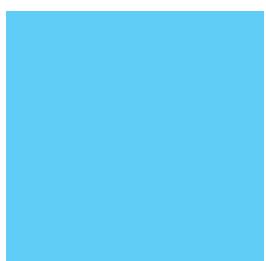
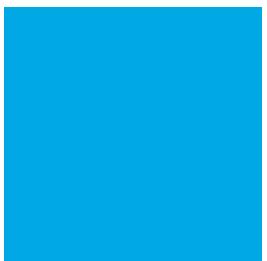
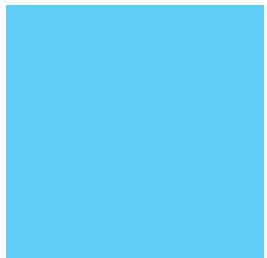


NSW Motorcycle Safety Strategy

2012 – 2021





Foreword

The NSW Government is committed to improving road safety. The NSW Motorcycle Safety Strategy 2012-2021 (Strategy) will contribute to road safety by addressing the motorcycle road toll through targeted motorcycle safety initiatives and actions.

Road safety is a Government priority of NSW 2021: A Plan to Make NSW Number One. The Strategy will contribute to our goal to make NSW roads the safest in the country.

Motorcycle safety actions are already underway to reduce motorcycle crashes. Such actions include our current programs and the implementation of early initiatives throughout 2011 and 2012. We will continue to deliver these as well as driving new initiatives and actions such as:

- ▶ Developing targeted communication campaigns to address motorcycle crash risks
- ▶ Furthering our research and understanding of motorcycle crash risks

- ▶ Improving road environment safety features for motorcyclists
- ▶ Investigating safety equipment and gear

The Strategy was developed in consultation with key stakeholders, including the rider community. Our consultation with the motorcycle rider community brought broad and varied input in developing achievable and practical solutions.

We will continue to develop, implement, monitor and evaluate the Strategy in partnership with our stakeholders and the rider community through an Implementation Working Group to ensure our objectives are met and our actions remain relevant.

A handwritten signature in black ink, appearing to read "The Hon. Duncan Gay".

The Hon. Duncan Gay MLC
Minister for Roads and Ports



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1. Executive Summary

The NSW Motorcycle Safety Strategy 2012-2021 (the Strategy) establishes the ten year direction of the NSW Government to make motorcycle riding in NSW safer and to reduce the motorcycle road toll. The Strategy sets out a range of short-term actions and long-term initiatives to meet those aims.

The Strategy will align with other key documents and actions that the NSW Government is implementing to improve road safety, including the UN Decade of Action 2011-2020, the National Road Safety Strategy 2011-2020, NSW 2021: A Plan to Make NSW Number One and the NSW Road Safety Strategy 2012-2021.

The Strategy represents the NSW Government's commitment to making NSW roads the safest roads in Australia. By developing a strategy specifically for motorcyclists, the NSW Government acknowledges motorcyclists have unique road safety needs, as well as the general road safety needs common to all road users.

The NSW Government is committed to making roads safe for all road users. Motorcyclists require a targeted safety improvement approach because motorcyclist fatalities are over-represented in the overall NSW road toll.

The Strategy comprises of early initiatives already being implemented, as well as actions from the National Road Safety Strategy 2011-2020, and new actions and initiatives over the next decade. The Strategy actions and initiatives will be developed and implemented within a Safe System framework. As such, the Strategy has been developed in collaboration with key stakeholders and is derived from and supported by safety research and motorcycle crash data analysis.

A detailed action and implementation plan for the Strategy will be developed with key stakeholders. This will be achieved by establishing and convening the Implementation Working Group, and by monitoring, evaluating and reporting on the initiatives. Adopting this process will allow the Strategy to remain relevant to motorcyclists, current to the issues of the time and effective in meeting the overall aims.



2. Why a NSW Motorcycle Safety Strategy?

Motorcyclists are over-represented in NSW road trauma, accounting for 15 per cent of road fatalities and 10 per cent of injuries. Importantly, motorcycles make up only 3.7 per cent of all NSW registered motor vehicles, and are increasing in number on the road network. This growth is more pronounced than the growth in other transport modes. There is also current evidence of very strong growth in the number of motorcycle licences on issue. The following motorcycling statistics highlight the increase in motorcycle riding popularity:

- ▶ There are about 500,000 motorcycle licences in NSW (about 10 per cent of all licences on issue) and about 173,000 registered motorcycles (2010).
- ▶ In the five years since 2006 the number of passenger vehicle registrations has grown 8 per cent while the number of motorcycle registrations has grown by 41 per cent.
- ▶ Over the same five year period, the number of motorcycle licences has increased by 17 per cent in NSW.

Figure 1 shows that since 2000 there has been an increase in motorcycle casualties on NSW roads. This figure also shows that NSW motorcycle registrations have increased at a considerably higher rate over the same period. There is a potential risk that motorcycle casualties may increase at a substantial rate commensurate with registrations in the future. A motorcycle-specific strategy is required to manage this risk and improve the safety of motorcyclists on NSW roads.

