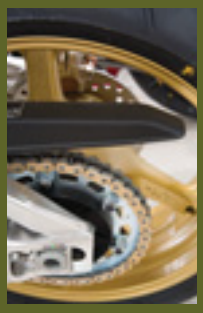
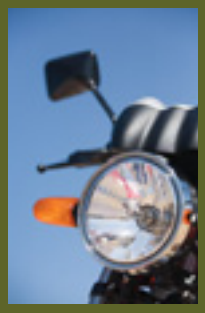
Graduated Licensing for Motorcyclists

A Discussion Paper

2010





State Government Victoria

Graduated Licensing for Motorcyclists
A Discussion Paper – 2010

Table of contents

Have your say

The Victorian Government is interested in receiving your views on the options presented to improve novice rider safety.

The consultation period will run until Friday 29 October 2010, please ensure that your response reaches VicRoads by that date.

During the consultation period, information forums will be held in Melbourne, Ballarat, Benalla and Traralgon.

If you would like further copies of this Discussion Paper or require further information about the information forums please go to:
www.arrivealive.vic.gov.au/motorcycleGLS

You can use the tear-out consultation response form which is found at Appendix 1.

Please send your comments to VicRoads by Friday 29 October 2010.

Motorcycle GLS Discussion Paper
VICROADS
Reply Paid 72780
KEW VIC 3101

Note: A stamp on the envelope is not required.

Or use the online feedback form at:
www.arrivealive.vic.gov.au/motorcycleGLS

Scope and definitions

This Discussion Paper provides an opportunity to have your say on a range of possible options that are designed to enhance the current motorcycle GLS, with the objective being to reduce the incidence and severity of novice rider crashes.

The scope of this Discussion Paper covers the licensing requirements for the legal operation of motorcycles and motor trikes on Victorian roads. The term 'motorcycle' incorporates mopeds and motor scooters. A motor trike is a motor vehicle with three wheels that has similar operating controls to a motorcycle.

Wherever injury statistics are presented in this paper, the term 'motorcyclist' includes pillion passengers.

Throughout the paper, efforts have been made to source data, research evidence and examples from other Australian jurisdictions as well as comparable overseas jurisdictions. Data on every issue was not always available from each jurisdiction. Where this is the case, only those jurisdictions with relevant data have been referred to.

Road safety principles and graduated licensing principles were also drawn upon in the development of the options for discussion in this paper.

Executive summary

Motorcycling is becoming more popular both as a means of transport and as a recreational activity. In particular, the growing population of motor scooter riders and commuters suggests that riding has become a more mainstream activity and is not the sole domain of motorcycle enthusiasts.

However, riding a motorcycle carries a higher level of risk than other modes of transport, as evidenced by the over-representation of motorcycle riders in crash statistics. Novice riders are particularly at risk because of their inexperience.

Graduated licensing is a system that delays full licensing, providing beginners with the opportunity to first gain experience and acquire critical skills under conditions of reduced risk. As novices gain maturity and experience, restrictions are gradually lifted and novices are able to experience and master new, more complex traffic conditions and scenarios. At the final stage, all restrictions are removed and the novice is granted a full privilege licence.

Although Victoria has had a graduated licensing system (GLS) in place for motorcyclists for a number of years, there is scope for improvements that would result in improved rider safety. The aim of an improved motorcycle GLS is to reduce the incidence and severity of novice rider crashes.

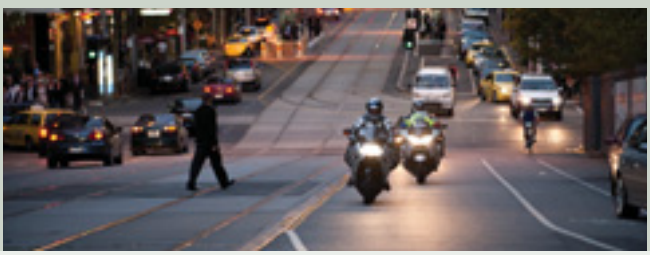
In the development of this paper, a broad range of issues under the banner of a motorcycle GLS has been considered. For some of these issues, Victoria already has the appropriate measures in place. However for other issues a range of options that will help address the novice rider crash problem are presented for public consideration.

The range of options falls into four broad categories:

- **Type and duration of phases**
- **Test requirements**
- **Training and skill development**
- **Restrictions/sanctions on novice riders**

A model for an improved motorcycle graduated licensing system is presented on page 5.

Your feedback on the options presented in this paper is particularly welcomed.



Category	Potential model
Type and duration of phases (Chapter 4.1)	**With car licence** ● Learner (3-15 months) ● Intermediate (3 years) ● Full
	Without car licence ● Learner (3-15 months) ● P1 (12 months) if <21 yrs old ● P2 (3 years) ● Full
Testing (Chapter 4.2)	**Learner permit** ● A more comprehensive and rigorous assessment of practical skills (range-based only)
	Licence ● A more comprehensive and rigorous assessment of practical skills incorporating an on-road component ● Motorcycle hazard perception test
Training and skill development (Chapter 4.3)	**Learner phase** ● Mandatory pre-learner training (standardised curriculum) ● Minimum hours of on-road supervised riding
	Intermediate licence phase ● Mandatory pre-licence training (standardised curriculum)
Restrictions / sanctions (Chapter 4.4)	**Learner phase** ● May only ride Learner Approved Motorcycle Scheme (LAMS) bike ● Zero BAC ● No pillion passenger ● No towing ● Must wear a high-visibility vest while riding ● Must wear motorcycle protective clothing ● Must be supervised when riding ● Must not ride during defined night time hours ● Automatic transmission restriction if practical test is passed on an automatic motorcycle/ scooter
	Intermediate licence phase ● May only ride LAMS bike ● Zero BAC ● No pillion passenger ● Licence status of rider must be identifiable for enforcement purposes (e.g. similar to an L plate) ● Automatic transmission restriction if practical test is passed on an automatic motorcycle/ scooter ● Good riding record
	Full licence phase ● Automatic transmission restriction if practical test is passed on an automatic motorcycle/ scooter

CHAPTER 1

Introduction

1.1 Popularity

The use of motorcycles is increasing in Victoria. Throughout the past decade, the popularity of motorcycling has been dramatically increasing, with a 73 per cent increase in motorcycle registrations in Victoria over the ten years to 2009. As well as registrations, the number of motorcycle licences in Victoria has been increasing (Figure 1). In 2009, almost 25,000 Victorians obtained a motorcycle learner permit, and around 15,000 Victorians progressed from a motorcycle learner permit to a motorcycle licence. Motorcycling is becoming more popular both as a means of transport and as a recreational activity. The growing population of the scooter segment of the motorcycle fleet and practical commuting motorcycles suggests that riding has become a more mainstream activity and is not the sole domain of motorcycle enthusiasts.

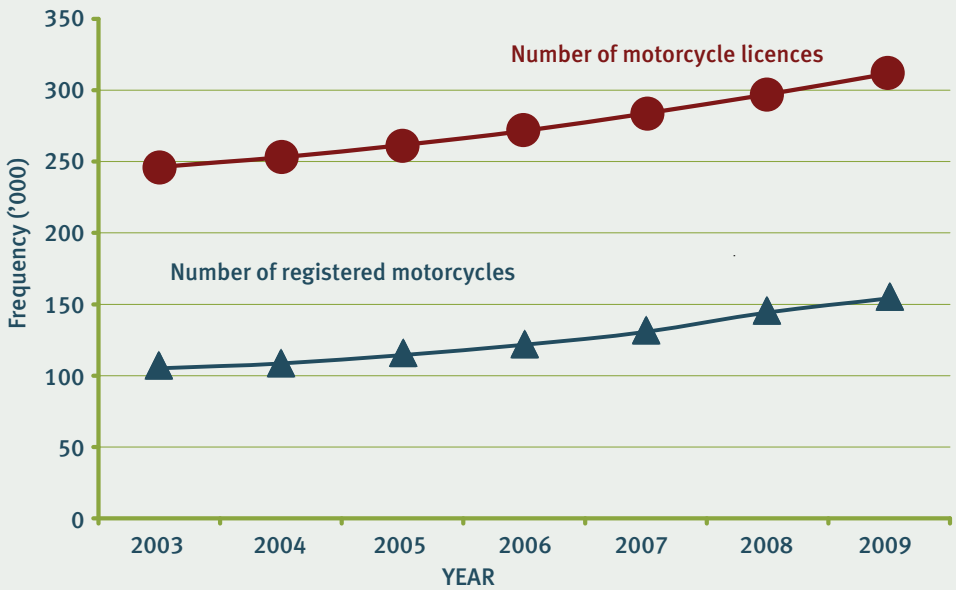


Figure 1. Increases in Victorian motorcycle registrations and licences

1.2 Safety

Riding a motorcycle carries a higher risk of crash and injury than driving a car because of the inherent instability of the motorcycle and because, unlike other vehicle occupants, the rider is essentially unprotected. As a result, motorcyclists involved in crashes tend to sustain multiple injuries to the head, chest and legs either from the direct contact with solid objects or as a result of crush forces.

In Australia, motorcyclists are over-represented in road trauma statistics. A report for the Australian Institute for Health and Wellbeing states that the rate of serious injury per 100,000 registered vehicles for motorcyclists nationally is 10 times that for car occupants. When distance travelled is taken into consideration, the rate of serious injury per 100 million vehicle kilometres travelled for motorcyclists is 38 times that for car occupants[1]. The increased risk for motorcyclists compared to car drivers and passengers is common in many parts of the western world.

