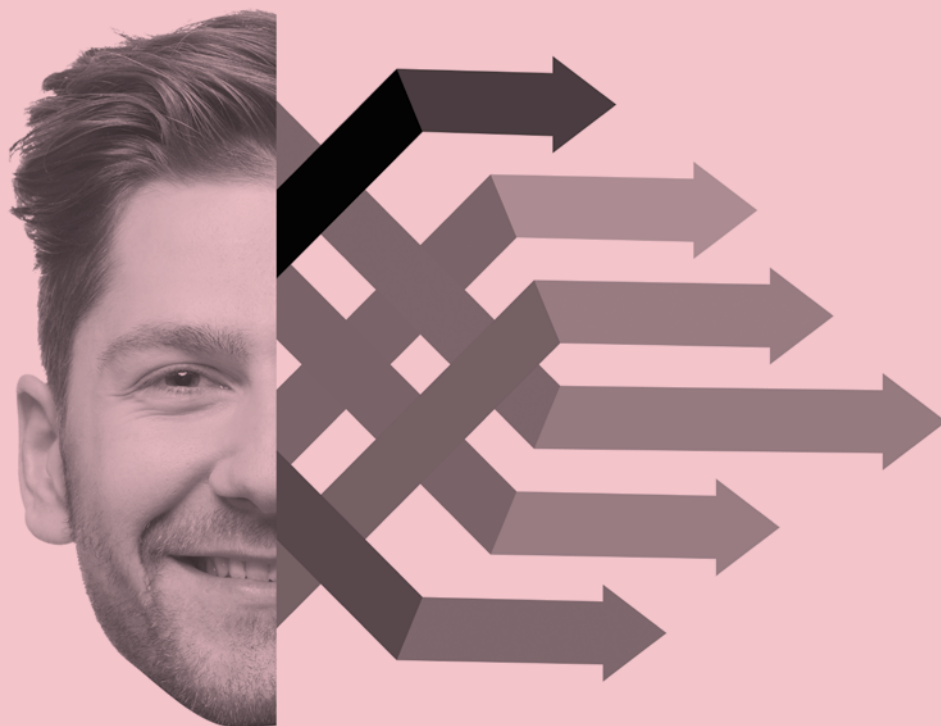


CITY OF MELBOURNE MOTORCYCLE PLAN

2015-2018



CITY OF MELBOURNE



A CONNECTED CITY

The Motorcycle Plan 2015-18 aims to make Melbourne safer and more attractive for current and future motorcycle riders. It also aims to integrate motorcycle use with other movement modes as part of the City of Melbourne's Transport Strategy 2012, as well as contribute to achieving the Council Plan goal for a connected city -

"In Melbourne, all people will be able to move freely, to communicate and trade without sacrificing essential social or economic values".

CONTENTS

1. Introduction	5
2. Motorcycles in Melbourne	7
3. Why support motorcycle use?	10
4. Analysis of motorcycle crashes	12
4.1. Long-term crash trends	13
4.2. Medium term crash trends	16
5. Motorcycle parking	22
6. Action Plan	26

Glossary of Terms

The following terms are used throughout this document:

Plan - Motorcycle Plan 2015-2018.

City - The municipality of the City of Melbourne.

Central city - Defined on the map on page 4.

Motorcycle - Used as a collective term for motorcycles, scooters and other powered two-wheel vehicles.

Car - Refers to private cars, excluding taxis.

City of Melbourne Motorcycle plan 2015-18

June 2016

Disclaimer

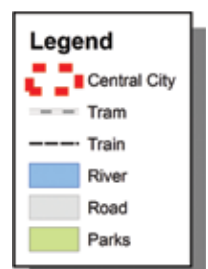
This report is provided for information and it does not purport to be complete. While care has been taken to ensure the content in the report is accurate, we cannot guarantee it is without flaw of any kind. There may be errors and omissions or it may not be wholly appropriate for your particular purposes. In addition, the publication is a snapshot in time based on historic information which is liable to change. The City of Melbourne accepts no responsibility and disclaims all liability for any error, loss or other consequence which may arise from you relying on any information contained in this report.

To find out how you can participate in the decision-making process for City of Melbourne's current and future initiatives, visit melbourne.vic.gov.au/participate

Central city



The term 'central city' in this Motorcycle Plan refers to the area outlined on the map, bounded by Victoria Street, Spring Street, Flinders Street, Swanston Street, the Yarra River, Spencer Street, La Trobe Street, William Street and Peel Street.



1. INTRODUCTION

The City of Melbourne is committed to promoting motorcycling as an energy efficient, space saving and sustainable mode of transport.

The City of Melbourne *Road Safety Plan 2013-2017* sets out environmental, behavioural, regulatory and policy actions to help create an urban environment that physically and socially supports the needs of people when walking, cycling and motorcycling (as the most vulnerable road users).

This *Motorcycle Plan 2015-2018* aims to make Melbourne safer and more attractive for current and future motorcycle riders. It focuses on improving the road network to improve safety and convenience for riders, as well as encouraging people to consider motorcycling for their daily travel needs. A status of current motorcycling in the municipality is provided, along with an Action Plan to achieve the vision of a city that promotes a safe and efficient transport network for all road users.

The goals of this Motorcycle Plan are to:

1. Investigate the benefits of motorcycle use.
2. Improve the road infrastructure to deliver an efficient transport network as per the City of Melbourne *Transport Strategy 2012*.
3. Increase participation in motorcycling.
4. Make motorcycling safer.
5. Enhance the convenience of the motorcycling experience.
6. Expand motorcycle parking across the municipality.
7. Increase compliance with the VicRoads' *make roads motorcycle friendly* guidelines.

Section 6 sets out the Action Plan to improve the safety of motorcyclists and promote motorcycling in the municipality. This Action Plan was adopted by the Council on 2 July 2013 (as part of the *Road Safety Plan*) following extensive community engagement.

This Motorcycle Plan and its accompanying Action Plan will help motorcyclists feel welcomed and supported through safe, comfortable roads, and on-street and off-street parking.

It will improve the safety of motorcyclists through a supportive road environment, as well as enhance reciprocal awareness between motorcyclists and other road users. It will also enable the support of motorcyclists by regulations and policies that prioritise their safety needs on the roads across the municipality, during the day and at night.

The Plan also commits to expanding motorcycle parking throughout the municipality, both in terms of the number of spaces and the options available to riders.

The City of Melbourne will continue to support motorcycle safety campaigns that encourage responsible road use and promote Melbourne as a safe city for all road users. Additional research will help us better understand traffic conditions, motorcycling behaviour and crashes, and monitor our performance.



2. MOTORCYCLES IN MELBOURNE

The Melbourne municipality covers an area of 37.6km² and shares boundaries with seven other municipalities. The distance from east to west and from north to south is approximately 7km. About 800,000 people travel into the municipality to work, study or visit each weekday. By 2016, close to 900,000 people are expected to travel into the central city area and adjoining suburbs each weekday.

Motorcycles are a space-saving, convenient and lower-cost alternative to private cars, and are well suited to the municipality's inner urban areas. As such, motorcycling can play an important role in supporting Melbourne's liveability by reducing traffic congestion.

The number of motorcycles on Victorian roads has increased steadily in recent years. Motorcycles offer many an attractive alternative form of transport to the car for daily commuting. Recreational use is also increasing, leading to more people riding on weekends and growing numbers of motorcycles along popular tourist routes, such as the Great Ocean Road and the Yarra Ranges.