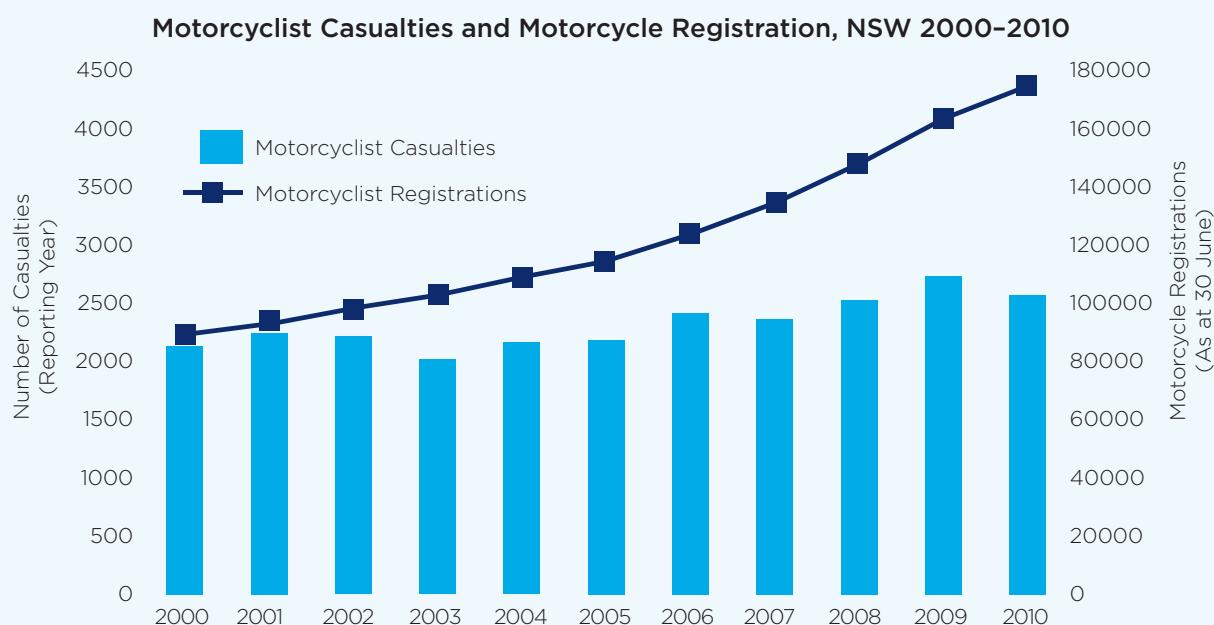


Figure 1: Motorcyclist Casualties and Motorcycle Registrations

1 Unless otherwise stated, the NSW crash data in this document comprises data for the period 2006-2010. All assumptions and definitions are consistent with the TfNSW's Annual Statistical Statement 2010.

2 Why A NSW Motorcycle Safety Strategy? cont'd

Despite the increased popularity of riding, motorcycles are more at-risk in crashes compared to other passenger vehicles (even after accounting for vehicle registrations).

Figure 2 shows that a motorcycle is four times more likely to be involved in a fatal crash than another passenger vehicle.

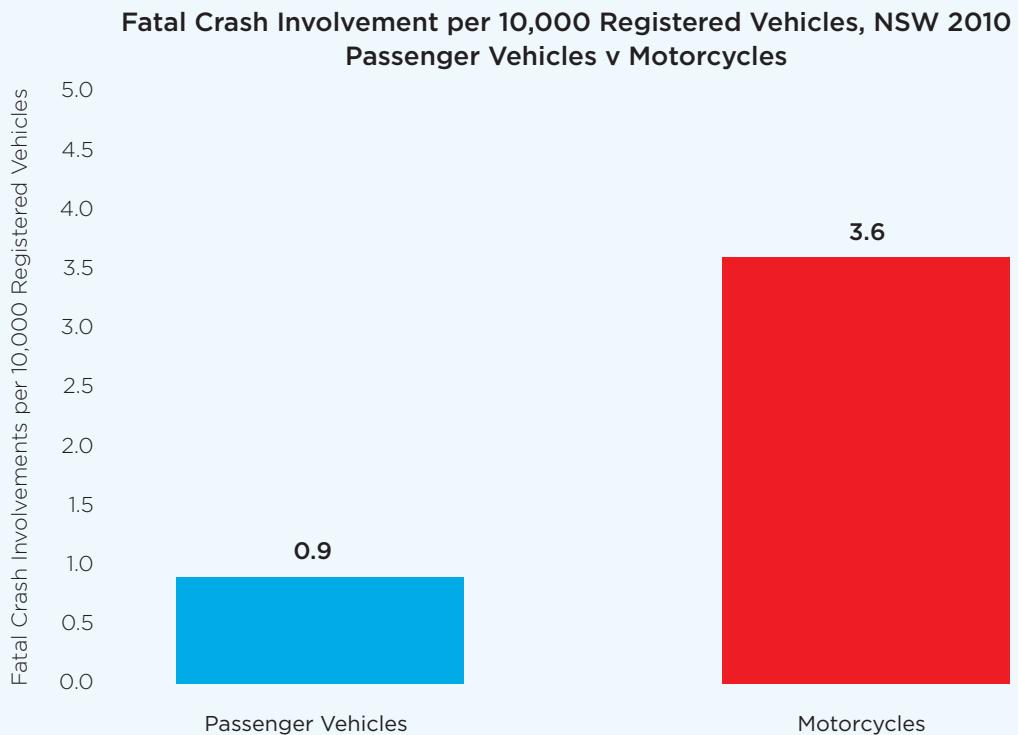


Figure 2: Fatal Crash Involvement of Motorcycles versus Passenger Vehicles



Not only are motorcyclists over-represented in the NSW road toll, but over recent years there is also a divergence between the motorcyclist casualty trend and the casualty trend for other road users. Since 2006, there has been a 6 per cent increase in motorcycle casualties while over the same period, all other road user casualties decreased by 4 per cent (Figure 3). Therefore, regardless of shifting trends in registrations and licences, the continuing increase in motorcycle casualties remains a primary road safety focus.

