



# Wellington City CBD Cordon Survey:

## An overview of the findings (2000-2018)

**FOR FURTHER INFORMATION**

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## Table of contents

### Contents

Contents.....	2
List of tables.....	2
List of figures.....	2
1 Introduction.....	3
2 The surveys and cordon boundary.....	3
3 Active mode trends.....	5
4 Public transport trends.....	7
5 Motor vehicle trends.....	10
6 Summary of findings.....	12

### List of tables

Table 1: Active mode counts inbound at peak times, 2000 to 2018.....	5
Table 2: Public transport passengers arriving at morning peak, 2000 to 2018.....	7
Table 3: Bus AM and PM peak counts, 2013 to 2017.....	9
Table 4: Motor vehicle cordon count, 2000 to 2018.....	11
Table 5: Overview of the cordon count for all modes inbound, 2000 to 2018.....	12
<b>Table 6: Transport trends for all modes crossing the Cordon from 2000-2018.....</b>	<b>14</b>

### List of figures

Figure 1 Map of the Wellington City CBD cordon.....	4
Figure 2: Average daily inbound pedestrian & cyclist counts, 2000 to 2018.....	6
Figure 3: Number of public transport passengers at morning peak, 2000-2018.....	8
Figure 4: Exit profile for passengers leaving Wellington railway station, 7am to 9am.....	8
Figure 5: PM peak count of bus passengers heading outbound from the CBD (2013-2017).....	9
Figure 6: Motor vehicle cordon counts and occupancy rate 2000-18.....	10
Figure 7: An overview of all modes of transport, 2000 to 2018.....	13

## 1 Introduction

This report presents the results of surveys collected annually during March for the Greater Wellington Regional Council (GWRC) and Wellington City Council (WCC) at selected collection points around the Wellington City CBD between 2000 and 2018. This report presents the data and describes recent trends in travel patterns and behaviour.

The report is set out as follows. Section 2 describes the survey and the geographical location of the Wellington City CBD cordon. Section 3 presents the active mode cordon trends; section 4 presents the public transport trends; and section 5 presents the motor vehicle trends. Section 6 consists of an overview of the main findings and presents a table of key results from the report.

## 2 The surveys and cordon boundary

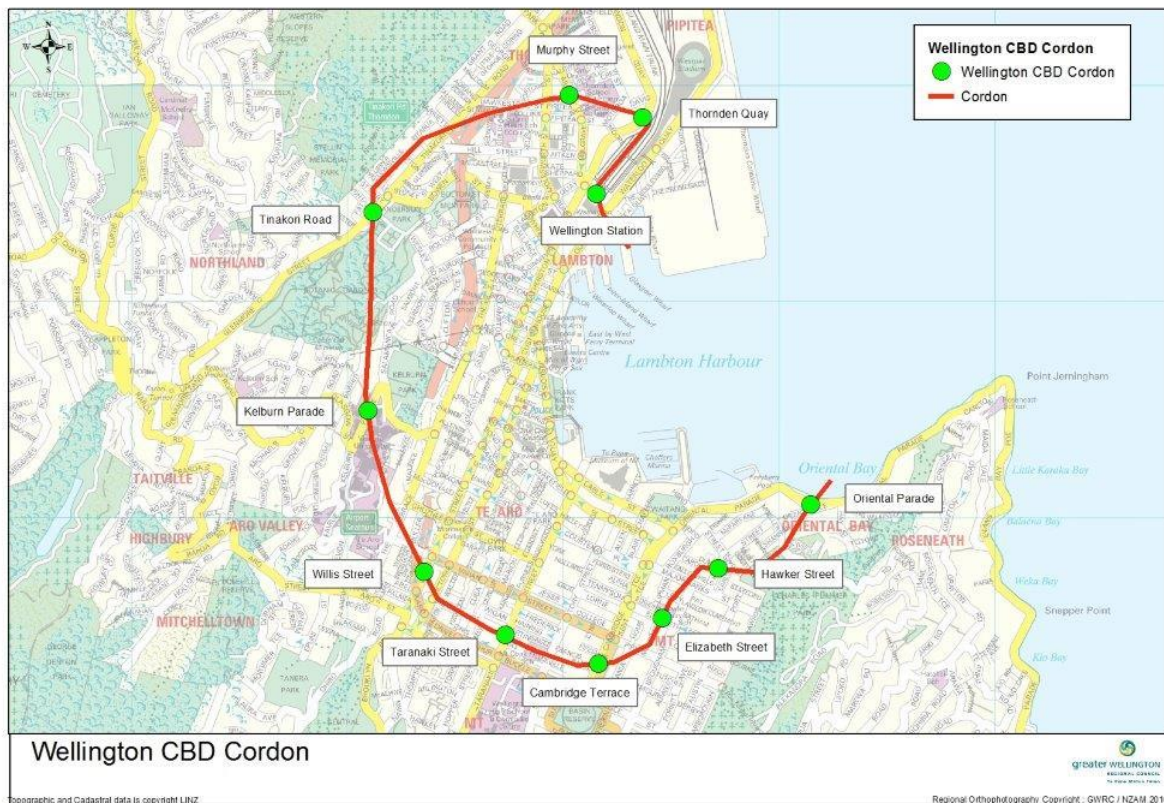
The WCC commissions vehicle, pedestrian and cyclist surveys, and the GWRC commissions a survey to count the number of people entering the Wellington City CBD by bus, ferry and rail. The data are referred to as cordon data, as the people cross the notional 'cordon' into the CBD. This report presents cordon count data for the period 2000 to 2018.