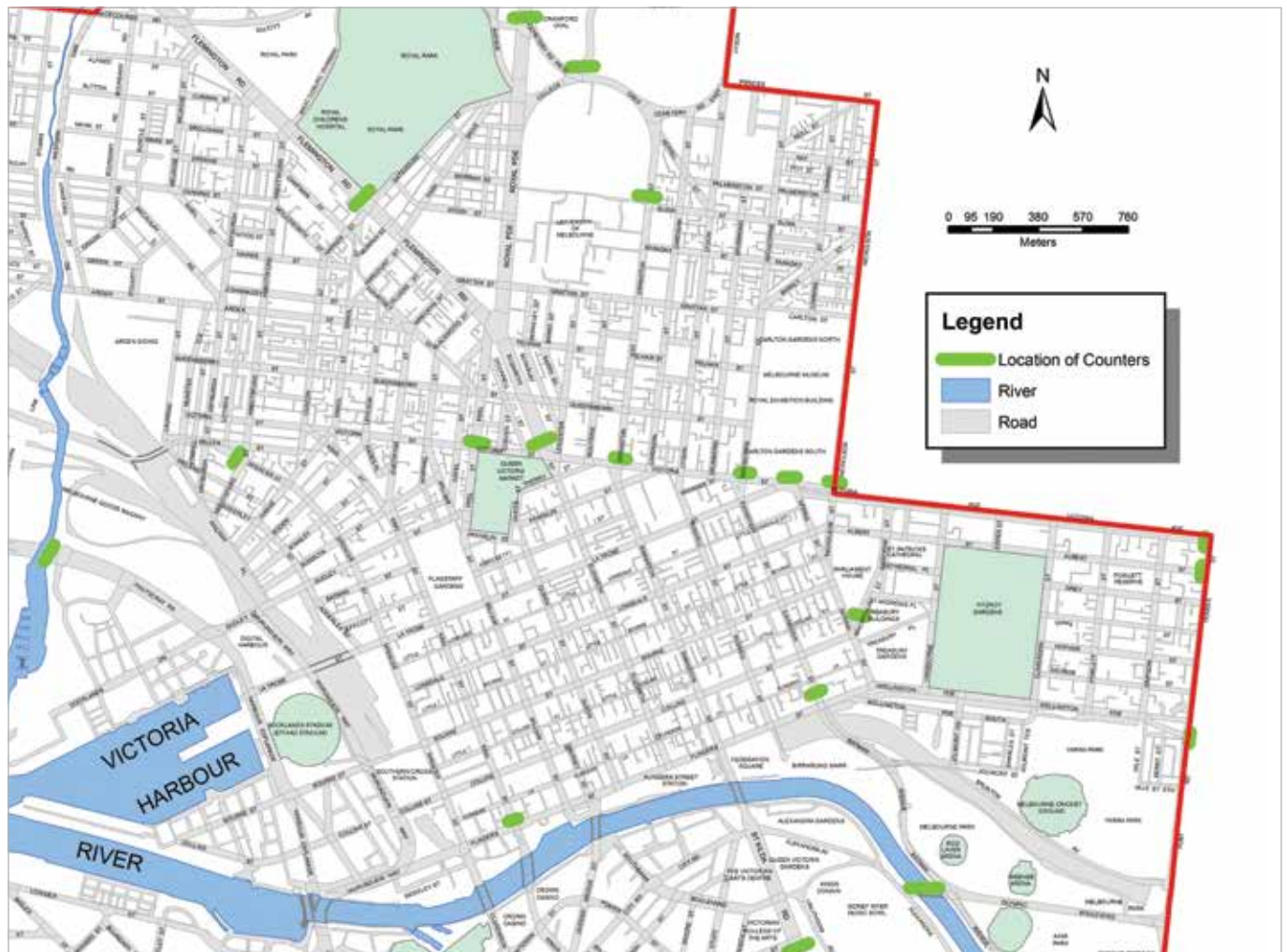
A high proportion of trips to, from and within the greater Melbourne area are taken as a driver or passenger of a car or by public transport. For weekday trips of 2km-7km, 44 per cent of people travel in cars and 40 per cent on public transport. For 7km-20km trips, 50 per cent of people travel in cars¹.

As part of its ongoing monitoring of traffic volumes, the City of Melbourne conducts surveys of inbound vehicles to the municipality twice a year. These surveys occur on typical weekdays from 7am to 10am, generally in March and September.

The results of the surveys are summarised in Table 1.

The map below shows the survey locations.

Survey locations



¹ Victorian Integrated Survey of Travel and Activity (VISTA) 2009 data, as presented in Table 1, page 8 of the City of Melbourne Bicycle Plan 2012-2016.

Table 1: Inbound traffic, City of Melbourne

DURING THE MONTH OF	CARS	TRUCKS	MOTORCYCLES	BICYCLES	ALL VEHICLES
July 2006 Per cent:	48,788 83.6%	6,664 11.4%	873 1.5%	2,053 3.5%	58,378 100.0%
March 2007 Percent:	45,583 77.7%	9,047 15.4%	1,173 2.0%	2,890 4.9%	58,693 100.0%
March 2008 Percent:	58,376 80.1%	7,069 9.7%	1,622 2.2%	5,778 7.9%	72,845 100.0%
March 2009 Percent:	56,611 83.0%	5,470 8.0%	1,538 2.3%	4,602 6.7%	68,221 100.0%
March 2010 Per cent:	50,962 76.2%	9,339 14.0%	1,691 2.5%	4,922 7.4%	66,914 100.0%
March 2011 Percent:	55,072 78.7%	8,128 11.6%	1,669 2.4%	5,115 7.3%	69,984 100.0%
March 2012 Per cent:	49,316 77.6%	7,456 11.7%	1,442 2.3%	5,312 8.4%	63,526 100.0%
March 2013 Percent:	49,728 73.4%	9,836 14.5%	1,748 2.6%	6,441 9.5%	67,753 100.0%
March 2014 Per cent:	47,911 72.7%	9,433 14.3%	1,703 2.6%	6,842 10.4%	65,889 100.0%

The Table indicates that motorcycles for transport have grown steadily from 1.5 per cent in 2006 to 2.6 per cent in 2014, which represents a 73 per cent increase over 8 years.

The March 2014 survey revealed the highest number of motorcycles during the 3-hour peak morning period was in King Street south of Flinders Street, where motorcycles represented 3.1 per cent of all inbound vehicles (209 motorcycles of 6,764 total vehicles). The largest proportion of motorcycles was in Nicholson Street north of Victoria Parade, where motorcycles represented 3.4 per cent of vehicles (80 motorcycles of 2,325 total vehicles).

A significant investment in time and resources is required to encourage more people to use a motorcycle for transport in the municipality. Riders need to feel legitimate, safe and supported. Consistent with the City of Melbourne *Road Safety Plan*, we will support pedestrians, cyclists and motorcyclists, who are the most vulnerable road users. This is in preference to freight, multiple occupancy vehicles and single-occupancy vehicle movements.

The City of Melbourne consulted with a number of groups representing motorcyclists to help develop this Motorcycle Plan. These included the Independent Riders' Group (IRG), Victorian Motorcycle Council (VMC), the Victorian Scooter Riders Association (VSRA), the motorcycle representative from the Road Safety Action Group Inner Melbourne, as well as a number of key stakeholders including VicRoads, Public Transport Victoria and Victoria Police.



3. WHY SUPPORT MOTORCYCLE USE?

Greater use of motorcycles generates multiple benefits. This includes reducing traffic congestion as well as fuel consumption and thus greenhouse gas emissions. Motorcyclists also generally enjoy lower costs and easier movement in traffic.

Motorcyclists generally enjoy shorter travel times than car drivers. An Australian study² published in 2000 found that motorcycles achieved significant travel time savings over cars, and they were the only transport mode to indicate no time delays as part of a trip. The study estimated that a 30km trip in metropolitan Melbourne can be three times faster by motorcycle than by car in peak hours. Further research is needed to obtain more recent data, possibly using the latest available in the Victorian Integrated Survey of Travel and Activity (VISTA).

Motorcyclists also reduce congestion because they occupy less space on the road and in congested conditions they do not further contribute to queues as they move through traffic (assuming filtering³). As illustrated by a 2011 Belgian⁴ study, a shift from cars to motorcycles can increase road network capacity and benefit all road users. In free flowing traffic, a motorcycle generally uses the same road space as a car. However, as traffic volume increases, motorcycles start to use less and less space, eventually 'disappearing' between the traffic queues through filtering. In stop-and-go traffic, motorcycles filtering through stationary traffic queues use little additional road space and do not contribute to congestion.

As recent studies identify, even a relatively small shift from cars to motorcycles can significantly reduce congestion and travel times for all road users. The Belgian study found that a 10 per cent shift from cars to motorcycles could reduce travel time by an average 8 minutes for the remaining 90 per cent of drivers, with queues starting 15 minutes later and ending 40 minutes earlier, and the number of 'lost vehicle hours' decreasing 63 per cent. Individuals switching to motorcycles enjoy faster travel times once queues start to form and are also 'helping' other commuters. The Belgian study also estimated significant reductions in greenhouse gas emissions with greater motorcycle use, mainly achieved from reduced fuel use from less traffic congestion.

Motorcycles offer a low-cost alternative to cars in terms of capital and operating costs. Scooters can cost as little as \$2,000 and small motorcycles around \$4,000, which is significantly lower than the operating cost of a car. Since fuel consumption is much lower, there are additional operational savings for riders. Toll road fees for motorcycles are also half the cost of passenger cars.

