



Railway Association  
of Canada



# RAIL TRENDS | 2020

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# MEMBER COMPANIES 2019

<b>APR</b>	Alberta Prairie Railway Excursions	<b>NBSR</b>	New Brunswick Southern Railway Company Limited
<b>AMTK</b>	Amtrak	<b>NCR</b>	Nipissing Central Railway Company
<b>AMIC</b>	ArcelorMittal Infrastructure Canada S.E.N.C.	<b>NS</b>	Norfolk Southern Railway
<b>BCR</b>	BCR Properties Ltd.	<b>ONR</b>	Ontario Northland Transportation Commission
<b>BCRY</b>	Barrie-Collingwood Railway	<b>OSR</b>	Ontario Southland Railway Inc.
<b>BRR</b>	Battle River Railway NGC Inc.	<b>OBRY</b>	Orangeville Brampton Railway
<b>BGS</b>	Big Sky Rail Corp.	<b>OVR</b>	Ottawa Valley Railway
<b>BNSF</b>	BNSF Railway Company	<b>PDCR</b>	Prairie Dog Central Railway — Vintage Locomotive Society Inc.
<b>BTRC</b>	Boundary Trail Railway Company Ltd.	<b>QIO</b>	Quebec Iron Ore Inc.
<b>CBNS</b>	Cape Breton & Central Nova Scotia Railway	<b>CFQG</b>	Québec Gatineau Railway Inc.
<b>CR</b>	Capital Railway	<b>QNSL</b>	Québec North Shore and Labrador Railway Company Inc.
<b>CTRW</b>	Carlton Trail Railway	<b>RS</b>	Roberval and Saguenay Railway Company
<b>CMQR</b>	Central Maine & Québec Railway Canada Inc.	<b>CFRR</b>	Romaine River Railway Company
<b>CEMR</b>	Central Manitoba Railway Inc.	<b>SCFG</b>	Société du chemin de fer de la Gaspésie
<b>CFA</b>	Chemin de fer Arnaud Québec	<b>SSR</b>	South Simcoe Railway
<b>CN</b>	CN	<b>SOR</b>	Southern Ontario Railway
<b>CFL</b>	Compagnie du Chemin de Fer Lanaudière Inc.	<b>SRY</b>	Southern Railway of British Columbia Ltd.
<b>CP</b>	CP	<b>SLQ</b>	St. Lawrence & Atlantic Railroad (Québec) Inc.
<b>CSX</b>	CSX Transportation Inc.	<b>TTR</b>	Toronto Terminals Railway Company Ltd.
<b>EMRY</b>	Eastern Maine Railway Co.	<b>CFC</b>	Train Touristique de Charlevoix Inc.
<b>ETR</b>	Essex Terminal Railway Co.	<b>PCHR</b>	Trillium Railway Co. Ltd.
<b>EXO</b>	exo	<b>TSH</b>	Tshuetin Rail Transportation Inc.
<b>GEXR</b>	Goderich-Exeter Railway Company Ltd.	<b>UP</b>	Union Pacific Railroad Company
<b>RMR</b>	Great Canadian Raitour Company Ltd.	<b>VIA</b>	VIA Rail Canada Inc.
<b>GWR</b>	Great Western Railway Ltd.	<b>WCE</b>	West Coast Express Ltd.
<b>HBRY</b>	Hudson Bay Railway	<b>WP&amp;YR</b>	White Pass and Yukon Route Railroad
<b>HCRY</b>	Huron Central Railway Inc.		
<b>KRC</b>	Keewatin Railway Company		
<b>KFR</b>	Kettle Falls International Railway LLC		
<b>KLT</b>	Knob Lake and Timmins Railway		
<b>LMR</b>	Last Mountain Railway		
<b>GO</b>	Metrolinx		

*Current membership:*  
[www.railcan.ca/who-we-are/rac-members/](http://www.railcan.ca/who-we-are/rac-members/)

# ASSOCIATE MEMBERS 2019

A&B Rail Services	Drain-All Ltd.	RTC Rail Solutions Ltd.
Absopulse Electronics Ltd.	Elbow River Marketing Ltd.	Sait Polytechnic
Allied Track Services	FORMA-TRAIN	Sands Bulk Transport
Amsted Rail	Frauscher Sensor Technology USA Inc.	Sandy Cooke Consulting Inc.
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Atlantic Industries Limited	Groupe Pelletier Entretien	Stantec Inc.
AvL Construction Group Inc.	HARSCO Rail	Suncor Energy Products Partnership
Bayside Canadian Railway	J Lanfranco Fastener Systems Inc	T-Rail Products Inc.
British Columbia Institute of Technology	Koch Fertilizer Canada ULC	Toromont Cat
Canadian Heartland Training Railway Services	L.A. Hébert Ltée	TYBO Contracting Inc.
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Cando Rail Services Limited	Mecfor inc.	Walker Industries Inc.
Cégep de Sept-Îles	Montréal Port Authority	Whiting Equipment Canada
CPCS Transcom Limited	NARSTCO	X-Rail Signalisation Inc.
Crescent Point Energy	Ontario Steel Haulers Inc.	<i>Current associate membership:</i> <a href="http://www.railcan.ca/who-we-are/rac-associate-members/">www.railcan.ca/who- we-are/rac-associate- members/</a>
CSTP Inc.	PNR Railworks	
Davanac Inc.	Rail Cantech	
Dillon Consulting Limited	RailTerm	
Dominion Railway Services Ltd.	RB&C Maintenance of Way	
	Red River College	

# FOREWORD

This is the 28<sup>th</sup> edition of *Rail Trends*, the Railway Association of Canada's (RAC) annual report on the performance of Canada's railway industry.<sup>1</sup> This publication contains a rolling 10-year review of financial and statistical results, reflecting multiple aspects of railway performance in Canada.<sup>2</sup> This edition covers the 2010 to 2019 period.

The data in *Rail Trends* is reported by RAC member companies: Class 1 (6 members) and shortline (39) freight railways, as well as tourist (6), intercity (2) and commuter (5) passenger rail service providers.

Canadian Class 1 freight railways (CN and CP) account for the majority of freight rail activity in Canada. For that reason, most of the data presented in *Rail Trends* reflects Class 1 carriers.

While RAC represents the vast majority of non-Class 1 railways in Canada, it does not represent that entire sector. Data pertaining to non-Class 1 railways in this report should be viewed with that lens.

A detailed profile of railway industry performance by province is available upon request.<sup>3</sup>

The data in *Rail Trends* is categorized into the following sub-sections:

- Freight traffic
- Passenger transportation
- Safety
- Financial information, investments and taxes
- Employment
- Track and equipment

Data reflects performance in Canada only. Figures may not add up to totals due to rounding. A glossary of railway terms appears in Appendix A, conversion factors can be found in Appendix B and safety-specific definitions are provided in Appendix C.

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1 This document contains revised data and, as such, supersedes earlier versions of *Rail Trends*.

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

3 Contact Jonathan Thibault ([jthibault@railcan.ca](mailto:jthibault@railcan.ca)).

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# EXECUTIVE SUMMARY

Rail is the backbone of Canada's economy, moving over 360 million tons of traffic and over 100 million passengers annually. The Railway Association of Canada (RAC) and its members are committed to developing and maintaining industry best practices in four key areas: safety, environmental stewardship, economic growth and innovation.

RAC members' top priority has always been **safety** and our collective actions in this area in 2019 speak to this commitment. Over the past decade, the freight accident rate has decreased by 20 per cent and the passenger accident rate has decreased by 59 per cent. Despite their impressive safety record, Canada's railways continue to make significant annual investments in training, infrastructure and leading-edge safety technologies.

Canada's railways continue to deliver greater fuel efficiency as part of their commitment to **environmental stewardship**. Through multi-billion-dollar investments in technology and operational innovation, freight operators can move one tonne of freight more than 210 kilometres on a single litre of fuel. Passenger carriers are also doing their part, removing cars from the road and transporting a record number of people – over 100 million in 2019. Railways produce just one per cent of Canada's total GHG emissions, and only 3.5 percent of Canada's transportation GHG emissions, making rail one of the country's most sustainable transportation options.