Data are for the two-hour AM peak between 7am and 9am. Counts are taken of people and vehicles crossing the cordon and entering Wellington City CBD, covering the following modes:

- active modes – walking, running, cycling
- public transport – rail, bus, ferry, cable car
- private and commercial motor vehicles – cars, light trucks, heavy trucks, vans, motorbikes, taxis

**Figure 1** shows broadly how the Wellington City CBD cordon is defined. All inbound vehicles, passengers, public transport users, pedestrian and cyclists crossing the cordon are captured by the various surveys.

**Figure 1 Map of the Wellington City CBD cordon**



The green dots represent locations where commuters cross the cordon and this is approximately where surveyors are positioned to count people and vehicle type. The number of cordon crossing points, however, varies by mode – for example, all rail passengers cross the cordon at Wellington railway station, buses cross the cordon at select locations (corresponding to bus corridors), other motor vehicles have a greater number of crossing points to choose from whilst cyclists/pedestrians have the greatest number of crossing points to choose from, including walking/cycling only routes such as the waterfront.

The durations of the surveys vary by mode:

- bus and rail – one day survey
- motor vehicle surveys – one day survey
- cyclist and pedestrian surveys – average of data gathered across one week

Given that the survey duration varies between modes, combined with the variability of the Wellington weather potentially affecting travel choices from one day to the next, some short-term variation from one year to the next might be expected due to local factors and limitations with the data rather than changes in travel behaviour.

Over the long-term, however, the data is a useful indicator of changes in travel patterns and behaviour.

### 3 Active mode trends

The active mode count is collected in the two-hour AM peak period (7-9 AM) and is the number of pedestrians and cyclists crossing the cordon heading towards the CBD, shown in table 1. Pedestrians and cyclists entering and exiting the cordon and commuter cyclists are represented in figure 2.

In **Table 1**, between 2000 and 2018 that there was strong growth in cycling numbers, up by 115.6%. The majority of this growth appeared to occur in the period 2006 to 2010. Pedestrian numbers grew by 17.5% between 2000 and 2018, though from a much larger base. Between 2017 and 2018, pedestrian volumes decreased by 7.4% and cordon cyclist volumes increased by 19.0%.

People using active modes are more likely to be affected by unfavourable weather conditions than other modes. Figure 2 shows fluctuating results for pedestrians and cyclist which may be due to poor weather conditions during the cordon survey week.

The total active mode count increased between 2000 and 2018 by 20.5%, and total walkers and cyclists were consistently above 12,000 from 2012 to 2016, in the last two years total active count has been below 12,000. Pedestrian counts have been down in the last five years, a net downturn of 19.4%. However the number of cyclists has increased by 14.6% since 2014.