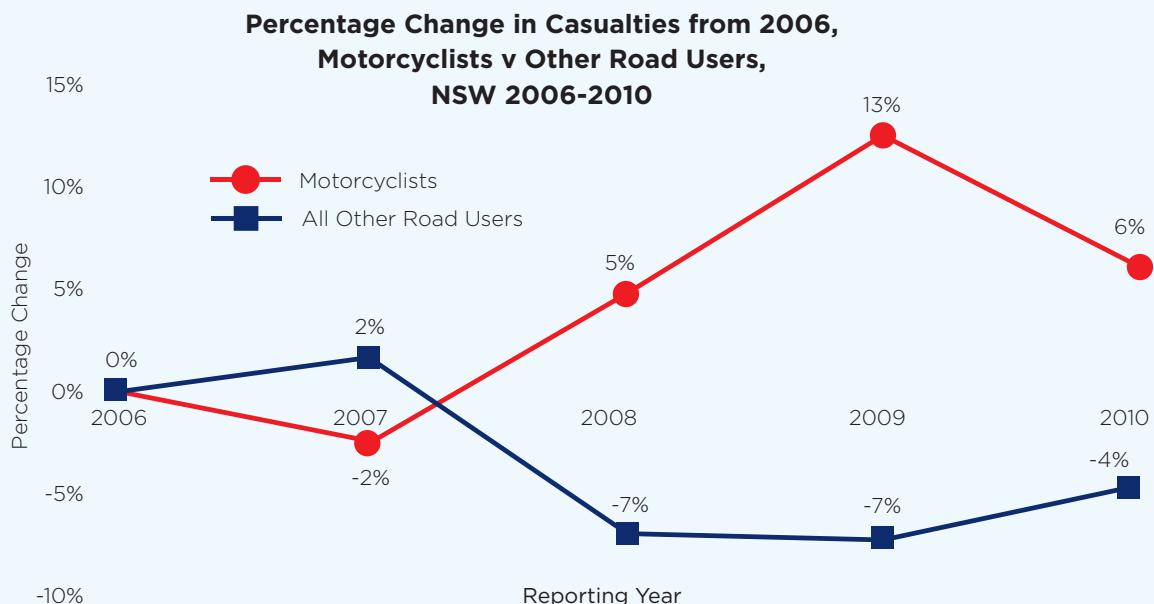


Figure 3: Percentage Change in Casualties from 2006, Motorcyclists v Other Road Users

There are risks associated with motorcycle riding that are the same for all road users but there are also specific risks that apply particularly to motorcycle riding.

Motorcycle riding can be different from other modes of transport in terms of patterns of travel, environmental influences and the greater physical and cognitive demands. Motorcycles can also be divided into a number of different types or categories, such as standard, touring, sport, on/off, cruiser, moped and scooter. The design of motorcycles and scooters means that they have unique characteristics when compared with other vehicles and are extremely sensitive to road and maintenance design features and impacts with objects. These elements along with the lack of

physical protection, makes riders and their passengers among the most at-risk road users.

The characteristics of motorcycle crashes show that countermeasures need to be designed to address the rider, the motorcycle, other road users, other vehicles, equipment, clothing and the road environment. The Strategy presents an opportunity for a coordinated approach to reduce motorcycle crashes incorporating the Safe System pillars of safe roads, safe vehicles, safe speeds and safe people.

In developing and implementing this Strategy, the NSW Government is committed to reducing the risk of fatality or injury and improving road safety for riders and their passengers.

3. Context

Road trauma costs the NSW community approximately \$4.8 billion per year.² Delivering services, policies and programs to reduce road trauma can result in significant economic savings to the community, while greatly improving quality of life for many people.

The 2009 road toll was 453, comprising 79 more deaths than in 2008. In response to this sharp rise in fatalities, the \$170 million Road Toll Response Package (2010/11 to 2014/15) was implemented to improve road safety. The Road Toll Response Package comprises of a wide range of programs including road safety improvements, research and strategy development, heavy vehicle initiatives and speed enforcement. The package also includes the development of the Strategy to reduce motorcyclist fatalities and injuries.

The NSW Government is strongly committed to improving road safety for all road users, having adopted the following key road safety approaches:

- ▶ Signing the UN Decade of Action for Road Safety which provides focus for the worldwide effort in improving road safety.
- ▶ Working alongside other jurisdictions to develop and

implement the National Road Safety Strategy.

- ▶ Providing overall strategic direction for road safety actions in NSW by implementing the NSW Road Safety Strategy 2012-2021.
- ▶ Driving the implementation of NSW 2021: A Plan to Make NSW Number One priorities of improving road safety across the State through the Government's Centre for Road Safety, with the help of our partners and the community.
- ▶ Adopting the nationally and internationally endorsed Safe System approach to improving road safety for all road users in NSW.

UN Decade of Action 2011-2020

The Decade of Action for Road Safety 2011-2020 is a United Nations initiative aimed at halving the projected global road traffic deaths over the next ten years.³ Australia was a signatory to the resolution, proclaimed by the UN General Assembly in March 2010.

According to a World Health Organisation report, road traffic injuries are predicted to become the fifth leading cause of death in the world by 2020 hence the need to take strong action globally. The report found more than 1.3 million people die every year due to road crashes with

a further 20-50 million injured. This is predicted to grow to 1.9 million deaths by 2020.

National Road Safety Strategy 2011-2020

The National Road Safety Strategy 2011-2020 aims to reduce the number of fatalities and serious injuries by at least 30 per cent by 2020.⁴ On average four people die and 90 people are seriously injured on Australian roads every day. The National Road Safety Strategy 2011-2020 aims to elevate Australia's road safety ambitions through the coming decade and beyond.

As part of the National Strategy, governments from all Australian states and territories have agreed to implement a number of actions using the Safe System approach. The initiatives specifically aimed at motorcycle safety measures include:

2 NSW Department of Premier and Cabinet, NSW 2021: A Plan to Make NSW Number One, Sydney, September 2011.

3 For full report see: http://www.who.int/roadsafety/decade_of_action/plan/english.pdf

4 For full report see: http://www.atcouncil.gov.au/documents/files/NRSS_2011_2020_20May11.pdf

First three years actions:

- ▶ Target infrastructure treatments to address safety issues for vulnerable road users, for example: safety improvements on popular motorcycle routes.
- ▶ Examine options for improved enforcement of motorcycle speeding.
- ▶ Prepare Regulatory Impact Statements (RISs) to consider mandating of Anti-lock Braking Systems (ABS) for motorcycles.
- ▶ Review licensing arrangements for motorcycle riders. Elements for examination include graduated restrictions for novice riders (including minimum period with a car licence before motorcycle licensing) and education and training if proven to deliver road safety benefits.
- ▶ Investigate licensing options to improve the safety of returning motorcycle riders.
- ▶ Develop and implement a national helmet assessment and rating program to stimulate market demand for the safest motorcycle helmets, and examine options for other protective gear.

Future steps for consideration:

- ▶ Introducing motorcycle Black Spot / Black Length programs in all jurisdictions, potentially funded by a levy on compulsory third-party injury insurance for motorcyclists.
- ▶ Investigating the scope for regulatory action to further improve stability, traction and braking standards on motorcycles supplied to the Australian market.

NSW Road Safety Strategy 2012-2021

The NSW Government launched the NSW Road Safety Strategy 2012-2021 (the NSW Strategy) in 2012. The NSW Strategy aligns with the National Strategy, but will also include additional NSW-specific initiatives. Motorcyclists will benefit from many of the broader road safety initiatives under the NSW Strategy, like improved crash data capture and collection, capacity-building and safety programs.