RAC members are integral to **growing Canada's future economy**. Rail moves our resources, goods and people to more markets and more destinations, efficiently. In 2019, Canada's railways originated 47 per cent more carloads and moved 47 per cent more people than they did in 2010. Strong and continued growth has been made possible by significant year-over-year investments into Canadian rail assets. Members invested a record \$3.1 billion into Canadian assets in 2019, breaking the previous record of \$2.4 billion set in 2018. Members also provide significant contributions to Canadian governments, paying a record-high \$2.1 billion in a number of various taxes in 2019, topping the previous record of \$2.0 billion set in 2018.

Improvements in safety, environmental, and economic performance have one thing in common; they're driven by **innovation**. Canada's railways continue to innovate through process improvements and investments in state-of-the-art technologies, such as train length optimization, precision railroading, advanced communications systems, automated train and track inspection systems, predictive analytics and big data.

The following table provides a statistical summary of Canada's railway industry performance in 2019, compared to the previous year and to 10 years ago.

# DELIVERING FOR CANADIANS A 10-YEAR SNAPSHOT OF RAIL IN CANADA

(year-over-year and 10-year comparisons)

	2010	2018	2019
<b>Freight traffic</b>			
Revenue ton-miles (billions)	239.7	312.8	<b>312.2</b>
Revenue tonne-kilometres (billions)	349.9	456.6	<b>455.8</b>
Gross ton-miles (billions)	448.0	593.5	<b>592.9</b>
Gross tonnes-kilometres (billions)	654.0	866.4	<b>865.5</b>
Freight train-miles (thousands)	65,669.1	68,571.1	<b>68,376.7</b>
Freight train-kilometres (thousands)	105,683.9	110,354.3	<b>110,041.3</b>
Carloads originated (thousands)	3,871.1	5,732.1	<b>5,708.4</b>
Tons originated (thousands)	312,240.3	376,625.0	<b>366,956.4</b>
Tonnes originated (thousands)	283,279.2	341,673.9	<b>332,902.5</b>
Tons per carload	80.7	65.7	<b>64.3</b>
Tonnes per carload	73.2	59.6	<b>58.3</b>
Intermodal carloads originated (thousands)	848	1,878	<b>1,927</b>
Freight revenue per ton-mile (cents)	3.99	4.82	<b>5.07</b>
Freight revenue per tonne-km (cents)	2.73	3.30	<b>3.47</b>
Gallons of fuel consumed (millions)	450.7	494.2	<b>498.1</b>
Litres of fuel consumed (millions)	2,048.8	2,246.6	<b>2,264.2</b>
RTM per gallon of fuel consumed	561.1	669.1	<b>666.7</b>
RTK per gallon of fuel consumed	180.2	214.9	<b>214.1</b>
<b>Passenger transportation</b>			
Total passengers carried (thousands)	73,261	88,142	<b>107,557</b>
<b>Financial information</b>			
Operating expenses (millions)	9,171.6	11,827.6	<b>12,626.2</b>
Operating revenues (millions)	10,768.1	16,728.2	<b>17,903.6</b>
Operating income (millions)	1,596.5	4,900.6	<b>5,277.5</b>
<b>Investments</b>			
Total investments (millions)	1,704.8	2,382.3	<b>3,119.8</b>
<b>Taxes</b>			
Taxes paid (millions)	787.0	2,043.6	<b>2,120.4</b>
<b>Employment</b>			
Employees	32,565	34,315	<b>36,196</b>
Average wage per employee	79,373	99,361	<b>99,332</b>
<b>Track and equipment</b>			
Total miles of track operated	27,806	25,947	<b>26,635</b>
Total kilometres of track operated	44,750	41,757	<b>42,865</b>
Freight cars (thousands)	72	59	<b>61</b>
Locomotives	2,954	3,788	<b>3,840</b>

# FREIGHT TRAFFIC

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

In 2019, freight rail traffic, measured by revenue ton-miles, decreased by 0.2 per cent from 2018, but was 5.5 per cent above the 2014–2018 average. Year-over-year, the freight rail sector’s workload, measured by gross ton-miles, decreased by 0.1 per cent, but was 5.7 per cent above the 2014–2018 average. The distance travelled by Canada’s freight trains, measured by freight train-miles, decreased by 0.3 per cent to 68.4 million in 2019 versus 2018.

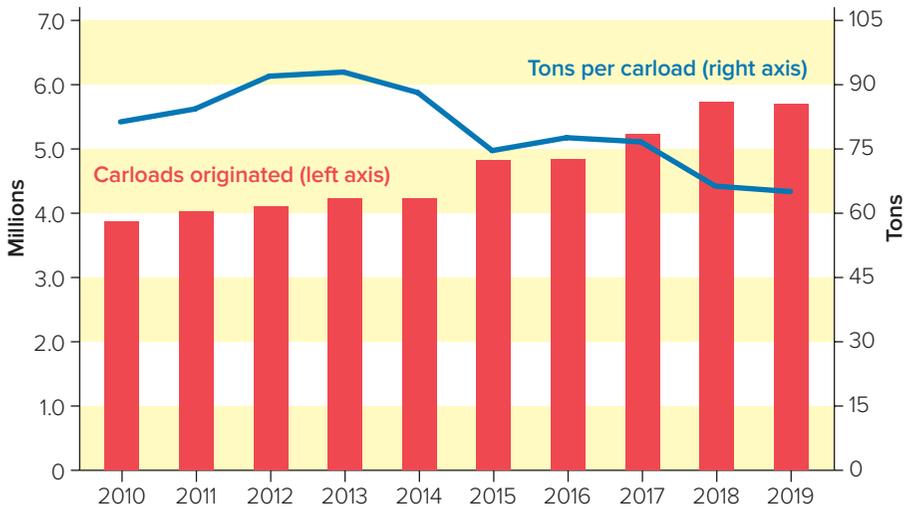
	RTM (millions)	RTK (millions)	GTM (millions)	GTK (millions)	Freight train miles (thousands)	Freight train kilometres (thousands)
2010	239,662	349,872	447,981	653,987	65,669	105,684
2011	247,262	360,967	474,235	692,313	66,801	107,506
2012	266,306	388,767	502,625	733,760	68,145	109,668
2013	277,083	404,501	517,700	755,767	67,208	108,161
2014	293,720	428,789	555,936	811,585	70,313	113,157
2015	289,678	422,888	553,962	808,704	68,044	109,506
2016	282,230	412,014	532,400	777,226	61,630	99,183
2017	301,239	439,765	569,574	831,495	65,033	104,661
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



### CARLOADS

In 2019, the number of carloads that originated in Canada, 5.7 million, was similar to 2018. Increases in intermodal, coal, and fuel & chemicals were offset by reductions in shipments of forest products, paper products, minerals and metals, leading to an overall decrease of 0.4 per cent. The overall weight of goods transported by RAC members decreased by 2.6 per cent. As a result, the tonnage per carload fell by 2.2 per cent from the previous year.<sup>4</sup> Compared to the 2014–2018 average, the number of carloads originated in Canada was up 14.7 per cent in 2019, while tonnage was down by 2.2 per cent.

	Carloads originated (thousands)	Tons originated (thousands)	Tonnes originated (thousands)	Tons per carload	Tonnes per carload
2010	3,871	312,240	283,279	81	73
2011	4,044	337,074	305,793	83	76
2012	4,113	375,780	340,907	91	83
2013	4,234	388,735	352,660	92	83
2014	4,238	368,970	334,730	87	79
2015	4,831	361,342	327,809	75	68
2016	4,847	373,676	338,998	77	70
2017	5,228	395,721	358,998	76	69
2018	5,732	376,625	341,674	66	60
<b>2019</b>	<b>5,708</b>	<b>366,956</b>	<b>332,903</b>	<b>64</b>	<b>58</b>

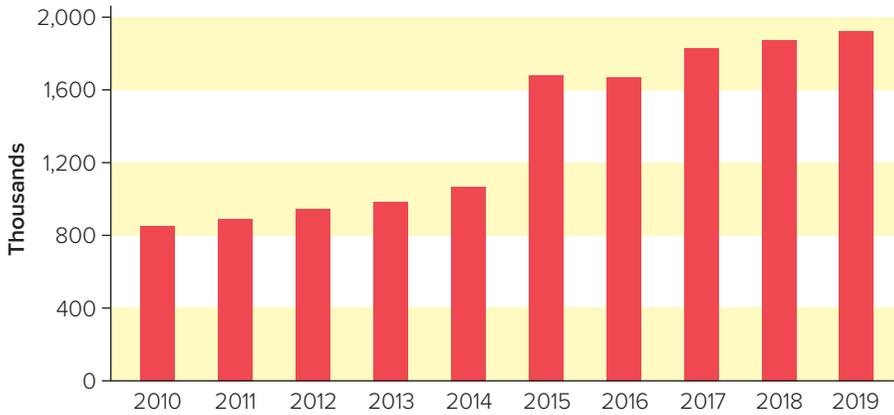


<sup>4</sup> Tons (tonnes) per carload is calculated by dividing tons (tonnes) originated by carloads originated.