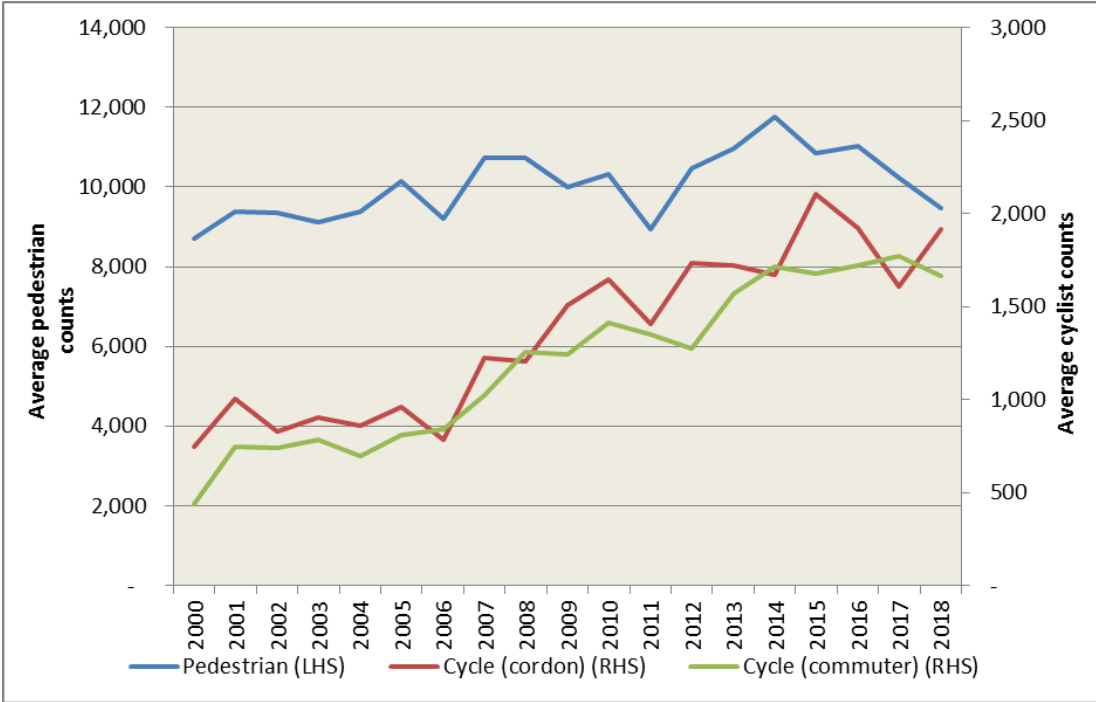
**Table 1: Active mode counts inbound at peak times, 2000 to 2018**

Year	Pedestrians	Cyclists	Total active mode
2000	8,703	746	9,449
2001	9,383	1,007	10,391
2002	9,348	831	10,179
2003	9,110	906	10,016
2004	9,393	858	10,251
2005	10,158	963	11,121
2006	9,209	787	9,995
2007	10,732	1,222	11,954
2008	10,722	1,208	11,930
2009	9,997	1,511	11,508
2010	10,325	1,644	11,969
2011	8,940	1,405	10,345
2012	10,473	1,731	12,204
2013	10,960	1,724	12,684
2014	11,750	1,671	13,421
2015	10,864	2,102	12,966
2016	11,024	1,924	12,948
2017	10,226	1,609	11,835
2018	9,472	1,914	11,386
<i>Net change 2000-2018</i>	8.8%	156.4%	20.5%
<i>Net change 2014-2018</i>	-19.4%	14.6%	-15.2%
<i>Net change 2017-2018</i>	-7.4%	19.0%	-3.8%

The commuter cycling survey occurs over one week at five intersections<sup>1</sup> in Wellington city to measure cyclist volumes at morning peak times. The average daily total for the two hour time period is shown in Figure 2. In 2018 the total was 1,668 cyclists. The commuter survey results follow a similar trend to the cordon cycling counts, showing significant growth from 2006 to 2018 (98%) and small changes over the last five years (2.6%).

**Figure 2** shows average pedestrian, commuter and cordon cyclist’s counts entering and exiting at AM peak. The pedestrian volumes are shown by the blue line and measured on the left-hand side of chart.

**Figure 2: Average daily inbound pedestrian & cyclist counts, 2000 to 2018**



<sup>1</sup> Five intersections: Upland road/ Glenmore St, Adelaide road/Riddiford St, Cobham drive /Evans bay, Tinakori/Thorndon and Jarden mile/Centennial Highway.

## 4 Public transport trends

Patronage counts on all types of public transport – rail, bus, ferry and cable car – are shown in **Table 2** and **Figure 3**.

Between 2000 and 2018 public transport passengers increased by 46% from 20,600 to 30,060 for those passengers inbound between 7 and 9 AM into the Wellington CBD. **Table 2** shows that the harbour ferry made the greatest proportionate gains by increasing by almost 200% during this time. Rail has had strong passenger growth almost consistently from 2000 to 2018 with a net change of 60.5%, bus 30.2% and cable car reduced patronage by 30.3%.

Patronage on all types of public transport increased in the last five years; between 2014 and 2018. Rail passengers<sup>2</sup> increased by 16%, bus by 3.5%, ferry by 23.6% and cable car patronage by 6.5%. Note that rail and bus combined account for 98% of public transport trips in 2018, of which 56% were rail and 42% were bus.

The number of ferry passengers were increasing until 2009; from 2009 to 2015 numbers fluctuated and since 2015 have remained relatively stable (see **Figure 3**). Cable car trip numbers initially increased and fell after the 2004 peak to less than half the 2004 total in 2011. Since that time passenger numbers have increased.