Motor vehicles are significant contributors to energy consumption and greenhouse gas emissions. In response to this environmental challenge, infrastructure, technology and policy actions at all government levels aim to reduce the growth in private vehicle travel and encourage a shift to more sustainable travel modes.

Fuel consumption and emission levels are highly sensitive to driving patterns, and are directly linked to distances travelled, average speed, acceleration and deceleration characteristics, and frequencies of starts and stops.

Promoting a shift to more energy-efficient modes can considerably reduce transport fuel consumption and emissions. It is therefore a priority to promote transport alternatives that reduce congestion and the growth of private vehicle travel across the Melbourne municipality. Motorcycles are significantly more fuel efficient than cars and produce less greenhouse gas emissions. Small scooters can consume as little as 1.3 litres per 100km, significantly less than any motor car.

While cars can accommodate multiple passengers, the average vehicle occupancy in cities around Australia is 1.1 to 1.2 people per vehicle (including the driver) at any point in time. Fuel consumption and emissions per person are therefore significantly higher for those travelling by car as the additional passenger space is not utilised. A motorcycle carrying just the rider transports the same number of people as the vast majority of car trips, while using less fuel and taking up less road space, which reduces congestion and further reduces fuel consumption and emissions. In addition, the most fuel efficient cars cost 10 to 15 times more than the most fuel-efficient scooters. Switching to a fuel efficient scooter saves the user money and significantly reduces greenhouse gas emissions.

Electric and hybrid-electric scooters have potential to significantly reduce emissions. There are currently (April 2015) five electric charging points located within the Melbourne municipality. To encourage the uptake of electric and hybrid motorcycles, additional low cost and conveniently located electric vehicle charging points are required.

² *Motorcycles as transport: Volume 1 - Powered two wheelers in Victoria* (Victorian Motorcycle Advisory Council Report 2000-1-1). Melbourne Australia: VicRoads on behalf of the Motorcycle Advisory Council by Oxford Systematics.

³ Filtering is generally defined as motorcycles passing alongside stationary and slow moving motor vehicles to progress towards the front of traffic queues. While various Victorian road rules prohibit elements of filtering, this matter is currently under consideration by the Victorian Government. VicRoads has advised it will continue monitoring the effects of the implementation of lane filtering in New South Wales to determine if this approach will provide a safe and enforceable solution for Victoria.

⁴ *Commuting by Motorcycle: Impact Analysis*, I. Yperman, Transport & Mobility Leuven, Brussels, September 2011.



4. ANALYSIS OF MOTORCYCLE CRASHES

Motorcyclists are amongst the most vulnerable of road users, making safety critical for making riding more attractive for a wider variety of potential users. In Victoria, the likelihood of serious injury or death in a crash is 34 times higher for motorcyclists than for those in a car⁵.



4.1 LONG-TERM CRASH TRENDS

To assess the long-term trends of motorcycle crashes, the Crashstats⁶ data for the Melbourne municipality was analysed during the following periods:

- July 2000–June 2001
- July 2007–June 2008
- July 2012–June 2013.

To compare crash trends in the municipality with state trends, the Victorian data was analysed during the following periods:

- July 2000–June 2001
- July 2012–June 2013.

Table 2 lists crash statistics within the Melbourne municipality from July 2000 to June 2001.

Table 3 and Table 4 list crash statistics within the Melbourne municipality for 2007-2008 and 2012-2013.

Table 5 and Table 6 show collision statistics for Victoria for 2000-01 and 2012-13.

Table 7 shows the total number of different motor vehicle registrations in Australia.

Table 2: Crashes, City of Melbourne, 1 July 2000–30 June 2001

NUMBER OF PEOPLE	MOTORCYCLISTS & PASSENGERS	CYCLISTS	DRIVERS & PASSENGERS	PEDESTRIANS	ALL ROAD USERS
Killed	1	1	10	1	13
Seriously Injured	42	23	215	98	379
With non-serious injuries	76	76	807	115	1,078
Total	119	100	1,032	214	1,470

Table 3: Crashes, City of Melbourne, 1 July 2007–30 June 2008

NUMBER OF PEOPLE	MOTORCYCLISTS & PASSENGERS	CYCLISTS	DRIVERS & PASSENGERS	PEDESTRIANS	ALL ROAD USERS
Killed	3	0	2	3	8
Seriously Injured	69	75	136	79	366
With non-serious injuries	59	126	278	93	567
Total	131	201	416	175	941

⁵ Victoria's Road Safety and Transport Strategic Action Plan for Powered Two Wheelers 2009–2013.

⁶ CrashStats is the VicRoads publicly accessible crash database, which contains information on casualty crashes reported to Victoria Police. A casualty crash is defined as a crash in which somebody is injured and needs treatment or hospitalisation. Crashes that result in property damage only or those not reported to or by Victoria Police, are not included in this database.

Table 4: Crashes, City of Melbourne, 1 July 2012–30 June 2013

NUMBER OF PEOPLE	MOTORCYCLISTS & PASSENGERS	CYCLISTS	DRIVERS & PASSENGERS	PEDESTRIANS	ALL ROAD USERS
Killed	0	0	3	0	3
Seriously Injured	58	62	101	68	290
With non-serious injuries	83	156	318	104	666
Total	141	218	422	172	959

Table 5: Crashes, Victoria, 1 July 2000–30 June 2001

NUMBER OF PEOPLE	MOTORCYCLISTS & PASSENGERS	CYCLISTS	DRIVERS & PASSENGERS	PEDESTRIANS	ALL ROAD USERS
Killed	53	6	289	61	409
Seriously Injured	760	308	4,714	734	6,520
With non-serious injuries	1,172	762	14,751	945	17,651
Total	1,985	1,076	19,754	1,740	24,580

Table 6: Crashes, Victoria, 1 July 2012–30 June 2013

NUMBER OF PEOPLE	MOTORCYCLISTS & PASSENGERS	CYCLISTS	DRIVERS & PASSENGERS	PEDESTRIANS	ALL ROAD USERS
Killed	40	6	175	32	255
Seriously Injured	903	444	3,299	565	5,216
With non-serious injuries	1,050	1,031	8,793	778	11,679
Total	1,993	1,481	12,267	1,375	17,150

Table 7: Motor vehicle registrations (ABS Census)

	2001	2008	2013	2014
Passenger vehicles	2,682,536	3,120,048	3,446,548	3,519,491
Motorcycles	94,741	136,019	169,406	174,336
All vehicles	3,317,682	3,921,574	4,383,634	4,483,098

Table 2, Table 3 and Table 4 indicate that in the Melbourne municipality:

- From 1 July 2000 to 30 June 2001, there was 1 motorcyclist fatality (7.7% of all fatalities) and 42 motorcyclists or their passengers were seriously injured (11.1% of all serious injuries).
- From 1 July 2012 to 30 June 2013, there were no motorcyclists or passenger fatalities, but 58 were seriously injured (20.0% of all serious injuries).
- From 2001 to 2013, while the number of motorcyclist or passenger fatalities dropped (from 1 to 0), the number seriously injured increased 38.1 per cent (from 42 to 58). When fatalities and serious injuries are combined, there was a total increase of 34.9 per cent (from 43 to 58) in fatalities and serious injuries over the 12 years from 1 July 2000 to 30 June 2013.
- From 2008 to 2013, the number of motorcyclist or passenger fatalities dropped (from 3 to 0) and serious injuries also dropped 15.9 per cent (from 69 to 58). When fatalities and serious injuries are combined, there was a total decrease of 19.4 per cent (from 72 to 58) over the 5 years. Data from the City of

Melbourne twice a year surveys (7am–10am) indicates the mode share for motorcycles was 2.2 per cent in 2008 and 2.6 per cent in 2013, representing a growth of 18.2 per cent.

- Given the 19.4 per cent reduction in fatalities and serious injuries, and the corresponding 18.2 per cent increase in mode share, it appears there was a significant improvement in the safety of motorcyclists over the 5 years from 2008 to 2013.

