

Queensland Motorcycle Safety Strategy

2009 – 2012





Acknowledgements

On 28 April 2008, Queensland Transport released the *Motorbike Safety in Queensland – Consultation Paper*¹. The consultation paper proposed 16 initiatives to deal with known motorcycle safety issues. More than 2300 online and written responses were received from motorcyclists and other road users, organisations representing motorcyclists, trainers, manufacturers and retailers, and businesses using motorcycles. Workshops were held during April with the Motorbike Safety Working Group, the Queensland Road Safety Committee, and the Q-Ride Registered Service Providers.

Extensive comments were provided on the 16 proposed initiatives, and other alternatives were suggested. There was considerable comment about drivers not looking out for motorcyclists, or riders not being visible to car drivers. All responses were collated by road safety researchers, Associate Professor Barry Watson and PhD student Darren Wishart of the Centre for Accident Research and Road Safety (CARRS-Q). Two consultation reports were produced and are published online at: www.transport.qld.gov.au

Queensland Transport thanks the members of the Motorbike Safety Working Group, the Queensland Road Safety Committee, and the Q-Ride Registered Service Providers for their contribution to the development of the Strategy.

Queensland Transport would also like to thank the motorcyclists, organisations and the general community who shared their views on how motorcycle safety could be improved in Queensland.

¹ *Motorcycle Safety in Queensland – Consultation Paper* is available from: www.transport.qld.gov.au

Context

Motorcycle and moped riding increased in popularity in Queensland during the past five years. More people are using motorcycles for regular commuting and for recreation, leading to a steady increase in motorcycle registrations and the number of people obtaining a motorcycle licence² (Figure 1).

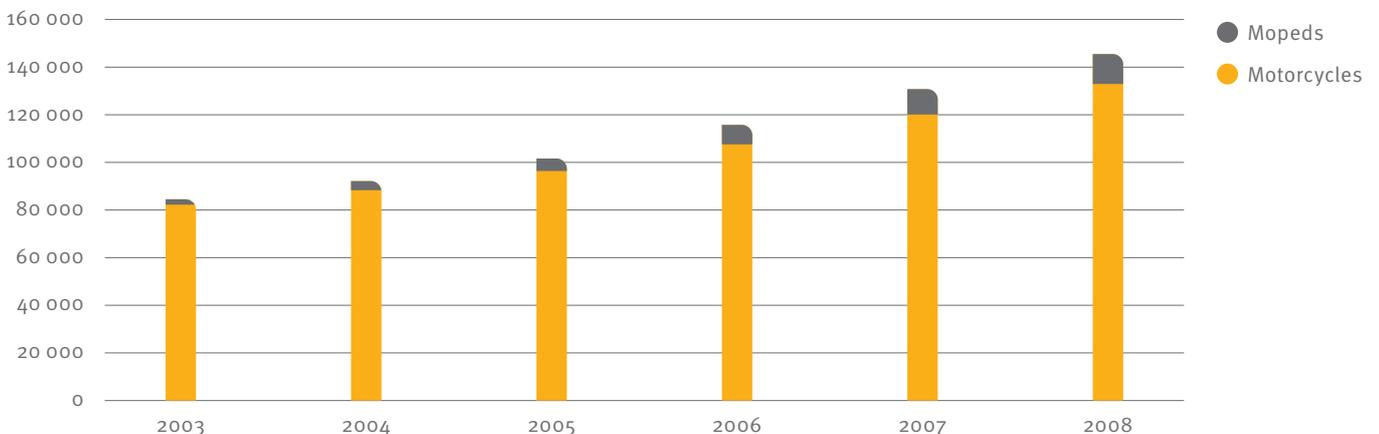
In Queensland (as at 31 December 2007)³:

- there were 138 722 registered motorcycles (4% of all vehicles registered);
- since 2003, the number of motorcycle registrations increased by 56%, more than three times the rate of increase for cars;
- over 12 000 mopeds were registered⁴ (9% of all motorcycles registered), an increase of 150% from 2004;
- there were 570 649 people licensed to ride motorcycles (20% of all current licence holders); and
- more than four people held a motorcycle licence, for every motorcycle registered.