NSW 2021: A Plan to Make NSW Number One

Around 400 deaths and 24,000 injuries occur in NSW each year. NSW 2021: A Plan to Make NSW Number One aims to reduce fatalities to 4.3 per 100,000 people by 2016 by identifying and upgrading Black Spots, promoting safety features in cars, enforcing speed limits and other road rules, and encouraging road users to drive responsibly.

Safe System

The Safe System approach is adopted globally as the overarching framework for understanding road safety and developing appropriate countermeasures. The Safe System approach provides a guiding set of principles for road safety, and is designed to identify the way different elements of the road transport system combine and interact with human behaviour to produce an overall effect on road trauma.

The Safe System approach recognises there is a limit to the forces humans can withstand in a crash, while accepting that human error on our roads is inevitable. The approach is also used to promote the importance of travelling at speeds more forgiving of human error, designing roads and vehicles which reduce harm in the event of a crash, and responsible road user behaviour.

The Strategy outlines the motorcycle riding safety risks in relation to these Safe System elements and the associated initiatives to manage these risks.



Current Programs

The NSW Government currently provides a number of key programs to ensure motorcycle safety. These programs are set out in the following table:

Programs	Description
Graduated Licensing Scheme (GLS)	A GLS for motorcycle riders was introduced in June 2009. Restrictions on alcohol, speed, demerit points and type of motorcycle apply.
Learner Approved Motorcycle Scheme (LAMS)	LAMS was implemented in late 2002. It allows learner and provisional riders to ride moderately powered motorcycles up to engine capacity of 660cc. Now adopted nationally.
Rider training scheme	<p>The rider training scheme has been operating in NSW since 1990 and is compulsory. It covers key riding skills and low risk riding strategies.</p> <p>Pre learning training Two sessions of 3.5 hours each. Competency based course, pass or fail. Driver knowledge test.</p> <p>Pre provisional training Competency based course, pass or fail criteria. One session of six hours plus one hour test.</p>
Motorcycle campaigns	Outdoor safety messages on roadside banner sites, busbacks and taxibacks and regional initiatives and local campaigns: <ul style="list-style-type: none">▶ Cornering▶ Braking▶ Drink riding▶ Check twice for bikes.
Educational Brochures and Booklets	Provision of road safety information and advice: <ul style="list-style-type: none">▶ Road Users' Handbook▶ Motorcycle Riders' Handbook▶ 'Braking Habits'▶ Safer Motorcycle Helmets▶ Group riding in NSW - a guide for motorcyclists▶ Group riding in NSW - a guide for organisers.
Enhanced Enforcement Program	Targeting high risk road safety behaviours such as speeding, drink riding and non-helmet use on identified motorcycle routes.
Double demerit periods	Targeting speeding and non-helmet use.
Road engineering, design and repairs	<ul style="list-style-type: none">▶ Curve widening on identified high motorcycle crash areas▶ Highway safety route reviews including consideration of motorcycle safety treatments▶ Auditing of recreational motorcycle routes▶ Motorcycle friendly safety barrier terminals; guide posts that collapse when hit▶ Improved line marking on roads frequented by motorcycles▶ Speed limit reviews on known motorcycle routes▶ Motorcycle specific advisory signs for motorcycles or warnings for motorcycles on motorcycle routes▶ Research into roadside barriers and other motorcycle friendly road safety treatments.
CRASH	RMS research and reporting program designed to address relative safety performance of motorcycle helmets.

4. The Strategy

The Strategy is designed to reduce the risk, incidence and severity of a crash for all motorcyclists on NSW roads. The aim of the Strategy is to make riding motorcycles safer and reduce motorcycle fatalities and injuries in NSW. The Strategy will build on existing motorcycle safety programs and will set out research and development work to establish new initiatives over the next 10 years.

Early Initiatives

During the Strategy development phase, the Government started work on early initiatives to improve motorcycle safety. Such initiatives included: printing and distributing consumer information about safe gear, researching international helmet standards and comparing them to Australian standards, expanding existing motorcycle safety communications campaigns, and scoping an in-depth motorcycle crash study. These initiatives have been incorporated as part of the overall Strategy.

Framework

The NSW Government applies the Safe System approach to the development of countermeasures that reduce deaths and injuries, enabling safer travel on NSW roads. The Safe System approach comprises four key areas of road

safety intervention: Safe Roads, Safe Vehicles, Safe People and Safe Speeds.

The Strategy will incorporate the four pillars of the Safe System approach into its structure, outline safety objectives, identify risks and harms, and contain proposals for initiatives. It will also be supported by an evidence-based approach that includes research, data analysis, and consultation with stakeholders and the motorcycle rider community.

The extent and severity of motorcycle crashes are rarely attributable to one factor (as with all crashes), because there are often overlapping and multi-dimensional contributing factors. The Safe System approach helps to understand and address complex motorcycle safety issues.

Consultation

The Government is committed to consulting and working with our stakeholders and the motorcycle rider community. A series of consultation workshops were organised and attended by key stakeholders, including: the motorcycle rider community, the Motorcycle Council of NSW, Transport for NSW, NSW Police Force, Motor Accidents Authority, Australian Motorcycle Council, Local Government and Shires Association, Federal Chamber of Automotive Industries and NRMA Motoring and Services. During consultation, key rider and other road user behaviours were identified for targeted road safety messages.

Communication

A communication plan will be developed to underpin the Strategy. The plan will be developed in consultation with key stakeholders, and will support the delivery of motorcycle safety initiatives.





Safe Roads

Objective

Reduce the number of motorcycle crashes, the severity of injuries and the number of fatalities attributable to road design, maintenance and operational factors.

Impaired sightlines can be more hazardous for motorcyclists than for other road users.

Other road features that can be hazardous to motorcycles include insufficient shoulder and clear zone widths, rumble and median strips, road furniture placement and road marking visibility.

Safety risks

Road Surface and Hazards

The road surface and environment can pose a unique risk to motorcyclists. Motorcycle stability can be affected more by changes in the shape, texture, or the skid resistibility of the road surface than other vehicles. Aspects of the environment and road surfaces such as potholes, loose gravel and

In view of the above, it is important that Safe Roads is incorporated as a key safety intervention area of the Strategy. Safe Roads interventions will mitigate or eliminate potential road environment risks contributing to motorcycle crashes and the injuries sustained in the event of a crash, while also managing potential risks for other road users.