## INTERMODAL TRAFFIC

In 2019, total intermodal traffic originating in Canada increased by 2.6 per cent from 2018.<sup>5</sup> The 2019 total was 18.5 per cent higher than the 2014–2018 average of 1.6 million intermodal carloads.

### Intermodal carloads



<sup>5</sup> Previous versions of Rail Trends reported on total Canadian Class 1 operations (including U.S. operations).

### CARLOADS BY COMMODITY

The RAC tracks 11 commodity groupings moved by freight railways in Canada. In 2019, intermodal goods, minerals, and fuels and chemicals were the largest groupings of carloads transported by Canada’s railways, accounting for 66 per cent of all carloads. The largest increases among groupings in 2019 were intermodal (48,900 carloads or 2.6%), coal (23,700 carloads or 7.0%) and fuels & chemicals (22,500 carloads or 3.6%). The largest decreases were forest products (-35,300 carloads or -13.6%), minerals (-33,100 carloads or -3.1%), metals (-14,600 carloads or -8.1%) and paper products (-13,000 carloads or -9.2%).

*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 5).*

*Statistics Canada provides monthly statistics of commodity movements in Canada in its Railway Carloadings dataset. This dataset offers a brief analysis, along with tables showing carloadings and tonnes carried for 63 commodity groupings.*

### Carloads originated by commodity grouping

	Agriculture	Coal	Minerals	Forest products	Metals	Machinery & automotive
2010	462,445	327,419	703,270	205,120	160,895	185,962
2011	466,305	348,556	790,520	228,448	160,827	186,522
2012	472,474	353,201	805,952	209,654	161,541	220,216
2013	465,816	383,013	810,750	215,254	150,906	199,068
2014	547,122	336,632	676,865	213,980	157,086	193,294
2015	537,013	303,932	854,186	235,169	150,273	178,429
2016	511,228	309,403	859,479	257,774	151,609	199,927
2017	527,271	326,228	937,737	251,273	165,404	189,632
2018	542,722	337,323	1,060,395	260,377	178,784	214,592
<b>2019</b>	<b>538,726</b>	<b>361,067</b>	<b>1,027,286</b>	<b>225,031</b>	<b>164,230</b>	<b>208,879</b>

	Fuel & chemicals	Paper products	Food products	Manufactured & miscellaneous	Intermodal	Total
2010	419,905	170,823	52,240	92,949	847,832	3,628,860
2011	432,657	157,780	54,948	94,935	890,168	3,811,666
2012	479,669	149,740	60,906	93,129	946,223	3,952,706
2013	540,411	150,029	56,405	103,605	987,186	4,062,442
2014	593,186	139,110	61,993	101,733	1,072,278	4,093,278
2015	579,254	133,800	62,160	112,194	1,683,988	4,830,398
2016	565,331	130,882	68,951	99,480	1,669,892	4,823,956
2017	617,792	129,675	79,041	118,651	1,828,225	5,170,929
2018	622,769	140,822	78,864	181,935	1,878,392	5,496,976
<b>2019</b>	<b>645,268</b>	<b>127,821</b>	<b>80,009</b>	<b>178,379</b>	<b>1,927,291</b>	<b>5,483,989</b>

## FREIGHT REVENUE BY COMMODITY

In 2019, the freight rail sector's revenue increased by 1.6 per cent to \$12.6 billion. Similar to the previous year, freight railways generated most — 55 per cent in 2019 — of their revenue from transporting intermodal goods, agricultural products, and fuels and chemicals. On a revenue basis, agriculture, coal, fuels & chemicals, food products, manufactured & miscellaneous and intermodal saw increases over 2018; while minerals, forest products, metals, machinery & automotive and paper products saw decreases.

*Not all RAC member companies record revenue from carloads originated by commodity grouping. The data in this section reflects 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 23).*

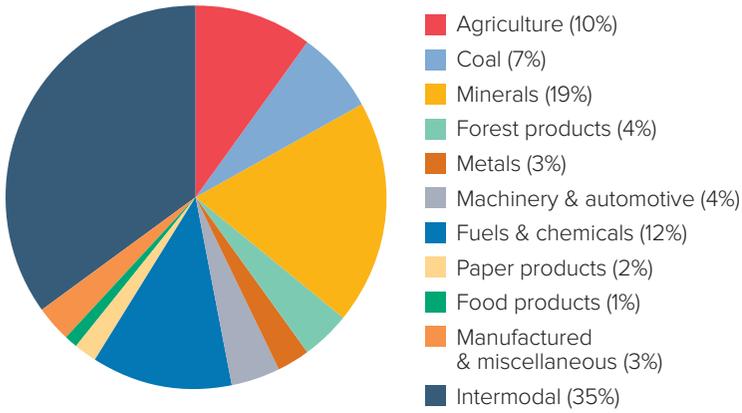
### Revenue from carloads originated by commodity grouping (\$ millions)

	Agriculture	Coal	Minerals	Forest products	Metals	Machinery & automotive
2010	1,221	598	772	500	381	394
2011	1,297	713	898	564	424	381
2012	1,374	749	926	611	455	508
2013	1,433	833	973	660	448	481
2014	1,725	760	1,030	702	501	481
2015	1,871	632	1,336	857	487	541
2016	1,731	628	1,061	952	429	567
2017	1,865	695	1,101	918	478	552
2018	2,040	768	1,555	968	557	664
<b>2019</b>	<b>2,129</b>	<b>837</b>	<b>1,544</b>	<b>899</b>	<b>513</b>	<b>630</b>

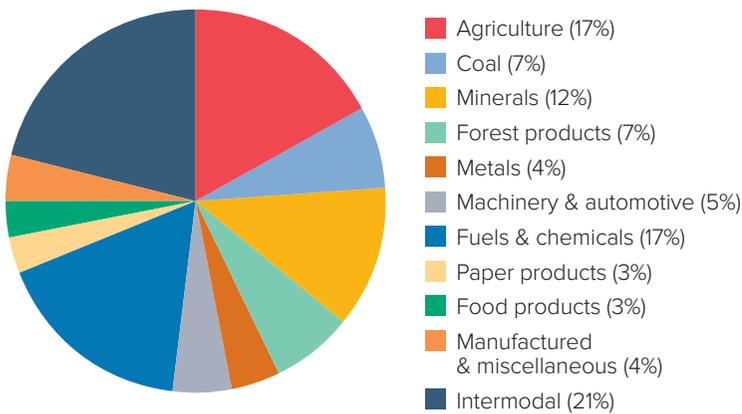
  

	Fuels & chemicals	Paper products	Food products	Manufactured & miscellaneous	Intermodal	Total
2010	853	437	128	130	2,592	8,006
2011	928	427	146	133	1,893	7,805
2012	1,155	411	161	153	1,997	8,499
2013	1,421	406	155	174	2,019	9,002
2014	1,756	393	181	177	2,162	9,869
2015	1,934	426	235	192	2,171	10,682
2016	1,719	423	258	181	2,135	10,083
2017	1,824	425	295	221	2,354	10,728
2018	1,944	477	305	510	2,566	12,355
<b>2019</b>	<b>2,137</b>	<b>445</b>	<b>326</b>	<b>516</b>	<b>2,580</b>	<b>12,557</b>

The chart below illustrates carloads originated by commodity groupings as a percentage of all commodity carloads in 2019.



The chart below illustrates revenues by commodity grouping as a percentage of all revenues in 2019.