International comparison of motorcyclist risk per distance travelled:		
Country	**Risk effect**	**Compared to**
Australia	38 times more likely to be seriously injured	Car occupants
USA	34 times more likely to be killed	Car occupants
United Kingdom	50 times more likely to be killed or seriously injured	Car drivers
New Zealand	16 times more likely to be killed	Car occupants

Sources:[2] [3] [4]

Motorcycles account for less than four per cent of all vehicles registered in Victoria, and motorcyclists represent about seven per cent of all Victorian licence holders. However, over the last five years, motorcyclists comprised more than 14 per cent of all road fatalities and serious injuries. In 2009, 38 motorcyclists were killed and 1013 were seriously injured on Victorian roads.

Over the past 10 years, 464 motorcyclists were killed and 9174 seriously injured. While there has been a general downward trend in motorcycle fatalities over the last five years, Figure 2 shows that there is an upward trend in the number of serious injuries for motorcyclists in Victoria. The ten year trend in motorcyclists killed or seriously injured in Victoria as a proportion of all road users is shown in Table 1.

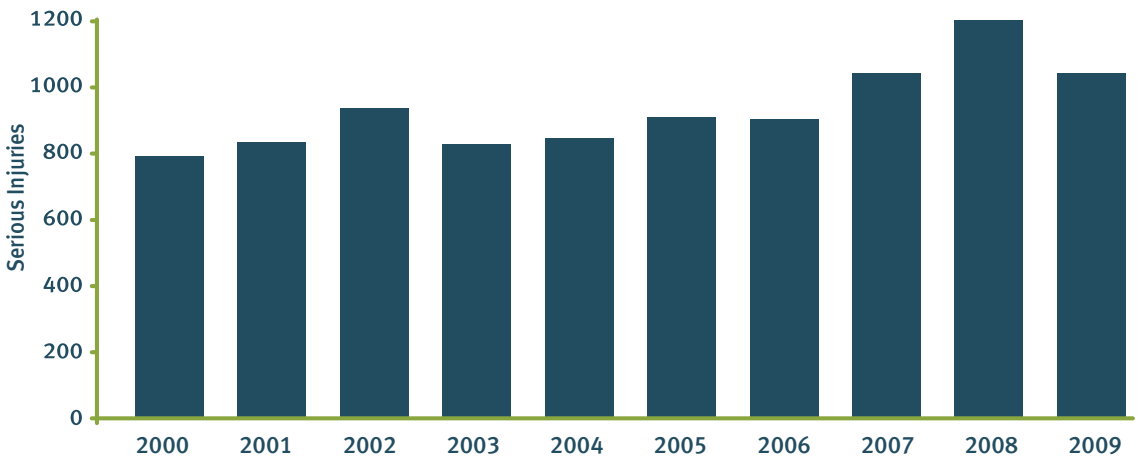


Figure 2. Motorcyclist serious injuries in Victoria 2000-2009

Source: VicRoads crash data

Table 1. Ten-year trend of motorcyclist fatalities and serious injuries					
YEAR	Motorcyclist fatalities	% of all fatalities	Motorcyclist serious injuries	% of all serious injuries	Fatalities and serious injuries per 10,000 motorcycle registrations
2000	46	11.3%	789	12.4%	93.7
2001	64	14.4%	826	12.3%	94.2
2002	56	14.1%	930	13.4%	96.3
2003	39	11.8%	822	12.3%	82.0
2004	37	10.8%	840	13.1%	80.8
2005	48	13.9%	901	14.5%	83.0
2006	47	13.9%	898	12.6%	77.7
2007	45	13.6%	1032	13.1%	82.5
2008	43	14.2%	1194	16.3%	85.8
2009	38	13.1%	1013*	16.2%*	68.1*

Source: VicRoads crash data *estimate based on 999 crashes currently in database

Motor scooters have been identified as an emerging road user group. Crashes involving motor scooters account for an increasing proportion of all motorcycle crashes in Victoria. In 2007, motor scooters accounted for about 6.4 per cent of all registered motorcycles in Victoria[5], yet they comprised about 15 per cent of all killed or seriously injured motorcyclists[6].

1.3 Crash data shows novice riders are at risk

Motorcyclists in their first years of riding are involved in more crashes than riders with more years of riding experience. Figure 3 shows that there is a significant decline in the number of motorcycle crashes as licence duration increases.

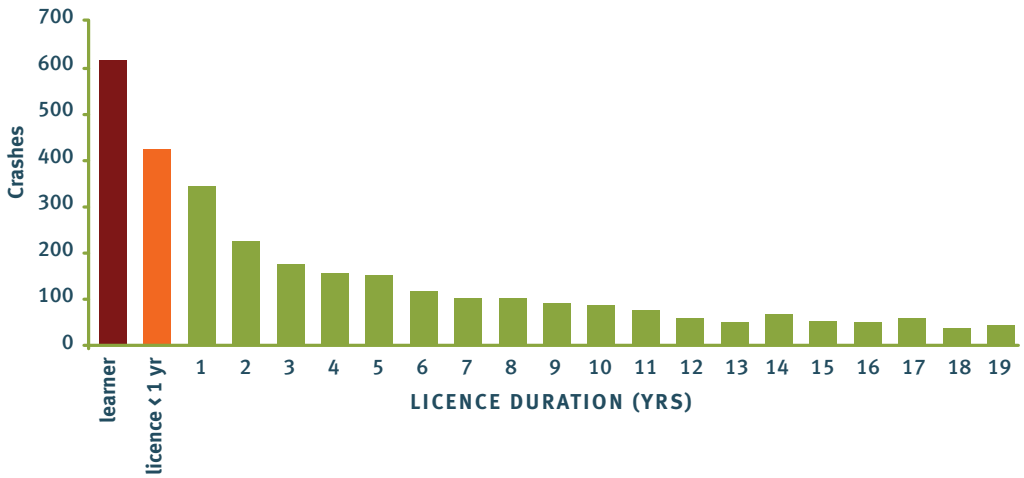


Figure 3. Number of motorcycle crashes (fatal and serious injury) by licence duration

Source: Victorian crash data 2003-2007

Crash rates are higher for learner motorcycle riders than they are for motorcycle licence holders. Table 2 clearly shows that the crash rate for motorcycle learner riders is significantly higher - approximately three times that for motorcycle licence holders.

Table 2. Casualty rate by motorcycle licence type

Licence type	Number	Killed or seriously injured (KSI)	KSI per 100,000 licences
Motorcycle learner permit	21,366	149	697.4
Motorcycle licence	283,729	667	235.1

Source: Victorian licence and crash data (for 2007)

Between 2003 and 2007, learner motorcyclists comprised 18 per cent of all motorcyclist fatalities and 17 per cent of all motorcyclist serious injuries. First year licence holders with restrictions comprised 11 percent and 12 per cent respectively (Table 3). In total, novice riders represent almost one-third of all motorcycle fatalities and serious injuries.

Table 3. Motorcycle fatal and serious injuries, Victoria 2003-2007

Licence type	Fatalities		Serious injuries	
	Number	% of total	Number	% of total
Learner	30	18	584	17
Licence – restricted	18	11	402	12
Licence - full	118	71	2449	71

Source: Victorian crash data 2003-2007

The pattern of novice rider crash risk is similar in other jurisdictions. Queensland crash data shows that 36-39 per cent of all fatal crashes are riders in their first year of riding. Western Australia has reported that between 2006 and 2009, riders aged 16 to 25 years accounted for between 20-65 per cent of all rider fatalities[7].

In the UK, the effects of age and experience together showed that a 22 year old rider with 6 years experience has a crash risk 50 per cent lower than a 17 year old rider with one year of experience[8].

However, the novice motorcycle crash problem is not isolated to young riders. Many novice motorcyclists are not in the 18-22 age group and already have a car licence by the time they obtain their motorcycle learner permit or licence. The MAIDS study in Europe suggests that inexperienced riders are not as skilled at risk identification or anticipation of dangerous situations as are experienced riders[9].

Improvements can be made to motorcycle licensing to better prepare learner riders for riding on the roads, regardless of age.

1.4 Why are novice riders more vulnerable road users?

Evidence of the increased risk for novice riders is demonstrated in the text shown below from the website of a motorcycle training school in Ontario, Canada. New licence applicants are informed about the risks associated with riding, enabling them to make an informed choice before they register to do the training course and apply for their motorcycle licence.

Research has demonstrated that learner and novice motorcyclists, like learner drivers, take some time to develop their skills[10]. For example, common crash contributory factors include failure to respond to hazards, ineffective braking and inappropriate road positioning[11]. While vehicle handling skills are considered more important for motorcyclists than car drivers, motorcyclists must also have superior cognitive skills for riding that can only be obtained through experience. These higher order cognitive skills include[11]:

- perceptual ability to judge the radius, width and camber of a curve
- hazard perception including detection, response choice and execution
- detection of road surface hazards, temporary road-based hazards, visual obstructions, road alignment/curves, hazards caused by other road users

Motorcyclists must also be equipped for the demands of riding, including concentration, fatigue, and physical discomfort. Further research has claimed that there is a need to undertake ongoing practice and self-assessment of skill development[12].