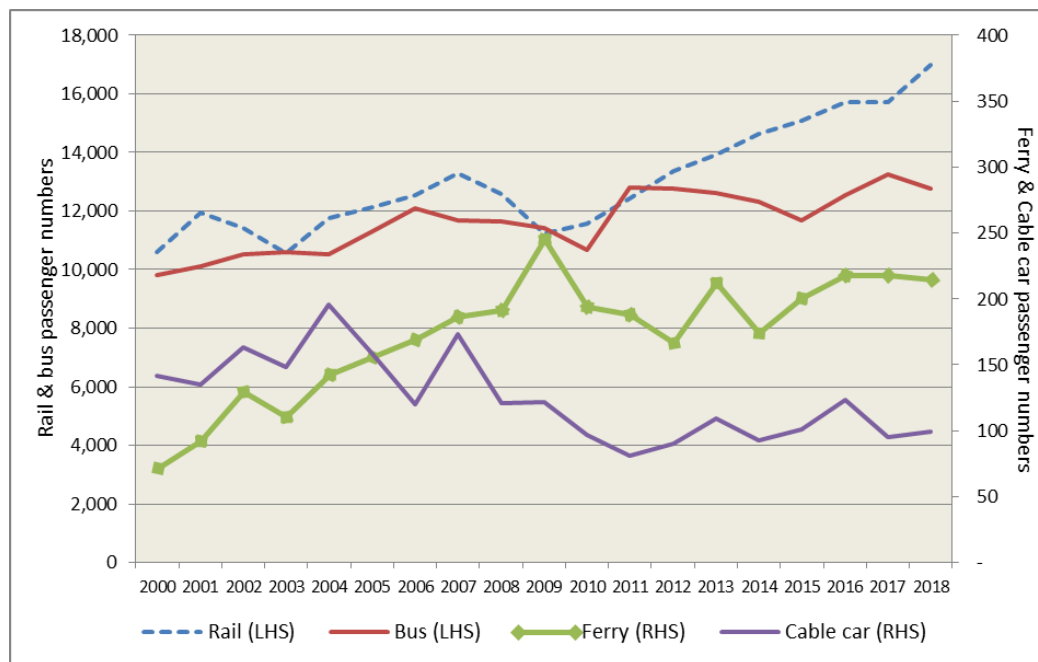
Between 2017 and 2018 passenger numbers increased across 2 out of four Public transport services (Rail 8%, Cable car 4.2%) there was a small decrease in Ferry passengers (1.4%) and declining numbers in bus (3.5%).

**Table 2: Public transport passengers arriving at morning peak, 2000 to 2018**

Year	Rail (LHS)	Bus (LHS)	Ferry (RHS)	Cable car (RHS)	Total
2000	10,580	9,808	72	142	20,602
2001	11,948	10,116	92	135	22,291
2002	11,436	10,505	129	163	22,233
2003	10,575	10,590	110	148	21,423
2004	11,746	10,511	143	196	22,596
2005	-	-	-	-	-
2006	12,534	12,074	169	120	24,897
2007	13,294	11,665	187	173	25,319
2008	12,575	11,656	192	121	24,544
2009	11,237	11,417	246	122	23,022
2010	11,555	10,667	194	97	22,513
2011	12,429	12,796	188	81	25,494
2012	13,364	12,754	167	90	26,375
2013	13,919	12,610	212	109	26,850
2014	14,644	12,334	174	93	27,245
2015	15,067	11,676	201	101	27,045
2016	15,714	12,524	218	123	28,579
2017	15,723	13,233	218	95	29,269
2018	16,981	12,767	215	99	30,062
<i>Net change 2000-2018</i>	60.5%	30.2%	198.6%	-30.3%	45.9%
<i>Net change 2014-2018</i>	16.0%	3.5%	23.6%	6.5%	10.3%
<i>Net change 2017-2018</i>	8.0%	-3.5%	-1.4%	4.2%	2.7%

