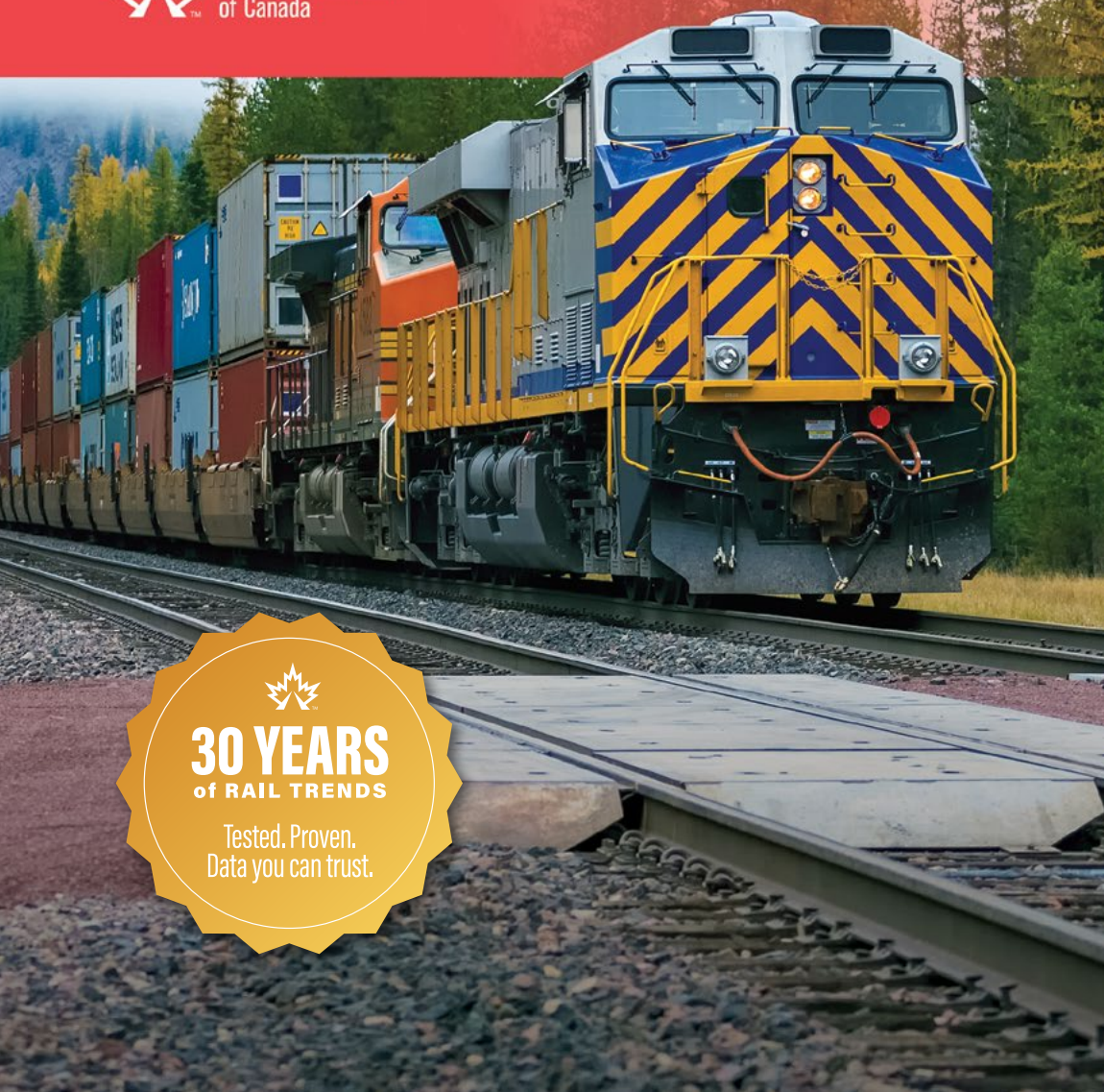


RAIL TRENDS 2022



Railway Association
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As of December 2021

MEMBER COMPANIES 2021

AMC	ArcelorMittal Infrastructure Canada S.E.N.C.
AMTK	Amtrak
APR	Alberta Prairie Railway Excursions
BCR	BCR Properties Ltd.
BCRY	Barrie-Collingwood Railway
BNSF	BNSF Railway Company
BRR	Battle River Railway NGC Inc.
BSR	Big Sky Rail Corp.
BTRC	Boundary Trail Railway Company Ltd.
CBNS	Cape Breton & Central Nova Scotia Railway
CEMR	Central Manitoba Railway Inc.
CFC	Train Touristique de Charlevoix Inc.
CFL	Compagnie du Chemin de Fer Lanaudière Inc.
CN	Canadian National Railway
CP	Canadian Pacific Railway
CR	Capital Railway
CRR	Romaine River Railway Company
CSX	CSX Transportation Inc.
CTRW	Carlton Trail Railway
EMRY	Eastern Maine Railway Co.
ETR	Essex Terminal Railway Co.
EXO	exo
GEXR	Goderich-Exeter Railway Company Ltd.
GO	Metrolinx
GWR	Great Western Railway Ltd.
HBRY	Hudson Bay Railway
HCRY	Huron Central Railway Inc.
KLTR	Knob Lake and Timmins Railway
KRC	Keewatin Railway Company
LMR	Last Mountain Railway

NBSR	New Brunswick Southern Railway Company Limited
NCR	Nipissing Central Railway Company
NS	Norfolk Southern Railway
OBRY	GIO Rail Holdings Corporation (Orangeville Brampton Railway)
ONR	Ontario Northland Transportation Commission
OSR	Ontario Southland Railway Inc.
OVR	Ottawa Valley Railway
PCHR	GIO Rail Holdings Corporation (Trillium Railway Co. Ltd.)
PDCR	Prairie Dog Central Railway — Vintage Locomotive Society Inc.
QGRY	Québec Gatineau Railway Inc.
QIO	Quebec Iron Ore Inc.
QNSL	Québec North Shore and Labrador Railway Company Inc.
RMR	Great Canadian Railtour Company Ltd.
RS	Roberval and Saguenay Railway Company
SFG	Société du chemin de fer de la Gaspésie
SFP	SFP Pointe-Noire (Chemin de fer Arnaud Québec)
SLQ	St. Lawrence & Atlantic Railroad (Québec) Inc.
SOR	Southern Ontario Railway
SRY	Southern Railway of British Columbia Ltd. (and Southern Railway of Vancouver Island (SVI))
SSR	South Simcoe Railway
STPP	St. Paul & Pacific Northwest Railroad Company LLC
TRT	Tshuetin Rail Transportation Inc.
TTR	Toronto Terminals Railway Company Ltd.
UP	Union Pacific Railroad Company
VIA	VIA Rail Canada Inc.
WCE	West Coast Express Ltd.
WP&YR	White Pass and Yukon Route Railroad

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

ASSOCIATE MEMBERS 2021

Absopulse Electronics Ltd.	NARSTCO
Ashcroft Terminal	Ontario Steel Haulers Inc.
Atlantic Industries Limited	PNR Railworks Inc.
Bayside Canadian Railway	Rail Cantech
British Columbia Institute of Technology	RailTerm
CAD Railway Industries Ltd.	RailVision Analytics
Canadian Heartland Training Railway Services Inc.	Rail-Werx Inc.
Canadian Rail Research Laboratory	Red River College
Canadian Urban Transit Association	RTC Rail Solutions Ltd
Cando Rail & Terminals Ltd	Sait Polytechnic
Cégep de Sept-Iles	Sands Bulk Transport
Confederation College of Applied Arts and Technology	Sandy Cooke Consulting Inc.
CPCS Transcom Limited	SC3 Automation Inc
Crescent Point Energy	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
Groupe Pelletier Entretien	T-Rail Products Inc.
Harsco Rail	Tybo Contracting Ltd.
J Lanfranco Fastener Systems Inc	Universal Rail Systems
Jade Acoustics Inc.	VIP Rail ULC
Jones Rail Industries Ltd.	Wabtec Corporation
Koch Fertilizer Canada ULC	Walker Industries Inc.
L.A. Hébert Ltée	Whiting Equipment Canada
McCarthy Tétrault	Wi-Tronix, Inc.
Messer Canada Inc.	X-Rail Signalisation Inc.
Montréal Port Authority	

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

FOREWORD

This is the 30th 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.¹ This edition covers the 2012 to 2021 period.

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

- 39 shortline freight railways
- 6 Class 1 freight railways³
- 6 tourist railways
- 5 commuter railways
- 2 intercity passenger railways

Canadian Class 1 freight railways (CN and CP) 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 reflect 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.

1 In some cases, relative variations reflect a change in the way certain members report data, or a change in membership.

2 Some railways perform more than one service. The list of railways provided is by the railways' primary service.

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

READERS' COMMENTS

Comments on this report may be addressed to:

Jonathan Thibault
Senior Research Analyst

Railway Association of Canada
99 Bank Street, Suite 901
Ottawa, Ontario K1P 6B9

P: 613.564.8104

Email: JThibault@railcan.ca

Media Inquiries: Communications@railcan.ca



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EXECUTIVE SUMMARY

In 2021, Canadian railways and railroaders demonstrated resilience in the face of multiple, concurrent challenges. The health and supply chain impacts of the global pandemic continued to impact operations, while several severe weather events linked to climate change tested disaster mitigation and emergency preparedness plans. All of these challenges were reminders of the interconnectedness of global supply chains and the need for ever-greater collaboration among all supply chain partners.