'Motorcycling is inherently risky. Although we strive to provide a very safe training environment, there is still a risk of injury. These courses are strenuous, tiring, mentally and physically challenging. On an average course, a couple of people may have a minor accident and receive scrapes to knees and other body parts. A few people during the training season may incur more significant injuries such as fractures and sprains. You will be required to sign a waiver of claim prior to taking our course. If these risks are unacceptable to you, and you do not wish to sign the waiver, please do not register.' Source: Motorcyclecourse.com, Ontario, Canada

1.5 Visibility

Motorcycles, because of their size and manoeuvrability, are often harder to see in traffic than other motor vehicles, even during the daytime. Additionally, drivers can have difficulty in estimating the speed of the motorcycle and therefore judging gap selection becomes important. While previous awareness campaigns have aimed to increase driver awareness of motorcycles, motorcyclists also have a responsibility to take some relatively simple measures to increase the likelihood they will be seen in traffic.

A New Zealand study found that wearing white helmets and highly visible clothing would reduce visibility-related motorcycle crashes by 45 per cent[13]. In addition, it has been found that motorcyclists who use daytime running lights have a crash risk about 10-29 per cent lower than those that do not.[14]

CHAPTER 2

Road safety in Victoria - making riding safer

Victoria's roads and road users are amongst the safest in the world. Victoria's road safety strategy, *arrive alive* 2008-2017 was developed using Safe System thinking.

By taking a total view of the combined factors involved in road safety, the Safe System approach aims to design and build a transport system that will protect responsible road users and reduce the number of deaths and serious injuries. A Safe System approach encourages a better understanding of the interaction between the key elements of the road system – road users, vehicles, roads and roadsides, and travel speeds.

The purpose of licensing motorcycle riders within a Safe System approach, is to ensure:

- that riders are competent to ride on roads
- that riders are aware of safe riding practices and road law
- that riders who are, or who become, unfit to ride are not permitted to ride on the road
- identification of riders for the purposes of law enforcement and crash investigation[15].

2.1 Victorian Government commitments to improve motorcycle safety

Under *arrive alive* 2008-2017, to assist in achieving a 30 per cent reduction in all road deaths and serious injuries, the Victorian Government is committed to 'improved training programs and licensing systems for riders to enhance the defensive riding skills of inexperienced riders', and 'promoting the use of high standard protective wear by motorcyclists'.

In addition, Victoria's Road Safety and Transport Strategic Action Plan for Powered Two Wheelers 2009-2013 ('the PTW Plan') aims to reduce motorcyclist and scooter rider fatalities and serious injuries and to ensure that PTWs are recognised in transport policy and planning. Under the PTW Plan, the Victorian Government has committed to 'review the licensing and training system for PTWs and identify opportunities for improvements', stating that 'a GLS for PTWs similar to the new GLS for car drivers should be considered'.

2.2 What is graduated licensing?

Graduated licensing is a system that delays full licensing, providing beginners with the opportunity to first gain experience and acquire critical skills under conditions of reduced risk. As novices gain maturity and experience, restrictions are gradually lifted and novices are granted the opportunity to experience and master new, more complex traffic conditions and scenarios. At the appropriate time, all restrictions are removed and the novice is granted a full privilege licence.

2.3 Elements of graduated licensing

The increased risk of a crash for novice motorcycle riders and car drivers is universal, and graduated licensing systems can effectively reduce this risk. A GLS can apply to all novice riders, not just those who are young. Research has clearly demonstrated that older novice riders and drivers experience higher crash rates than riders and drivers of the same age with several years of experience[8]. The reduction in the incidence of crashes resulting from the introduction of a GLS for riders and drivers in countries around the world varies from four per cent to over 60 per cent depending upon restrictions used and the degree to which they are enforced[14].

A motorcycle GLS aims to address the lack of skills and the high crash involvement of novice riders until they have gained some initial experience riding in conditions of reduced risk. A motorcycle GLS can include measures aimed at reducing the impact of these factors on the over-representation of motorcyclists in serious crashes. These factors include:

- vulnerability to injury
- inexperience
- driver failure to see motorcycles
- instability and braking difficulties
- road surface and environmental hazards
- risk taking.

A motorcycle GLS should include a range of measures aimed at reducing the impact that these factors have on novice rider crashes. Critical to this, and to determine the optimal GLS for motorcycle riders, the following questions need to be considered:

- what is the best way for novice riders to gain riding experience (eg. training, supervision, riding practice etc)?
- to what extent do the skills and experience gained through car driving assist novice riders when learning to ride?
- what type and level of testing is required to ensure riders are competent?
- what restrictions and sanctions are required to ensure novice riders gain valuable riding experience in the absence of some of the 'higher-risk' riding situations?

A motorcycle GLS should include:

- **pre-licence training**
- **a defined number of phases with requirements to progress from one phase to the next**
- **appropriate duration of the phases to ensure adequate opportunity for learning and skill development**
- **a range of tests (theory and practical)**
- **appropriate conditions and sanctions to protect the novice rider from key crash risk factors**
- **identification of novice riders for enforcement and education purposes**
- **a requirement to obtain riding experience.**

CHAPTER 3

Current GLS for new riders in Victoria

3.1 Rider obligations

All riders, including novice riders, have obligations to ride in a safe manner having regard to:

- physical characteristics of the road
- prevailing weather conditions
- level of visibility
- condition of the motor vehicle
- prevailing traffic conditions
- relevant road laws and advisory signs
- physical and mental condition of the driver (rider)
- the rights of other road users and taking reasonable care to avoid any conduct that may endanger the safety or welfare of other road users

3.2 Current motorcycle licensing

The current process for obtaining a motorcycle licence is summarised and presented in Figure 4. While the current motorcycle GLS implements a number of the proven measures to prepare new riders for the roads, more can be done to improve the licensing system for novice riders.

In the development of this paper, a broad range of issues under the banner of a motorcycle GLS has been considered. For some of these issues, Victoria already has the appropriate measures in place. Issues that were considered but where no change is proposed include:

3.2.1 Minimum age for obtaining a motorcycle learner permit and licence

There is some variation throughout Australia on the minimum age for obtaining a rider learner permit, ranging from 16 years in Western Australia, Northern Territory and South Australia to 18 years in Victoria and Queensland. Age (or more specifically, youth) is the most important risk factor for motorcyclists, followed then by experience. Across Australia young, novice motorcyclists (16-24 years) continue to be over-represented in casualty crash rates[10].

The World Health Organisation reported that the greatest cost-benefit measure to reduce motorcycle crashes in Malaysia was to increase the legal riding age from 16 to 18 years[14]. The Transport Research Laboratory in the UK found that, all things being equal, a 26-year old novice rider (with less than 1 year riding experience) has a crash risk 40 per cent lower than a 17-year old novice rider.

By granting a motorcycle learner permit at age 18 years, it is expected that many novice motorcyclists will have developed some fundamental road awareness through supervised driving as a learner driver[8]. Further increases to the licensing age could be expected to deliver additional road safety benefits. However, the negative impact on social mobility and travel arrangements means that this is not under consideration. Conversely, lowering the licensing age would most likely result in an increase in crashes, therefore no change to the minimum licensing age is proposed.

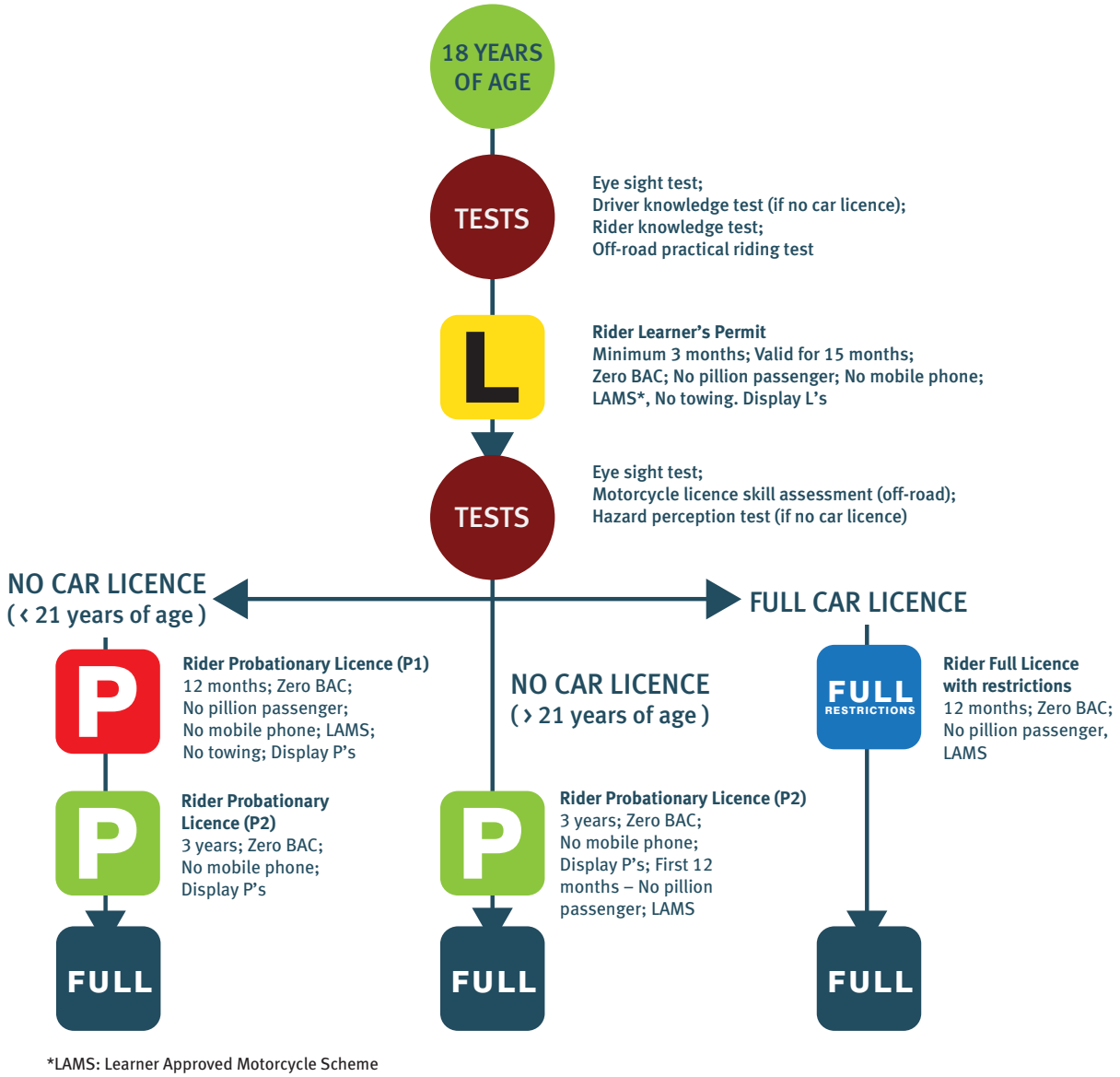


Figure 4. Summary of the current process for motorcycle licensing in Victoria

(note: the full processes could not easily be included schematically – for full details, please visit www.vicroads.vic.gov.au)

3.2.2 Knowledge (theory) tests

Knowledge tests are an important requirement to ensure that novices have a basic understanding of theory and road laws prior to entering the road environment. In order for knowledge tests to be effective, they must be complemented by a handbook, or some alternative means of providing the relevant information.