Safety Initiatives

1. Research road safety engineering treatments to improve motorcycle safety.
2. Ensure Safe Roads principles are understood and applied by people looking after the assets – designers, maintainers and engineers.
3. Contribute to National Road Safety Strategy by introducing a motorcycle blackspot/length program.

Actions for First 3 Years

1. Investigate effective road environment incident reporting that is available for the motorcycling community.
2. Review traffic engineering specifications that increase motorcycle safety while balancing road safety requirements for other road users.
3. Educate road asset owners to consider motorcycle safety while roads are designed, constructed, maintained and operated.
4. Establish opportunities for road design, engineer and maintenance practitioners to share motorcycle safety expertise.

Road Alignment

Motorcycles are especially vulnerable to collisions on bends and curves. Loss of control is more likely where acceleration or deceleration occurs, or where the stability of the motorcycle is threatened. A high number of impacts happen on roads with a tight radius and on roundabouts. Other motorcycle-specific issues in connection with road geography include: shoulder width, curves, clear zone width, gravel, transverse lines, rumble strips, median strips, kerbs, visibility, barriers, road furniture, markings, and fencing.⁵

Roadside objects pose a high risk for motorcyclists when crashes involve departing the roadway. The greatest proportion of motorcyclists killed in NSW was in motorcycle-object crashes (35 per cent of all motorcyclist fatalities). This figure has been increasing since about 2003. Trees and other types of vegetation are the most frequent objects hit, followed by roadside barriers, kerbs/gutters, then utility poles, median strips and walls.

Urban and Rural roads

There are differences in motorcycle crash characteristics between rural and urban

roads. The treatments for such characteristics are different. In rural NSW, many motorcyclists were killed when they lost control of their motorcycle on a curved road at a high speed and hit an object. By contrast, many motorcyclists were killed in urban areas when they struck an object such as a tree or pole at a lower speed, or in a crash involving another vehicle at an intersection. Differences in rural and urban riding can include factors such as trip purpose (commuting versus recreational riding) and trip length. As such, these factors need to be considered in developing safe roads.

Actions for First 3 Years

5. Continue research into safety barriers and motorcycles.
6. Use Road Safety Audits to review and improve motorcycle routes and safety features.
7. Document the clear zone policy and continue to communicate about safe motorcycle roadside needs to other agencies and utility agencies.
8. Contribute to National Road Safety Strategy:
Safety improvements on popular motorcycle routes.

Prompt medical interventions in emergency situations can often save lives and decrease injury severity; importantly, emergency responses to motorcycle crashes in rural locations may be delayed due to the relative isolation at the crash site. This may be attributed to poor mobile phone reception, inadequate emergency phones, lack of other road users in the event of a crash, and logistical access issues for emergency services.

Popular motorcycle routes are often found in isolated and rural areas. These routes have also been identified in crash data as presenting a high crash risk in terms of the number and rate of injury and fatality crashes.

Safety Initiative

4. Investigate ways to improve post-crash emergency response.

Actions for First 3 Years

9. Explore emergency location detection for motorcyclists.
10. Investigate feasibility for safety phones along popular motorcycling routes.

5 Austroads, Guide to Traffic Engineering Practice, Motorcycle Safety, Part 15, 1999 and TfNSW consultation workshop, 2 July 2011.



Safe People

Objective

Reduce the number of motorcycle crash fatalities and the severity of injury by reducing distractions, improving awareness, training, education and regulatory measures (including motorcyclists and motor vehicle drivers).

Safety risks

Dangerous and risk-taking behaviours

Studies of motorcycle crashes caused by behavioural factors have found that when the motorcyclist was responsible for the crash, it was often due to a loss of control linked with speed, alcohol impairment and reckless or careless riding behaviour.⁶ An analysis of the NSW crash data also shows high crash risks associated with dangerous riding behaviours in NSW, for example:

- ▶ Illegal alcohol levels contributed to 17 per cent of motorcycle rider fatalities between 2006 and 2010 and is around 3 times more likely to be present among killed riders than among injured riders.
- ▶ In the same period, 51 per cent of motorcycle riders killed were speeding or riding at an inappropriate speed for the prevailing conditions.
- ▶ Fatigue is identified as a contributing factor to around 7 per cent of motorcycle crashes. Alcohol was present in the rider at levels of 0.05g/100ml and over in a larger proportion of fatigue-related crashes compared with non-fatigue-related motorcycle crashes (13.0 per cent versus 3.8 per cent).
- ▶ It is unclear if or how much of a role drugs may play in motorcycle crashes, however, initial studies have found that it may be an area in need of further investigation.⁷

⁶ Haworth, N., Smith, R., Brumen, I. & Pronk, N. Case-control study of motorcycle crashes, Federal Office of Road Safety, Dept. of Transport, Canberra, CR 174, 1997

⁷ Grzebieta, G., Jama, Hussein., Bambach, Mike., Friswell, Rena., McIntosh, Andrew., Favand, Jerome., Motorcycle Crashes into Roadside Barriers Stage 1: Crash Characteristics and Causal Factors, NSW Injury and Risk Management Research Centre, March 2010.

Safety Initiatives

5. Further research on motorcycle road crashes, including collaboration with other jurisdictions and research bodies.
6. Continue to investigate enforcement strategies to deter risk-taking behaviours.
7. Ongoing communication campaigns to target risk-taking behaviours and increase motorcycle safety awareness and risk management.
8. Research the impacts of fatigue on motorcycling with a view to developing appropriate countermeasures.

Actions for First 3 Years

11. Develop campaigns to assist riders to better manage risks that can lead to high-risk motorcycle crashes.
12. Undertake in-depth motorcycle crash study.
13. Promote crash care advice for motorcyclists.
14. Continue supporting Motorcycle Awareness Week.
15. Undertake literature review into fatigue as it relates to motorcycles.