Table 5 and Table 6 indicate that in Victoria:

- From 1 July 2000 to 30 June 2001, there were 53 motorcyclist or passenger fatalities (13.0% of all fatalities) and 760 motorcyclists or passengers were seriously injured (11.7% of all serious injuries).
- From 1 July 2012 to 30 June 2013, there were 40 motorcyclists or passenger fatalities (15.7% of all fatalities) and 903 motorcyclists or passengers were seriously injured (17.3% of all serious injuries).
- From 2001 to 2013, the number of fatalities of motorcyclists or passengers dropped 24.5 per cent (from 53 to 40) even though motorcycle registrations increased

78.8 per cent (94,741 to 169,406) during this period (see Table 7). However, there was a 19 per cent increase in the serious injury of motorcyclists or passengers (760 to 903). When fatalities and serious injuries are combined, there was a total 16 per cent increase (813 to 943) over the 12 years.

Table 8 shows crash rates for pedestrians, cyclists and motorcyclists.

The Table shows that on a per trip basis, walking is statistically safer than cycling and motorcycling, with the risk exposure rates significantly lower in 2011 than a decade before.

Although motorcyclists are significantly more exposed to risk than pedestrians and cyclists, their exposure rate appears to have fallen almost three quarters in the decade from 2001 to 2011. This could be attributed to greater driver awareness in response to an increase in the number of motorcycles on our roads or the installation of traffic engineering measures such as controlled right-turn phases at signalised intersections. Nevertheless, improvements are still required to improve safety for motorcyclists.

Table 8: Road users / crash ratio, Melbourne municipality, 2001, 2011

CRASHES PER 100,000 TRIPS			
ROAD USERS	2001	2011	CHANGE
Pedestrians	16	5	-66%
Cyclists	77	45	-42%
Motorcyclists	637	188	-71%

Source: City of Melbourne Road Safety Plan, pg. 14.

4.2 MEDIUM TERM CRASH TRENDS

To identify medium term trends in the incidence of motorcycle crashes, the latest available Crashstats data was analysed, from 1 July 2008 to 30 June 2013.

A total of 699 crashes were recorded involving motorcycles (3 fatal, 273 serious injury and 423 non serious injury crashes).

The tables below show the numbers of crashes by time of day, by day of week, by month, by financial year, and by the Definitions for Coding Accidents (DCA) crash types.

Location is LGA(s): Melbourne; User-defined Query; Vehicle type is motor cycle, moped, motor scooter, date range is 01/07/2008 to 30/06/2013.

SUMMARY BY TIME OF DAY		
NAME	COUNT	%
0.00 - 0.59	8	1%
1.00 - 1.59	8	1%
2.00 - 2.59	6	<1%
3.00 - 3.59	3	<1%
4.00 - 4.59	7	1%
5.00 - 5.59	4	<1%
6.00 - 6.59	21	3%
7.00 - 7.59	35	5%
8.00 - 8.59	58	8%
9.00 - 9.59	40	6%
10.00 - 10.59	19	3%
11.00 - 11.59	31	4%
12.00 - 12.59	44	6%
13.00 - 13.59	45	6%
14.00 - 14.59	31	4%
15.00 - 15.59	50	7%
16.00 - 16.59	58	8%
17.00 - 17.59	66	9%
18.00 - 18.59	58	8%
19.00 - 19.59	27	4%
20.00 - 20.59	14	2%
21.00 - 21.59	29	4%
22.00 - 22.59	22	3%
23.00 - 23.59	15	2%
Unknown	0	0%
Total	699	100%

SUMMARY BY DAY		
NAME	COUNT	%
Sunday	47	7%
Monday	89	13%
Tuesday	114	16%
Wednesday	119	17%
Thursday	125	18%
Friday	131	19%
Saturday	74	11%
Total	699	100%

SUMMARY BY MONTH		
NAME	COUNT	%
Jan	55	8%
Feb	57	8%
Mar	68	10%
Apr	74	11%
May	65	9%
Jun	48	7%
Jul	53	8%
Aug	46	7%
Sep	63	9%
Oct	56	8%
Nov	63	9%
Dec	51	7%
Total	699	100%

SUMMARY BY DCA GROUPS		
NAME	COUNT	%
Pedestrian (100-109)	33	5%
Cross traffic (110)	27	4%
Right turn near (113)	9	1%
Head on-not overtaking (120)	2	<1%
Right turn against (121)	86	12%
Rear end (130-132)	94	13%
Head on-not overtaking (150-159)	3	<1%
Off path on straight (170-179)	174	25%
Off path on curve (180-189)	14	2%
Other	257	37%
Total	699	100%

SUMMARY BY FINANCIAL YEAR		
NAME	COUNT	%
2008/2009	143	20%
2009/2010	158	23%
2010/2011	127	18%
2011/2012	131	19%
2012/2013	140	20%
Total	699	100%

The most common crash type for motorcyclists was 'out of control' on the carriageway. From 2008 to 2013, a total of 188 'out of control' crashes⁷ involved motorcycles (one fatal, 66 serious injury and 121 non-serious injury crashes).

The data indicates that, of these 188 crashes:

- 112 crashes (59.6%) did not involve a collision with either a vehicle or an object. This indicates that, in the majority of the 'out of control' crashes, the motorcyclist fell off the motorcycle and struck the road or footpath surface.
- 92 crashes (48.9%) occurred at intersections, with the remaining 96 crashes (51.1%) occurring mid-block.
- It was raining during 41 (21.8%) of the 'out of control' crashes. However, only 9 per cent of all motorcycle crashes from 2008 to 2013 occurred in the rain. Therefore, 'out of control' crashes are much more likely to occur in the rain than other motorcycle crashes.
- It was dark during 56 (29.8%) of the 'out of control' crashes. However, only 24.2 per cent of all motorcycle crashes from 2008 to 2013 occurred in the dark. Therefore, 'out of control' crashes are slightly more likely to occur in the dark than other motorcycle crashes.

Motorcycles are inherently more vulnerable to losing control as they are less stable than cars and there are few physical measures to mitigate loss of control. These are typically single-vehicle crashes, with potential causes including speeding, loss of traction in the wet, on tram tracks or pit covers, and debris on the road. However, the statistics fail to record the crashes resulting from motorcyclists

compensating for the behaviour of other road users (such as sudden lane changes by motor vehicles). A number of these crashes may therefore not be 'single-vehicle crashes', which is another deficiency of the data collection.

The second most common crash type for motorcyclists was a rear-end crash type. From 2008 to 2013, a total of 94 'rear-end' crashes were reported involving motorcycles (no fatal, 31 serious injury and 63 non-serious injury crashes). The data indicates that of the 94 crashes:

- 56 crashes (59.6%) involved a motorcyclist 'rear-ending' a driver (the reasons for this are unclear)
- 37 crashes (39.3%) involved a driver 'rear-ending' a motorcyclist
- 1 crash (1.1%) involved a motorcyclist 'rear-ending' another motorcyclist.

A number of factors could influence these rear-end crashes. These include the acceleration and braking characteristics of motorcycles, their visibility on the road, loss of traction on some road surfaces or in the wet, and inappropriate speed. As many of these factors cannot be addressed by physical treatments, behavioural techniques should be applied to reduce the incidence of rear-end crashes.

The third most common crash type involving motorcyclists were right-through crashes. This crash type involves a right turning vehicle colliding with a through vehicle travelling through at an intersection. Over the 5 years from 2008 to 2013, a total of 86 'right through' crashes involving motorcycles (no fatal, 50 serious injury and 36 non serious injury crashes) were recorded. The data indicates that, of the 86 right-through crashes:

- 77 crashes (89.5%) involved a driver turning right across the path of a motorcyclist
- 9 crashes (10.5%) involved a motorcyclist turning right across the path of a driver.