Evolving public health restrictions and the high number of teleworkers delayed meaningful recoveries in passenger rail ridership. Intercity, commuter, and tourism rail operators were tested. Yet through it all, railways kept trains running, got people (including essential workers) where they needed to go and provided valued services to Canadians.

Freight railways showed their mettle, working through devastating wildfires, unprecedented flooding in British Columbia and severe drought conditions in the Prairies. When these climate-related crises hit, railroaders mobilized to restore service quickly and keep goods moving.

Indeed, Canadian railways remained reliable links in integrated supply chains. Canadian freight railways transported half of our country's exports in 2021, and a total of \$350 billion worth of goods. Despite the challenges outlined above, Canada's Class 1 railways managed to maintain an average terminal dwell time of just 7.6 hours.

The impacts of COVID-19 and global mismatches in production and consumer demand impacted international supply chains. The on-time performance of global ocean liners deteriorated, and delays increased significantly. This had an effect on major port operations around the world, including in Canada. Canadian port dwell times increased by 42% since 2019, to an average of 104 hours in 2021.

In 2021, prices for most goods and services increased, many significantly. Consumer prices increased at rates not seen in decades, industrial and commodity prices soared, and railway diesel fuel costs increased by 31%. Despite these inflationary pressures, railways were a source of stability, as they maintained competitive freight rates throughout 2021 – helping to drive the recovery of the Canadian economy. In fact, in 2021, Canadian rail freight rates remained lower than rates in the U.S. and were amongst the lowest in the world.

RAC members' top priority has always been safety, and their 2021 performance reflects this ongoing commitment to continuous improvement. Railways set another consecutive record in the safe transportation of dangerous goods – reducing the dangerous goods accident rate by 6.9% compared to 2020 (which

itself was a previous low). Over the past decade, the number of accidents per 1,000 carloads of dangerous goods has been cut in half, from 0.30 to 0.15. Overall in 2021, the total number of railway accidents was 2.6% below the 2016-2020 average.

In 2021, railways continued to play a key role in helping Canada progress towards its ambitious emissions reduction and decarbonization targets. Freight fuel efficiency improved by 1.2% to 704 revenue ton-miles per gallon – setting another consecutive record. Various initiatives contributed to this improvement, including investments in locomotive fleet modernization, fuel saving technologies, and low-carbon fuels. Improved operational practices, such as running longer and heavier trains and training employees to optimize fuel efficiency, also contributed to greater fuel efficiency. Overall, total rail industry fuel consumption was 2.8% below 2020 levels and 5.5% below the 2016-2020 average.

Improvements in supply chain performance, growth, safety, and fuel efficiency all have one thing in common: they're driven by innovation. Canada's railways are investing heavily in big data analytics, artificial intelligence, automation, and digital platforms to enhance service, support growth, and further improve safety. The expanded roll-out of innovative, automated inspection technologies is enabling railways to increase inspection frequency – leading to a safer and more reliable network. Lastly, locomotive fuel efficiency continues to improve thanks to innovations such as CN's Horsepower Tonnage Analyzer and CP's Trip Optimizer technology.

In 2021, railways invested \$2.3 billion into their Canadian assets, bringing the total to \$20.9 billion over the past 10 years. RAC members also contributed over \$1.9 billion in various taxes to Canadian governments, bringing the total to \$16.9 billion over the past decade.

Lastly, the rail industry's workforce was strengthened in 2021. Employment increased by 3.0%, or 997 jobs, to 34,318 employees. And since every one job in the rail industry supports nearly five additional jobs, the industry supported a total of approximately 182,000 jobs in Canada.⁴ The average wage in the industry increased by 1.3%, to \$102,160; and railways made progress on their commitments to diversity, equity, and inclusion. From 2020 to 2021, the representation of women, persons with disabilities, visible minorities, and Indigenous peoples employed in the rail industry all increased.

⁴ The Conference Board of Canada, *Moving People, Products, and the Economy*, April 2020.

A 10-YEAR SNAPSHOT OF RAIL IN CANADA

	2012	2020	2021
FREIGHT TRAFFIC			
Revenue ton-miles (billions)	260.7	309.8	303.9
Revenue tonne-kilometres (billions)	380.6	452.3	443.6
Gross ton-miles (billions)	488.5	581.0	571.7
Gross tonnes-kilometres (billions)	713.2	848.1	834.6
Freight train-miles (thousands)	68,195.9	63,382.8	61,611.4
Freight train-kilometres (thousands)	109,750.3	102,004.4	99,153.6
Carloads originated (thousands)	4,120.0	5,497.2	5,493.5
Tons originated (thousands)	311,618.7	366,396.2	363,479.4
Tonnes originated (thousands)	282,700.3	332,394.2	329,748.3
Intermodal carloads originated (thousands)	946.2	1,905.5	1,955.8
Freight revenue per ton-mile (cents)	4.34	4.97	5.21
Freight revenue per tonne-km (cents)	2.97	3.41	3.57
Gallons of fuel consumed (millions)	469.7	460.7	447.9
Litres of fuel consumed (millions)	2,135.3	2,094.3	2,036.2
RTM per gallon of fuel consumed	583.4	695.9	704.0
RTK per litre of fuel consumed	187.3	223.5	226.1
PASSENGER TRANSPORTATION			
Total passengers carried (thousands)	75,982	23,979	14,901
FINANCIAL INFORMATION			
Operating expenses (millions)	10,574.9	11,763.8	11,682.5
Operating revenues (millions)	12,632.6	16,764.1	17,242.5
Operating income (millions)	2,057.7	5,000.3	5,560.1
INVESTMENTS			
Total investments (millions)	1,794.7	2,629.5	2,300.1
TAXES			
Taxes paid (millions)	777.1	1,852.4	1,919.4
EMPLOYMENT			

	2012	2020	2021
Employees	34,629	33,321	34,318
Average wage per employee	82,883	100,886	102,160

TRACK AND EQUIPMENT

Total miles of freight track operated	26,923	26,551	26,490
Total kilometres of freight track operated	43,328	42,730	42,631
Freight cars (thousands)	64.5	61.8	60.0
Locomotives	3,063	3,756	3,600



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),⁵ increased by 16.6% while the freight sector's total workload, measured by GROSS TON-MILES (GTMs), increased by 17.0%.

Overall freight traffic in 2021 was slightly below 2020 levels. Severe drought conditions in the Prairies, and a resulting small grain crop, was the primary driver of the reduction in total freight traffic. In 2021, RTMs decreased by 1.9% from 2020 and was just 0.4% above the 2016-2020 average. GTMs decreased by 1.6% from 2020 and was equal to the 2016-2020 average.

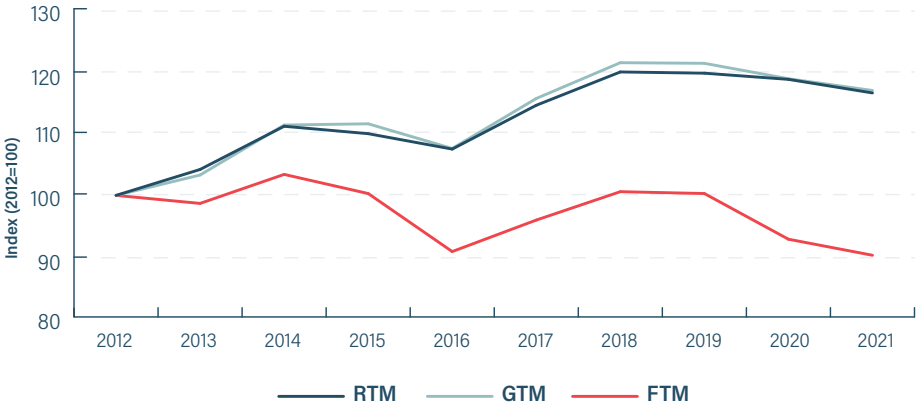
The distance travelled by Canada's freight trains, measured in freight TRAIN-MILES (FTMs), decreased by 2.8% compared to 2020, and was 6.0% below the 2016-2020 average. Over the past decade, a trend towards longer and heavier trains has enabled railways to carry more traffic, without a corresponding increase in TRAIN MILES (see [Freight Train Performance on page 24](#)).

RTMS, GTMS AND FTMS

	RTM (millions)	RTK (millions)	GTM (millions)	GTK (millions)	FTM (thousands)	FTK (thousands)
2012	260,723	380,617	488,518	713,165	68,196	109,750
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

5 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 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 2012 to 2021, the number of INTERMODAL carloads more than doubled, while non-INTERMODAL carloads increased by just 10.7% ([see Freight Carloads and Revenues by Commodity on page 18](#)). The average weight of an INTERMODAL carload, even with double stacking, is significantly less than that of a non-INTERMODAL carload.⁶

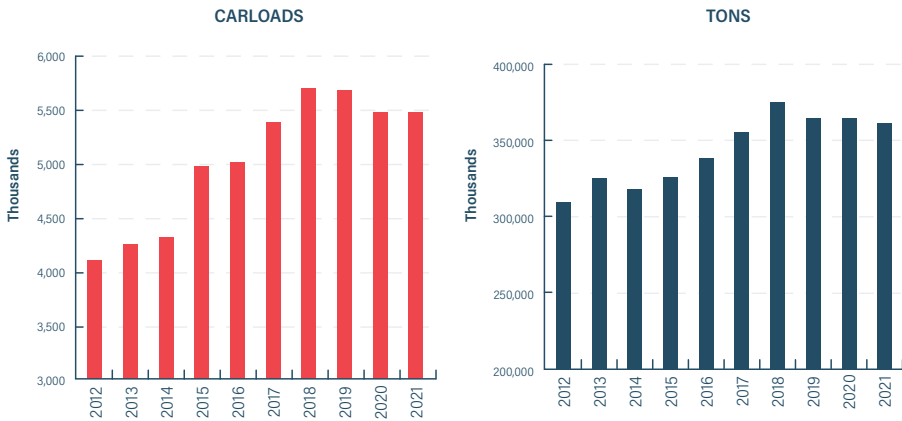
From 2020 to 2021, the number of Canadian originating carloads decreased by 0.1%, and the originating tonnage decreased by 0.8%.