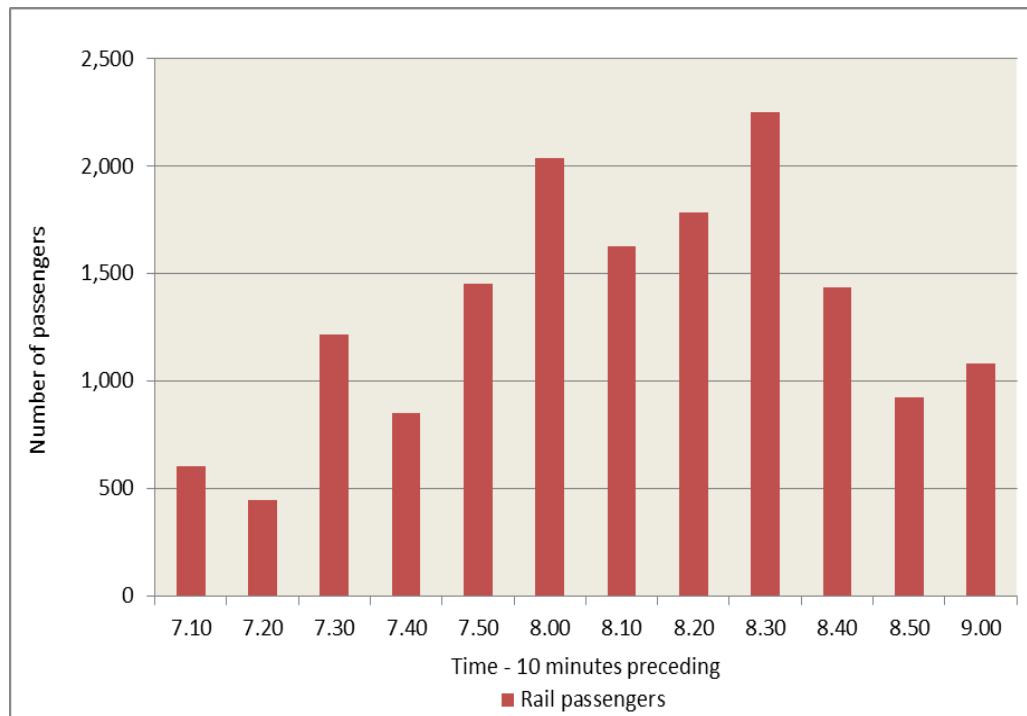
<sup>2</sup> This refers to the number of people exiting Wellington railway station. Whilst these numbers could potentially include non-rail passengers walking through the station, the vast majority of people captured by the survey will be people who have just alighted from trains and are walking to the CBD, or towards the bus station to catch an onward bus service.

**Figure 3: Number of public transport passengers at morning peak, 2000-2018**



**Figure 4** below shows the exit profile for rail passengers leaving Wellington railway station in the AM peak, by 10 minute time period. It shows two peaks in passenger numbers; at 8:00 and 8.30am, when the majority of rail passengers arrive into Wellington.

**Figure 4: Exit profile for passengers leaving Wellington railway station, 7am to 9am**





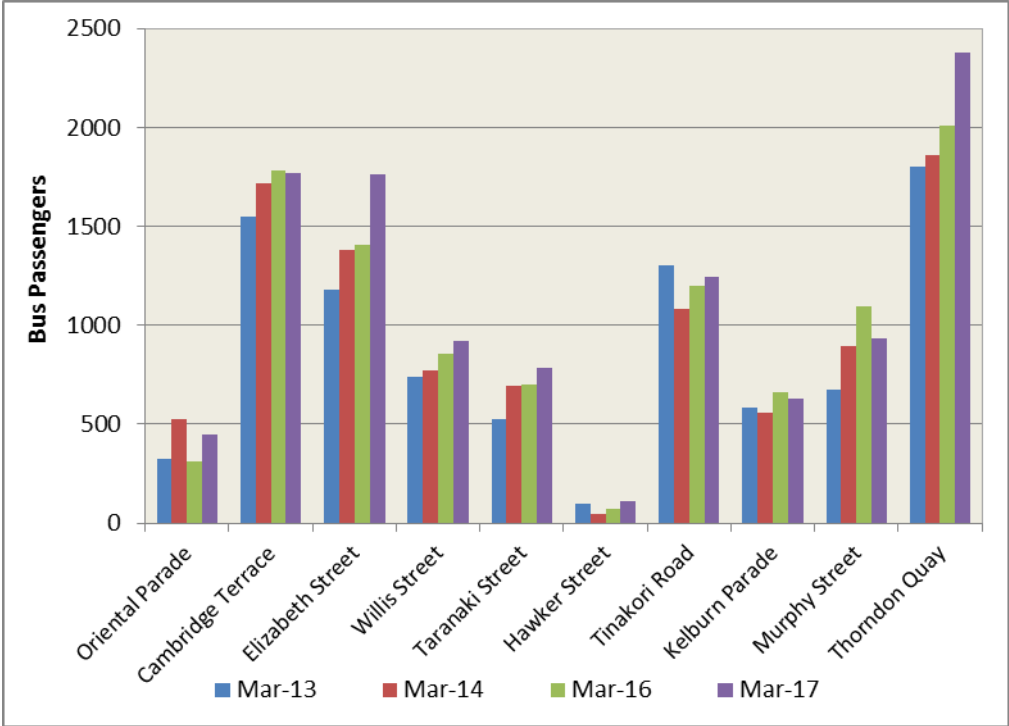
**Table 3** shows that the peak counts for bus trips tend to be notably lower in the PM peak compared to the AM peak period, at 22% lower in 2017. (Note that these counts are only available for 2013-2017.) It is interesting to note that the count in the PM peak increased by 25% between 2013 and 2017, compared to a 5% increase in the AM peak. The ratio between the AM peak and PM peak counts in 2017 is 1.2:1, down from 1.44:1 in 2013 and steadily reducing since 2013.