Motorcycles are an alternative to car travel and public transport. Aside from the enjoyment of riding, there are broader benefits, such as reducing road congestion and potentially lowering greenhouse gas emissions. With constant economic changes and a greater interest in more cost efficient forms of transport, the growth in motorcycle use is expected to continue.

However, motorcycle riding remains a higher risk activity than using any other motor vehicle. As the number of motorcycles has increased, so has the number of motorcyclists involved in fatal or injury crashes. This is happening in Queensland and across Australia.

Figure 1: Motorcycle and moped registrations in Queensland at 30 June



² Data Analysis Unit, Queensland Transport.
³ Data Analysis Unit, Queensland Transport.

⁴ *moped* means a motorbike with an engine capacity of not more than 50mL; and that has a manufacturer's top rated speed of not more than 50km/h; and is not a bicycle (Schedule 7, *Transport Operations (Road Use Management – Driver Licensing) Regulation 1999*). Scooters with a higher engine capacity are defined as motorbikes.

- Collaborate with the Motor Accident Insurance Commission (MAIC) to commission and conduct motorcycle safety research, including education and training programs for riders.
 - Continue road maintenance and infrastructure projects aimed specifically at enhancing motorcycle safety, including the Motorcycle Mass Action Program (*Safer Roads Sooner* package managed by the Department of Main Roads).
 - Participate in the development of a national guideline for protective gear for motorcyclists, and once complete, promote to motorcyclists.
 - Conduct research to obtain relevant and accurate data on the use of mopeds and motor-trikes (three wheel motorcycles), including crash involvement.
 - Research best practice moped and motor-trike training and licensing options.
 - Research the risks associated with dormant and returning riders, and investigate alternatives to encourage appropriate skills refreshment for riders returning after an extended break from riding.
- further training for learners, including consideration of hazard perception testing;
 - provisional stage(s); and
 - restricting the minimum and maximum learner licence periods.
- Investigate the benefits of introducing a zero alcohol limit for all motorcycle riders.
 - Investigate the feasibility of providing online registration of Q-Ride competency declarations.

Actions for continued monitoring and/or investigation throughout the term of the Strategy and beyond are to:

The Government is committed to enhancing the motorcycle graduated licensing system as well as continuing to take tangible steps to improve motorcycle safety. However, a number of actions require further research before developing initiatives for implementation during the term of the Strategy. These actions are to:

- Investigate further enhancements to the motorcycle graduated licensing system including:
 - pre-learner training;
- Investigate improvements to the quality of motorcycle crash and exposure data.
- Monitor developments at the national level for alternative methods to identify speeding motorcyclists (including consideration of Radio Frequency Identification Devices and front number plates) and investigate alternative technologies.
- Participate in the development of an Australian Standard or rating system (possibly based on the European Standard) setting technical specifications for motorcyclist gear prescribed as 'protective'.
- Conduct on-going research into motorcycle rider behaviour.
- Monitor the development of advanced safety technology and promote features showing evidence of road safety benefits via public education campaigns.
- Monitor and evaluate the effectiveness of the Q-SAFE and Q-Ride motorcycle licensing systems in Queensland.
- Monitor both Australian and international developments relating to targeted road safety improvements for motorcycle safety.

Learner Approved Motorcycle Scheme (LAMS)

RE licence holders are currently restricted to riding motorcycles with an engine capacity of 250mL or less. The limit was introduced many years ago, when engine capacity generally related to the power of the motorcycle. This is no longer the case as advancements in engine technology mean that some modern



motorcycles meeting the 250mL restriction are very powerful and unsuitable for novice riders.