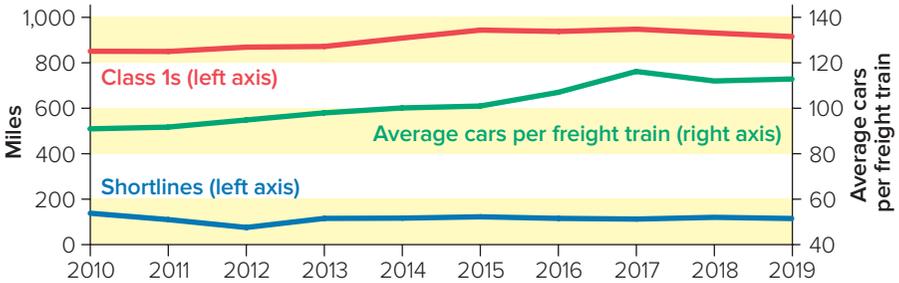


## AVERAGE LENGTH OF HAUL AND AVERAGE CARS PER FREIGHT TRAIN

In 2019, each separate shipment transported by Canada’s Class 1 railways (CN and CP) travelled an average distance of 920 miles (1,481 kilometres), down 1.0 per cent from the average length of haul reported in 2018.<sup>6</sup> Shipments carried by Canada’s shortline railways travelled an average distance of 118 miles (190 kilometres), down 1.4 per cent from the previous year. Freight sector-wide, the average number of railcars per train increased by 0.7 per cent to 114.<sup>7</sup>

	Average miles (kilometres) hauled by Class 1 railways (CN and CP)		Average miles (kilometres) hauled by shortline railways		Average cars per freight train
	Miles	Kilometres	Miles	Kilometres	Cars
2010	850	1,368	134	216	91
2011	849	1,366	108	174	92
2012	868	1,396	79	127	95
2013	871	1,402	114	184	99
2014	908	1,462	117	188	100
2015	943	1,517	129	208	102
2016	937	1,508	121	195	108
2017	947	1,524	116	186	116
2018	930	1,496	120	192	113
<b>2019</b>	<b>920</b>	<b>1,481</b>	<b>118</b>	<b>190</b>	<b>114</b>

### Average length of haul



6 Length of haul is calculated by dividing revenue ton-miles (revenue tonne-kilometres) by revenue tons (revenue tonnes).

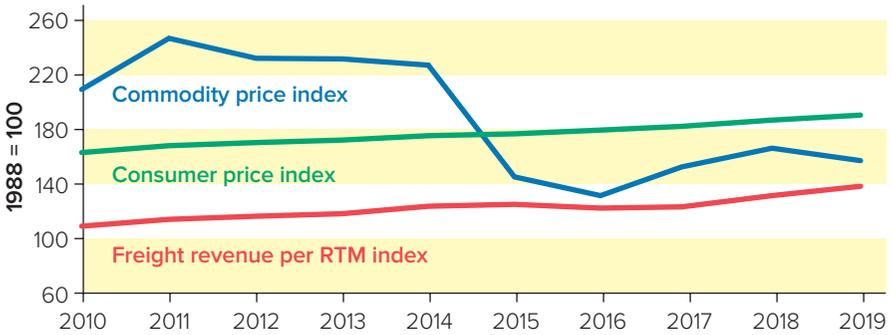
7 Average cars per freight train is calculated by dividing loaded and empty car-miles (car-kilometres) by train-miles (train-kilometres).

## FREIGHT RATES

Freight revenue per ton-mile is often viewed as a proxy for railway rates because it shows the level of revenue collected by railways for moving goods over a certain distance.<sup>8</sup> Despite increases in freight rates in recent years, over the long run, increases have been modest compared to commodity price and consumer price inflation. From 1988 to 2019, freight revenue per revenue ton mile (RTM) has increased by 38.8 per cent; outpaced by the 58.1 per cent growth in commodity prices and 91 per cent growth in consumer prices.

	Freight revenue (cents) per		Freight revenue per RTM index	Commodity price index	Consumer price index
	RTM	RTK	1988 = 100	1988= 100	1988 = 100
2010	3.99	2.73	109.2	209.7	163.6
2011	4.17	2.85	114.2	246.6	168.4
2012	4.25	2.91	116.5	232.4	170.9
2013	4.34	2.98	119.0	231.6	172.5
2014	4.52	3.10	123.9	226.8	175.8
2015	4.58	3.14	125.5	144.8	177.8
2016	4.48	3.07	122.8	131.8	180.3
2017	4.52	3.09	123.8	152.9	183.1
2018	4.82	3.30	132.0	166.5	187.4
<b>2019</b>	<b>5.07</b>	<b>3.47</b>	<b>138.8</b>	<b>158.1</b>	<b>191.0</b>

### Freight revenue per RTM, commodity price and consumer price indices



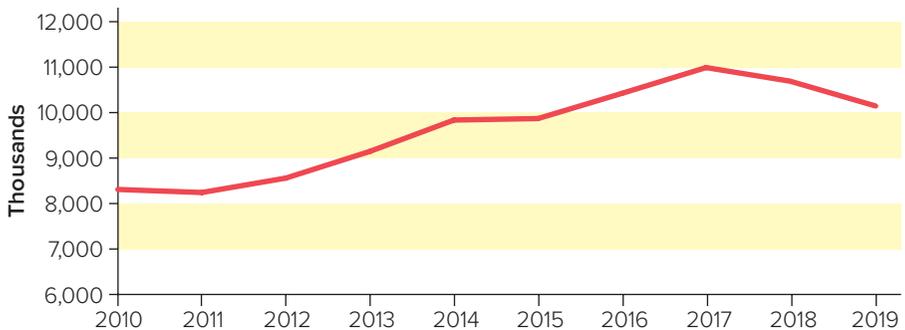
<sup>8</sup> Freight revenue per ton-mile is calculated by dividing freight operating revenue by revenue ton-miles (revenue tonne-kilometres).

## PRODUCTIVITY

The best measure of freight railway labour productivity is revenue ton-miles per employee.<sup>9</sup> Using this measure, employee productivity decreased by 5.0 per cent in 2019 from the previous year, as traffic levels remained relatively stable while employment increased.

	RTM per employee (thousands)	RTK per employee (thousands)	Road miles per employee	Road kilometres per employee
2010	8,287	12,098	0.96	1.54
2011	8,221	12,001	0.90	1.45
2012	8,541	12,469	0.86	1.39
2013	9,143	13,347	0.90	1.45
2014	9,811	14,322	0.90	1.45
2015	9,930	14,497	0.93	1.50
2016	10,403	15,187	1.00	1.61
2017	11,005	16,066	0.96	1.55
2018	10,666	15,571	0.87	1.40
<b>2019</b>	<b>10,137</b>	<b>14,799</b>	<b>0.85</b>	<b>1.37</b>

### RTM per employee



<sup>9</sup> Freight rail labour productivity is calculated by dividing the annual sum of revenue ton-miles by the average number of freight railway employees.

## FUEL CONSUMPTION AND COST

In 2019, freight railways consumed 468 million gallons (2.1 billion litres) of fuel, up 0.2 per cent, while moving 0.2 per cent less traffic than the previous year. As a result, the freight railway sector's fuel efficiency decreased slightly, from 669 revenue ton-miles per gallon to 667.<sup>10</sup> The sector's fuel efficiency has been relatively stable over the past 5 years, at around 670 revenue ton-miles per gallon of fuel. The cost of diesel fuel in 2019 decreased by 4.8 per cent to \$4.03 per gallon (\$0.89 per litre), which was still 6.4 per cent higher than the 2014–2018 average.<sup>11</sup>

	Fuel consumed – freight operations		Total fuel consumed		RTM per gallon of fuel consumed	RTK per litre of fuel consumed	Cost of diesel fuel	
	Gallons (thousands)	Litres (thousands)	Gallons (thousands)	Litres (thousands)			per gallon (\$)	per litre (cents)
2010	427,128	1,941,757	450,684	2,048,841	561	180	3.25	71.44
2011	436,558	1,984,492	460,894	2,094,812	566	182	4.02	88.52
2012	446,122	2,028,102	468,884	2,131,583	597	192	4.27	93.93
2013	440,072	2,000,601	461,412	2,097,632	630	202	4.47	98.25
2014	460,548	2,093,687	481,921	2,190,851	638	205	4.74	104.38
2015	442,744	2,012,749	466,970	2,122,879	654	210	3.48	76.48
2016	413,558	1,880,068	437,788	1,990,216	682	219	3.04	66.84
2017	445,961	2,027,374	472,072	2,146,073	675	217	3.46	76.11
2018	467,418	2,124,919	494,194	2,246,644	669	215	4.24	93.20
<b>2019</b>	<b>468,302</b>	<b>2,128,994</b>	<b>498,051</b>	<b>2,264,237</b>	<b>667</b>	<b>214</b>	<b>4.03</b>	<b>88.70</b>

<sup>10</sup> Freight rail fuel efficiency is calculated by dividing total revenue ton-miles (revenue tonne-kilometres) by the total volume of fuel consumed. RTK per litre of freight fuel in 2019 was 214; RTK per litre of freight fuel (excluding yard and work train fuel) was 221.