Licensing

Motorcycle crash risk can also be influenced by the rider's level of experience and awareness of motorcycle safety. Inexperience has been identified as a major factor in motorcycle crashes worldwide.⁸

Young riders (under 30 years) and novice riders (learner and provisional licence-holders), are over-represented in crash statistics, accounting for 44 per cent of all rider casualties. In NSW, although older riders (30 years and over) make up the greater proportion of motorcycle riders in crashes, it is younger riders who (relative to the licences on issue), have the higher crash rate:

- ▶ Motorcycle rider casualties under the age of 30 years account for 40 per cent of all motorcycle rider casualties and represent only about 11 per cent of rider licences on issue.
- ▶ Motorcycle rider casualties aged 30-49 years account for 41 per cent of all motorcycle rider casualties and represent about 47 per cent of rider licences on issue.
- ▶ Motorcycle rider casualties aged 50 years and older account for 16 per cent of all motorcycle rider casualties and represent about 42 per cent of rider licences on issue.

Motorcycle crashes involving speed, alcohol and fatigue is a concern, particularly for young and novice riders. For example, when compared to older riders, fatal crashes involving young and novice riders are:

- ▶ 5 times more likely to involve speed as a factor
- ▶ 4 times more likely to involve alcohol as a factor
- ▶ 3 times more likely to involve fatigue as a factor.

Another licensing issue that arises from the NSW crash data is the level of unauthorised riding. One in every five riders killed and one in every 14 riders injured was unauthorised to ride a motorcycle (which includes unlicensed, suspended, disqualified, cancelled or expired).

During the Strategy consultation and development stage, the motorcycle rider community expressed concerns about riders who have "dormant licences" or who have no recent motorcycle riding experience. These concerns related to a perceived link between a lack of recent riding experience and decreased safety risk for the rider. There is currently a lack of research evidence to support this hypothesis; however, in view of increasing motorcycle registrations and licence numbers in NSW, the issue should be investigated as a potential safety issue.

⁸ Haworth, N. Powered two wheelers in a changing world—Challenges and opportunities, Accident Analysis and Prevention, October 2010.

Safety Initiative

9. Continue research into motorcycle licensing and training.

Actions for First 3 Years

16. Investigate ways to enhance the motorcycle mentoring program.
17. Investigate the issue of returning riders.
18. Disseminate the Motorcycle Handbook to relevant road users.
19. Evaluate the NSW Graduated Licensing Scheme.
20. Contribute to National Road Safety Strategy:
 - a. Investigate licensing options to improve the safety of returning riders.
 - b. Review licensing arrangements for motorcyclists.

Interaction with other road users

In around two thirds of crashes involving a motorcycle and motor vehicle colliding, the motor vehicle was deemed the key vehicle, indicating a need to address how other road users interact with motorcyclists on the roads. The interaction between motorcycles and other road users was also identified in consultation with the motorcycle rider community as a key issue for road safety.

Safety Initiative

10. Develop campaign and other information material promoting the safe interaction between motorcyclists and other motor vehicles on the road.

Actions for First 3 Years

21. Use existing campaigns (for example, Check Twice for Bikes campaign) to build awareness of the presence of motorcyclists by other road users, especially drivers.
22. Investigate safety impacts of measures addressing congestion and motorcycle interactions with other road users (e.g. lane filtering).



Safe Speeds

Objective

Reduce speeding as a contributor to motorcycle fatalities and injuries.

Safety risks

Excessive or inappropriate speed

Speed is a significant factor in many motorcycle casualty crashes. Speeding includes riding at excessive speed and not riding at a speed suitable to the prevailing road conditions (for example on curves or wet roads). Higher travel speeds afford the rider less time to respond to a hazardous situation, and increase the likelihood of death or serious injury in a crash.

There is a higher risk of a casualty outcome for a motorcyclist involved in a speed-related crash. The higher risk is attributable to minimal protection and the chance of being thrown from the motorcycle. Speed was a factor in 51 per cent of motorcycle rider fatalities. Speeding is an issue both in rural and metropolitan NSW. While speed limits may vary between urban and rural locations, many motorcyclists involved in casualty crashes may not be adjusting their riding to the prevailing speed limits or road conditions. Many of the crashes on identified popular motorcycling routes involve speeding.

Safety Initiatives

11. Research speed countermeasures such as speed advisory signs and speed management communication messages.
12. Identify high motorcycle crash locations for road safety treatment including road engineering improvement and review of speed zones.
13. Target enforcement on popular motorcycle routes to ensure safe motoring for all road users.

Safe Speeds cont'd

Actions for First 3 Years

23. Develop a communication campaign that addresses:
 - ▶ motorcycle speed-related risks and behaviours
 - ▶ inappropriate speed
 - ▶ riding to conditions.
24. Continue Enhanced Enforcement Program with a focus on identified motorcycle crash risk locations.
25. Contribute to National Road Safety Strategy: Examine options for improved enforcement of motorcycle speeding.

Safe Vehicles

Objective

Reduce the number of motorcycle fatalities and the severity of injury in motorcycle crashes through protective clothing and safe motorcycle features, including design of other vehicles (visibility for drivers).

Safety risks

Lack of Rider Protection

One of the major contributors to rider injury and death is the design of the motorcycle itself. This is attributable to the lack of protection in the event of a crash, relative to other motorists. For example, compared to other motor vehicles, motorcycles lack vehicle and body physical crash protection, are more difficult to control as they have only two wheels, and are less visible to other road users.

The NSW crash data show that striking an object is a highly prevalent outcome in a motorcycle crash. While the rider may not always be at fault in these crashes, the rider is more exposed to injury and/or fatality due to the absence of a protective barrier. In addition, a motorcycle by its very design can lead to a high rate of 'secondary' impact forces. Often the motorcyclist may be avoiding a hazard or be thrown from the motorcycle and hit an object. Of the 108 motorcycle-object fatal crashes in the last five years, around a third involved hitting a second object in the crash.

In addition to object crashes, 32 per cent of casualty crashes are rollover crashes (where a motorcyclist and/or passenger is ejected from the bike or slides along the road on the bike). In

metropolitan and rural locations, there are a high proportion of cases in which riders are ejected from their motorcycles and slide or tumble on the road surface, regardless of crash type. The benefits of riders wearing protective clothing, particularly in low-impact and low speed crashes, are well established. Evidence from research studies indicates effective protective clothing can prevent injury in most low impact and low speed crashes.⁹ There is also evidence that those who ride unprotected are less likely to seek out information about protective clothing indicating a need to improve the quality and delivery of safety information.¹⁰ In particular, information about motorcycling crash risks, the benefits of protective clothing, and motorcycle safety features should be promoted to riders.