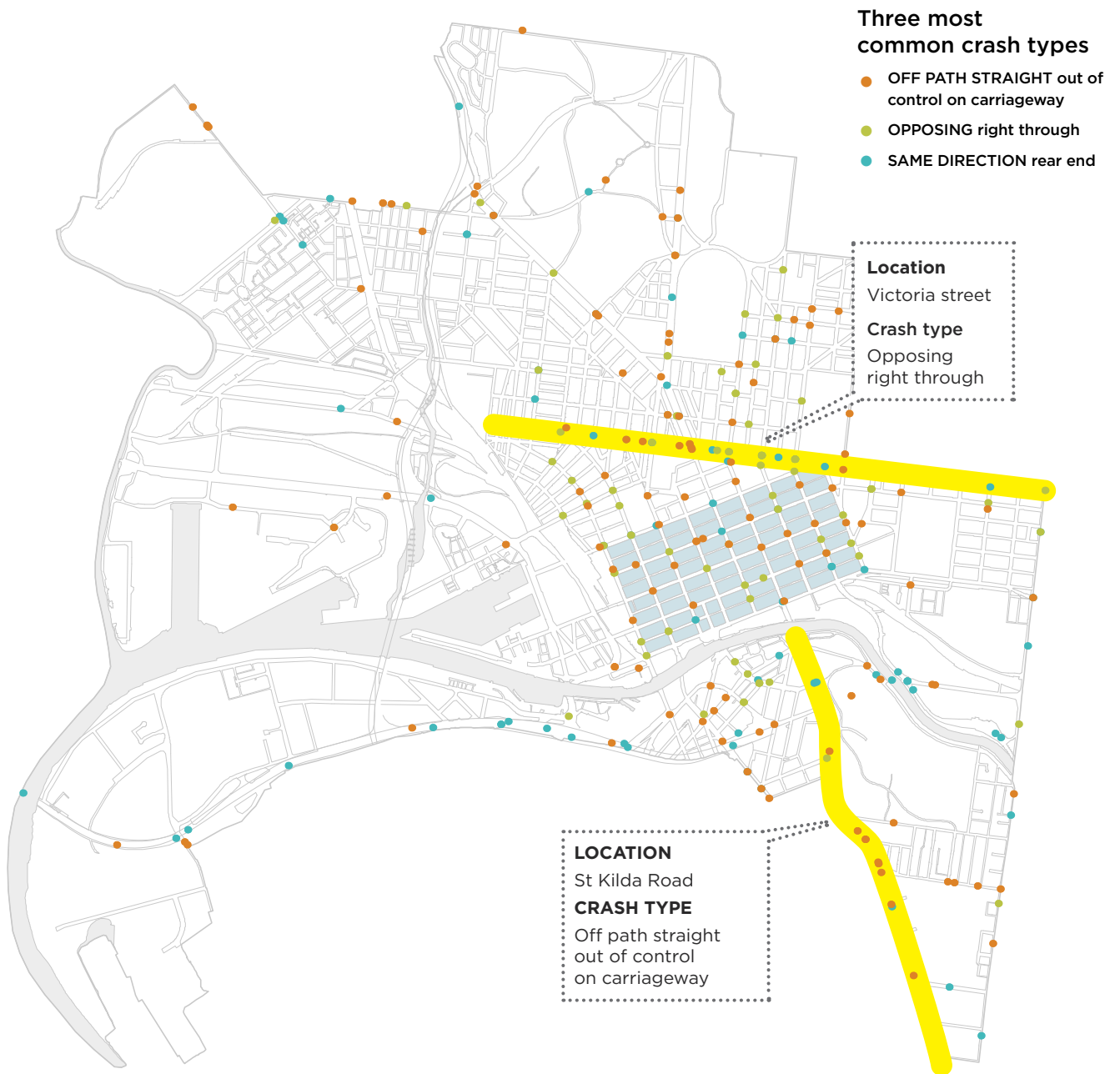
Understanding the dynamics of motorcycle crashes is critical for developing appropriate and effective infrastructure, road management and education safety solutions. Further research into the causes of motorcycle crashes is needed, including an assessment of Victoria Police reports and incident fact sheets to better understand the definitive causes of the crashes and develop possible countermeasures.

A recent report⁸ by Stephen Bardsley (Member of the Motorcycle Advisory Group and spokesperson for the Victorian Scooter Riders Association) evaluating crash data from around the world shows that in the majority of crashes involving a motorcycle and another vehicle, the motorist driving the other vehicle is either responsible for the crash or played a significant role in the crash occurring. The report further suggests that for some types of crashes, such as right-of-way violations, motorists are an important contributing factor in over 80 per cent of crashes.

⁷ These crashes refer to DCA types 170-179 and 180-189.

⁸ *Stop the Blame Game (Blaming the Victims), A Road Safety Report for the Attention of Victorian Government and Road Safety Authorities*, June 2014.

Most common crash types



The map above⁹ shows the locations of motorcycle crashes by crash type in the municipality. These crashes occurred over five years, from January 2007 to December 2011.

⁹ Map source: City of Melbourne Road Safety Plan 2013-2017, pg. 18.

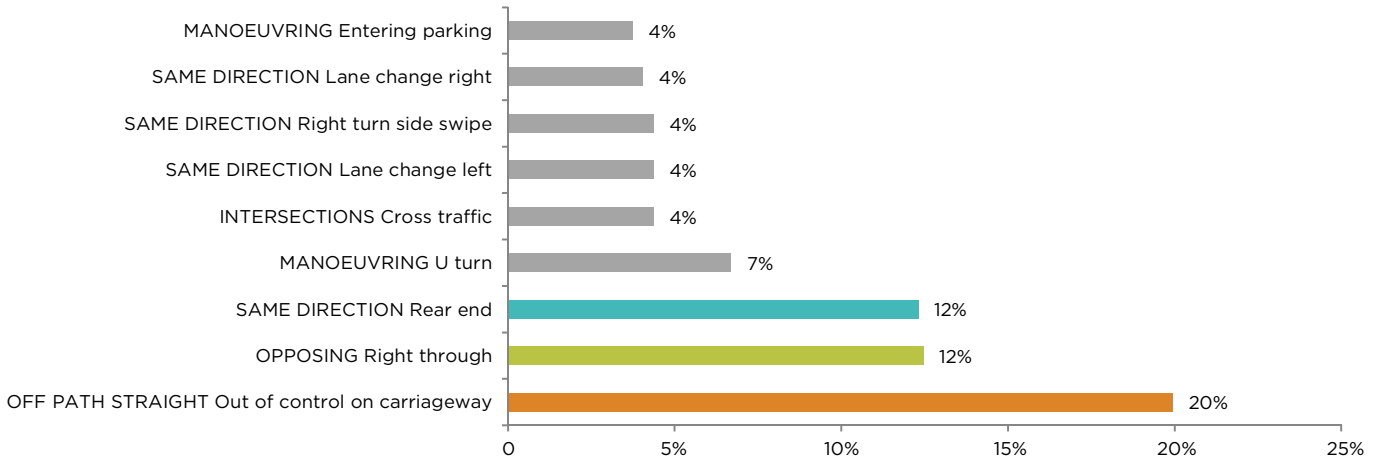
Locations of motorcycle crashes by severity



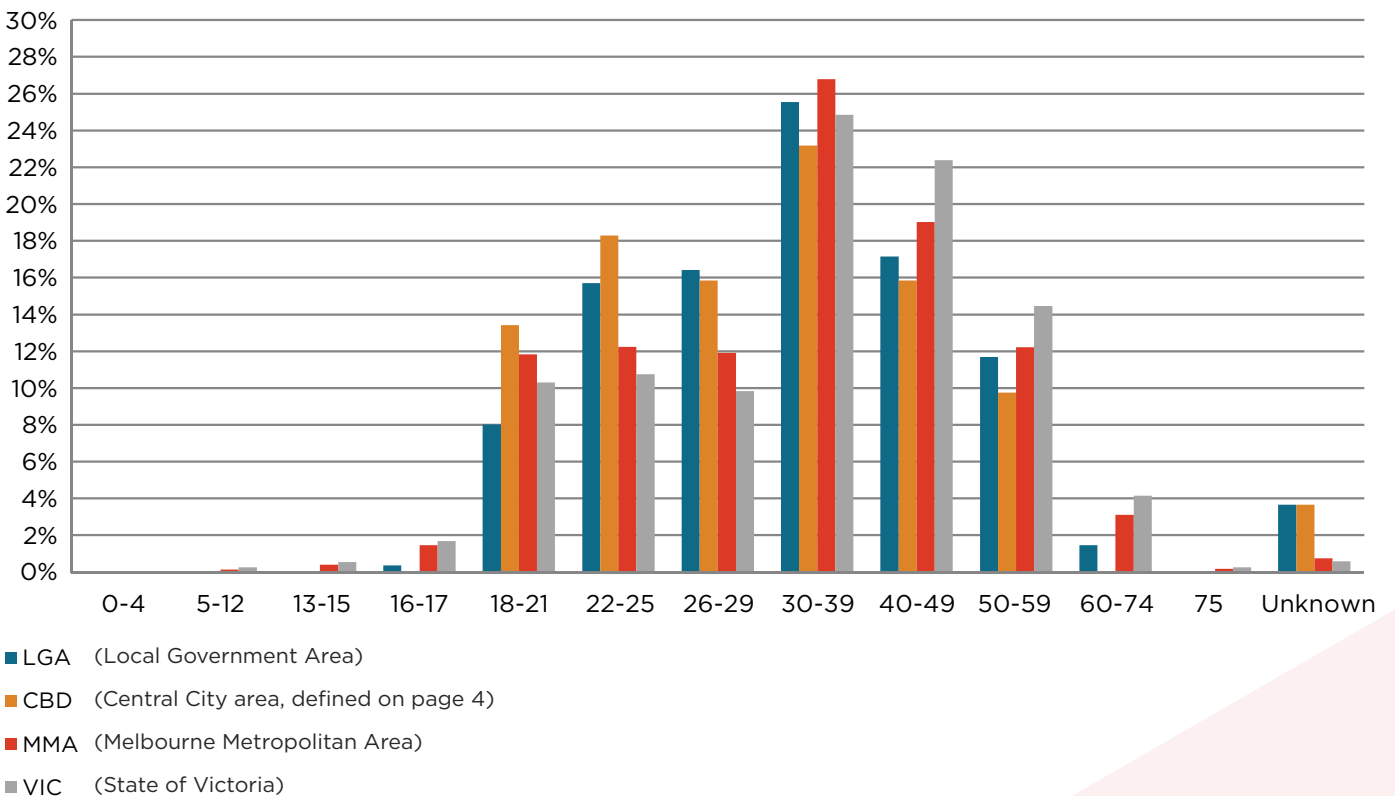
The map above¹⁰ shows the locations of motorcycle crashes by severity in the municipality. These crashes occurred over five years, from January 2007 to December 2011.