⁶ Data from Statistics Canada's *Monthly Railway Carloadings* show that in 2021, the average weight of a non-intermodal carload was 86.3 tonnes, compared to 14.8 tonnes for an intermodal unit (or 29.7 tonnes if intermodal units are double stacked on a single railcar).

ORIGINATING CARLOADS AND TONNAGE

	Carloads originated (thousands)	Tons originated (thousands)	Tonnes originated (thousands)
2012	4,120	311,619	282,700
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

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 (1,009,500 or 106.7%), minerals (299,400 or 37.1%), and manufactured & miscellaneous goods (87,800 or 94.3%).⁷

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

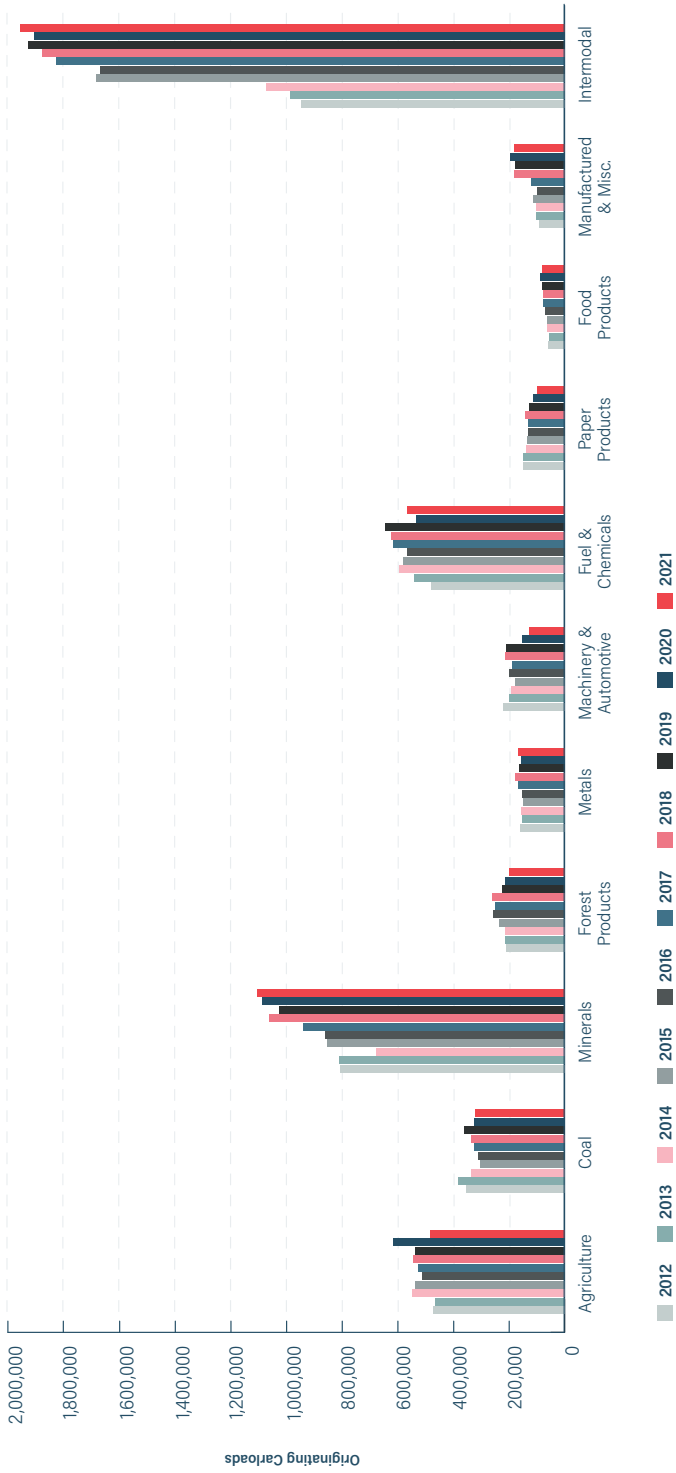


ORIGINATING CARLOADS BY COMMODITY GROUPING

	Agriculture	Coal	Minerals	Forest products	Metals	Machinery & automotive	Fuel & chemicals	Paper products	Food products	Manufactured & miscellaneous	Intermodal	Total Commodities*
2012	472,474	353,201	805,952	209,654	161,541	220,216	479,669	149,740	60,906	93,129	946,223	3,952,706
2013	465,816	383,013	810,750	215,254	150,906	199,068	540,411	150,029	56,405	103,605	987,186	4,062,442
2014	547,122	336,632	676,865	213,980	157,086	193,294	593,186	139,110	61,993	101,733	1,072,278	4,093,278
2015	537,013	303,932	854,186	235,169	150,273	178,429	579,254	133,800	62,160	112,194	1,683,988	4,830,398
2016	511,228	309,403	859,479	257,774	151,609	199,927	565,331	130,882	68,951	99,480	1,669,892	4,823,956
2017	527,271	326,228	937,737	251,273	165,404	189,632	617,792	129,675	79,041	118,651	1,828,225	5,170,929
2018	542,722	337,323	1,060,395	260,377	178,784	214,592	622,769	140,822	78,864	181,935	1,878,392	5,496,976
2019	538,726	361,067	1,027,286	225,031	164,230	208,879	645,268	127,821	80,009	178,379	1,927,291	5,483,989
2020	615,441	323,880	1,086,036	213,474	156,271	154,487	535,268	113,001	87,050	194,640	1,905,493	5,385,041
2021	483,085	321,232	1,105,311	198,714	168,593	126,451	565,748	97,884	79,547	180,944	1,955,771	5,283,280

* 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 2021, 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. Four commodity groupings experienced modest increases in carloads from 2020 to 2021, including intermodal (50,300 or 2.6%), fuels & chemicals (30,500 or 5.7%), minerals (19,300 or 1.8%), and metals (12,300 or 7.9%). The other seven commodity groupings experienced decreases compared to 2020. Agriculture experienced the most significant decrease in carloads (-132,400 or -21.5%), owing largely to severe drought in the Prairies. Machinery & automotive experienced a decrease of 28,000 carloads (or 18.1%), as automakers struggled through supply chain disruptions and chip shortages, leading to a 19% reduction in Canadian vehicle production.⁸

The commodity groupings with the higher numbers of carloads tend to generate higher revenues, as would be expected, however there are some notable differences. 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 2021, intermodal, agriculture, fuel & chemicals, and minerals were the largest revenue generators for Canadian railways, accounting for two-thirds of freight revenues.

⁸ International Organization of Motor Vehicle Manufacturers, <https://www.oica.net/production-statistics/>. Canadian production was as follows: 1,115,002 (2021), 1,376,623 (2020), 1,916,585 (2019).

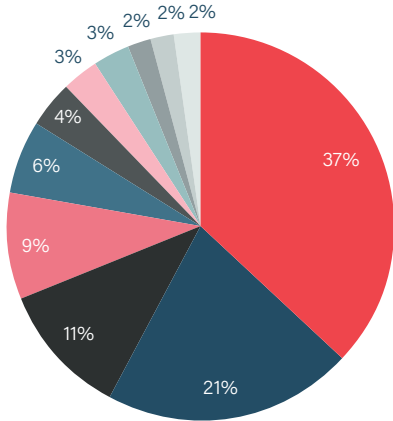
FREIGHT REVENUE BY COMMODITY GROUPING (\$ MILLIONS)

	Agriculture	Coal	Minerals	Forest products	Metals	Machinery & automotive	Fuel & chemicals	Paper products	Food products	Manufactured & miscellaneous	Intermodal	Total Commodities*
2012	1,374	749	926	611	455	508	1,155	411	161	153	1,997	8,499
2013	1,433	833	973	660	448	481	1,421	406	155	174	2,019	9,002
2014	1,725	760	1,030	702	501	481	1,756	393	181	177	2,162	9,869
2015	1,871	632	1,336	857	487	541	1,934	426	235	192	2,171	10,682
2016	1,731	628	1,061	952	429	567	1,719	423	258	181	2,135	10,083
2017	1,865	695	1,101	918	478	552	1,824	425	295	221	2,354	10,728
2018	2,040	768	1,555	968	557	664	1,944	477	305	510	2,566	12,355
2019	2,129	837	1,544	899	513	630	2,137	445	326	516	2,580	12,557
2020	2,431	725	1,390	868	481	489	1,759	415	373	578	2,553	12,061
2021	1,974	692	1,344	919	548	474	1,905	396	343	645	2,731	11,971

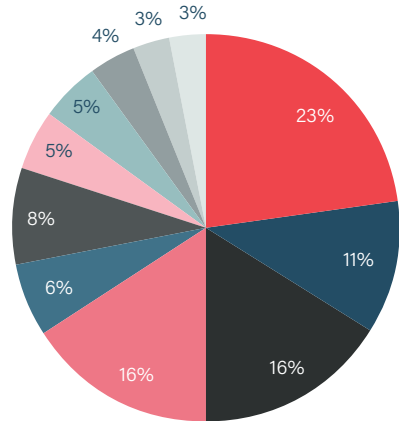
*Not all RAC member companies report revenue from carloads originated by commodity grouping. The data in this section reflect reported freight revenue from originated carloads grouped by commodity grouping. As a result, total freight revenue from carloads originated by commodity grouping is lower than 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, 2021