⁹ Baldock MRJ, Grigo JAL, Raftery SJ. Protective clothing and motorcyclists in South Australia, March 2011

¹⁰ de Rome Liz, Ivers Rebecca, Haworth Narelle, Heritier Stephane, Du Wei, Fitzharris Michael. Novice riders and the predictors of riding without motorcycle protective clothing, 2010

Safe Vehicles cont'd

Safety Initiative

14. Research, develop and promote accurate and reliable motorcycle safety information on motorcycle features, helmet standards and protective clothing.

Actions for First 3 Years

26. Continue to improve on helmet standards and helmet use, including expanding the CRASH program and researching international helmet standards.
27. Research use of helmets by motorcycle riders and passengers.
28. Disseminate evidence-based consumer information on protective gear and motorcycle safety features (distribution of the Good Gear Guide).
29. Contribute to National Road Safety Strategy: Develop and implement a national assessment and rating program to stimulate market demand for the safest motorcycle helmets – and examine options for other protective gear.
30. Seek input from stakeholders and motorcycle rider community to manage motorcycle safety and standards issues (e.g. motorcycle helmets).

Scooters/mopeds

Scooters and mopeds are classified as motorcycles in NSW road transport law. A motorcycle licence is required to ride a scooter or moped in NSW.

Scooters and mopeds are becoming increasingly popular. The number of scooter/moped registrations in NSW increased from 4 per cent of all motorcycle registrations in 2006 to 5 per cent in 2010. At the same time the proportion of scooter/moped casualties increased from 2 per cent to 5 per cent of all motorcyclist casualties. These data show scooters and mopeds are an increasing concern, possibly due to increased exposure on the road network.

Scooter/moped riders face similar risks to motorcycle riders because they are just as vulnerable in the event of a crash. The NSW crash data reveals interesting similarities and differences in the crash patterns of scooter/moped riders.

The NSW crash data indicate these similarities:

- ▶ Most single-vehicle crashes involve a rollover and most multi-vehicle involve adjacent turning, right angle and rear end crashes.
- ▶ Under 30 and 30-49 years of age groups made up the majority of motorcycle and scooter/moped casualties.

The NSW crash data indicate these differences:

- ▶ Over 70 per cent of scooter/moped casualties were involved in multi-vehicle crashes compared to 56 per cent for motorcyclists.
- ▶ About 30 per cent of scooter/moped casualties were females, compared with 11 per cent for motorcycle casualty crashes.
- ▶ About 82 per cent of scooter/moped casualties occur in an urban environment and 18 per cent in a rural area. For motorcyclists 59 per cent of casualties are urban and 41 per cent are rural.



Action for First 3 Years

31. Develop communication campaigns targeting specific risk issues for scooter/moped riders.

Stability and braking control

Intelligent Transport Systems have also been identified as a possible method of reducing the number and severity of motorcycle crashes, especially in relation to speeding, post-crash care and anti-lock braking. The effectiveness of these systems is still being researched. Intelligent Transport Systems technology in motorcycles lags behind other vehicles such as cars. In NSW crash data, running off-road crashes on both straight

and curved roads were the most commonly occurring types of single-vehicle crashes and crashes involving vehicles travelling in opposing directions or intersection crashes were the most commonly occurring multi-vehicle crashes. Therefore systems which address the stability and braking properties of a motorcycle are seen to have the highest priority potential to enhance motorcycle safety in many of these high crash situations.



Safety Initiatives

15. Monitor developments in Intelligent Transport Systems.
16. Research applicable motorcycle safety features.
17. Investigate safety rating for motorcycles.
18. Contribute to National Road Safety Strategy:
 - a. Investigate scope for regulatory action to further improve stability, traction and braking standards on motorcycles supplied to the Australian market.
 - b. Monitor the National Road Safety Strategy's investigation of automatic crash notification similar to the European eCall system.

Actions for First 3 Years

32. Monitor and report on voluntary uptake of ABS braking.
33. Investigate any motorcycle crash testing in other jurisdictions/internationally.
34. Contribute to National Road Safety Strategy: Prepare RISs to consider mandating of ABS for motorcycles.

Safe Vehicles cont'd

Crashes with other vehicles

Motorcycle casualty crashes involved another motor vehicle in 53 per cent of cases. In many cases, the driver of the other motor vehicle either failed to detect the motorcyclist or was in some way obstructed from detecting the motorcyclist.

The common crash types for motorcycle-motor vehicle crashes are intersection crashes, including: adjacent approach crashes, rear end crashes, opposing vehicle/turning crashes and lane change crashes. Such crash types suggest the driver may have failed to

detect the motorcycle during the critical road user manoeuvre. Car drivers who collide with motorcycles often claim that they did not see an approaching motorcycle.¹¹ In crashes with another vehicle, the other motor vehicle was considered the key vehicle in more than half of the crashes involving a motorcycle.⁺ Less attention is currently given to developing Intelligent Transport System measures for car-motorcycle crashes when compared with the widespread measures under development for car-car/car-pedestrian crashes.¹²

Safety Initiatives

19. Monitor and promote car design which does not obstruct visibility of motorcycles.
20. Monitor ITS that can alert drivers to the presence of a motorcycle (vehicle-vehicle communication).

Actions for First 3 Years

35. Work with motorcycle manufacturers to improve motorcycle visibility to other road users.
36. Raise motorcyclists' awareness about how to make themselves visible to other road users on the road.

¹¹ Shahar Amit, Clarke David, Crundall David Applying the motorcyclist's perspective to improve car drivers' attitudes towards motorcyclists, Accident Analysis and Prevention, April 2011

⁺ The 'key' traffic unit is generally that vehicle considered to have played the major role in the crash.

¹² Pai, Chih-Wei. Motorcycle right-of-way accidents—A literature review, Accident Analysis and Prevention, November 2010

5. Summary

The Strategy has been developed using an evidence-based approach. This approach included conducting motorcycle crash analysis, researching motorcycle crash risks and interventions, and carrying out extensive stakeholder and community consultation for ideas and feedback.

The consultative, evidence-based approach adopted during the Strategy development phase will continue to be applied to develop, implement and deliver the outcomes and objectives of the Strategy over the next ten years.