A power-to-weight ratio provides a better indication of a motorcycle’s potential performance than engine capacity alone²². A number of Australian jurisdictions, including New South Wales, Victoria, South Australia, Tasmania and the Northern Territory have introduced a Learner Approved Motorcycle Scheme (LAMS). This scheme has replaced the traditional 250/260mL restriction with one based on a maximum power-to-weight ratio of 150kW/t and an upper engine capacity of 660mL. Introducing the combined power-to-weight/ engine capacity restriction into Queensland would provide RE licence holders with access to a much larger range of motorcycles (in New South Wales, there are more than 300 learner-approved motorcycles, in addition to most of the motorcycles up to 250mL²³). The introduction of a LAMS restriction will:

- more comfortably accommodate larger riders (a major criticism of the 250mL restriction);
- ensure motorcycles are not physically too large or too heavy for novice riders;
- provide a more progressive step-up to larger capacity motorcycles;
- remove the urgency for riders to progress to an unrestricted class R licence because they can ride a higher capacity motorcycle from the outset; and
- allow riders to train and gain experience on a motorcycle that they are more likely to ride in the longer term.

²² Haworth and Mulvihill (2005), Review of motorcycle licensing and training, Report No 240, Monash University Accident Research Centre.

²³ Six 250mL ‘race replica’ motorcycles are excluded from the LAMS list and are not permitted for novice riders.

Consumption of alcohol at any level can have a greater impact on motorcycle riders than on car drivers.²⁴

Alcohol restrictions

Consumption of alcohol at any level can have a greater impact on motorcycle riders than on car drivers²⁴. Riding a motorcycle places different and additional demands on the rider, such as coordination, balance, and concentration²⁵. Motorcycles are less stable and more sensitive to rider dexterity and road conditions²⁶ and in the event of a crash, more serious injuries are sustained by a motorcyclist, compared to a car driver. Any impairment that reduces a rider's ability to cope with these demands can significantly increase crash risk.

The potential impact of alcohol on a rider's crash risk is not isolated to young motorcyclists. In one study, experienced motorcyclists riding on a closed course showed impairment of riding performance, including slower reaction times, passing at a closer distance to hazards, with faster maximum speeds and increased variability in speed at low alcohol levels²⁷. The researchers proposed that larger impairments could be expected for less experienced riders, on less familiar roads, with more complex and novel tasks. Experienced motorcyclists using a motorcycle simulator more frequently left the roadway at 0.038–0.059 blood alcohol level²⁸.

Riders are most likely to crash in their first year of gaining a motorcycle licence, with the crash involvement rate declining significantly in subsequent years²⁹. This high crash rate in the first year is not exclusive to young people, as

the 30–49 age group makes up 36% of licensed first year riders involved in fatal crashes, where age and licence history was known.

Consumption of alcohol even at low (legal) levels has been shown to have a larger impact on young licence holders than on older road users³⁰. For this reason, a zero blood/breath alcohol limit applies to all learner and provisional drivers and riders in Queensland under the age of 25 years. Currently, learner and provisional drivers aged 25 years or older must comply with the general alcohol limit (0.05).

A number of Australian jurisdictions require newly licensed riders to comply with a zero alcohol limit. First year RE and R licence holders in Queensland are already subject to a restriction on carrying passengers for the first 12 months, recognising that their skills are still developing. The zero alcohol restriction will apply in Queensland to all newly licensed motorcyclists, regardless of age, recognising the risks that novice riders face until they have accumulated sufficient riding experience. It is expected that this new restriction will commence in late 2009.

24 Mannering and Grodsky (1995), Statistical analysis of motorcyclists' perceived accident risk, *Accident Analysis and Prevention*, 27(1): 21-31.

25 Haworth, Ozanne-Smith, Fox and Brumen (1994), Motorcycle-related injuries to children and adolescents, Report No 56, Monash University Accident Research Centre.

26 Peek-Asa and Krause (1996), Alcohol use, driver, and crash characteristics among injured motorcycle drivers, *Journal of Trauma – Injury Infection and Critical Care*. 41(6):989-993.

27 Creaser, Ward, Rakauskas, Boer, Shankwitz and Nardi (2007), Effects of alcohol on motorcycle riding skills, DOT HS 810 877, National Highway Traffic Safety Administration.

28 Colburn, Meyer, Wrigley and Bradley (1993), Should motorcycles be operated within the legal alcohol limits for automobiles, *Journal of Trauma – Injury Infection and Critical Care*, 35(2): 183-186.