<sup>11</sup> This total includes fuel expenses and gallons (litres) consumed by both freight and passenger railways.

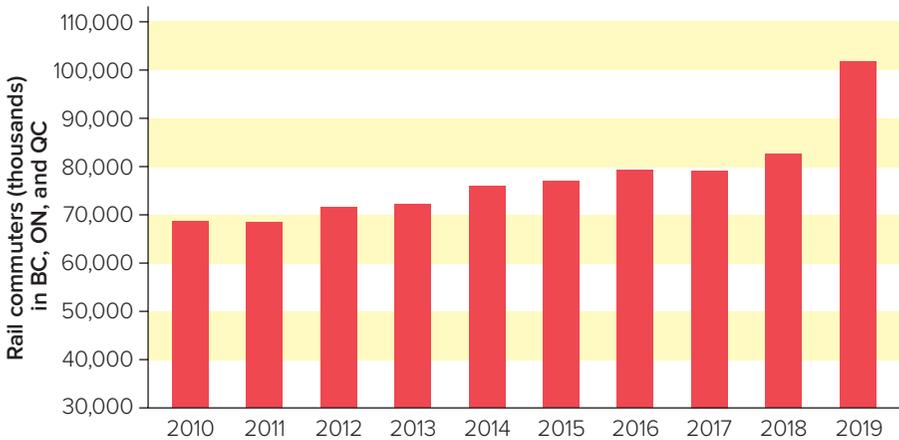
# PASSENGER TRANSPORTATION

## COMMUTER RAIL

In 2019, commuter railways in British Columbia, Ontario and Quebec transported a record 101.9 million passengers, up 29.1 per cent compared to the 2014-2018 average.<sup>12</sup>

**Rail commuters in BC, ON, and QC (thousands)**

2010	68,562
2011	68,427
2012	71,522
2013	72,002
2014	75,901
2015	77,233
2016	79,626
2017	79,347
2018	82,792
<b>2019</b>	<b>101,936</b>



<sup>12</sup> The significant increase in commuters in 2019 is due to a combination of increasing ridership on commuter rail services compared to 2018, as well as the inclusion of one additional rail service that was not included in earlier versions of the report.

## INTERCITY PASSENGER RAIL

In 2019, intercity passenger railways transported more than 5.3 million people, up 5.5 per cent from 2018 and 19.6 per cent above the average for 2014–2018.

Passenger-miles and passenger train-miles increased by 6.3 and 1.5 per cent, respectively, year over year. The average number of intercity passengers per train grew by 4.7 per cent to 149, while the average length of journey increased by 0.8 per cent to 211 miles (339 kilometres).

	Passenger cars in service	Number of passengers (thousands)	Passenger	
			miles (millions)	kilometres (millions)
2010	545	4,477	877	1,412
2011	544	4,461	888	1,428
2012	542	4,246	871	1,402
2013	552	4,186	861	1,386
2014	552	4,094	834	1,343
2015	551	4,171	857	1,380
2016	527	4,241	876	1,409
2017	512	4,645	971	1,562
2018	495	5,028	1,011	1,626
<b>2019</b>	<b>488</b>	<b>5,305</b>	<b>1,074</b>	<b>1,729</b>

	Passenger train		Passenger car	
	miles (thousands)	kilometres (thousands)	miles (thousands)	kilometres (thousands)
2010	7,331	11,799	46,275	74,472
2011	7,273	11,705	48,239	77,633
2012	7,075	11,386	48,725	78,415
2013	6,809	10,958	43,673	70,285
2014	6,720	10,814	41,587	66,928
2015	6,781	10,913	43,843	70,559
2016	6,850	11,024	44,884	72,234
2017	7,094	11,416	46,758	75,249
2018	7,107	11,438	47,030	75,688
<b>2019</b>	<b>7,216</b>	<b>11,612</b>	<b>46,000</b>	<b>74,030</b>

	Average intercity passengers per train	Average length of journey		Average passenger load factor (%)	On-time performance (%)
		miles	kilometres		
2010	120	204	328	57	82
2011	122	204	328	55	84
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
<b>2019</b>	<b>149</b>	<b>211</b>	<b>339</b>	<b>60</b>	<b>68</b>

# SAFETY

The safety data presented in *Rail Trends* is calculated using statistics from the Transportation Safety Board of Canada (TSB) and the RAC. It reflects the performance of the RAC's federally and provincially regulated freight and passenger member railways. The TSB maintains a database of safety performance statistics on federally regulated railways, as well as provincially regulated railways that voluntarily report their data.

The safety data found in *Rail Trends* is an aggregate of railway statistics from the TSB and information provided to the RAC by provincially regulated member-companies that are not required to report safety data to the TSB. Each organization uses the same safety definitions, and the data reflects railway operations in Canada only.

Excluding crossing and trespassing accidents, non-main-track collisions and derailments accounted for 69 per cent of total railway accidents in 2019. Most non-main-track accidents are minor and occur during switching operations at speeds of less than 10 miles per hour. Main-track collisions and derailments represented only 8 per cent of total accidents in 2019.

The small increase in total accidents since 2018 was primarily due to an increase in fires/explosions. However, much of the increase in fires/explosions in 2019 was a result of a methodological change in accident reporting by certain railways.

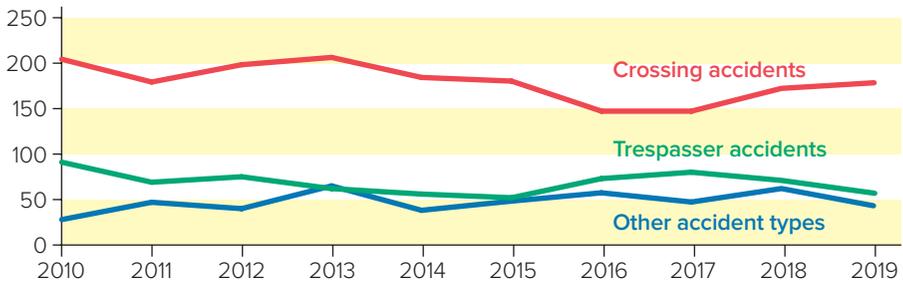
## Safety Summary (year-over-year and 10-year comparisons)

	2010	2018	2019
Main-track collisions	4	5	4
Main-track derailments	90	92	100
Crossing accidents	206	172	179
Non-main track collisions	97	104	115
Non-main track derailments	661	665	630
Collisions/derailments involving track units	39	53	54
Employee/passenger accidents	21	21	22
Trespassing accidents	92	71	57
Fires/explosions	33	42	103
Other accident types	29	63	44
<b>Total Accidents</b>	<b>1,272</b>	<b>1,288</b>	<b>1,308</b>

## CROSSING AND TRESPASSING

Each year, crossing and trespassing accidents account for roughly one fifth of total rail accidents in Canada. In 2019, there were 179 accidents at roadway-railway crossings, a 4.1 per cent increase from the previous year. In addition, 57 accidents occurred as a result of illegal trespassing on railway property in 2019, down 19.7 per cent compared to 2018 and down 13.9 per cent versus the 2014–2018 average.