In Victoria there are two knowledge tests that riders are required to pass. One of these is the driver road law knowledge test, which is based on information provided in the 'Road to Solo Driving' handbook. The other is a rider theory knowledge test which is based on information provided in the 'Victorian Rider Handbook'.

These tests are essential to ensure that riders are aware of the road law and the basics of motorcycle riding. As Victoria already has a motorcycle knowledge test and a motorcycle theory handbook, no change is proposed.

3.2.3 Blood Alcohol Content (BAC) restriction

Alcohol consumption adversely affects driving and riding performance. There is strong evidence from evaluations of zero BAC among novice drivers that such a measure is effective in reducing the crash risk of this group. A European study of motorcycle crashes throughout France, Germany, Netherlands, Spain and Italy found that the risk of crash involvement on a motorcycle while under the influence of alcohol was 2.7 times greater than the risk when sober[9]. This result, coupled with the finding that the effects of alcohol consumption on motorcycle riding are more dramatic than on **car** driving (due to the role of coordination and balance in riding)[16], confirms the value of a zero BAC for novice riders.

All Australian jurisdictions, with the exception of the ACT, have a zero BAC restriction, which applies at least across the learner and intermediate phases of their respective licensing systems.

It is not proposed to change the requirement of zero BAC for novice riders, however a change to the duration of the restriction is under consideration (see Ch 4.1.1).

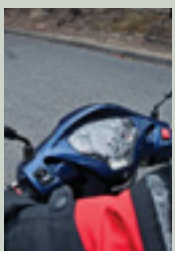
3.2.4 Passenger restriction

For a motorcyclist, carrying a passenger makes the task of balancing the motorcycle more difficult [16]. In addition, peer passengers can cause a distraction for the novice rider and may deliberately or inadvertently encourage risk-taking behaviour. While the latter is the justification for peer passenger restrictions for novice car drivers, it is primarily the issue of balance which is the concern for novice rider safety. The current requirement that all learner riders and newly licensed riders cannot carry a pillion passenger appears well justified.

All Australian jurisdictions have a pillion passenger restriction for novice riders, with the exception of Western Australia and South Australia. In South Australia, during the learner phase, a pillion passenger is permitted as long as he/she holds a full rider licence.

It is not proposed to change the requirement for a pillion passenger restriction for novice riders, however a change to the duration of the restriction is under consideration (see Ch 4.1.1).




3.2.5 Road type and speed restriction

Road type restrictions prohibit driving/riding on certain road types. Speed restrictions prohibit driving/riding above a certain speed – even if the posted speed limit is higher. While there are no Australian jurisdictions that impose a road type restriction, four jurisdictions impose speed restrictions as part of their GLS for riders. For example, in NSW, novice drivers and riders who are in the learner phase are not permitted to exceed a speed of 80 km/h. Novice riders and drivers who are in the first phase of their probationary licence must observe a maximum speed of 90 km/h, while those novices who are in the second phase of their probationary licence must not exceed a speed of 100 km/h.

The rationale behind such restrictions stems from research that has shown roads with high traffic volume, mixed vehicle types and multiple lanes to be associated with a higher demand on riders, particularly for novices, than other road types[17]. In principle, travelling at lower speeds provides drivers/riders with a greater safety margin. However, there is a real concern that the speed differential created by novice road user speed restrictions could create an unintended risk. Therefore no change is proposed.

3.2.6 Engine capacity/Power-to-weight restriction

Engine size has been shown to be a risk factor for motorcycle crashes. Research has shown that riding a motorcycle with an engine capacity greater than 750cc significantly increases crash risk compared to riding a motorcycle with an engine capacity under 260cc[11].

The World Health Organisation reported that when the United Kingdom reduced the engine size from 250cc to 125cc accompanied by a maximum power output to 9kW for inexperienced motorcyclists, the casualty rate for novice motorcyclists was reduced by 25 per cent.

Engine capacity restrictions prohibit novices from riding motorcycles with an engine capacity above a certain size. Power-to-weight restrictions prohibit novices from riding motorcycles that exceed a certain power-to-weight ratio. In Australia, most jurisdictions have implemented a Learner Approved Motorcycle Scheme (LAMS) which consists of a list of motorcycles that have a power to weight ratio not exceeding 150 kW/tonne and a maximum engine capacity of 660cc.

It is not proposed to change the requirement for a LAMS restriction for novice riders, however a change to the duration of the restriction is under consideration (see Ch 4.1.1).

CHAPTER 4

Options to improve the motorcycle GLS

Based on best available evidence, a number of new measures, many of which are designed to work together, can be introduced to improve the motorcycle GLS. Options based around these measures are presented in this chapter, and are grouped into four broad categories:

- **Type and duration of phases**
- **Testing**
- **Training and skill development**
- **Restrictions/sanctions**

A potential model for an improved motorcycle GLS is presented below for consideration and each category is expanded in the following sections. Where the potential model differs from the current system **a different colour** is used:

Category	Current GLS	Potential model
Type and duration of phases (Chapter 4.1)	**With car licence** • Learner (3-15 months) • Restricted (12 months) • Full	**With car licence** • Learner (3-15 months) • Intermediate (3 years) • Full
	Without car licence • Learner (3-15 months) • P1 (12 months) if <21 yrs old • P2 (3 years) • Full	**Without car licence** • Learner (3-15 months) • P1 (12 months) if <21 yrs old • P2 (3 years) • Full
Testing (Chapter 4.2)	**Learner permit** • Range-based test at a private training provider	**Learner permit** • A more comprehensive and rigorous assessment of practical skills (range-based only)
	Licence • Range-based test at a private training provider	**Licence** • A more comprehensive and rigorous assessment of practical skills incorporating an on-road component • Motorcycle hazard perception test

Category	Current GLS	Potential model
Training and skill development (Chapter 4.3)	Learner phase • Training is optional (no standardised curriculum) • No evidence of riding required	Learner phase • Mandatory pre-learner training (standardised curriculum) • Minimum hours of on-road supervised riding
	P1/P2/Restricted licence phase • Training is optional (no standardised curriculum)	Intermediate licence phase • Mandatory pre-licence training (standardised curriculum)
Restrictions / sanctions (Chapter 4.4)	Learner phase • May only ride Learner Approved Motorcycle Scheme (LAMS) bike • Zero BAC • No pillion passenger • No towing	Learner phase • May only ride Learner Approved Motorcycle Scheme (LAMS) bike • Zero BAC • No pillion passenger • No towing • Must wear a high-visibility vest while riding • Must wear motorcycle protective clothing • Must be supervised when riding • Must not ride during defined night time hours • Automatic transmission restriction if practical test is passed on an automatic motorcycle/scooter
	Restricted licence phase • May only ride LAMS bike • Zero BAC • No pillion passenger	Intermediate licence phase • May only ride LAMS bike • Zero BAC • No pillion passenger • Licence status of rider must be identifiable for enforcement purposes (e.g. similar to an L plate) • Automatic transmission restriction if practical test is passed on an automatic motorcycle/scooter • Good riding record
	Full licence phase • None	Full licence phase • Automatic transmission restriction if practical test is passed on an automatic motorcycle/scooter

While comparisons can be made with the driver GLS, there is little crash data or research that accurately estimates the impact of similar GLS measures on rider safety. In addition, while it is relatively simple to estimate the costs of a proposed measure on the individual rider and the community, it is not possible to isolate and calculate the benefits of a measure or a range of measures in crash outcomes or dollar benefits for novice riders. Figure 5 shows the estimated reductions for some of the key measures in the car GLS. Estimated reductions for motorcyclists could be expected to be of a similar (if not somewhat reduced) magnitude. However, the BAC estimates listed may be too high given that riding during high alcohol hours is less common for motorcyclists than for car drivers, therefore any expected benefit would likely be reduced.