29 Queensland Transport (2006), Response to Issues Paper No. 11 – *Inquiry into the Q-RIDE Rider Training Program*, www.parliament.qld.gov.au/view/committees/documents/TSAFE/inquiry/Q-RIDE/Submissions/48a%20-%20Queensland%20Transport.pdf

30 Mayhew and Simpson (2001), Graduated licensing for motorcyclists, Traffic Injury Research Foundation.



Length of the learner licence

Currently in Queensland, a motorcycle learner licence can be held indefinitely by a person holding a car or other licence class. Motorcycle learners cannot ride on the road unless they are supervised by an appropriately licensed person. A significantly higher proportion of people currently hold a learner motorcycle licence (almost 23% of all motorcycle licences) than those who hold a learner licence for a car or other vehicle (less than four percent)³². It suggests that many holders of a motorcycle learner licence never progress beyond learner, because the learner licence status does not expire.

A maximum learner licence period would encourage riders to learn the skills necessary to progress to an RE licence. A maximum learner licence period of three years was proposed as an option in the *Motorbike Safety in Queensland – Consultation Paper*. If at the end of the learner period the learner has not gained the necessary skills, they would be required to reapply for their learner licence, re-sitting the practical and theoretical assessment. This would help ensure that riders consolidate their practice and skills to become safer riders as well as ensuring new riders maintain current road rules knowledge.

Currently, there is a minimum learner licence period of six months for riders being assessed under the Q-SAFE system to allow riders sufficient time to accumulate skills and experience. This encourages riders to get on-road experience and understand the

operation of a motorcycle. There is no minimum learner licence period for riders who are trained within the Q-Ride system and assessed as competent.

Actions

- Introduce new restrictions to enhance the current motorcycle graduated licensing system, including:
 - replace the 250mL engine capacity restriction for learner and RE licence holders with a Learner Approved Motorcycle Scheme (LAMS), consisting of 150 kilowatts per tonne power-to-weight ratio and 660mL engine capacity upper limit;
 - a zero blood and breath alcohol limit for all learner, provisional and novice motorcycle licence holders, regardless of age (the term ‘novice rider’ refers to the first 12 months of licensing after the learner stage even though the rider may have held an open car licence for some time);
 - no passengers for learner riders (including a supervisor);
 - a requirement for riders holding a provisional licence to display a P plate; and
 - minimum and maximum learner licence periods.
- Investigate the benefits of introducing a zero alcohol limit for all motorcycle riders.



³² Queensland current driver licences as at 31 December 2007, Data Analysis Unit, Queensland Transport.

Research revealed that riders wearing any reflective or fluorescent clothing had a 37% lower crash risk than those who did not wear such clothing.³³

Priority: Protective clothing

Protective clothing for motorcyclists such as leather gloves, jackets, trousers, suits, boots and impact protectors can significantly reduce minor injuries such as bruising, abrasions and lacerations in the event of a crash. Safety standards have been developed for motorcycle clothing in Europe. While Australia has voluntary industry guidelines developed by Standards Australia, it does not have an enforceable standard or ratings system to inform motorcyclists about the protective qualities of the clothing they buy.

The visibility of motorcyclists is considered an important factor in motorcycle crashes involving other motor vehicles. The visible areas of a motorcycle and rider are smaller than that of other motor vehicles. While motorcycle riders can help themselves by being more conspicuous to other road users, drivers are often unaware that motorcycle riders are present on the road. Enhancing rider visibility may prevent crashes.

Research conducted in New Zealand revealed that riders wearing any reflective or fluorescent clothing had a 37% lower crash risk than those who did not wear such clothing³³. Increased use of reflective or fluorescent clothing and light coloured helmets could make motorcyclists more visible to other road users, and help to reduce motorcycle crash related injury and fatalities.

Queensland Transport encourages motorcycle riders and their passengers to wear protective and high visibility clothing throughout their motorcycle riding life. The information provided by Queensland Transport will continue to educate and encourage riders to choose clothing that protects them in the event of a crash and increases their visibility to other motorists on the road.