¹⁰ Map source: City of Melbourne Road Safety Plan 2013-2017, pg. 18.

Most common crash types



Fatalities and injuries by age group



In response to the safety challenges for motorcyclists, the City of Melbourne will continue supporting the Victorian Government's work to promote low-risk driving and riding, and will also continue considering motorcyclists in all aspects of managing, designing and maintaining local roads.

In addition, the City of Melbourne will identify potential on-road hazards that may increase safety risks for motorcyclists. A number of construction sites around the municipality use steel or concrete barriers with sharp edges that pose particular risks for riders, and using plastic barriers instead will improve the safety of motorcyclists. Several locations feature 'rigid' steel and concrete bollards and using plastic bollards with a flexible base will also improve safety for motorcyclists.

Other road infrastructure that may pose a risk to motorcyclists will also be investigated, such as:

- posts on the outside of kerbs
- vegetation which grows to such a size that visibility is impacted
- tram separators that are difficult to see and are slippery for motorcyclists
- road paint, particularly at intersections and roundabouts
- slippery metal plates with no skid-resistant plate covers.

The City of Melbourne will continue supporting the use of safer barriers, bollards and skid-resistant plate covers

for motorcyclists and cyclists, and will consider these vulnerable road users during the approval process for Traffic Management Plans for construction sites and road works.

The City of Melbourne will also continue supporting the Victorian Government's training programs for motorcyclists, as well as education initiatives for motorists to improve their care and attention towards pedestrians, cyclists and motorcyclists. Inexperienced riders have a very high risk of crashing until they develop skills that enable them to recognise and avoid hazards. High-quality educational materials and training resources are important for the safety of riders. While the perception and response to hazards is a critical skill for riders, it is only developed through many hours of experience.

Both the filtering and the use of bus lanes by motorcycles are designed to 'distance' riders from motor vehicles and may thus help address the causes of some common crashes in which car motorists play a significant role, such as situations in which they fail to perceive a motorcycle within the traffic environment before changing lanes or performing other manoeuvres.

Education activities will need to also focus on motorists, particularly as the majority of motorcycle crashes involve a collision with another vehicle, and in those crashes, the driver is often at fault. As noted above, a significant number of crashes reported as 'single-vehicle' crashes may be a result of motorcyclists compensating for the behaviour of other road users, including motorists. The proportion of motorcycle crashes in which motorists play a contributing factor (directly or indirectly) is likely to be high, and as such their education is critical to improve safety for motorcyclists.

It is important to understand the role that different road users play in crashes, and to focus education activities and to change perceptions and attitudes to more effectively improve behaviour between, and safety for, all road users. The City of Melbourne will continue supporting opportunities for training and education for all road users.

5. MOTORCYCLE PARKING

The space required for motorcycle parking is significantly smaller than for cars. Four to six motorcycles, or up to 10 scooters, can be parked in the space required for a single car. A shift from cars to motorcycles would increase the parking available to serve commercial, residential and other land uses in a given area. In addition, the unused areas of off-street parking facilities in residential and commercial buildings, as well as in parking garages within the municipality, could be used to accommodate more motorcycles. This would enhance the convenience and attractiveness of motorcycle use, without competing for space with other road users. In turn, increasing the use of motorcycles would promote the City of Melbourne's sustainable transport goals.

Motorcyclists should have convenient access to both on-street and off-street parking. With this in mind, and despite the competition for limited space, the City of Melbourne supports motorcycle parking and is the only capital city in Australia where it is legal to park a motorcycle on the footpath. Parking on footpaths is generally permitted, provided that motorcycles do not obstruct pedestrians or park on footpaths where motorcycle parking has been expressly prohibited. We will continue supporting opportunities for training and education for riders to discourage the blocking of footpath and tram ramps, as well as promote parking on footpaths away from the edge of buildings, which are used by visually impaired people for navigation.

There are more than 300 free on-street parking spaces in Melbourne's central city area designated specifically for motorcycles. Motorcyclists are the only group with access to dedicated and unrestricted on-street parking. All other on-street parking spaces available to drivers are timed pay parking spaces for short stays.

Safe motorcycle parking is especially important in the central city, where there are large numbers of pedestrians and motorcycles. So that streets are safe for all users, motorcycle parking on the footpath has been prohibited at three locations:

- Collins Street, southern footpath, between Exhibition Street and George Parade
- Flinders Lane, southern footpath, between Port Phillip Arcade and Elizabeth Street
- Exhibition Street, western footpath, adjacent to Her Majesty's Theatre.

Motorcycle parking is prohibited at the Collins Street and Flinders Lane locations since 2002 and in Exhibition Street since 2003. These locations were excluded from footpath motorcycle parking based on a thorough assessment according to the following criteria:

- concentration of pedestrian movements in a location
- existence of kerbside activities such as outdoor cafes and stalls
- impact on urban amenity
- use of public transport services such as bus and tram stops
- impact on street furniture and other fixtures (such as seats and phone booths)
- nature of adjacent kerbside parking (such as disabled parking bays and taxi zones)
- guidelines in support of the Disability Discrimination Act 1992 (Commonwealth)
- availability of alternative on-street and off-street parking for motorcycles.