**Table 3: Bus AM and PM peak counts, 2013 to 2017**

Bus count data	2013	2014	2016	2017	Net change 2013 - 2017
AM peak count	12,610	12,334	12,524	12,524	4.9%
PM peak count	8,775	9,546	10,097	10,989	25.2%
AM:PM peak ratio	1.44:1	1.29:1	1.24:1	1.20:1	

**Figure 5** shows the bus passenger counts at the different cordon sites at pm peak times. The results are for the four years this survey has been conducted. Comparing passenger numbers from 2016 to 2017, significant growth (in absolute terms) in pm passengers for those buses exiting the cordon via Elizabeth Street and Thorndon quay. Passengers travelling to the eastern suburbs (Wellington city) travel via the Elizabeth street route and passengers travelling via Thorndon quay will likely be heading to the northern suburbs (Wellington city).

**Figure 5: PM peak count of bus passengers heading outbound from the CBD (2013-2017)**



## 5 Motor vehicle trends

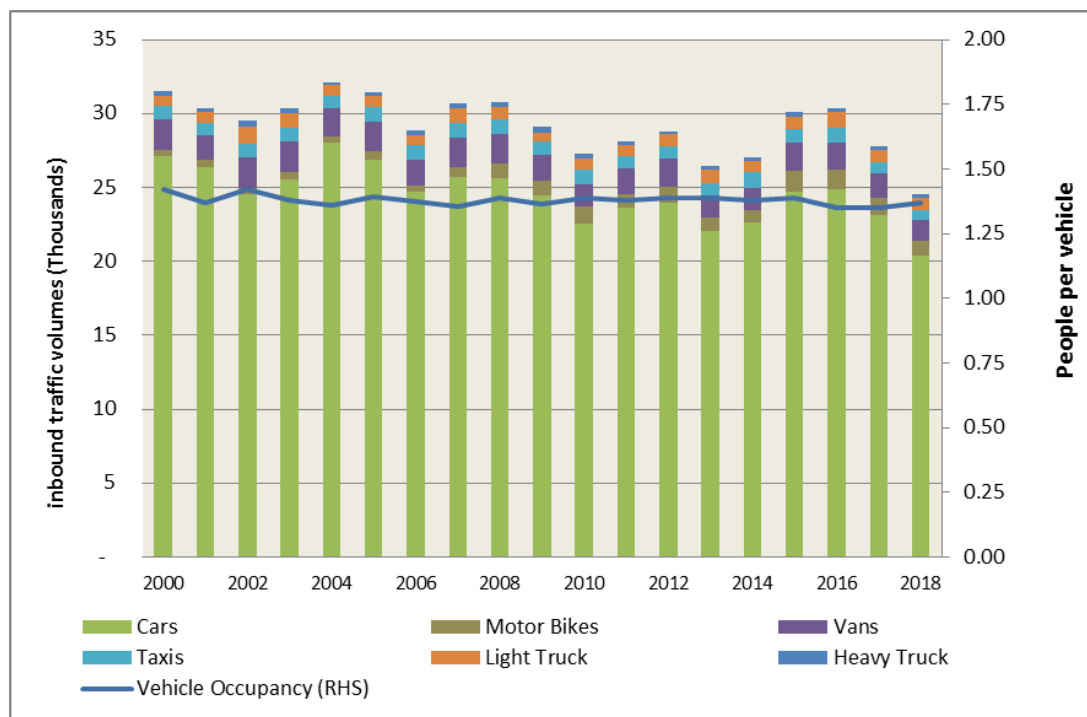
The number of motor vehicles crossing the cordon fell between 2000 and 2018; the cordon results are shown in **Table 4** and **Figure 6**. The fall in absolute terms in motor vehicle numbers was 6,971 or 22.1% (from 2000 to 2018). The reduced vehicles numbers comprised of cars, a decrease of 25%, vans (31%), taxis (28%) and heavy trucks (25%). Increases were seen in numbers of motorbikes (150.3%) and light trucks (16.2%).

Over the five years to 2018, net car use decreased by 9.8% overall but increased during this period to peak in 2016 (24,882 cars) and has decreased since. From 2017 to 2018, a decrease of 11.9%, in absolute numbers there were 2,748 fewer cars crossing the CBD cordon.