	Crossing accidents	Trespasser accidents	Other accident types
2010	206	92	29
2011	183	68	48
2012	202	72	41
2013	202	60	68
2014	189	55	37
2015	180	52	47
2016	147	73	56
2017	147	80	47
2018	172	71	63
<b>2019</b>	<b>179</b>	<b>57</b>	<b>44</b>

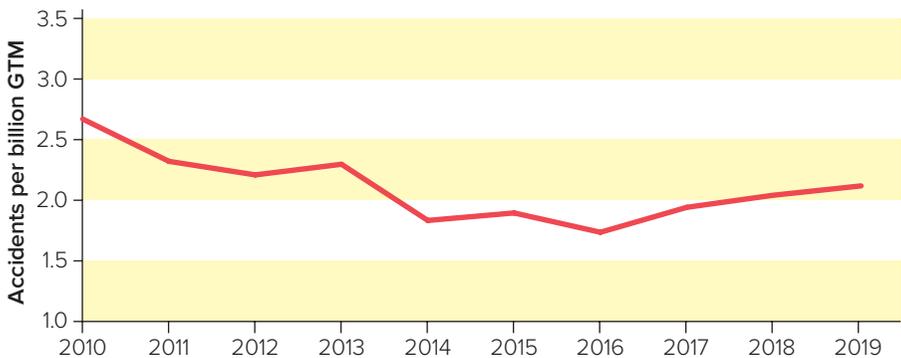


## FREIGHT

In 2019, Canada's freight rail sector's accident rate increased by 3.6 per cent from the previous year to 2.13 accidents per billion gross ton-miles.<sup>13</sup>

	Freight accidents	GTM (billions)	Accident Rate
2010	1,194	448.0	2.67
2011	1,110	474.2	2.34
2012	1,107	502.6	2.20
2013	1,188	517.7	2.29
2014	1,021	555.9	1.84
2015	1,052	554.0	1.90
2016	930	532.4	1.75
2017	1,101	569.6	1.93
2018	1,218	593.5	2.05
<b>2019</b>	<b>1,261</b>	<b>592.9</b>	<b>2.13</b>

### Freight accident rate



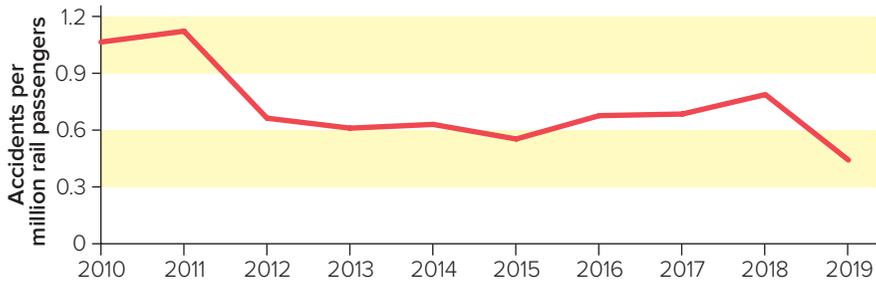
<sup>13</sup> The freight rail sector's accident rate is calculated by dividing the number of reportable freight rail accidents by the freight sector's workload in billions of gross ton-miles. Since 2016, the increase in accident rates have been attributed to increases in non-main-track derailments. The increase in the accident rate from 2018 to 2019 is attributed to a methodological change, resulting in an increase of fires reported on right-of-way.

## PASSENGER

In 2019, the passenger rail sector's accident rate was 0.44 accidents per million passengers.<sup>14</sup> This rate represents a 45.0 per cent improvement from 2018 and 34.4 per cent improvement compared to the 2014-2018 average.

	Accidents involving passenger trains	Passengers (thousands)	Accident rate
2010	78	73,261	1.06
2011	82	73,080	1.12
2012	50	75,982	0.66
2013	46	76,400	0.60
2014	50	80,366	0.62
2015	46	81,767	0.56
2016	57	84,185	0.68
2017	57	84,301	0.68
2018	70	88,142	0.79
<b>2019</b>	<b>47</b>	<b>107,557</b>	<b>0.44</b>

### Passenger accident rate



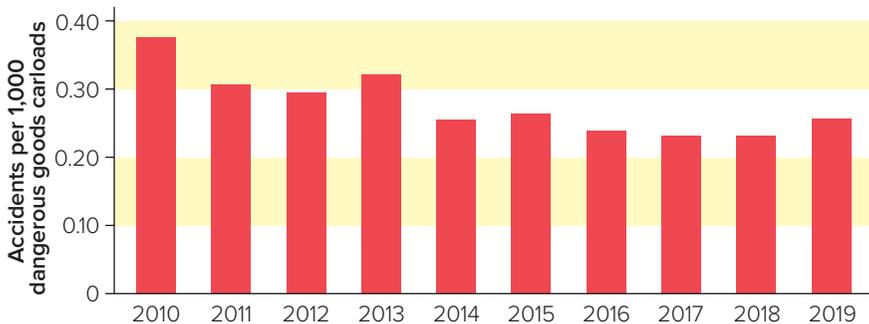
<sup>14</sup> The passenger rail sector's accident rate is calculated by dividing the number of passenger rail accidents by the total number in millions of intercity and tourist passengers and rail commuters. In 2019, an additional commuter rail service was included in the total number of commuters. Without this addition, the passenger rail sector's accident rate would have been approximately 0.51; which would have resulted in an improvement of 35.8 per cent since 2018 and 23.5 per cent compared to the 2014-2018 average.

## ACCIDENTS INVOLVING DANGEROUS GOODS

In 2019, the freight rail sector's accident rate involving dangerous goods increased by 8.9 per cent from the previous year, from 0.24 to 0.26 accidents per 1,000 dangerous goods carloads.<sup>15</sup> However, the number of accidents with a dangerous goods release has remained below 10 in every year over the past decade (there were 8 releases in 2019).

	Accidents involving dangerous goods	Originated Dangerous Goods Carloads	Accident rate (accidents per 1,000 dangerous goods carloads)
2010	150	400,318	0.37
2011	131	425,124	0.31
2012	127	428,660	0.30
2013	158	493,360	0.32
2014	148	576,226	0.26
2015	130	491,802	0.26
2016	105	438,098	0.24
2017	116	504,807	0.23
2018	130	546,660	0.24
<b>2019</b>	<b>175</b>	<b>675,607</b>	<b>0.26</b>

### Dangerous goods accident rate



<sup>15</sup> The freight rail sector's accident rate involving dangerous goods is calculated by dividing total accidents involving dangerous goods by the number of dangerous goods carloads in thousands moved by Canada's railways. Although the accident rate involving dangerous goods in 2019 was higher than in 2018, it was in-line with accident rates since 2014, which are lower than rates in the 2010-2013 period. From 2018 to 2019, the number of carloads carrying dangerous goods increased significantly, and over three-quarters of the increase in accidents were caused by non-main-track derailments.

# FINANCIAL INFORMATION, INVESTMENTS AND TAXES

## OPERATING EXPENSES, REVENUES AND INCOME

In 2019, Canadian railways' operating expenses increased by 6.8 per cent to \$12.6 billion. Lower fuel costs were offset by higher costs in all other categories.

Year-over-year, operating revenues increased by 7.0 per cent to a record \$17.9 billion, as freight, passenger and other revenues all increased.

As a result, the total operating income of Canada's railways in 2019 increased from \$4.9 billion to \$5.3 billion.<sup>16</sup>

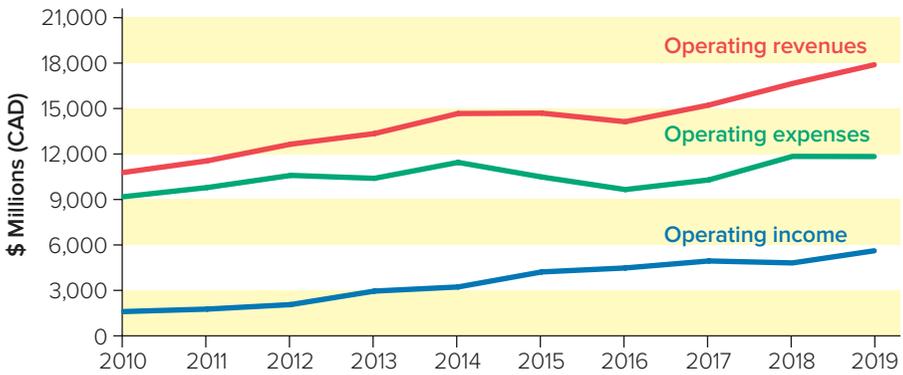
	Operating income (\$ millions)			Operating revenues (\$ millions)		
	Total operating revenues	Total operating expenses	Total operating income	Freight	Passenger	Other
2010	10,768	9,172	1,596	9,551	673	544
2011	11,533	9,774	1,760	10,305	668	561
2012	12,633	10,575	2,058	11,322	674	637
2013	13,331	10,383	2,948	12,039	668	623
2014	14,641	11,571	3,071	13,287	690	664
2015	14,679	10,471	4,208	13,270	727	682
2016	14,114	9,642	4,472	12,649	784	681
2017	15,228	10,277	4,951	13,610	915	704
2018	16,728	11,828	4,901	15,064	970	694
<b>2019</b>	<b>17,904</b>	<b>12,626</b>	<b>5,277</b>	<b>15,820</b>	<b>996</b>	<b>1,088</b>