FREIGHT REVENUE BY COMMODITY GROUPING, 2021



- Intermodal
- Minerals
- Fuel & chemicals
- Agriculture
- Coal
- Forest products
- Manufactured & miscellaneous
- Metals
- Machinery & automotive
- Paper products
- Food products

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
2012	868	1,396	128	206	95	7,165
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 ^R	184 ^R	120	9,159
2021	913	1,470	106	171	121	9,279

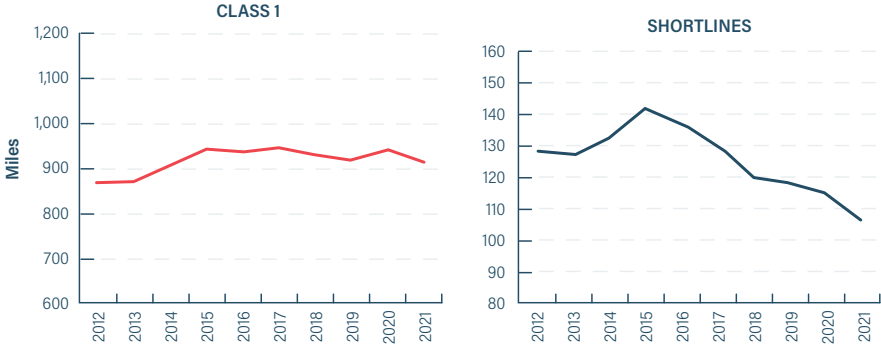
Note: See Appendix D for an explanation on revised data ^(R).

In 2021, shipments transported by Canada's CLASS 1 RAILWAYS (CN and CP) travelled an average distance⁹ of 913 miles (1,470 kilometres), which is 3.0% shorter than in 2020. Shipments carried by Canada's SHORTLINE RAILWAYS travelled an average distance of 106 miles (171 kilometres), which is 7.2% shorter than in 2020. The average length of haul varies significantly across SHORTLINE RAILWAYS due to variations in the length of TRACK OPERATED.¹⁰ The reduction in SHORTLINE RAILWAYS' average length of haul is likely the result of an increasing share of freight traffic handled by *shorter* SHORTLINE RAILWAYS.

⁹ 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.

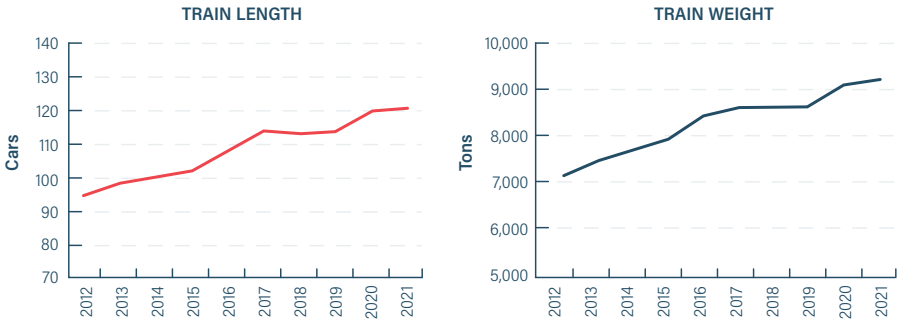
¹⁰ In 2021, the length of track operated by Canadian shortline railways ranged from just a few miles to over 700 miles, with a median length of around 85 miles and average of around 135.

AVERAGE LENGTH OF HAUL



As mentioned earlier in the report, average train length and weight continue to trend upwards. In 2021, the average number of cars¹¹ per freight train increased by 0.6% from 2020 and by 6.1% compared to the 2016-2020 average. The average train weight¹² increased by 1.3% from 2020 and by 6.4% compared to the 2016-2020 average. Over the past decade, average train length (number of cars) has increased by 27.4% and average train weight has increased by a total of 29.5%, from 7,165 tons in 2012 to 9,279 tons in 2021.

AVERAGE TRAIN SIZE



11 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.

12 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.¹³ In 2021, railway freight rates increased by 4.9%, to 3.57 cents per REVENUE TONNE-KILOMETRE or 5.21 cents per REVENUE TON-MILE. Freight rates must be analyzed in conjunction with costs and other prices at a time of significant general price inflation worldwide.

In Canada, in 2021, the truck transportation price index increased by 4.9% (not shown),¹⁴ the consumer price index increased by 3.4%, the industrial product price index increased by 13.9%, and the commodity price index increased by a whopping 58.1%, which includes a very significant increase in the price of fuel. For example, railways faced a 30.5% increase in the cost of diesel fuel (see [Fuel on page 29](#)).

Since 1988 (the first year in RAC's *Rail Trends Database*), railway freight rates have increased by a total of 42.8%, which is much less than the increases in industrial product prices (92.1%), consumer prices (98.9%), and commodity prices (120.4%).

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
2012	4.34	2.97	119.0	232.1	170.9	155.5
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	160.5	191.0	169.4
2020	4.97	3.41	136.2	139.4	192.4	168.7
2021	5.21	3.57	142.8	220.4	198.9	192.1

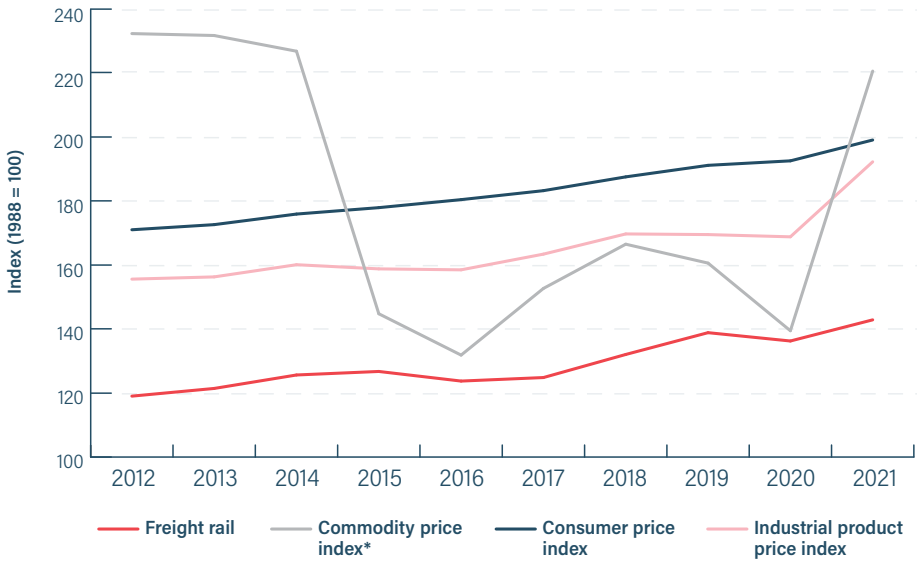
Sources: Bank of Canada (commodity price index); Statistics Canada (consumer price index; industrial product price index).

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

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

¹⁴ Statistics Canada, *For-hire Motor Carrier Freight Services Price Index*.

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.¹⁵ Using this measure, employee productivity decreased by 4.1% in 2021, as freight employment for reporting carriers increased by 2.2% (not shown), while RTMs fell by 1.9%. The number of road miles per employee¹⁶ decreased by 2.3% in 2021.

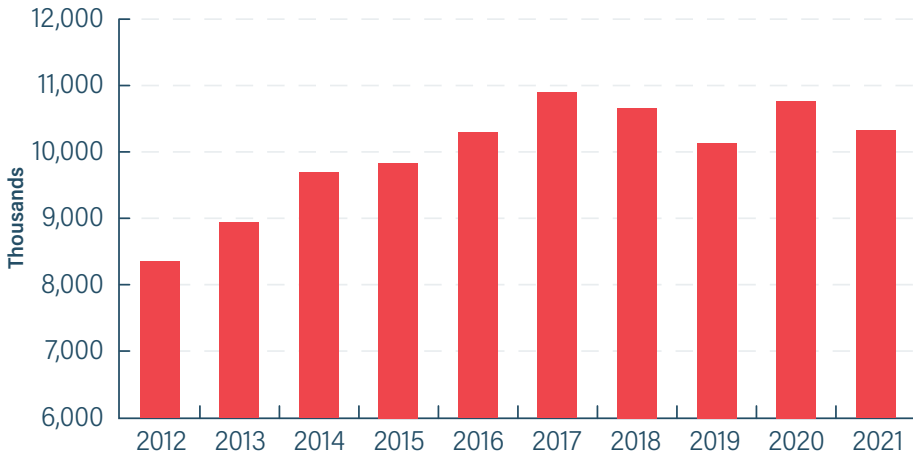
¹⁵ Freight rail labour productivity is calculated by dividing the total revenue ton-miles by the average number of freight railway employees, each year. Data from railways that don't report both metrics are excluded from the calculation. Freight rail sector employment is not shown in the *Rail Trends* report.