VicRoads Graduated Licensing System Regulatory Impact Statement 2007 for car drivers assessed the introduction of the four stage GLS and applied the following crash reductions based on local and international research literature across the key features:	
GLS measure	**Estimated reductions**
120 hours practice and 12 months minimum period for learner permit.	– 10 % reduction for 1st and 2nd year P drivers aged 18 & 19 years of age; and – 5 % reduction for 1st and 2nd year P drivers aged 20 years or more.
P1 licence for one year; P2 licence for three years; no use of mobile phones or towing for P1 licences and fourth year probationary – zero blood alcohol concentration.	– 1 % reduction for 1st year P drivers; – 17 % reduction for 4th year P drivers in high alcohol hour fatal crashes; – 11 % reduction for 4th year P drivers in high alcohol hour serious crashes; and – 4.5 % reduction for 4th year P drivers in injury crashes.
Probationary driver requirements across P1 & P2 licences; good driving record requirement and revised high powered vehicle restriction.	– 5 % reduction for P drivers involved in casualty crashes.

Figure 5. Estimated crash reductions for car GLS measures

4.1 Type and duration of phases

Traditionally, a GLS consists of at least three phases – although there are some instances of four or more for car drivers. The three phases generally include[18]:

- Learner phase (pre-learner training, testing, supervised riding, restrictions),
- Intermediate phase(s) (probationary-type phase – training, testing, solo riding, restrictions),
- Full licence phase (solo, unrestricted riding).

In Victoria, the intermediate phase for car drivers is the probationary phase. However for new motorcycle riders who already hold a full car licence, the intermediate phase for motorcycling is specified by restrictions on a full licence.

Staggered training assessment and the gradual removal of restrictions allows novice riders to develop critical riding skills before being exposed to greater crash risks.

Currently, when minimum time periods are followed, a motorcyclist with a full car licence can progress through the learner and restricted licence phase in as little as 15 months and then be on a full motorcycle licence. In comparison, novice car drivers can be in the graduated licensing system for a minimum of three years and three months (if over 25 years of age) and five years (if under 21 years of age) before they can be issued with a full licence.

As the range of measures that comprise the motorcycle GLS often work in conjunction with each other, as well as with other motorcycle safety initiatives, the effects of the individual motorcycle GLS measures cannot be easily disaggregated. However, driver GLS research is the best available evidence of the possible impacts of the type and duration of phases of novice riding and is useful to broadly evaluate this measure.

4.1.1 Time period for holding an intermediate motorcycle licence

Restrictions and conditions on the novice rider are an important mechanism to ensure that the rider gains experience under conditions of reduced risk. The duration of this time as a novice must allow the rider to increase their riding experience, which will in turn reduce their crash risk, before the restrictions are lifted and they are issued with a full motorcycle licence.

Motorcycle-specific restrictions on novice riders currently apply for 12 months from the date the licence is obtained. This is inconsistent with Victoria's novice car driver GLS which has a 12 month P1 phase and a three year P2 phase.

An anomaly of the current system permits a rider as young and inexperienced as 19 years and three months of age to be off their LAMS restriction and hence ride any sized motorcycle. This includes motorcycles that have performance capabilities way beyond what can be designed for in a Safe System. Such motorcycles are capable of speeds well in excess of 200km/h and can accelerate from 0-100km/h in under four seconds. Only ultra high performance cars have anywhere near the acceleration capabilities of standard sports motorcycles. Yet the same individual will be subject to the high-powered vehicle restrictions when driving a car until they obtain a full car licence which will be no earlier than 22 years of age.

By extending the intermediate phase, novice riders would be required to ride under certain licence conditions aimed at reducing their crash risk for three years, rather than 12 months. This will make novice riders subject to conditions and restrictions for a longer duration to provide further additional opportunities to develop skills under conditions of reduced risk before being fully licensed.

Q1. Do you support the extension of novice rider restrictions (i.e. the intermediate phase) from 12 months to 3 years?

4.2 Testing

The main objective of testing is to ensure that riders are competent to progress from one licensing phase to the next phase. Aiming to successfully pass a test encourages novices to accumulate sufficient riding knowledge and experience.

The types of tests that can be administered as part of a motorcycle GLS include road law knowledge tests, driving/riding theory tests, eyesight tests, basic motorcycle skills tests, on-road practical tests, hazard perception tests, and exit tests.

All Australian jurisdictions have tests as part of their motorcycle licensing. Research of other jurisdictions demonstrates that there is significant variability between the jurisdictions on the number, range, components and timing of the tests.

4.2.1 Practical tests

The purpose of a practical riding test is to assess an individual's ability to perform a defined task to a set standard. Currently in Victoria, there are two practical riding tests as a novice rider progresses through the motorcycle licensing system. The first of these is the Learner Permit Skills Assessment; the second is the Motorcycle Licence Skills Test. Both of these tests are conducted on an off-road training range (i.e. not on public roads). A more comprehensive and rigorous assessment of practical skills could be included in a range-based test to obtain a learner permit, and a combination of range-based and on-road testing for the rider to advance to the licence phase.

Q2. Do you support the introduction of a more comprehensive and rigorous assessment of practical skills (range-based) to obtain a motorcycle learner permit?

Q3. Do you support the introduction of a more comprehensive and rigorous assessment of practical skills with an on-road component to obtain a motorcycle licence?

4.2.2 Hazard perception

The relative instability of motorcycles combined with the vulnerability of riders in a crash make it critical for riders to have well-developed hazard perception and response skills. Research using simulations has shown that there is a relationship between reduced hazard perception ability and increased crash involvement among novice riders[19].

When riding on the road, riders are faced with a greater number of additional hazards compared to car drivers. Road-surface hazards such as loose gravel, potholes, paint and tram tracks are unlikely to cause a problem for a car but can all cause a rider to lose control, particularly in adverse weather conditions. Opening car doors or other vehicles pulling out without indicating can result in serious injuries for motorcyclists but are less likely to have a serious effect on car occupants. Hazard perception is a much more critical skill for motorcyclists than it is for car drivers.

A hazard perception test (HPT) presents simulated driving or riding scenarios where the individual is required to scan the scene and respond when a hazard is present.

At present, the only HPT completed by riders is the car driver HPT. Consideration could be given to developing and implementing a rider HPT that all riders must pass to obtain an intermediate licence.

The successful completion of a motorcyclist specific HPT as part of a rider GLS would ensure that novice riders have an understanding of the types of hazards and risks that are specific to motorcyclists.

Q4. Do you support the development of a rider specific HPT which riders must pass to obtain an intermediate motorcycle licence?

4.2.3 Exit test

A practical exit test is a test of novice rider skills prior to gaining a full rider licence and will assess whether the rider has obtained a number of higher order skills. Exit tests can include range-based and on-road practical rider skills testing.

Exit tests are designed to reinforce and build on the novice rider's skills and awareness before they graduate to a full licence. Exit tests have road safety benefits as they provide a means to identify those novice riders who may not have obtained a sufficient level of skills and should remain on an intermediate licence for a longer period. While the successful completion of an exit test may not necessarily reduce crash risk, it can help to ensure that riders have undertaken some riding and developed some experience during the novice phases.

Consideration could be given to the development of an exit test that riders must pass in order to become a full licence holder.

Q5. Do you support introducing an exit test that riders must pass to obtain a full rider licence?



4.2.4 Motor trike test

Currently in Victoria, a person who wishes to ride a motor trike must hold a valid motorcycle learner permit or motorcycle licence. While it is recognised that there are some physical differences between riding a motor trike and a motorcycle, the vulnerability and lack of occupant protection means the risk of fatal or serious injury in the event of a crash would be similar.

New applicants who wish to ride a motor trike must currently complete all the necessary requirements in place to obtain a motorcycle licence. Applicants are not permitted to undertake the riding skills test on a motor trike as many of the skills being tested (i.e. slow riding, balance, counter-steering) are designed specifically for two-wheeled vehicles and not three-wheeled vehicles.

Given that some applicants who wish to ride a motor trike have no intention of ever riding a motorcycle, a specific motor trike test would enable them to be tested on the type of vehicle they intend on riding. In conjunction with a specific motor trike test, a modified learner permit and licence would need to be issued that prevents a motor trike learner permit or licence holder from riding a motorcycle.

Q6. Do you support the development and introduction of a specific motor trike test and a motor trike learner permit and licence?

4.3 Training and skill development

Training and skill development is important for novice riders to be sufficiently competent to pass the tests to obtain a motorcycle learner permit or licence. Progression of the rider from learner to intermediate to full licence phase requires riders to learn the theory and develop the skills required to ride motorcycles on the road. Therefore, the progression from one phase of licensing to the next may involve completion of a compulsory training course as well as the testing of those skills and theories.

A motorcycle GLS should require the completion of courses which take place over a number of days and that courses commence with range-based practical components and progress to on-road practical components for the licence course[6, 16, 20].

Case studies:

In the UK, compulsory basic training (CBT) was introduced in 1990 to help reduce the very high crash rate among inexperienced motorcyclists. CBT must be completed before a learner moped or motorcycle rider is allowed to ride on the road with L-plates. The UK CBT course involves five elements:

1. Introduction

2. Practical on-site training

3. Practical on-site riding

4. Practical on-road training

5. Practical on-road riding

In Quebec there is also mandatory training on operating a motorcycle before a new rider is permitted to ride on the road. The Quebec pre-learner course includes a theoretical component and two practical components and the rider must pass a range based test.

4.3.1 Mandatory pre-learner and pre-licence training

International research and recommendations suggest that compulsory training has a small safety benefit and should form part of any motorcycle GLS[16]. Most Australian jurisdictions require novice riders to undertake some form of training to enter the learner phase and also the intermediate licence phase.

Currently in Victoria it is not compulsory to undertake training before attempting the learner or licence tests. However, it is estimated that the vast majority of applicants undertake some training prior to attempting the tests. This training is not necessarily consistent between training providers and can range from a half day to two days in duration.