Actions

- Develop public education campaigns and/or communication activities that encourage motorcyclists to:
 - wear protective clothing to mitigate injury severity in the event of a crash; and
 - wear clothing to improve motorcyclist visibility to other road users.
- Participate in the development of a national guideline for protective gear for motorcyclists, and once complete, promote to motorcyclists.
- Participate in the development of an Australian Standard or rating system (possibly based on the European Standard) setting technical specifications for motorcyclist gear prescribed as ‘protective’.

³³ Wells, Mullin, Norton, Langley, Connor, Lay-Yee and Jackson (2004), Motorcycle rider conspicuity and crash related injury: case-control study, *British Medical Journal* 328:857.

Dormant riders who maintain their motorcycle licence endorsement can return to riding at any time. This may contribute to the increase in older riders, and possibly even contribute to the increased crash involvement of older riders. As there is no additional fee to hold a motorcycle licence (when attached to a C class car licence),

many riders retain the motorcycle endorsement on their licence while not riding. Similarly, many drivers who have a licence endorsement to drive a bus or other heavy vehicle continue to hold that licence while no longer driving that class of vehicle. Nothing prevents a motorcycle licence holder from returning to riding after an extended period.

Actions

- Research the risks associated with dormant and returning riders, and investigate alternatives to encourage appropriate skills refreshment for riders returning after an extended break from riding.
- Develop public education campaigns and/or communication activities for returning riders (for example, information illustrating the risks for riders returning after an extended break from riding, and to encourage refresher training).

Priority: Public education safety campaigns

Queensland Transport will continue to develop, implement, and evaluate motorcycle safety campaigns. These campaigns primarily target motorcyclists (males aged 17–49), the increasing number of moped riders, and motorists. The public education campaigns follow a social marketing model with most motorcyclists targeted at the pre-contemplation stage of behaviour change. Firstly, it will target general awareness in motorcycle riders. Secondly, it will encourage individuals to recognise that a behavioural problem exists,





and subsequently encourage individuals to be analytical about their current attitudes and behaviours. The integrated marketing communication campaigns comprise of advertising, online presence, promotional collateral, publicity, and a media and issues strategy. Campaign activities are informed by extensive market research, crash statistical analysis, and stakeholder consultation. This also includes updating departmental publications such as *Your keys to driving in Queensland*, and other relevant publications. The Queensland Transport website will also be updated with key messages, information about changes to licensing and registration requirements, and ‘share the road’ messages.

Queensland Transport will investigate developing a motorcycle riders’ handbook, in print or electronic format, similar to those produced by the Road Transport Authority (New South Wales), and Department of Infrastructure, Energy, and Resources (Tasmania) and VicRoads (Victoria). It is envisaged that the publication will include information on motorcycle licensing, motorcycle types and protective clothing, safe riding, road rules, offences and penalties, and motorcycle roadworthiness.

This publication’s content would be informed by stakeholder consultation and market research.

Actions:

- Develop public education campaigns and communication activities, including:
 - a motorcycle riders’ handbook;
 - public education campaigns and/or communication activities to promote other new *Queensland Motorcycle Safety Strategy 2009–2012* initiatives;
 - evaluate current material and continue to develop new public education material for motorcycle riders and other road users (including ‘share the road’ type messages);
 - review the need for more ‘share the road’ information in *Your keys to driving in Queensland*; and
 - develop internet content appropriate for young riders.

Priority: Ongoing research

Having access to accurate and current data is critical to analysing trends in road safety. Queensland Transport has a strong relationship with a number of research institutions and equivalent interstate bodies, regularly commissioning research and communicating with peers to ensure that policy makers are kept up to date with relevant information.

There are some aspects of motorcycle safety that are not directly dealt with in this Strategy. This is because there is not enough known yet about the size or nature of the problem or the risks, or the best way to manage them.