## Operating expenses (\$ millions)

	Transportation <sup>17</sup>	Fuel	Maintenance of equipment	Maintenance-of-way and structures	General and administrative	Total
2010	2,195	1,464	1,453	1,766	2,294	9,172
2011	2,381	1,854	1,570	1,910	2,059	9,774
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	2,758	2,287	1,784	2,107	2,631	11,571
2015	2,508	1,624	1,870	2,315	2,153	10,471
2016	2,591	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
<b>2019</b>	<b>3,718</b>	<b>2,008</b>	<b>2,136</b>	<b>2,280</b>	<b>2,483</b>	<b>12,626</b>

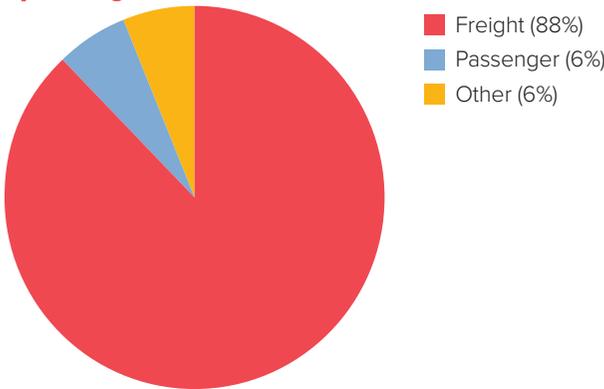
<sup>16</sup> Operating income reflects earnings before interest and taxes.

<sup>17</sup> Transportation costs are expenses incurred through the movement of rolling stock (locomotives, railcars, etc.) that are not reported under other operating expense categories.

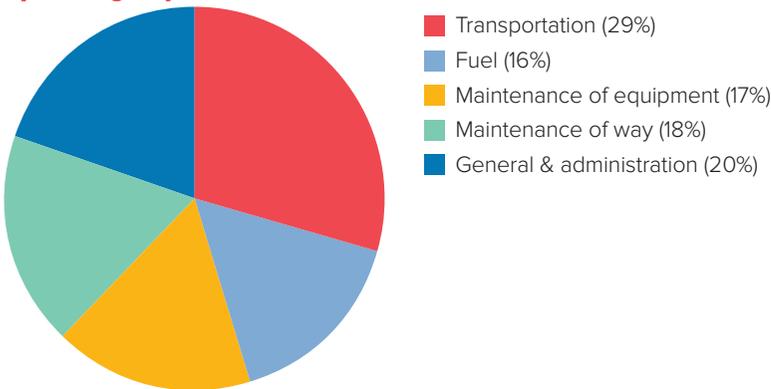


The charts below illustrate operating revenues and expenses by category as a percentage of RAC member railway totals in 2019.

**Operating revenues**



**Operating expenses**



## INVESTMENTS

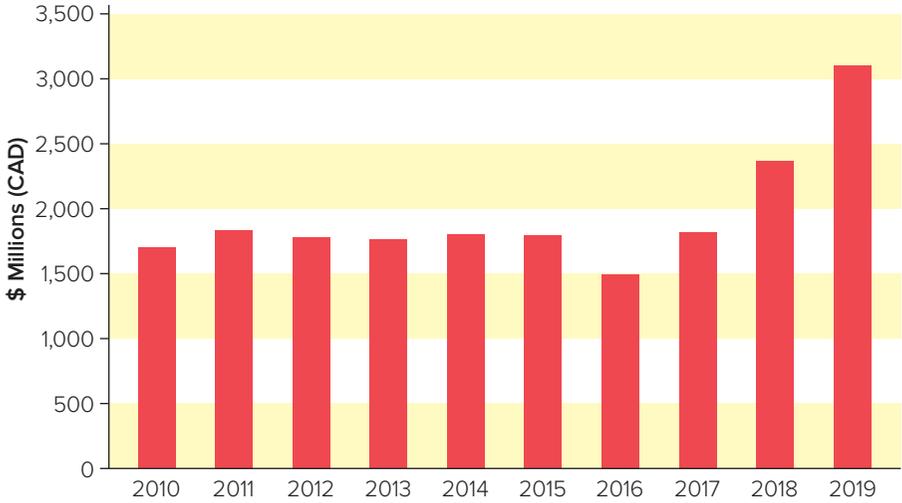
Canada's railways invested a record-breaking \$3.1 billion into their Canadian assets in 2019. This investment represents a 31 per cent increase over 2018 (which itself was a previous record year) and a 67 per cent increase compared to the 2014-2018 average. While investments increased across many asset categories, the most notable increase was the \$308 million, or 84 per cent, increase in investments in rolling stock (particularly for grain transportation and VIA's fleet replacement program).

### Investments (\$ millions)

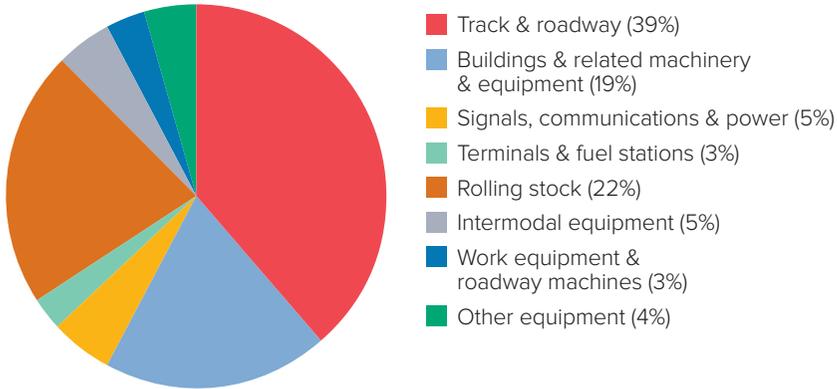
	Track & roadway	Buildings & related machinery & equipment	Signals, communications & power	Terminals & fuel stations
2010	804	231	109	16
2011	971	315	109	15
2012	961	269	122	41
2013	892	357	100	32
2014	988	292	93	10
2015	888	309	130	26
2016	771	298	102	8
2017	980	275	104	15
2018	1,044	442	146	55
<b>2019</b>	<b>1,206</b>	<b>601</b>	<b>165</b>	<b>89</b>

	Rolling stock	Intermodal equipment	Work equipment & roadway machines	Other equipment	Total investments
2010	427	15	49	55	1,705
2011	307	11	53	64	1,845
2012	255	22	49	77	1,795
2013	239	17	50	77	1,764
2014	240	53	49	83	1,808
2015	233	61	92	62	1,801
2016	145	53	55	70	1,500
2017	182	102	57	109	1,824
2018	366	166	62	101	2,382
<b>2019</b>	<b>674</b>	<b>152</b>	<b>99</b>	<b>136</b>	<b>3,120</b>

**Investments**



The chart below illustrates investments by category as a percentage of all investments made by RAC member railways in 2019.



## TAXES

In 2019, Canada's railways paid a record-high \$2.1 billion in taxes, up 3.8 per cent from the previous year and 32.6 per cent above the 2014-2018 average. The main contributors to this increase were a 24.4 per cent — \$24 million — increase in carbon-related levies and a 2.8 per cent — \$34 million — increase in income taxes.

### Taxes by category (\$ millions)

	Locomotive fuel & excise tax	Property tax	Other sales tax	Capital tax & customs duties	Income tax	Payroll taxes	Carbon-related levies	Total
2010	195	150	96	14	185	147	0	787
2011	204	153	70	0	371	158	0	957
2012	220	158	70	0	159	170	0	777
2013	198	169	43	1	629	150	21	1,210
2014	189	179	106	1	463	167	44	1,149
2015	159	168	115	3	775	171	45	1,435
2016	187	180	114	1	976	167	43	1,667
2017	196	185	122	0	940	181	78	1,702
2018	217	192	128	4	1,212	191	100	2,044
<b>2019</b>	<b>215</b>	<b>193</b>	<b>140</b>	<b>3</b>	<b>1,246</b>	<b>199</b>	<b>124</b>	<b>2,120</b>

### Payroll taxes (\$ millions)

	Canada/Quebec pension plan	Unemployment insurance	Health taxes	Total
2010	73	31	43	147
2011	77	34	47	158
2012	84	37	49	170
2013	75	32	43	150
2014	84	37	46	167
2015	82	36	53	171
2016	79	37	50	167
2017	93	36	52	181
2018	95	37	58	191
<b>2019</b>	<b>102</b>	<b>37</b>	<b>60</b>	<b>199</b>