Q7. Do you support introducing mandatory pre-learner training prior to granting a motorcycle learner permit?

Q8. Do you support introducing mandatory training prior to progression to the intermediate licence phase?

In the ACT, if the applicant fails the motorcycle riding test and they have not undertaken the optional probationary training course (seven hours duration) then he/she is required to undertake this training course before attempting further tests. The ACT Government fully subsidises the course fee but a re-assessment fee is payable. This measure was introduced to ensure riders have learnt safe riding practices and that they are competent to ride solo. This measure also ensures riders gain experience and only undertake assessments when they are ready.

If the option for mandatory training is introduced, applicants should not be permitted to undertake a 'test only' following a failed attempt. Based on this, an applicant who fails either the learner test or licence test would only be permitted to attempt the test again at a future date after completing the mandatory training associated with the failed test.

Q9. Do you support requiring a rider who fails either riding skills test to complete mandatory training before they attempt the test again?

4.3.2 Standardised curriculum for use by all training providers

Most novice riders will undertake at least some formal training during the licensing process. However, completion of a training course is not compulsory in Victoria. As a result, there may be a wide variation across training providers in the training programs offered. While the traditional programs have tended to focus on vehicle control training and knowledge of the road rules, more progressive rider training programs should also assist the novice rider in developing their higher order skills which are fundamental to safe riding.

Consideration should be given to standardising the training curriculum used by all training providers to ensure consistency and quality of the training provided to all novice riders.

Q10. Do you support the introduction of a standardised training curriculum?

4.3.3 On-road supervision during the learner phase

Supervision of novice riders aims to promote learning through the provision of feedback from the supervisor to the novice rider. However, supervision of novice riders differs to supervision of novice car drivers in a number of ways. If implemented in Victoria, the supervising rider would not be on the same vehicle as the novice rider, however this means that the supervisor may not necessarily have the same field of view to assist the novice rider identify and respond to hazards appropriately. Additionally the mechanism for communication between the supervisor and the novice rider also differs from the way supervisors and novice car drivers communicate.

Gaining driving experience under the supervision of a skilled and appropriately qualified driver is a defining characteristic of the car driver learner phase throughout Australia. While supervised driving is associated with a significant reduction in crash risk for novice car drivers, there is no direct evidence to show the same effect for novice riders.

Supervision while gaining riding experience on road requires the supervisor to be skilled and appropriately qualified (i.e. a qualified trainer or fully licensed rider) and requires a mechanism to enable other road users to identify the learner and supervisor. Capacity for the supervisor to communicate with the learner rider is also required. An appropriate coloured or marked vest and communication technology may help to address these challenges.

Two Australian jurisdictions require learner riders to acquire practice under supervised conditions. While the supervisor can be a qualified trainer or a fully licensed rider, the method of supervision differs. In Western Australia, the supervisor must accompany the rider at all times either as a pillion passenger, in a sidecar or on another motorcycle. In Queensland, the supervisor cannot be a pillion passenger, but may follow at a safe distance in a car.

Q11. Do you support a requirement for a learner rider to be:

- Supervised at all times?
- Supervised some of the time?

Q12. If supervision of a learner rider is introduced, do you support a requirement that the supervision be provided by?

- A qualified training instructor only?
- A fully licensed motorcyclist only?
- A combination of the above?

Q13. Do you support requiring the wearing of a vest clearly displaying an "L" to identify the learner during supervised riding?

Q14. Do you support requiring the wearing of a vest clearly identifying the instructor during supervised riding?

4.3.4 Certified hours of on-road riding practice during the learner stage

One of the aims of a GLS is to ensure that the novice rider obtains experience under conditions of reduced risk. Despite the restrictions and conditions enforced to reduce the risk, ultimately this will mean nothing if the novice rider does not actually ride and gain experience during the novice phases. One way to ensure novice riders practice and gain experience is to have a requirement for a certified number of hours on-road riding experience.

Most jurisdictions require that learner car drivers accrue a certain number of hours of practice before progressing onto the next phase of licensing. The requirement to log the number of hours of supervised practice during the learner phase is intended to ensure that novices accrue sufficient experience, often across a range of conditions, before advancing to the intermediate phase.

However, the minimum number of hours varies across jurisdictions. For example, novice car drivers, in both Victoria and NSW, must log at least 120 hours of practice, while Western Australia, in contrast, has a 25 hour minimum for learner drivers and riders who do not hold a car licence.

In Queensland, to be eligible for a motorcycle learner licence, the rider must have held a probationary or open licence for another class of vehicle, such as a car for at least one year and then be supervised by another rider for another year.

This in practice requires motorcycle riders to have at least two years on-road supervised driving/riding experience before riding solo, and ensures a better understanding of how vehicles, pedestrians and cyclists interact to improve rider judgement and safety.

In the province of Quebec in Canada, the learner rider is only permitted to gain on-road practice if accompanied by a qualified rider. While there is no requirement for certified hours of practice, the rider cannot progress to the next phase until they have held this licence for at least 11 months.

The requirement for all learner riders to record minimum hours of practice will ensure that learner riders have sufficient practical skills to minimise crash risks while riding on the road.

Q 15. Do you support a requirement for a learner rider to obtain:

- 120 hours of on-road riding experience?
- 50 hours of on-road riding experience?
- 25 hours of on-road riding experience?

Due to the nature of the options under consideration in Chapters 4.2 and 4.3, it is likely that the capabilities of the motorcycle training provider network will need to be enhanced to deliver the required training and testing services. This will benefit new riders in Victoria through the provision of high level, standardised training and testing throughout the state. It also serves to remove much of the variability that exists under current arrangements.

Q16. Do you support enhancing the capabilities of motorcycle training providers?

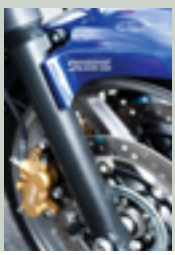
4.4 Restrictions

4.4.1 Display of plates to denote licence status

Clearly signalling the licence status to other road users and the authorities plays an important role in the effective enforcement of licensing conditions and supporting a safe road environment for novices. All Australian jurisdictions, including Victoria, require the display of plates to signify the learner phase, and the probationary P1 and P2 phases. However, there is no mechanism for the easy identification of novice riders with a full car licence. It is proposed that novice riders in the intermediate phase also be readily identified by the use of a plate or some other suitable alternative to facilitate easy identification.

Q17. Do you support the introduction of a plate or suitable alternative to identify riders in the intermediate phase?






4.4.2 Night time restriction

Night time restrictions as part of a GLS, that prohibit riding during certain time periods at night, aim to reduce the risk of serious injury for inexperienced riders. Recent analysis of Victorian motorcycle crash data from 2003-2007 found that novice riders were over-represented in night time crashes (i.e. between 8pm and 6am) when compared to more experienced riders.

Reduced visibility at night makes the task of riding during night time hours more demanding, particularly for novices, which acts to further compromise novices' limited ability and experience to effectively perceive hazards. Limiting novice car drivers' exposure to night time driving has been shown to be an effective crash countermeasure[21, 22].

Both Western Australia and New Zealand have a night time restriction in place for novice riders. Restriction start times range from 10pm to midnight. The same restriction end time of 5am applies in both these cases.

Given the rationale behind night time restrictions for car drivers and the positive results to date, there are safety benefits in introducing a night time restriction for novice motorcyclists, however this may affect novice riders' social mobility.

Q18. Do you support introducing night time riding restrictions during the learner phase?

4.4.3 Mobile phone restrictions

Mobile phone restrictions prohibit driving/riding while the novice is using a mobile phone. Such restrictions typically prohibit all mobile phone use, including Bluetooth and hands-free. While six jurisdictions across Australia (Victoria, NSW, Queensland, South Australia, Tasmania, Northern Territory) have in place a mobile phone restriction for novice car drivers, only three of these jurisdictions (Victoria, Tasmania, Northern Territory) have extended this restriction to also apply to at least some novice riders. In Victoria, a full restriction on the use of mobile phones applies to riders with a motorcycle learner permit only and any riders who hold a probationary P1 motorcycle or motorcycle/car licence. It does not apply to novice riders who hold either a probationary P2 car licence or a full car licence, however handheld mobile phone use is prohibited for all drivers and riders.

A strong association exists between mobile phone use and increased crash risk. In general, mobile phone use while driving or riding acts to compromise the ability to devote sufficient attention to the driving task and effectively respond to threats or hazards in the road environment. Novices are considered to be particularly at risk given their inexperience.

Q19. Do you support a ban on mobile phone use for all riders in the intermediate phase of licensing?

4.4.4 Towing restriction

Towing restrictions prohibit novices from towing vehicles such as trailers. There is little research demonstrating the relationship between towing and novice driver/rider crash risk. Nonetheless, it can be argued that towing places additional demands on novices, thus justifying restrictions on towing for at least the most inexperienced drivers and riders.

Three jurisdictions in Australia have a towing restriction for novice riders during the learner phase at least. In Victoria, this applies to learner riders and any riders who hold a probationary P1 motorcycle or motorcycle/car licence. It does not apply to novice riders who hold either a probationary P2 car licence or a full car licence.

Q20. Do you support a towing restriction for riders in the intermediate phase of licensing?

4.4.5 Automatic transmission restriction

Currently in Victoria, a person can complete the motorcycle learner and licence tests on an automatic motorcycle – often a motor scooter with an engine capacity up to 250cc – and then be issued with a motorcycle licence that enables them to ride both automatic and manual/geared motorcycles.