¹⁶ 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
2012	8,362	12,207	0.86	1.39
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

RTM PER FREIGHT EMPLOYEE

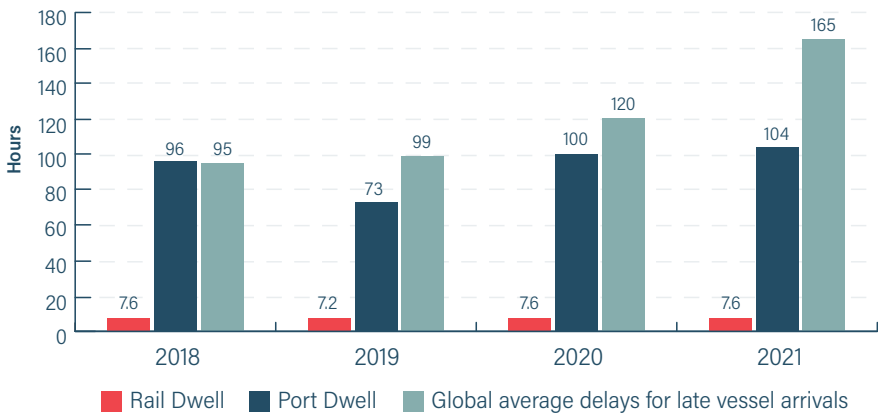


SUPPLY CHAINS

Canadian and global supply chains were disrupted throughout 2021 by significant climate events (wildfires and flooding in British Columbia), evolving public health restrictions, labour shortages, and global shipping CONTAINER issues, among other factors. As a result, supply chain bottlenecks, dwell times, and delays 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 2021, Canadian CLASS 1 RAILWAYS' average terminal dwell time¹⁷ remained unchanged from 2018 and was just slightly above 2019 levels at 7.6 hours. Yet Canadian ports' average terminal dwell time¹⁸ increased by 42.1%, from 73 hours in 2019 to 104 hours in 2021. At the global level, the ON-TIME PERFORMANCE of marine vessels decreased from 78% in 2019 to 36% in 2021 (not shown).¹⁹ For vessels that were not on-time, the average delay increased by 67.1%, from 99 hours in 2019 to 165 hours in 2021.²⁰

SUPPLY CHAIN PERFORMANCE



¹⁷ The Canadian Class 1 railways' average dwell time is calculated as a simple average of CN and CP.

¹⁸ The Canadian ports' average dwell time is calculated as a simple average of the Port of Vancouver and the Port of Montreal.

¹⁹ Sea-Intelligence, *Global Liner Performance (GLP) report*.

²⁰ Ibid.

FUEL

In 2021, RAC member railways consumed 448 million gallons (2.0 billion litres) of fuel, a reduction of 2.8% compared to 2020, and 5.5% below the 2016-2020 average. Passenger rail fuel consumption increased by 5.4% compared to 2020, but remained well-below pre-pandemic levels, when ridership was much higher. Freight rail fuel consumption (including yard and work trains) decreased by 3.1%.

The cost of diesel fuel increased by 30.5%, from \$3.22 per gallon (\$0.71 per litre) in 2020 to \$4.20 per gallon (\$0.92 per litre) in 2021.



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)
2012	469,695	2,135,270	446,932	2,031,788	434,514	1,975,334	22,763	103,481	4.26	93.76
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	92.38

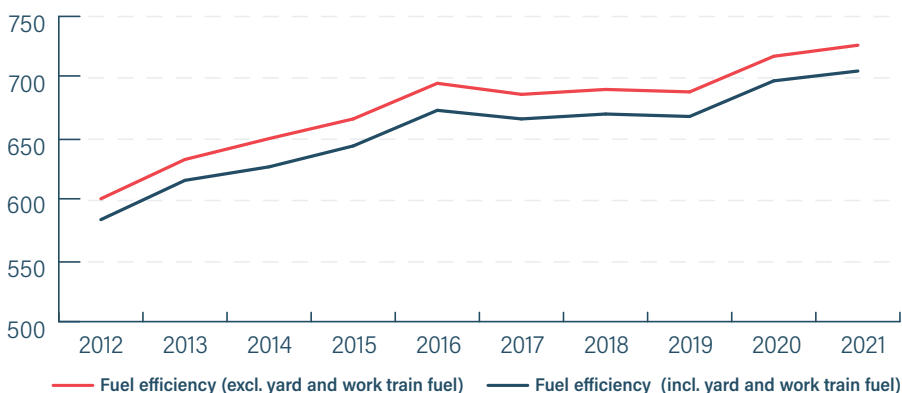
FREIGHT FUEL EFFICIENCY

In 2021, 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 (-3.1%)²¹ was greater than the reduction in RTMs (-1.9%), freight fuel efficiency improved by 1.2% to 704 RTMs per gallon (or 226 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, including running longer and heavier trains and training employees to optimize fuel efficiency.

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
2012	583	187	600	193
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

FREIGHT FUEL EFFICIENCY



²¹ Freight fuel consumption, including yard and work train fuel, decreased by 3.1%. Freight fuel consumption, excluding yard and work train fuel, decreased by 3.2%.

PASSENGER TRANSPORTATION

All segments of passenger railways – commuter, intercity and tourist – continued to face challenges throughout 2021. Evolving public health restrictions and the high number of teleworkers worked against strong ridership recoveries. Throughout, railways kept trains running, providing essential services to Canadians.

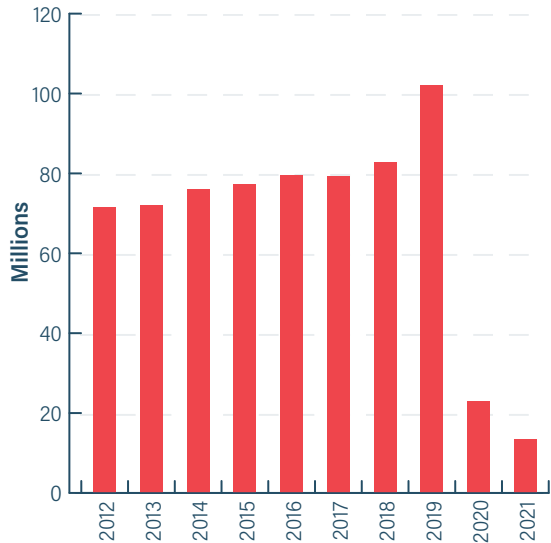
COMMUTER RAIL

From 2020 to 2021, commuter rail ridership fell an additional 41.5% (after falling by 77.7% in 2020). Unlike 2020, where ridership levels were “normal” for the first few months of the year, 2021 did not benefit from any months of pre-pandemic ridership levels. Despite the 41.5% drop in ridership, TRAIN MILES did not decrease (not shown) and commuter railways continued to provide essential transportation services.

COMMUTER RIDERSHIP

	Commuters (millions)
2012	71.5
2013	72.0
2014	75.9
2015	77.2
2016	79.6
2017	79.3
2018	82.8
2019*	101.9
2020	22.8
2021	13.3

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 2020 to 2021, the number of intercity railway passengers increased by 26.7%, from 1.2 million to 1.6 million. Throughout 2021, pandemic conditions evolved, some restrictions were lifted,²² and demand for travel increased. VIA rail increased service levels and frequencies, and ridership on each corridor and non-corridor route increased.²³ Intercity passenger TRAIN MILES increased by 25.2%, and passenger CAR MILES increased by 24.1%. Given similar increases in TRAIN MILES and CAR MILES, there was not a notable change in the average number of cars per train (not shown).

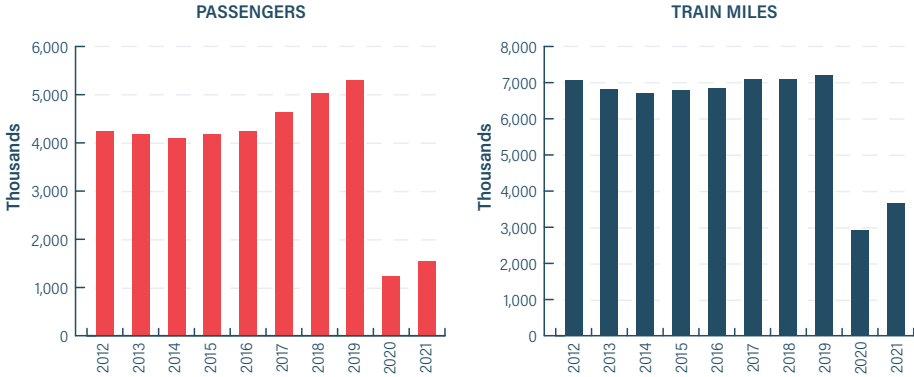
INTERCITY PASSENGER RAIL STATISTICS

	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)
2012	542	4,246	871	1,402	7,075	11,386	48,725	78,415
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

²² For example, travel restrictions in Atlantic provinces that interrupted VIA Rail's *Ocean* service.

²³ Routes include: Corridor East, Southwestern Ontario, *Ocean*, *Canadian*, and Regional services. VIA Rail, *Annual Report 2021*, p.97.

INTERCITY PASSENGERS AND TRAIN MILES



Efficiency metrics improved in 2021. The average passenger load factor increased from 45% to 49%, and the average number of passengers per train increased from 78 to 91. Despite these gains, these two efficiency metrics remained lower than they were in the pre-pandemic period. On a more positive note, ON-TIME PERFORMANCE edged up to 72%, and was 1.7% better than the 2016-2020 average.

INTERCITY PASSENGER RAIL PERFORMANCE METRICS

	Average intercity passengers per train	Average length of journey		Average passenger load factor (%)	On-time performance (%)
		Miles	Kilometres		
2012	123	213	342	54	82
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

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 2021 was similar to 2020, which itself was a strong year. In 2021, the total number of accidents increased by just 1.7% compared to 2020 but remained 2.6% below the 2016-2020 average.