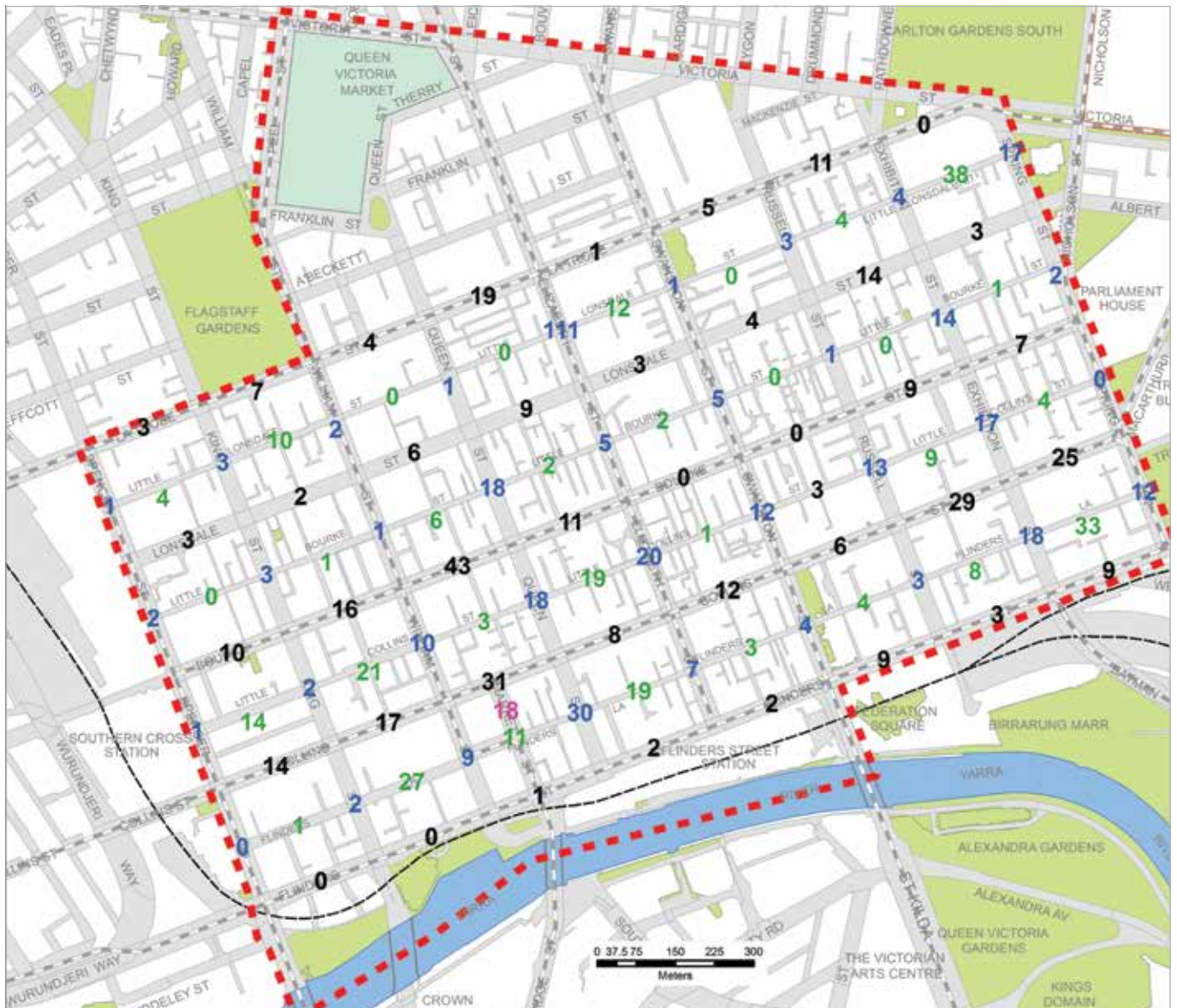
The above criteria were developed by the 'Motorcycles in the City of Melbourne' forum attended by representatives from the City of Melbourne, Independent Riders Group (IRG), Motorcycle Advisory Group (MAG), RACV, Victorian Automobile Chamber of Commerce (VACC), the Federated Chamber of Automotive Industries (FCAI) and VicRoads.

The City of Melbourne conducted extensive surveys of motorcycle parking availability and practices across the Hoddle Grid in 2007 and 2009 (see Table 9 below.) The surveys counted all motorcycles parking in the following areas within the Hoddle Grid. The map below shows the location and number of parked motorcycles on:

- footpaths
- private property abutting footpaths
- 'herringbone' style angled centre-of-road spaces
- centre-of-road (either conventional 90 degree spaces or abutting tree plots).



Motorcycle Parking Survey



The surveys were separated into individual street segments for the following categories:

- 14** East-west main streets (Flinders, Collins, Bourke, Lonsdale and La Trobe streets)
- 21** East-west 'little' streets (Flinders Lane, Lt. Collins, Lt Bourke, and Lt. Lonsdale)
- 0** North-south main streets (Spencer, King, William, Queen, Elizabeth, Swanston, Russell, Exhibition and Spring streets).
- 18** Market street

Survey findings are summarised in Table 9.

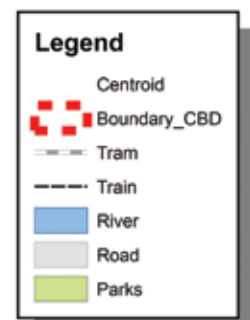


Table 9: Motorcycle parking survey, City of Melbourne, 2007 & 2009

	ON FOOTPATH	ON PRIVATE PROPERTY	HERRINGBONE ANGLED SPACES	CENTRE-OF-ROAD 90 DEGREE OR NEXT TO TREE PLOTS	ON-STREET KERBSIDE
East-West main streets	330 (8.5 per block)	12	10 motorcycles were parked in 6 spaces ¹¹	0 out of 30 spaces occupied	0 out of 2 spaces occupied
East-West little streets	193 (5.8 per block)	52	N/A	N/A	15 motorcycles were parked in 14 spaces ¹²
North-South main streets	254 (7.2 per block)	Negligible	52 motorcycles were parked in 42 spaces	84 out of 154 spaces occupied	N/A

The surveys recorded a total of 777 motorcycles (330, 193 and 254 across the 3 street segments, respectively) parked on the footpaths of all major 'big' and 'little' streets within the Hoddle Grid. Importantly, 111 of the 254 motorcycles parked on the footpaths of the north-south main streets were parked in the section of Elizabeth Street between La Trobe and Lonsdale streets. With the exception of this section, the average number of motorcycles parked on the footpath per block was just over two. In addition, the 'herringbone' style angle motorcycle spaces were generally occupied above capacity, with motorcycles often parking in the centre-of-road area, outside the designated spaces.

As part of its motorcycle parking survey, the City of Melbourne also analysed the impact of the motorcycles parked on the footpaths on pedestrian movement throughout the Hoddle Grid. Motorcycles were generally parked efficiently in the shadows of the street furniture (which in itself reduces the available footpath width for pedestrians). Therefore, in most streets surveyed, motorcycles did not present any significant additional obstruction for pedestrians. All locations surveyed had the highest level of service for pedestrians. This was the case even in locations where motorcycles were parked in areas with no nearby street furniture narrowing the available footpath width.

However, submissions to the City of Melbourne's draft *Walking Plan* in August/September 2014 noted that motorcycles are frequently parked in ways that do not meet VicRoads motorcycle parking guidelines and cause pedestrian congestion and obstruction. Pedestrian numbers in the city are increasing. The draft *Walking Plan* proposes minimum crowding levels for pedestrians, and includes an action to assess footpaths where pedestrians are overcrowded and take action to reduce crowding.

A survey of motorcycles parked on the footpaths was conducted by the Victorian Motorcycle Council (VMC) over 3 hours from 10:30am to 1:30pm on Wednesday 15 October 2014. The survey found a total of 1,235 motorcycles (excluding motorcycle couriers and motorcycle parked outside motorcycle dealers) parked within the area bounded by Flinders, Spring, Victoria and Spencer streets.

Despite providing extensive motorcycle parking (both on-street and on footpaths) in the central city area, demand for further parking is high and growing, and pressure on certain footpaths is increasing. Riders wishing to rely on the footpath and on-street parking to commute must arrive early each morning to secure a space close to their destination. In response, the City of Melbourne will continue to identify and install free dedicated on-street motorcycle parking zones. This may include locations where

dedicated motorcycle parking can help achieve other road safety goals, such as maintaining visibility at intersections and near driveways. We will also identify underutilised spaces on private land and within off-street parking garages, and encourage their utilisation for motorcycle parking.

The location of future dedicated motorcycle parking spaces will be chosen to maximise convenience for riders, support the safety of all road users and avoid negative impacts on surrounding land uses. Appropriate locations may include spaces at the ends of car parking bays or loading zones next to kerb extensions, and near corners where motorcycles will not interfere with sightlines for pedestrians or drivers. Additional locations for investigation could replace existing No Stopping areas with motorcycle parking (as illegally parked vehicles often obstruct sightlines), as well as on the departure side of some signalised intersections.

There are many demands on road space in the municipality. These include: the widening of footpaths to cater for greater pedestrian numbers, footpath trading or to improve road safety; providing for bicycle and car parking; car sharing; public transport stops; loading zones; taxi zones and other uses. The appropriate use for each space will be determined by an assessment of all relevant City of Melbourne policies.

¹¹ The herringbone spaces were occupied above capacity, as motorcycles were parked within the general centre of road area, but outside of the designated spaces.

¹² Similarly to the herringbone spaces, the kerbside spaces were occupied above capacity.

6. ACTION PLAN

The Action Plan lists a number of actions to improve the safety of motorcyclists and promote motorcycling to 2018. The Action Plan was adopted by the Council on 2 July 2013 (as part of the Road Safety Plan) following extensive community engagement. It is therefore not intended to change the actions set out below. A separate implementation plan will be developed.