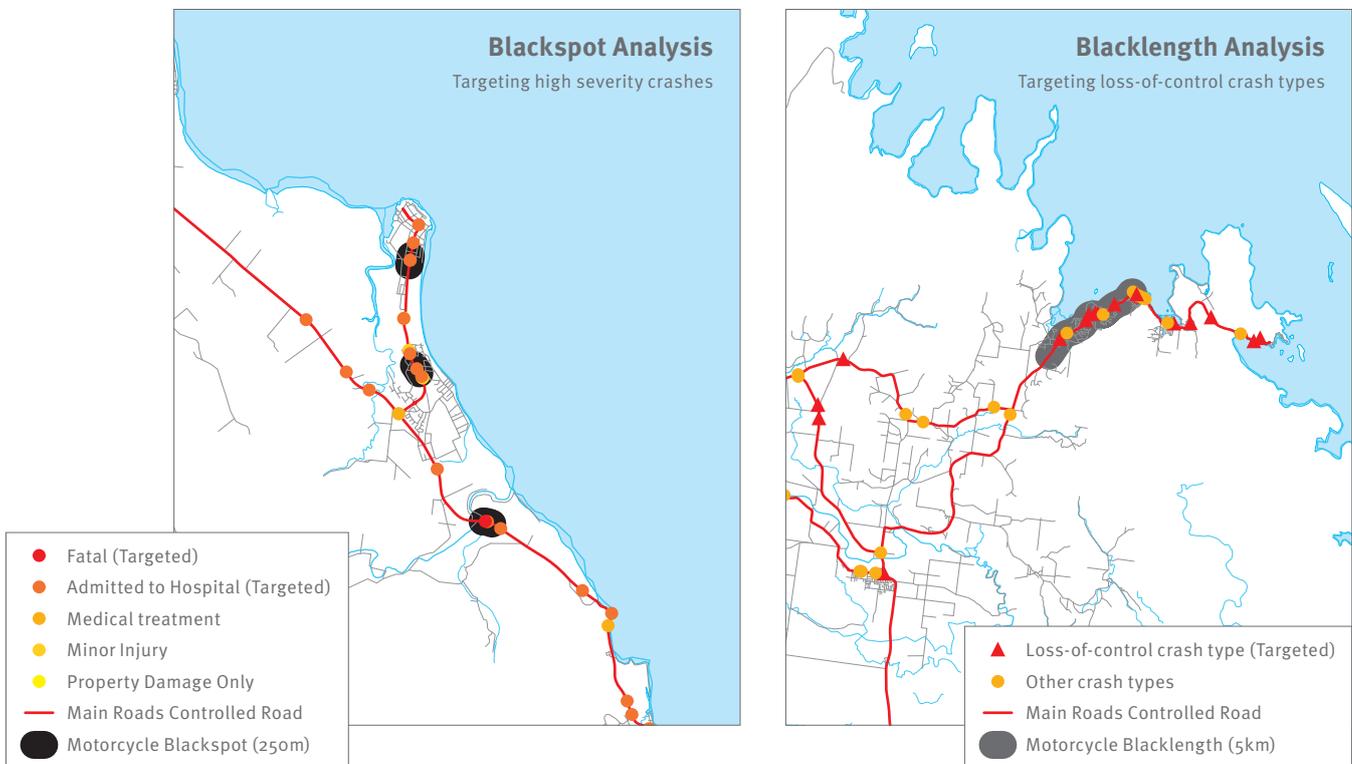
more crashes (ranging from hospitalisation to fatal in severity) (Figure 3). Treatments will be implemented along the entire length of identified routes and focus on providing riders with an ‘easy to read’ road environment, while providing forgiving roadsides that minimise crash severity for motorcyclists. The program will also develop guidelines to identify and prioritise routes most urgently requiring treatment.

The Motorcycle Mass Action Program will use a number of treatments similar to those utilised in the VicRoads Motorcycle Blackspot Program⁴⁰.

These include:

- minor areas of pavement resurfacing/ correction to provide a smooth road surface where there are irregularities/ corrugations on high risk curves or at areas of motorcycle braking;
- repair, sealing and delineation of shoulders on high risk curves;
- repairs to broken road edges;
- sealing of bellmouths at intersecting unsealed roads, driveways and parking areas, where appropriate, to prevent gravel wash;

Figure 3: Example of identified and targeted motorcycle high crash areas in Queensland locations



⁴⁰ VicRoads Motorcycle Safety Levy Program (2007), Guidelines for on-road treatments for motorcycle crashes, VicRoads.



For further information

Web: www.transport.qld.gov.au/motorbike_safety

Phone: 13 23 80 (during business hours)