Beyond the skills that are required to ride a motorcycle with an automatic transmission, riding a motorcycle with a manual transmission requires coordination of the throttle, clutch lever, gears (foot) and brakes (lever and foot). Accordingly, riding a motorcycle with a manual transmission is generally considered to be more demanding than riding a motorcycle with an automatic transmission, an effect that may be particularly pronounced for novice riders. However this does not mean that riding a motor scooter is safer than riding a manual motorcycle. In fact Victorian crash data shows that motor scooters are over-represented in motorcycle crash statistics.

While almost all Australasian jurisdictions have an automatic transmission restriction in place for novice car drivers, only NSW and Queensland impose such a restriction on novice riders. Any person who obtains a licence on an automatic motorcycle should not be permitted to ride a manual motorcycle until they demonstrate the necessary capabilities to ride a manual motorcycle.

If an automatic transmission restriction is introduced, the training and test requirements for these riders could be tailored to exclude the less relevant content including clutch control and changing gears. Removal of this restriction would only occur once the rider completes the licence test requirements on a manual motorcycle.

Q21. Do you support an automatic transmission restriction for riders who pass the test on an automatic motorcycle (such as a motor scooter)?

4.4.6 Reduced demerit point thresholds for traffic and licence condition violations

Penalties for traffic and licence condition violations and reduced demerit point thresholds (relative to fully licensed drivers/riders) are important tools for encouraging compliant road use by novice riders and drivers. They also serve to ensure that at-risk novices do not advance prematurely through the licence phases and, in principle, discourage illegal behaviour.

Most Australasian jurisdictions have in place, as part of their GLS, a strict penalty system for not adhering to traffic and licence conditions. In Victoria, this applies to riders who have a motorcycle learner permit only and any riders who hold a probationary P1 or P2 motorcycle or motorcycle/car licence. It does not apply to novice riders who hold a full car licence.

The higher risk associated with novice riders needs to be recognised with increased penalties for illegal behaviour.

Q22. Do you support a reduced demerit point threshold for all intermediate licence holders, including those who also hold a full car licence?

4.4.7 Motorcycle protective clothing

In crashes, motorcyclists tend to sustain multiple and more serious injuries than car occupants. Helmets and protective clothing play an important role in reducing the incidence and severity of injuries in the event of a motorcycle crash.

Motorcycle protective clothing is not designed to protect the rider from high-impact or crush forces. However the use of full protective clothing has been shown to prevent and reduce the severity of many commonly occurring injuries such as lacerations, bruises, burns, infection from wound contamination, gravel rash and some fractures.

While many motorcyclists own protective clothing, wearing rates suggest that riders are selective about when they wear protective clothing. Given that novice riders are involved in more crashes than more experienced riders, a requirement that they wear full protective clothing would reduce their risk of injury.

Schuller (1986) found[23]:

- Injured riders, who had been wearing leathers, spent on average 7 days less in hospital, and returned to work 20 days earlier than unprotected riders.
- Additionally, the protected riders were 40 per cent less likely to suffer permanent physical defect.
- It was concluded that protective clothing can prevent or reduce 43 per cent of injuries to soft tissue and 63 per cent of deep and extensive injuries.

The MAIDS study (2009) found that[9]:

- in 74 per cent of the cases, the upper extremity injuries were reduced or prevented by upper torso clothing; and
- in 58 per cent of the cases, the lower extremity injuries were reduced or prevented by lower extremity clothing.

Q23.	Do you support a requirement for learner riders to wear clothing designed for motorcycle riding (including gloves, long-sleeved jacket, long pants made of leather or a synthetic material, as well as boots that protect ankles)?
Q24.	Do you support a requirement for intermediate riders to wear clothing designed for motorcycle riding (including gloves, long-sleeved jacket, long pants made of leather or a synthetic material, as well as boots that protect ankles)?

4.4.8 Motorcyclist visibility

As mentioned in Chapter 1.5, motorcyclist visibility is a key issue for motorcycle safety. It is not uncommon for drivers involved in crashes with motorcycles to state that they did not see the motorcycle in sufficient time to avoid a crash.

While some of the fault for poor awareness of motorcycles lies with car drivers, motorcycle riders can take responsibility to improve their visibility in traffic. Two simple, yet effective measures can improve motorcycle visibility – use of headlights, and use of a high-visibility vest/clothing.

Use of headlights during daylight hours (or daytime running lights) has reduced visibility-related crashes in several countries by 10 per cent - 29 per cent[14].

A New Zealand study found that riders wearing any fluorescent or reflective clothing had a 37 per cent lower crash risk than other riders[13].

Q25.	Do you support a requirement for learner riders to wear a high-visibility vest/jacket?
Q26.	Do you support a requirement for intermediate riders to wear a high-visibility vest/jacket?
Q27.	Do you support a requirement for learner riders to always ride with their headlight on?
Q28.	Do you support a requirement for intermediate riders to always ride with their headlight on?

What will happen next?

This Discussion Paper has been prepared to promote discussion about a range of options to improve the motorcycle licensing process in Victoria. The Victorian Government is interested in your views on the options.

Once your views have been heard, the Victorian Government will consider the need for these possible options to develop an improved motorcycle GLS in Victoria. Some legislative changes may be required to introduce some of these measures. If so, a regulatory impact statement will be published for public comment in accordance with the requirements of the Subordinate Legislation Act 1994.

A Preliminary Impact Assessment (PIA) has been developed to assist the reader in making an informed view about the proposed options that require regulatory change (Appendix 2). Some assumptions have been made in estimating the likely costs and impact of the options.

A number of questions are presented at the end of Appendix 1 'Consultation response form' to seek verification from stakeholders on the accuracy of these assumptions, estimates of costs and estimates of impacts.

APPENDIX 1

Consultation response form

Title: Mr/Mrs/Miss/Ms/Other (please state):
Name:
Organisation (if applicable):
Address:
Postcode:
E-mail address:
Date:

Please note:
All submissions will be treated as public information unless you request otherwise.
You should be aware that all submissions are subject to the Freedom of Information Act 1982.

Your answers to the following questions will help us to better understand the issues and decide the best way forward. **The options referenced in the questions are fully explained in the impact assessment included with this consultation** and we will use the replies to develop these options and improve our understanding of the costs, benefits and risks.

Q1. Do you support the extension of novice rider restrictions (i.e. the intermediate phase) from 12 months to 3 years?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q2. Do you support the introduction of a more comprehensive and rigorous assessment of practical skills (range-based) to obtain a motorcycle learner permit?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q3. Do you support the introduction of a more comprehensive and rigorous assessment of practical skills with an on-road component to obtain a motorcycle licence?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q4. Do you support the development of a rider specific HPT which riders must pass to obtain an intermediate motorcycle licence?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q5. Do you support introducing an exit test that riders must pass to obtain a full rider licence?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make (e.g. what should be included in an exit test?):				

Q6. Do you support the development and introduction of a specific motor trike test and a motor trike learner permit and licence?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q7. Do you support introducing mandatory pre-learner training prior to granting a motorcycle learner permit?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make (e.g. how many hours/days should this training take?):				

Q8. Do you support introducing mandatory training prior to progression to the intermediate licence phase?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make (e.g. what form should this training take?):				

Q9. Do you support requiring a rider who fails either riding skills test to complete mandatory training before they attempt the test again?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q10. Do you support the introduction of a standardised training curriculum?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q11. Do you support a requirement for a learner rider to be:			
Supervised at all times?	☐ Yes	☐ No	☐ No view
Supervised some of the time?	☐ Yes	☐ No	☐ No view
Please explain your reasons and add any additional comments you wish to make:			

Q12. If supervision of a learner rider is introduced, do you support a requirement that the supervision be provided by?			
A qualified training instructor only?	☐ Yes	☐ No	☐ No view
A fully licensed motorcyclist only?	☐ Yes	☐ No	☐ No view
A combination of the above?	☐ Yes	☐ No	☐ No view
Please explain your reasons and add any additional comments you wish to make:			

Q13. Do you support requiring the wearing of a vest clearly displaying an "L" to identify the learner during supervised riding?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q14. Do you support requiring the wearing of a vest clearly identifying the instructor during supervised riding?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q 15. Do you support a requirement for a learner rider to obtain:			
120 hours of on-road riding experience?	☐ Yes	☐ No	☐ No view
50 hours of on-road riding experience?	☐ Yes	☐ No	☐ No view
25 hours of on-road riding experience?	☐ Yes	☐ No	☐ No view
Please explain your reasons and add any additional comments you wish to make (e.g. how else might learner riders obtain experience?):			

Q16. Do you support enhancing the capabilities of motorcycle training providers?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q17. Do you support the introduction of a plate or suitable alternative to identify riders in the intermediate phase?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make (e.g. what could be an alternative to identify novice riders?):				

Q18. Do you support introducing night time riding restrictions during the learner phase?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q19. Do you support a ban on mobile phone use for riders in the intermediate phase of licensing?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q20. Do you support a towing restriction for riders in the intermediate phase of licensing?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q21. Do you support an automatic transmission restriction for riders who pass the test on an automatic motorcycle?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make (e.g. should there be a separate licence class for motor scooter riders?):				

Q22. Do you support a reduced demerit point threshold for all intermediate licence holders, to be consistent with learner and probationary licence holders?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q23. Do you support a requirement for learner riders to wear clothing designed for motorcycle riding (including gloves, long-sleeved jacket, long pants made of leather or a synthetic material, as well as boots that protect ankles)?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make (e.g. what is the minimum amount of protective gear novice riders should wear?):				

Q24. Do you support a requirement for intermediate riders to wear clothing designed for motorcycle riding (including gloves, long-sleeved jacket, long pants made of leather or a synthetic material, as well as boots that protect ankles)?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q25. Do you support a requirement for learner riders to wear a high-visibility vest/jacket?