M1. Design with motorcycles in mind

- Make the needs of motorcyclists a critical aspect of the design process of the road environment.
- Ensure that the City of Melbourne officers and external consultants are appropriately trained to design for the needs of motorcyclists.
- Explore with Yarra Trams options to address safety issues for motorcyclists (e.g. road surfaces adjacent to tram tracks).
- Consider the needs of motorcyclists when implementing traffic calming measures – explore urban design options above traffic engineering interventions (e.g. road narrowing rather than speed humps).
- Ensure that the safety requirements of motorcyclists are considered as part of the design process for the placement of all on-road obstructions, including kerbing, traffic islands, RRPm's (raised bars) & crash barriers.
- Ensure that the safety requirements of motorcyclists are considered as part of the design process for the installation of future bicycle lanes.
- Consider safety improvements for motorcyclists, when assessing road safety measures for pedestrians & cyclists.
- Explore opportunities to replace existing permanent slippery metal pit covers with skid-resistant concrete covers.
- Explore the use of skid-resistant line marking at appropriate locations.
- Explore with Yarra Trams the feasibility of providing skid-resistant tram tracks, particularly at intersections.
- Advocate for new vehicle regulations requiring the installation of rear vision cameras on vans, trucks, buses & trams.

M2. Audit roads for motorcycle safety

- Undertake road safety audits of all roads with three or more motorcycle crashes in the last five years – include motorcycle rider representatives in the audits.
- Explore the use of motorcycles fitted with instruments (e.g. cameras) to audit from the perspective of the rider.
- Identify the issues associated with lane merging over short distances, skid resistance, surface quality and the maintenance of line markings and signage.
- Prioritise the recommendations and develop a works program to be delivered by 2017.
- Develop a Motorcycle Blackspot app in collaboration with VicRoads and IMAP, to enable motorcyclists to report site -specific road safety issues.
- Explore the provision of an SMS notice service for road maintenance and construction updates.

M3. Provide appropriate motorcycle parking

- Explore opportunities to increase the level of motorcycle parking across the municipality.
- Develop Melbourne Planning Scheme amendments to –
 - a. Increase & strengthen the requirements to provide motorcycle parking in new developments (even when car parking is not required);
 - b. Ensure that motorcyclists' requirements are considered & provided for in new developments (e.g. appropriate parking facilities & safe access/egress to parking), explore motorcycle parking rates for new developments;
 - c. Require the provision of lockers for protective clothing, as part of the provision for motorcycle parking in new developments.
- Maximise the use of 'dead space' in off-street car parks for appropriate motorcycle parking.
- Advocate for the provision of motorcycle parking at rail stations to support 'park and ride'.

- Integrate motorcycle parking signage in wayfinding for off-street car parking.
- Maintain a database of motorcycle parking across the municipality – monitor utilisation with the aim of supporting future demand.

M4. Develop a motorcycle plan, similar to the bicycle plan 2012/16.

M5. Hold discussions with the state government and community groups, to consider a change in the road rules to permit filtering by motorcycles.

M6. Encourage motorcycling as a sustainable form of transport, which assists in reducing traffic congestion.

- Work with the motorcycle groups to organise new activities to promote motorcycling in the City (e.g. ride to work day).
- Work with the Elizabeth Street motorcycle precinct to promote motorcycle safety issues.
- Explore opportunities to promote road safety issues affecting motorcyclists at major events (e.g. Phillip Island Grand Prix).
- Encourage & promote the uptake of the existing defensive riding training programs & courses.

M7. Consider the safety implications of allowing bicycles & motorcycles access through future road closures & entry/turn bans.

M8. Investigate the introduction of motorcycle boxes, in consultation with all road user groups & relevant state government agencies.

M9. Investigate the introduction of early start up for motorcycles at traffic signals.

M10. Continue to consult motorcycle advocacy groups, via the motorcycles in the City of Melbourne committee -

- Regarding any future proposals to ban/reduce parking on footpaths.
- Regarding safety and amenity issues.

M11. Identify blackspot motorcycle crash locations, particularly along popular motorcycle routes, and implement appropriate road safety treatments designed to reduce both the incidence & severity of crashes.

M12. Develop behavioural programs to:

- Encourage drivers to conduct regular vehicle safety checks.
- Encourage drivers to check their blind spots for bicycles/motorcycles & to look/signal when turning.
- Raise driver awareness of motorcyclists when turning right & travelling straight through intersections.

R1. Advocate for better data collection

- Advocate for the establishment of a national agency to coordinate the collection and collation of crash data.
- Work with academic bodies (e.g. MUARC) to develop crash data research and analysis.

R2. Advocate for safer vehicles

- Advocate for blind spot monitoring equipment (e.g. mirrors) to be installed on trucks to mitigate the danger of blind spots for cyclists and motorcyclists.
- Raise awareness of the presence of low noise-producing electric cars.
- Advocate for messages on car doors or glass to mitigate car dooring.

R3. Advocate for increased enforcement of the road rules to support vulnerable road users

- Work with the Victoria Police with a view to increasing the enforcement of speeding, running red lights, failing to give way to pedestrians, cyclists and motorcyclists, car dooring.
- Support Operation Halo.

R4. Advocate for positive enforcement of the road rules governing vulnerable road users

- Work with the Victoria Police to develop positive enforcement methods of the Road Rules governing the behaviour of pedestrians, cyclists and motorcyclists (e.g. reward appropriate behaviour with praise, small gifts etc.).

R6. Enhance the use of skid resistant metal plates for road works

- Investigate the feasibility of mandating the use of skid-resistant metal plate covers at all road works sites.

R7. Enhance the provisions for vulnerable road users during road/construction works

- Ensure that the safety of pedestrians, cyclists and motorcyclists is considered when approving traffic management plans for road works and building construction works.
- Undertake regular inspections and audits, and enhance enforcement at the road-works sites, to ensure that any safety issues are promptly addressed.

R9. Advocate for driving licence curriculum changes, to focus on vulnerable road users

- Advocate for a greater focus on the needs of pedestrians, cyclists and motorcyclists in the driving licence curriculum.

R10. Explore allowing motorcycles to use bus lanes, where appropriate

- The Victorian Government is currently developing a policy on allowing motorcycles to use bus lanes, which is expected to be available for public consultation.
- The City of Melbourne will contribute to provide input to the development of this policy.

B1. Improve the relationship among road users

- City of Melbourne to consider the development of programs to achieve the following:
 - Design behavioural programs using a behaviour change framework.
 - Increase the awareness, care and attention by motorists towards vulnerable road users.
 - Reduce driver distraction and car dooring.
 - Reduce the incidence of pedestrians being injured when crossing roads while distracted by conversation, mobiles and headphones.

- Encourage motorcyclists to wear protective clothing, in order to reduce the injury severity of crashes.
- Improve cyclists', motorcyclists' and drivers' awareness of road safety issues (e.g. awareness of blind spots on trucks).
- Increase the level of individual responsibility for road safety among all users.

D5. Support Victoria's road safety strategy

- Work closely with the State Government to support the delivery of the key strategies, including:
 - Address the issues of drink driving, drug driving, speeding, distraction and fatigue.
 - Incorporate safe system principles into the design of roads and roadsides and the setting of speed limits and develop innovative infrastructure solutions.
 - Make greater use of motorcycle safety technology and protective clothing. Better prepare new riders to be safe and target enforcement of unsafe road use among all motorists.
 - Introduce initiatives to encourage everybody to share the road safely.
 - Increase the availability of vehicle safety features in the Victorian car market and encourage the uptake of these features.
- Support the public and private sectors to proactively develop systems and policies that will improve the safety of their employees and other people on the roads.

How to contact us

Online: melbourne.vic.gov.au

In person:

Melbourne Town Hall - Administration Building
120 Swanston Street, Melbourne
7.30am to 5pm, Monday to Friday
(Public holidays excluded)

Telephone: 03 9658 9658
7.30am to 6pm, Monday to Friday
(Public holidays excluded)

In writing:

City of Melbourne
GPO Box 1603
Melbourne VIC 3001
Australia

Fax: 03 9654 4854

Translation services:

03 9280 0716	አማርኛ
03 9280 0717	廣東話
03 9280 0718	Ελληνικά
03 9280 0719	Bahasa Indonesia
03 9280 0720	Italiano
03 9280 0721	國語
03 9280 0722	Soomaali
03 9280 0723	Español
03 9280 0724	Türkçe
03 9280 0725	Việt Ngữ
03 9280 0726	All other languages

National Relay Service: If you are deaf, hearing impaired or speech-impaired, call us via the National Relay Service: Teletypewriter (TTY) users phone 1300 555 727 then ask for 03 9658 9658 9am to 5pm, Monday to Friday (Public holidays excluded)