**Taxes by jurisdiction (\$ thousands)**

	Locomotive fuel & excise tax			Fuel tax per litre (cents)	Carbon Levies		
	2017	2018	2019	2019	2017	2018	2019
Alberta	18,689	20,216	19,519	5.5	19,942	32,507	12,870
British Columbia	15,668	18,272	19,650	3	40,039	52,403	64,636
Manitoba	10,360	11,622	10,850	6.3	0	0	0
Nfld. & Labrador	0	0	0	16.5	0	0	0
New Brunswick	1,463	1,270	1,237	4.3	0	0	0
Nova Scotia	0	0	0	15.4	0	0	180
Ontario	23,671	23,268	23,058	4.5	13,480	9,733	16
Quebec	2,620	7,808	6,381	3	4,770	5,200	5,356
Saskatchewan	40,847	47,132	47,528	15	0	0	0
Northwest Territories	17	13	8	11.4	0	0	0
Federal	82,547	87,252	86,937	4	0	0	41,181
<b>Total</b>	195,881	216,852	<b>215,167</b>		78,231	99,843	<b>124,239</b>

	Property tax			Other sales tax		
	2017	2018	2019	2017	2018	2019
Alberta	19,702	23,166	22,848	40	35	43
British Columbia	49,448	51,690	53,608	41,126	41,582	49,313
Manitoba	15,831	16,250	16,250	17,022	21,355	22,365
Nfld. & Labrador	68	68	74	149	272	0
New Brunswick	2,022	1,143	1,199	0	0	0
Nova Scotia	2,902	2,727	2,785	0	0	0
Ontario	32,098	32,841	32,399	695	349	20
Quebec	40,589	40,413	40,284	18,373	18,166	16,849
Saskatchewan	21,887	23,197	23,586	12,944	14,663	19,870
Northwest Territories	122	126	141	0	0	0
Federal	0	0	0	31,921	32,048	31,634
<b>Total</b>	184,669	191,620	<b>193,173</b>	122,270	128,470	<b>140,094</b>

	Capital tax & customs duties			Income tax		
	2017	2018	2019	2017	2018	2019
Alberta	1	1	2	91,648	107,989	112,985
British Columbia	0	0	0	33,458	117,896	120,338
Manitoba	20	20	20	12,127	47,697	51,685
Nfld. & Labrador	0	0	0	0	0	0
New Brunswick	0	0	0	768	12,784	11,536
Nova Scotia	0	0	0	470	5,732	4,874
Ontario	0	0	0	88,257	117,861	118,707
Quebec	20	19	0	31,376	63,331	63,890
Saskatchewan	71	71	71	22,948	82,287	88,130
Northwest Territories	0	0	0	0	901	856
Federal	0	3,700	2,742	658,702	656,020	673,251
<b>Total</b>	112	3,811	<b>2,835</b>	939,754	1,212,497	<b>1,246,252</b>

# EMPLOYMENT

In 2019, the Canadian railway industry's workforce increased by 5.5 per cent from the previous year. The average annual wage per employee remained stable at just under \$100,000.<sup>18</sup>

	Total compensation (\$ millions)	Number of employees	Average annual wage per employee (\$)
2010	2,585	32,565	79,373
2011	2,803	33,703	83,163
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
<b>2019</b>	<b>3,477</b>	<b>36,196</b>	<b>99,332</b>



<sup>18</sup> Compensation includes salaries and compensation paid, but excludes company paid benefits such as the Canada/Quebec Pension Plan, unemployment insurance and health taxes. Average annual wage per employee is calculated by dividing total compensation by the average number of employees, excepting railways that did not report both figures.

# TRACK AND EQUIPMENT

In 2019, freight railways operated 26,589 miles (42,790 kilometres) of track in Canada, up 2.7 per cent from the previous year.<sup>19</sup> Much of the increase was attributed to restored service on track that was damaged in the previous year. The industry's freight car fleet increased by 2.9 per cent in 2019. The number of locomotives in service increased by 1.4 per cent year over year to reach a record-high 3,840.

## Track and equipment\*

	Miles	Kilometres	Index 2000 = 100	Freight cars in service	Locomotives in service
2010	27,806	44,750	96.3	71,788	2,954
2011	27,254	43,862	94.3	71,750	2,978
2012	27,075	43,572	93.7	64,485	3,063
2013	27,428	44,141	94.9	59,393	3,043
2014	27,456	44,186	95.0	58,577	2,700
2015	27,580	44,385	95.5	59,509	2,400
2016	27,221	43,808	94.2	55,230	2,318
2017	26,453	42,572	91.6	55,258	3,177
2018	25,947	41,757	89.8	59,309	3,788
<b>2019</b>	<b>26,635</b>	<b>42,865</b>	<b>92.2</b>	<b>61,030</b>	<b>3,840</b>

\* Includes segments terminating in the U.S.

## Track operated, by provinces and territories

	2017		2018		2019	
	Miles	Kilometres	Miles	Kilometres	Miles	Kilometres
Alberta	3,941	6,342	3,925	6,317	3,924	6,316
British Columbia	4,140	6,663	4,123	6,635	4,100	6,598
Manitoba	2,151	3,462	2,129	3,426	2,760	4,442
Nfld. & Labrador	175	282	175	282	175	282
New Brunswick	681	1,096	681	1,096	681	1,096
Nova Scotia	401	646	292	470	292	470
Ontario	6,332	10,190	6,026	9,698	6,065	9,760
Quebec	3,669	5,905	3,655	5,882	3,658	5,887
Saskatchewan	4,841	7,790	4,818	7,753	4,857	7,817
Northwest Territories	75	121	76	122	76	122
<b>Total</b>	<b>26,406</b>	<b>42,497</b>	<b>25,900</b>	<b>41,682</b>	<b>26,589</b>	<b>42,790</b>
Intercity passenger trains	7,453	11,995	7,453	11,995	7,453	11,995
Commuter and tourist trains	3,156	5,080	3,156	5,080	3,185	5,126
Segments terminating in the U.S.	47	75	47	75	47	75
<b>Grand total</b>	<b>37,063</b>	<b>59,647</b>	<b>36,556</b>	<b>58,832</b>	<b>37,274</b>	<b>59,986</b>

<sup>19</sup> Miles (kilometres) of track operated includes rail over which a railway has operating rights. Segments of track acquired by non-RAC-member railways would have the effect of reducing the total track mileage reported in *Rail Trends*.

# APPENDIX A

## GLOSSARY

**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, flammable and combustible liquids, flammable solids, 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>20</sup>

**Fuel efficiency:** The output one gets for a unit amount of fuel input, such as “revenue ton-miles per gallon” for rail.

**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. Excludes track used by intercity passenger trains, commuter and tourist trains, and segments of track terminating in the U.S.

**Train-mile:** The movement of a train the distance of one mile.

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<sup>20</sup> Source: *Canadian Transportation of Dangerous Goods Regulations*, section 1.4.

## **APPENDIX B CONVERSION FACTORS**

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

# APPENDIX C

## SAFETY DEFINITIONS

The following definitions apply to railway occurrences that are required to be reported pursuant to the *Canadian Transportation Accident Investigation and Safety Board Act* and the associated regulations.

### **Reportable railway accident**

An incident in which:

1. a person is killed or sustains a serious injury as a result of
  - (i) getting on or off or being on board the rolling stock, or
  - (ii) coming into contact with any part of the rolling stock or its contents;
2. the rolling stock or its contents
  - (i) are involved in a collision or derailment,
  - (ii) sustain damage that affects the safe operation of the rolling stock,
  - (iii) cause or sustain a fire or explosion, or
  - iv) 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.

### **Dangerous goods involvement**

“Dangerous goods” has the same meaning as in section 2 of the *Transportation of Dangerous Goods Act, 1992*. An accident is considered to have dangerous goods involvement if any of a train’s cars 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 product. Also included are crossing accidents in which the motor vehicle involved (e.g., tanker truck) is carrying a dangerous good.

### **Crossing accident**

A crossing accident is when a locomotive or railcar is involved in a collision with a motor vehicle or pedestrian at a railway crossing, resulting in death, serious injury or property damage.

### **Trespassing accident**

Trespassing accidents occur when people – primarily pedestrians who are not authorized to be on railway rights-of-way – are struck by locomotives or railway cars anywhere other than at railway crossings.

### **Other accident types**

Other accident types include, but are not limited to, trespassing, collisions/derailments involving track units, rolling stock collisions with objects, or employee/passenger accidents.