Motorbikes have proportionately shown the highest growth since cordon counts in 2000 and in the last five years, the number has grown by 20.6%. A high growth period occurred from 2007 to the peak year (2015) from 2017 to 2018 the number of motorbikes decreased by 121 or 10.7%.

**Figure 6** shows average vehicle occupancy (line graph) between 2005 and 2018. Records show that from a peak of 1.42 in 2000 and 2002, the average vehicle occupancy fluctuated between 2002 and 2010. Numbers stabilised around 1.38 and 1.39 between 2010 and 2015 and then fell to 1.35 in 2016 & 2017. In 2018 there has been a slight increase to 1.37.

**Figure 6: Motor vehicle cordon counts and occupancy rate 2000-18**



**Table 4: Motor vehicle cordon count, 2000 to 2018**

Year	Cars	Motor Bikes	Vans	Taxis	Light Truck	Heavy Truck	Total
2000	27,107	402	2,063	924	711	327	31,534
2001	26,408	434	1,685	826	740	227	30,320
2002	24,580	380	2,060	940	1,146	425	29,531
2003	25,511	514	2,082	942	1,011	318	30,378
2004	28,010	475	1,870	856	707	191	32,109
2005	26,903	574	2,006	948	771	239	31,441
2006	24,689	463	1,700	1,000	701	296	28,849
2007	25,737	668	1,968	1,002	1,001	353	30,729
2008	25,637	951	2,059	936	822	333	30,738
2009	24,505	986	1,752	858	640	356	29,097
2010	22,582	1,119	1,519	956	757	323	27,256
2011	23,599	951	1,778	754	776	266	28,124
2012	23,980	1,107	1,879	828	853	166	28,813
2013	22,033	963	1,508	755	930	282	26,471
2014	22,617	834	1,541	1,052	753	220	27,017
2015	24,740	1,399	1,864	958	839	276	30,076
2016	24,882	1,312	1,843	1,030	1,038	225	30,330
2017	23,146	1,127	1,660	797	786	267	27,783
2018	20,398	1,006	1,423	666	826	244	24,563
<i>Net change 2000-2018</i>	-24.8%	150.2%	-31.0%	-27.9%	16.2%	-25.4%	-22.1%
<i>Net change 2014-2018</i>	-9.8%	20.6%	-7.7%	-36.7%	9.7%	10.9%	-9.1%
<i>Net change 2017-2018</i>	-11.9%	-10.7%	-14.3%	-16.4%	5.1%	-8.6%	-11.6%

## 6 Summary of findings

This section presents an overview of the cordon data and trends presented in this report.

A summary of results is shown in **Table 5** and illustrated in **Figure 7**.

The overview shows how between 2000 and 2018, active mode and public transport numbers crossing the cordon increased whilst motor vehicle numbers decreased. The net changes from 2000 to 2018 were as follows:

- active modes – increase of 20.5%
- public transport – increase of 45.9%
- motor vehicles – decreased by 22.1%

Over the five years 2014–18, public transport patronage rose 10.3%; from 2017 to 2018 there was a 2.7% increase. People using active mode to travel to the CBD decreased by 15.2% over the five years to 2018 and decreased by 3.8% between 2017 and 2018. Vehicles crossing the cordon decreased by 9.1% over the 2014–18 period and decreased by 11.6% between 2017 and 2018.

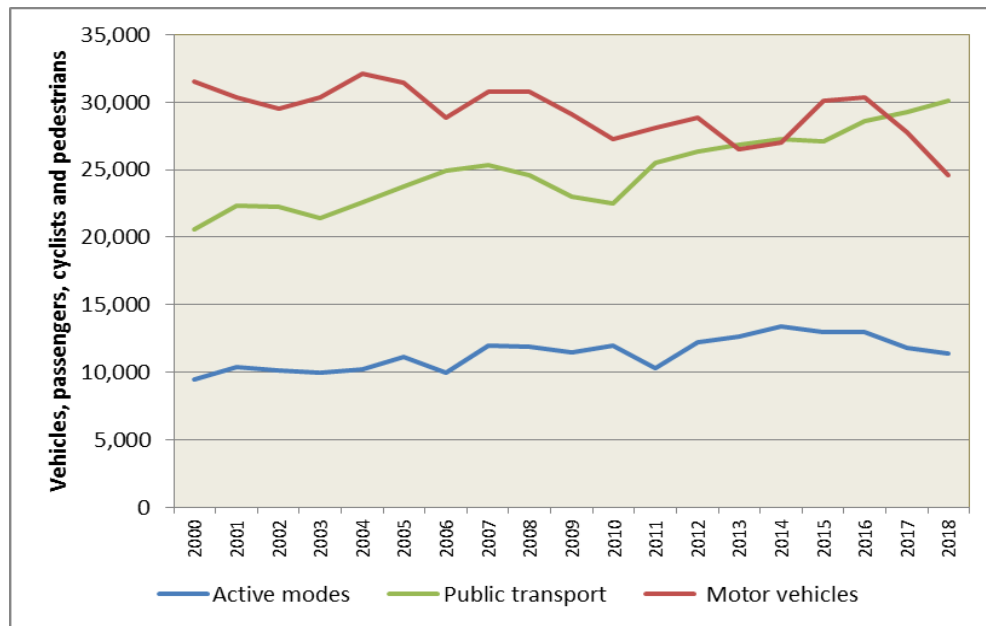
Looking at the total number of persons crossing the cordon and how these numbers have changed through time:

- 2000 to 2018 – increase of 0.4%
- 2014 to 2018 – decrease of 3.8%
- 2017 to 2018 – decrease of 4.5%

**Table 5: Overview of the cordon count for all modes inbound, 2000 to 2018**

Year	Active modes	Public transport	Motor vehicles	Total persons
2000	9,449	20,602	31,534	74,829
2001	10,391	22,291	30,320	74,220
2002	10,179	22,233	29,531	74,414
2003	10,016	21,423	30,378	73,361
2004	10,251	22,596	32,109	76,515
2005	11,121	23,747	31,441	78,718
2006	9,995	24,897	28,849	74,520
2007	11,954	25,319	30,729	78,891
2008	11,930	24,544	30,738	79,093
2009	11,508	23,022	29,097	74,254
2010	11,969	22,513	27,256	72,381
2011	10,345	25,494	28,124	74,650
2012	12,204	26,375	28,813	78,518
2013	12,684	26,850	26,471	76,292
2014	13,421	27,245	27,017	78,053
2015	12,966	27,045	30,076	81,883
2016	12,948	28,579	30,330	82,441
2017	11,835	29,269	27,783	78,620
2018	11,386	30,062	24,563	75,100
<i>Net change 2000-2018</i>	20.5%	45.9%	-22.1%	0.4%
<i>Net change 2014-2018</i>	-15.2%	10.3%	-9.1%	-3.8%
<i>Net change 2017-2018</i>	-3.8%	2.7%	-11.6%	-4.5%

**Figure 7: An overview of all modes of transport, 2000 to 2018**



Note: no cordon data were collected for public transport in 2005, the result reported is an average of 2004 & 2006 survey years.

The general trends between 2000 and 2018 for trips heading inbound across the Wellington City CBD cordon are presented in **Table 6**.

The table includes population data which provides some context for growth in transport usage. In short, findings presented in this report may be summarised as:

- In the last five years, the number of motor vehicles crossing the cordon has decreased (mainly due to the number of cars decreasing).
- The active mode trips into the CBD have overall decreased; walking has decreased but cycling has increased and public transport (dominated by rail and bus) saw strong growth.
- Vehicle occupancy (this excludes public transport) is unchanged since last year and over time has changed very little.

**Table 6: Transport trends for all modes crossing the Cordon from 2000-2018**

Transport modes	Morning peak counts March 2018	Change (%) in passenger and vehicle numbers over 1, 5 and 18 years.		
		2017-18	2014-18	2000-18
Public transport passengers	29,269	3%	10%	46%
Active mode count	16,969	-4%	-15%	20%
Motor vehicles	27,783	-12%	-9%	-22%
All persons	78,620	-4%	-4%	0%
<b>Public transport use</b>				
Rail passengers	15,723	8%	16%	61%
Bus passengers	13,233	-4%	4%	30%
Ferry passengers	218	-1%	24%	199%
Cable car passengers	95	4%	6%	-30%
<b>Active mode count</b>				
Cycling	2,150	19%	15%	156%
Walking	14,819	-7%	-19%	9%
<b>Motor vehicle count</b>				
Cars	23,146	-12%	-10%	-25%
Motorbikes	1,127	-11%	21%	150%
Vans	1,660	-14%	-8%	-31%
Taxis	797	-16%	-37%	-28%
Light trucks	786	5%	10%	16%
Heavy trucks	267	-9%	11%	-25%
Average vehicle occupancy	1.37	1%	-1%	-4%
<b>Population growth</b>	2017	2016-17	2013-17	2000-17
Wellington region	513,900	1.8%	5.6%	17.5%
Wellington City	212,700	2.3%	7.7%	25.5%

**Note: 1)** Estimated resident population figures sourced from Statistics NZ, 2017 population estimate is the most recent year. **2)** Morning peak counts are the average counts over five working days in March for all modes except Public transport.