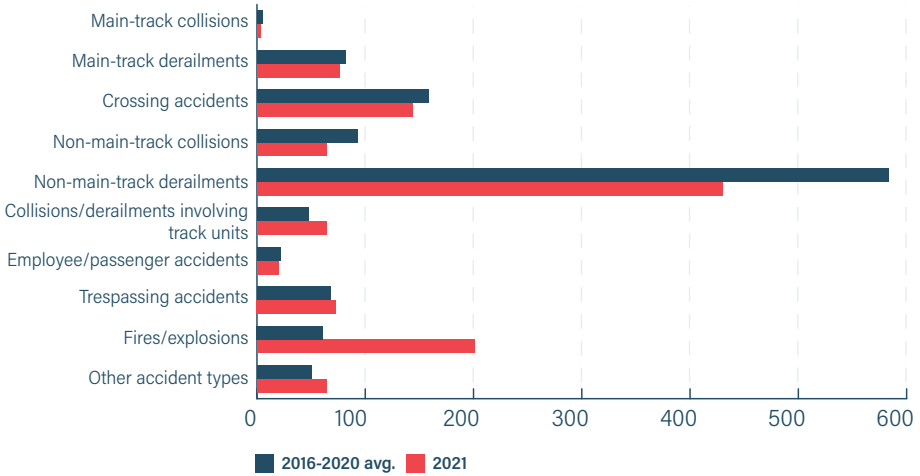
The total number of collisions and derailments was down 20%.²⁴ In recent years, the number of occurrences in the fires/explosions category has increased significantly, and this is obscuring the overall improving trend in rail safety. The number of reported fires increased from 81 in 2020 to 201 in 2021. However, the majority of these occurred along the right of way, and not on railway equipment (not shown). When excluding the fires/explosions category from the analysis, the total number of accidents in 2021 was 9.7% below 2020 and 15.4% below the 2016-2020 average.

SAFETY SUMMARY

	2012	2016-2020 avg.	2020	2021
Main-track collisions	8	5	7	3
Main-track derailments	75	82	72	76
Crossing accidents	201	158	138	144
Non-main-track collisions	106	93	75	64
Non-main-track derailments	594	583	564	430
Collisions/derailments involving track units	26	48	59	64
Employee/passenger accidents	14	22	18	20
Trespassing accidents	72	68	65	73
Fires/explosions	20	61	81	201
Other accident types	42	50	41	64
TOTAL ACCIDENTS	1,158	1,169	1,120	1,139
TOTAL ACCIDENTS EXCLUDING FIRES/EXPLOSIONS	1,138	1,109	1,039	938

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

SAFETY OVERVIEW: 2021 VS 2016-2020 AVERAGE



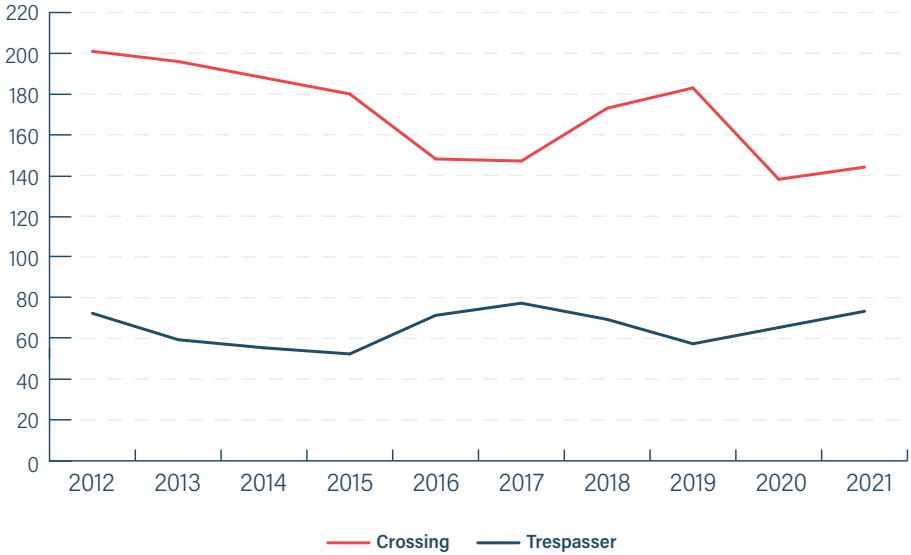
CROSSING AND TRESPASSING

Each year, crossing and trespasser accidents account for roughly one fifth of total rail accidents in Canada. In 2021, there were 144 accidents at railway crossings, a 4.3% increase from 2020 but still 8.7% below the 2016-2020 average. In addition, there were 73 accidents related to trespassing on railway property in 2021, up 7.7% compared to the 2016-2020 average.

CROSSING AND TRESPASSER ACCIDENTS

	Crossing	Trespasser	Crossing & Trespasser
2012	201	72	273
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	144	73	217

CROSSING AND TRESPASSER ACCIDENTS



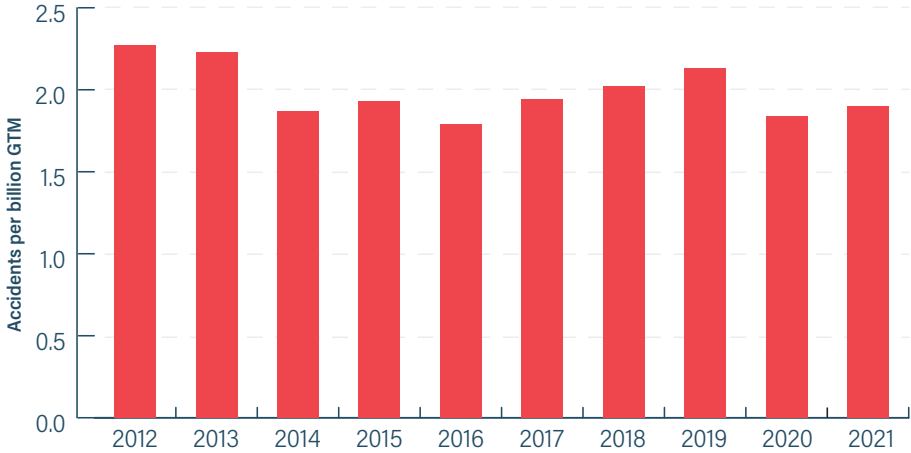
FREIGHT

In 2021, the freight sector's workload (GTM) and number of accidents were similar to 2020. At 1.90 accidents per billion GTMs, the freight accident rate was 2.3% below the 2016-2020 average. Many of these accidents are either minor collisions/derailments on non-main-track, or fires along the right-of-way.

FREIGHT ACCIDENTS

	Freight accidents	GTM (billions)	Accident rate
2012	1,108	488.5	2.27
2013	1,127	504.6	2.23
2014	1,018	544.4	1.87
2015	1,054	545.1	1.93
2016	943	525.8	1.79
2017	1,095	565.1	1.94
2018	1,196	593.5	2.02
2019	1,265	592.9	2.13
2020	1,071	581.0	1.84
2021	1,086	571.7	1.90

FREIGHT ACCIDENT RATE



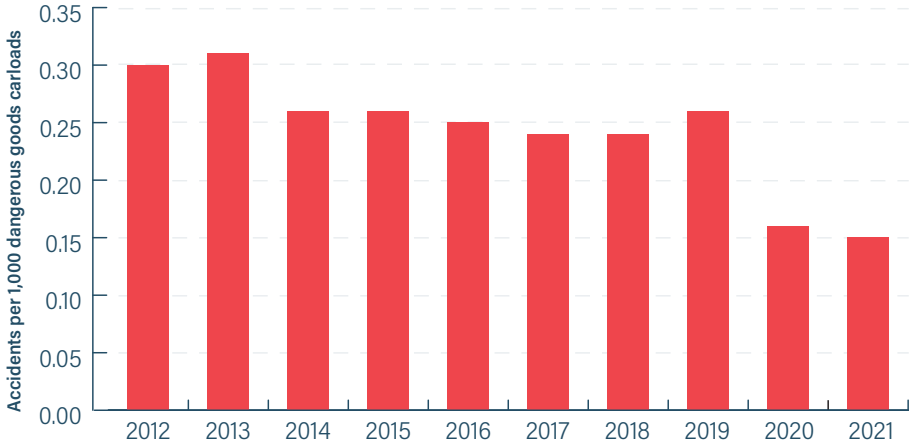
DANGEROUS GOODS

Railways continue to transport large volumes of freight classified as DANGEROUS GOODS – fulfilling their obligations as common carriers. In fact, railways set another safety record in this regard. The freight rail sector’s DANGEROUS GOODS accident rate decreased by 6.9% from 2020 (which itself was a previous low). Over the past decade, the number of accidents per 1,000 DANGEROUS GOODS carloads has been cut in half, from 0.30 to 0.15.