The Strategy is set within the context of increased motorcycling popularity, and commits the NSW Government to initiatives including: to continually conduct motorcycle safety research; to use the research findings to inform further development of policies and programs to address the identified risks; and to ultimately reduce motorcycle crashes.

The Strategy recommends specific actions for the next three years and broader initiatives that address longer term issues to be delivered over the next ten years. The table at the end of this document summarises the actions for the first 3 years and the longer term initiatives.

The progress and impact of the actions and initiatives will be subject to ongoing monitoring and evaluation against a range of measures, for example:

- ▶ Number of motorcycles on NSW roads
- ▶ Number of motorcycle crashes in NSW
- ▶ Number of motorcyclists killed and injured in NSW
- ▶ Stakeholder engagement and collaboration
- ▶ Communication campaign effectiveness
- ▶ Research into motorcycle safety to inform policies and programs.

To deliver the Strategy successfully and improve motorcycle safety, it will be necessary to develop reliable and strong partnerships with Federal, State and local governments, non-government agencies, and the motorcycle community and organisations.



Safety Initiatives and Actions Summary

Safe Roads

Safety Initiatives

1. Research road safety engineering treatments to improve motorcycle safety.
2. Ensure Safe Roads principles are understood and applied by people looking after the assets – designers, maintainers and engineers.
3. Contribute to National Road Safety Strategy:
 - a. Introducing a motorcycle blackspot/ length program.
4. Investigate ways to improve post crash emergency response.

Actions for first 3 Years

1. Investigate effective road environment incident reporting that is available for the motorcycling community.
2. Review traffic engineering specifications that increase motorcycle safety while balancing road safety requirements for other road users.
3. Educate road asset owners to consider motorcycle safety while roads are designed, constructed, maintained and operated.
4. Establish opportunities for road design, engineer and maintenance practitioners to share motorcycle safety expertise.
5. Continue research into safety barriers and motorcycles.
6. Use Road Safety Audits to review and improve motorcycle routes and safety features.
7. Document the clear zone policy and continue to communicate about safe motorcycle roadside needs to other agencies and utility agencies.
8. Contribute to National Road Safety Strategy: Safety improvements on popular motorcycle routes.
9. Explore emergency location detection for motorcyclists.
10. Investigate feasibility for safety phones along popular motorcycling routes.

Safe People

Safety Initiatives

5. Further research on motorcycle road crashes, including collaboration with other jurisdictions and research bodies.
6. Continue to investigate enforcement strategies to deter risk-taking behaviours.
7. Ongoing communication campaigns to target risk-taking behaviours and increase motorcycle safety awareness and risk management.
8. Research the impacts of fatigue on motorcycling with a view to developing appropriate countermeasures.
9. Continue research into motorcycle licensing and training.
10. Develop campaign and other information material promoting the safe interaction between motorcyclists and other motor vehicles on the road.

Actions for first 3 Years

11. Develop campaigns to assist riders to better manage risks that can lead to high-risk motorcycle crashes.
12. Undertake in-depth motorcycle crash study.
13. Promote crash care advice for motorcyclists.
14. Continue supporting Motorcycle Awareness Week.
15. Undertake literature review into fatigue as it relates to motorcycles.
16. Investigate ways to enhance the motorcycle mentoring program.
17. Investigate the issue of returning riders.
18. Disseminate the Motorcycle Handbook to relevant road users.
19. Evaluate the NSW Graduated Licensing Scheme.
20. Contribute to National Road Safety Strategy:
 - a. Investigate licensing options to improve the safety of returning riders.
 - b. Review licensing arrangements for motorcyclists.
21. Use existing campaigns (for example, Check Twice for Bikes campaign) to build awareness of the presence of motorcyclists by other road users, especially drivers.
22. Investigate safety impacts of measures addressing congestion and motorcycle interactions with other road users (e.g. lane filtering).

Safe Speeds

Safety Initiatives

11. Research speed countermeasures such as speed advisory signs and speed management communication messages.
12. Identify high motorcycle crash locations for road safety treatment including road engineering improvement and review of speed zones.
13. Target enforcement on popular motorcycle routes to ensure safe motoring for all road users.

Actions for first 3 Years

23. Develop a communication campaign that addresses:
 - ▶ motorcycle speed-related risks and behaviours
 - ▶ inappropriate speed
 - ▶ riding to conditions.
24. Continue Enhanced Enforcement Program with a focus on identified motorcycle crash risk locations.
25. Contribute to National Road Safety Strategy: Examine options for improved enforcement of motorcycle speeding.

Safe Vehicles

Safety Initiatives

14. Research, develop and promote accurate and reliable motorcycle safety information on motorcycle features, helmet standards and protective clothing.
15. Monitor developments in Intelligent Transport Systems.
16. Research applicable motorcycle safety features.
17. Investigate safety rating for motorcycles.
18. Contribute to National Road Safety Strategy:
 - a. Investigate scope for regulatory action to further improve stability, traction and braking standards on motorcycles supplied to the Australian market.
 - b. Monitor the National Road Safety Strategy's investigation of automatic crash notification similar to the European eCall system.
19. Monitor and promote car design which does not obstruct visibility of bikes.
20. Monitor ITS that can alert drivers to the presence of a motorcycle (vehicle-vehicle communication).

Actions for first 3 Years

26. Continue to improve on helmet standards and helmet use, including expanding the CRASH program and researching international helmet standards.
27. Research use of helmets by motorcycle riders and passengers.
28. Disseminate evidence-based consumer information on protective gear and motorcycle safety features (distribution of the Good Gear Guide).
29. Contribute to National Road Safety Strategy: Develop and implement a national assessment and rating program to stimulate market demand for the safest motorcycle helmets – and examine options for other protective gear.
30. Seek input from stakeholders and motorcycle rider community to manage motorcycle safety and standards issues (e.g. motorcycle helmets).
31. Develop communication campaigns targeting specific risk issues for scooter/moped riders.
32. Monitor and report on voluntary uptake of ABS braking.
33. Investigate any motorcycle crash testing in other jurisdictions/internationally.
34. Contribute to National Road Safety Strategy: Prepare RISs to consider mandating of ABS for motorcycles.
35. Work with motorcycle manufacturers to improve motorcycle visibility to other road users.
36. Raise motorcyclists' awareness about how to make themselves visible to other road users on the road.

For further enquiries
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