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
2012	127	429	0.30	2
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

DANGEROUS GOODS ACCIDENT RATE



PASSENGER

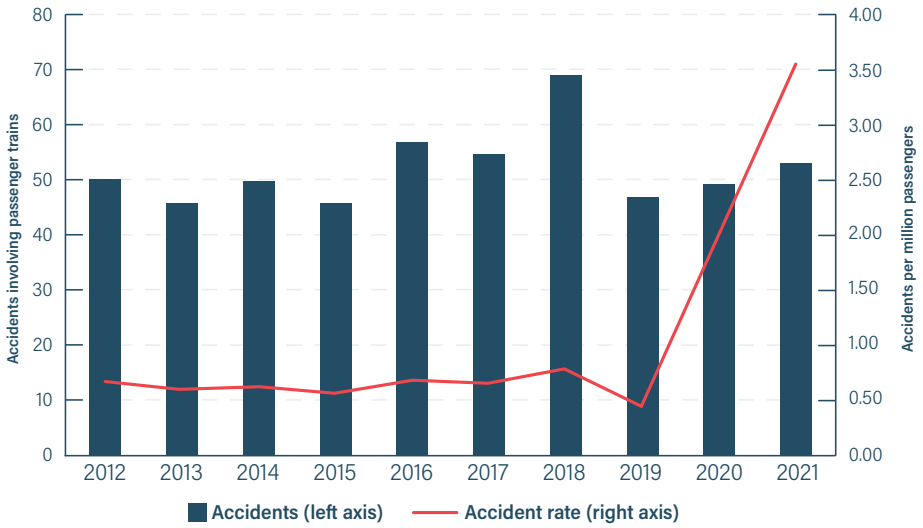
In 2021, the number of accidents involving passenger trains, 53, was similar to the 2016-2020 average of 55. However, the accident rate increased significantly in 2020, and again in 2021, because it is based on the number of passengers.²⁵ The number of rail passengers in 2021 (14.9 million) was 80.8% below the 2016-2020 average. In 2021, passenger trains continued to operate with lower numbers of passengers per train, contributing to an increase in the accident rate.

ACCIDENTS INVOLVING PASSENGER TRAINS

	Passenger accidents	Passengers (millions)	Accident rate
2012	50	76	0.66
2013	46	76	0.60
2014	50	80	0.62
2015	46	82	0.56
2016	57	84	0.68
2017	55	84	0.65
2018	69	88	0.78
2019	47	108	0.44
2020	49	24	2.04
2021	53	15	3.56

²⁵ 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).

PASSENGER TRAIN ACCIDENTS AND ACCIDENT RATE



OPERATING FINANCES, INVESTMENTS AND TAXES

OPERATING FINANCES

In 2021, Canadian railways' total operating revenues increased by \$478 million (or 2.9%), from \$16.8 billion to \$17.2 billion. Passenger-related revenues increased by \$76 million (or 47.9%); freight-related revenues increased by \$437 million (or 2.8%); and other revenues decreased by \$35 million (or -2.9%).

Total operating expenses decreased in 2021 by \$106 million (or -0.9%). The significant, \$398 million (26.9%) increase in total fuel expense was more than offset by reductions in expenses related to maintenance of equipment and general and administrative expenses.

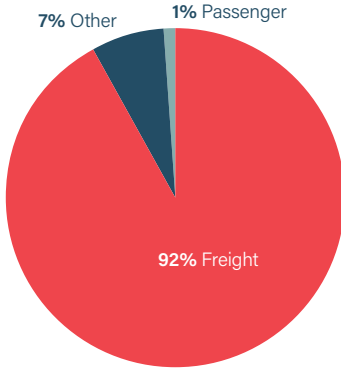
The increase in operating revenues combined with a decrease in expenses led to an 11.7% increase in total operating income – a record \$5.6 billion.²⁶

OPERATING REVENUES (\$ MILLIONS)

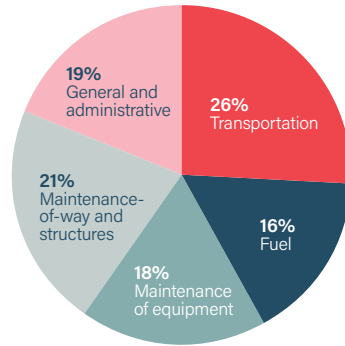
	Freight	Passenger	Other	Total operating revenues
2012	11,322	674	637	12,633
2013	12,039	668	623	13,331
2014	13,287	690	664	14,641
2015	13,270	727	682	14,679
2016	12,649	784	681	14,114
2017	13,610	915	704	15,228
2018	15,064	970	694	16,728
2019	15,820	996	1,088	17,904
2020	15,404	160	1,200	16,764
2021	15,841	236	1,165	17,243

²⁶ Operating income reflects earnings before interest and taxes.

OPERATING REVENUES, 2021



OPERATING EXPENSES, 2021



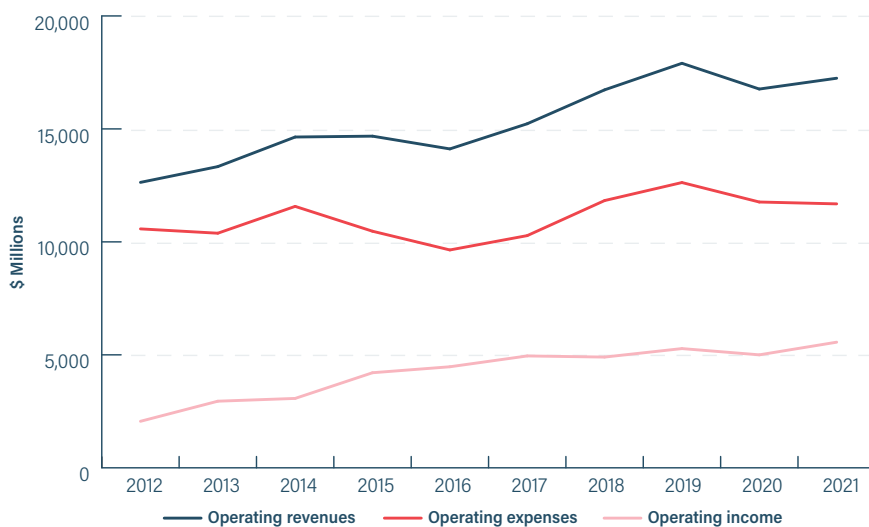
OPERATING EXPENSES (\$ MILLIONS)

	Transportation	Fuel	Maintenance of equipment	Maintenance-of-way and structures	General and administrative	Total operating expenses
2012	2,534	2,002	1,549	1,873	2,617	10,575
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	11,764
2021	3,027	1,881	2,069	2,513	2,192	11,682

OPERATING INCOME (\$ MILLIONS)

	Total operating revenues	Total operating expenses	Total operating income
2012	12,633	10,575	2,058
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	16,764	11,764	5,000
2021	17,243	11,682	5,560

OPERATING REVENUES, EXPENSES AND INCOME



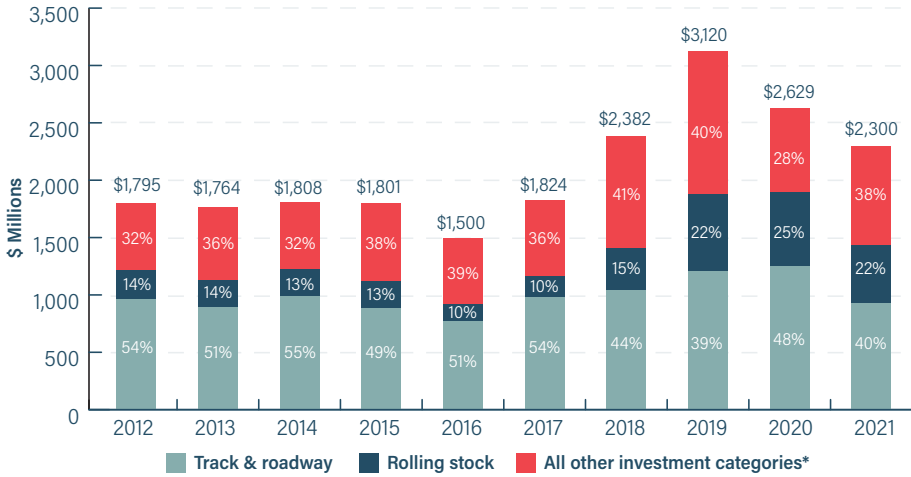
INVESTMENTS

Canadian railways have invested record amounts of capital into their networks and equipment over the past few 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 2021, railways invested \$2.3 billion into their Canadian assets, which is equal to the 2016-2022 average. The category that experienced the most significant increase in investment, in absolute terms, was signals, communications & power (\$95 million or 72.5%).

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
2012	961	269	122	41	255	22	49	77	1,795
2013	892	357	100	32	239	17	50	77	1,764
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

INVESTMENTS IN CANADIAN RAIL ASSETS

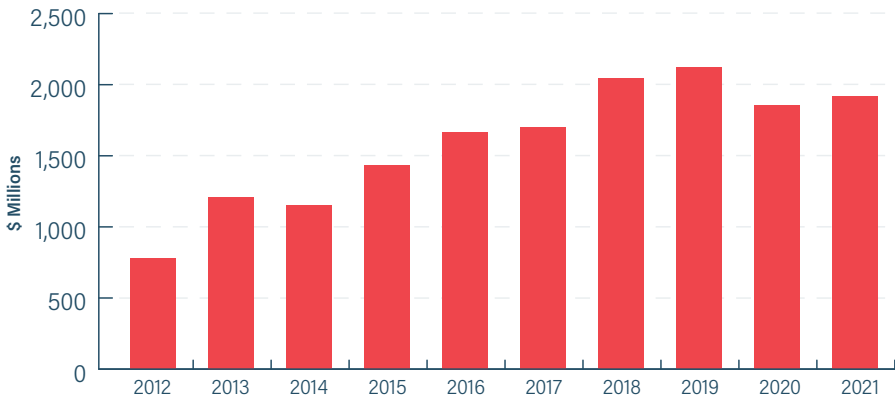


* Other investment categories include building & related machinery & equipment; signals, communications & power; terminals & fuel stations; intermodal equipment; work equipment & roadway machines; and other equipment.

TAXES

In 2021, railways paid \$1.9 billion in taxes to federal and provincial governments, up 3.6% from 2020 and 2.3% above the 2016-2020 average. Fuel tax, which is levied per litre, decreased by 4.2% as a result of lower railway fuel consumption. However, despite a reduction in fuel consumption and improvement in fuel efficiency, railways paid 20.3% (or \$34 million) more in carbon-related levies than they did last year – as these levies continue to escalate.

TOTAL TAXES PAID



TAXES BY CATEGORY (\$ MILLIONS)

	Locomotive fuel & excise tax					Other sales tax				Capital tax & custom duties			Income tax		Carbon-related levies		Payroll taxes				Total
	Locomotive fuel & excise tax	Property tax	Other sales tax	Capital tax & custom duties	Income tax	Carbon-related levies	CPP/QPP	EI	Health taxes												
2012	220	158	70	0	159	0	84	37	49												777
2013	198	169	43	1	629	21	75	32	43												1,210
2014	189	179	106	1	463	44	84	37	46												1,149
2015	159	168	115	3	775	45	82	36	53												1,435
2016	187	180	114	1	976	43	79	37	50												1,667
2017	196	185	122	0	940	78	93	36	52												1,702
2018	217	192	128	4	1,212	100	95	37	58												2,044
2019	215	193	140	3	1,246	124	102	37	60												2,120
2020	199	199	153	2	939	168	103	33	56												1,852
2021	190	203	97	2	1,021	202	113	34	59												1,919

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

	Locomotive fuel & excise tax		Property tax		Other sales tax		Capital tax & custom duties		
	2020	2021	2021 c/L tax	2020	2021	2020	2021	2020	2021
Alberta	19,081	16,918	5.5	23,066	24,296	11	12	1	1
British Columbia	19,838	19,565	3.0	56,485	57,834	48,659	55,141	0	0
Manitoba	10,018	9,584	6.3	16,517	15,355	19,298	21,099	15	99
Nfld. & Labrador	0	0	16.5	6	0	0	0	0	0
New Brunswick	1,204	1,223	4.3	17,730	2,149	0	0	0	1
Nova Scotia	0	0	15.4	2,783	2,704	0	0	0	0
Ontario	21,112	19,845	4.5	34,608	34,727	531	121	0	38
Quebec	6,117	6,011	3.0	40,858	40,329	32,264	728	0	0
Saskatchewan	39,761	38,528	15.0	23,301	25,335	18,440	19,041	43	26
Northwest Territories	13	12	11.4	142	143	0	0	0	0
Federal	81,623	78,723	4.0	0	0	33,361	510	2,417	1,636
Total	198,767	190,409	-	199,497	202,871	152,564	96,652	2,476	1,801

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

	Income tax		Carbon Levies		Payroll taxes		Total taxes	
	2020	2021	2020	2021	2020	2021	2020	2021
Alberta	73,826	77,658	22	4	0	0	116,007	118,889
British Columbia	66,989	93,874	67,624	73,641	1,164	1,211	260,759	301,266
Manitoba	41,519	40,966	0	0	7,193	7,374	94,560	94,477
Nfld. & Labrador	0	0	0	0	0	0	6	0
New Brunswick	9,960	8,952	1,790	2,897	0	0	14,684	15,222
Nova Scotia	3,334	3,888	181	208	0	0	6,298	6,800
Ontario	96,451	98,056	33	152	14,324 ^R	14,860	167,059 ^R	167,798
Quebec	48,968	56,388	5,088	5,980	59,971 ^R	63,909	193,265 ^R	173,345
Saskatchewan	72,872	70,698	35	70	0	0	154,452	153,698
Northwest Territories	542	652	8	11	0	0	705	818
Federal	524,991	569,554	92,753	118,564	109,423 ^R	118,060	844,567 ^R	887,046
Total	939,450	1,020,687	167,534	201,527	192,074	205,414	1,852,362	1,919,361

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

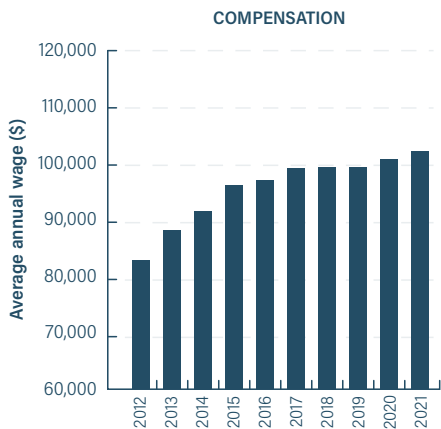
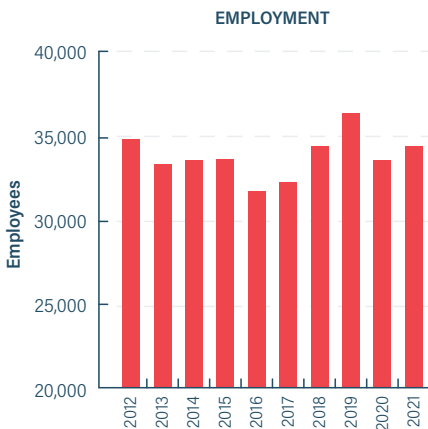
EMPLOYMENT

In 2021, Canadian railways directly employed 34,318 people from coast to coast to coast, an increase of 997 (3.0%) from 2020. The average annual wage per employee climbed by \$1,275 (1.3%) to \$102,160,²⁷ which is approximately 50% higher than the average full-time Canadian salary.²⁸

EMPLOYMENT AND COMPENSATION

	Total compensation (\$ millions)	Average number of employees	Average annual wage per employee (\$)
2012	2,870	34,629	82,883
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	100,886
2021	3,359	34,318	102,160

EMPLOYMENT AND COMPENSATION



²⁷ 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.

²⁸ Statistics Canada, *Labour Force Survey*.

DIVERSITY REPRESENTATION

The RAC began collecting information from its members on diversity representation in 2020. Information is collected on the number of employees in the following categories: women; persons with disabilities; visible minorities; and Indigenous peoples. From 2020 to 2021, diversity representation improved as the number of employees and the employment shares in all four categories increased.²⁹

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%

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.

²⁹ The share of women increased from 11.78% to 11.80%.

TRACK AND EQUIPMENT

In 2021, freight railways operated 26,490 miles (42,631 kilometres) of track in Canada – a network that is 12% longer than Canada’s National Highway System.³⁰ The industry’s freight car fleet decreased by 2.8% to 60,007 cars. The number of active freight and passenger locomotives in service decreased by 4.2% to 3,600 but remained 6.7% higher than the 2016-2020 average.

TRACK AND EQUIPMENT

	Freight railway operated track		Locomotives in service	Freight cars in service
	Miles	Kilometres		
2012	26,923	43,328	3,063	64,485
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	3,600	60,007

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.

As tourism operators came back online in 2021, the number of commuter and tourist track kilometres operated rebounded from the unusual low experienced in 2020. There was very little change in freight TRACK OPERATED.

³⁰ Transport Canada, [Transportation in Canada 2021](#).

TRACK OPERATED*, BY JURISDICTION AND RAILWAY SERVICE

	2012		2020		2021	
	Miles	Kilometres	Miles	Kilometres	Miles	Kilometres
Alberta	4,154	6,685	3,916	6,302	3,942	6,345
British Columbia	4,060	6,533	4,100	6,598	4,100	6,598
Manitoba	2,703	4,350	2,829	4,553	2,829	4,553
Nfld. & Labrador	237	381	167	269	164	264
New Brunswick	724	1,165	681	1,096	681	1,096
Nova Scotia	419	674	292	470	292	470
Ontario	6,383	10,273	6,065	9,761	6,073	9,774
Quebec	3,503	5,638	3,593	5,782	3,591	5,779
Saskatchewan	4,664	7,506	4,832	7,777	4,741	7,630
Northwest Territories	75	121	76	122	76	122
Freight total	26,923	43,328	26,551	42,730	26,490	42,631
Intercity passenger	7,820	12,585	7,608	12,244	7,453	11,995
Commuter and tourist	2,837	4,565	734	1,181	3,213	5,171
Passenger total	10,657	17,150	8,342	13,425	10,667	17,166
Segments terminating in the U.S.**	152	244	47	75	47	75
GRAND TOTAL TRACK OPERATED	37,731	60,723	34,940	56,231	37,203	59,872

* 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.

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.³¹

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.

³¹ Source: *Canadian Transportation of Dangerous Goods Act*

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 (2021)*	0.7978
USD to CAD (2021)*	1.2535

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

APPENDIX C – SAFETY DEFINITIONS

The safety definitions are sourced from the Transportation Safety Board of Canada's [*Rail transportation occurrences in 2021*](#) 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 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,
 - cause or 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,
- A derailment or non-main-track collision (involving one to two cars) occurs without damage or injury

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, including occurrences where there are no injuries and no damage to track or equipment.

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 2022* report incorporates a few minor statistical revisions.

- 2020 total tons for one shortline railway was revised, affecting the calculation of the average length of haul by shortline railways by less than 1% (from 115 to 114 miles, or 185 to 184 kilometres).
- The jurisdictions in which health taxes (a component of total payroll taxes) were paid by one member were incorrectly recorded in 2020. The federal amount has been reallocated to Quebec, and the Quebec amount has been reallocated to Ontario. Total health taxes (and payroll taxes) paid remain unchanged.

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.

In *Rail Trends 2022*, there have also been some revisions to the RAC's provincially regulated railway safety statistics. RAC safety data are regularly cross-referenced with the TSB data to remove any instances of double counting of occurrences, and to ensure all occurrences are properly accounted for.