Strongly agree	Slightly agree	No view	Slightly disagree	Strongly disagree
☐	☐	☐	☐	☐

Please explain your reasons and add any additional comments you wish to make (e.g. are there other ways to increase the chances of being seen when riding?):

Q26. Do you support a requirement for intermediate riders to wear a high-visibility vest/jacket?

Strongly agree	Slightly agree	No view	Slightly disagree	Strongly disagree
☐	☐	☐	☐	☐

Please explain your reasons and add any additional comments you wish to make:

Q27. Do you support a requirement for learner riders to always ride with their headlight on?

Strongly agree	Slightly agree	No view	Slightly disagree	Strongly disagree
☐	☐	☐	☐	☐

Please explain your reasons and add any additional comments you wish to make:

Q28. Do you support a requirement for intermediate riders to always ride with their headlight on?

Strongly agree	Slightly agree	No view	Slightly disagree	Strongly disagree
☐	☐	☐	☐	☐

Please explain your reasons and add any additional comments you wish to make:

The following four questions seek to validate the assumptions and estimates made in the PIA (Appendix 2).

Q29. Do you agree with the assessment of the impacts of type and duration of phases made in the PIA?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q30. Do you agree with the assessment of the impacts of testing options made in the PIA?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q31. Do you agree with the assessment of the impacts of training and skill development options made in the PIA?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Q32. Do you agree with the assessment of the impacts of safer on-road riding conditions and restrictions options made in the PIA?				
☐ Strongly agree	☐ Slightly agree	☐ No view	☐ Slightly disagree	☐ Strongly disagree
Please explain your reasons and add any additional comments you wish to make:				

Notes:

APPENDIX 2

Preliminary impact assessment

Road Safety (Drivers) Regulations 2009

A2.1 Introduction

A2.1.1 The purpose of this Preliminary Impact Assessment

A Regulatory Impact Statement (RIS) is prepared to evaluate the costs and benefits of any proposed regulatory proposals. This Preliminary Impact Assessment (PIA) has been prepared to facilitate community engagement on the impacts and costs of options to improve safety for motorcyclists.

Public comments and submissions are invited on the assumptions, impacts and estimates of costs set out in this PIA and the Discussion Paper.

A2.1.2 The problem

Victorian crash statistics show that the crash rate for novice motorcycle riders is approximately three times higher then the crash risk for experienced riders.

Skills and riding behaviour of novice riders need be addressed to reduce this crash rate.

A2.1.3 Causes of the problem

Victorian crash statistics show that crash rates are higher for learner and novice motorcycle riders. Learner and novice riders are at risk of crash and injury because of:

- ***Vulnerability to injury.*** Motorcycles do not have safety features like cars to reduce the consequences of crashes such as seat belts, roof and airbags.
- ***Instability.*** Motorcycles are unstable and braking is more difficult than on cars. Greater skills are required to ride a motorcycle than driving a car.
- ***Inexperience.*** Lack of experience is a contributory crash factor across all road users.
- ***Driver failure to see motorcyclists.*** Motorcycles are smaller and more difficult for drivers to detect.
- ***Awareness.*** There is a general lack of awareness and understanding by riders and drivers of the degree of risks/dangers of riding a motorcycle.
- ***Impairment.*** Use of alcohol or drugs makes riding more difficult. Crash data shows that riders who drink are more likely to crash.
- ***Motorcycle protective clothing.*** Many riders resist wearing motorcycle protective clothing because of cost, inconvenience, comfort and lack of knowledge.

A2.1.4 Stakeholders/Consultation

The groups likely to be noticeably affected by the policy options being considered include:

- Potential motorcycle riders.
- Accredited trainers, industry and motorcycle bodies.
- Motorcycle riders.
- Industries that rely on motorcycle riders (e.g. couriers, postal service)
- Motorcycle retailers and manufacturers.
- Government (including the Transport Accident Commission, Victoria Police, Department of Justice and Department of Transport).

A2.1.5 Key stakeholder concerns and issues

Community/stakeholder concerns include:

- The increasing high numbers of riders seriously injured.
- Standards of rider training and assessment.
- The lack of awareness of the risks for motorcyclists on roads.
- The number of unlicensed riders represented in the motorcycle crash data.

A2.1.6 Objectives

The objectives of proposals to change the graduated licensing system for motorcyclists are to:

- Improve awareness of the risks to motorcyclists.
- Improve skills and competence of riders (training and assessment).
- Promote safer riding (behaviour and environment).

A2.1.7 Relationship with Government's strategic aims

Under the strategic framework of *arrive alive*, Victoria's Road Safety and Transport Strategic Action Plan for Powered Two Wheelers 2009-2013 ('the PTW Plan') aims to reduce motorcyclist and scooter rider fatalities and serious injuries and to ensure that powered two wheeled vehicles are recognised in transport policy and planning. The action plan identifies four priorities for action:

- Increase knowledge and understanding of powered two wheeled vehicle riding and crashes.
- Improve rider and driver awareness, skills and knowledge.
- Encourage greater use of safer motorcycles and scooters, and protective clothing by riders.
- Recognise the role of powered two wheelers in the transport network, and improve the road system for powered two wheelers.

Under the PTW Plan, the Victorian Government has committed to 'review the licensing and training system for PTWs and identify opportunities for improvements', stating that 'a GLS for PTWs similar to the new GLS for car drivers should be considered'.




A2.1.8 Links with the objectives of the Road Safety Act 1986

The recommendations closely align with the purposes of licensing for riders under the Road Safety Act 1986, which are to ensure that riders:

- Are competent to ride on roads.
- Are aware of safe riding practices and road law.
- Who are, or who become, unsuited to ride are not permitted to ride on the road.
- Are able to be identified for the purposes of law enforcement and crash investigation[15].

A2.1.9 Links with the objectives of the Transport Integration Act 2010

The recommendations closely align with the objectives of the Transport Integration Act 2010 which commenced on 1 July 2010. The objectives of the Transport Integration Act 2010 include:

- Social and economic inclusion.
- Economic prosperity.
- Environmental sustainability.
- Integration of transport and land use.
- Efficiency, coordination and reliability.
- Safety and health and wellbeing.

A2.2 Preliminary analysis of options

A2.2.1 Government Role

Without the Road Safety Drivers Regulations 2009, there would be no capacity to require safe riding practices. Therefore, the regulations are important to all Victorians because they regulate the behaviour of drivers and riders by licensing.

Community concerns, crash statistics and research of motorcycle licensing practises in other jurisdictions suggest that the current graduated licensing system for novice motorcycle riders can be strengthened to improve road safety for all Victorians.

A2.2.2 Methodology

In proposing options for improving the graduated licensing system, VicRoads is required to identify all impacts including the economic, social, administrative and compliance costs on affected groups. The evaluation of options is made against the 'base case' which, for the purposes of the preliminary assessment, is retaining the status quo with no regulatory response to the number of fatalities and serious injuries involving novice motorcycle riders.

Because of data and evaluation constraints, this PIA seeks to obtain community validation of the assumptions and impacts, to help identify the option(s) that provide an effective road safety benefit for the community. The PIA will identify the economic, social and environmental impacts of options.

A2.2.3 Data and evaluation constraints

Compared to cars, world wide research on motorcycle crash data is scarce and somewhat inconclusive. However, research has demonstrated that there are multiple environmental, human and vehicle factors that contribute to road crashes. Taking a holistic approach to regulation of licensing is a critical element in improving road safety for riders.

The costs of road safety initiatives are shared by government, industry, police, health, media and the community. There are also significant economic and social benefits delivered by a collaborative approach as there is an increased access to resources, a sharing of responsibilities and strengthening of the ownership of activities by the community to deliver greater cumulative road safety benefits to all Victorians.

This has been reflected in the recent crash data from 50 states in the US where the combination of education, training, boosting helmet use and enforcement, training of trainers and less new riders has resulted in the reduction of motorcyclist deaths by at least 10 per cent in 2009[24].

However, the multiple causes of the over representation of motorcyclists in road trauma statistics and the multi-sectoral collaboration approach to address road safety, limits the capacity to evaluate costs and benefits of individual options and conclusions are sometimes a best 'guesstimate', variable and inconclusive[6].

A2.2.4 Evaluation criteria

A preliminary assessment of options will be considered against the following criteria:

- Capacity to build an awareness of the risks to motorcyclists (by both riders and drivers).
- Capacity to improve skills and competence (training and assessment).
- Capacity to promote safer riding (behaviour and environment).

A2.2.5 General information and assumptions supporting the identification and assessment of impacts

- The base case will retain the trend of increasing numbers of deaths and serious injuries for motorcycle riders, as shown in the discussion paper.
- International research and crash data[25] shows that there are highly variable and complicated assumptions made to estimate the number of lives saved and injuries prevented from training, supervision and assessment of novice riders. A direct road safety benefit may not be able to be attributed to supervision, training or testing individually.
- Based on data between 2007 and 2009, the assessment of options will affect the following numbers of key stakeholders:
  - 20,000 learner riders.
  - 12,500 probationary or "e" condition riders with a car licence.
  - 500 probationary riders (no car licence).
  - 14 accredited training providers.
- For the assessment of impacts, this PIA will use 2007 crash data of 12 fatalities, 222 serious injuries and 180 other injuries involving novice riders. VicRoads acknowledges that there will be significant under reporting of "other injuries" in which the rider was not taken to hospital.
- Increased training, supervision, assessment and broader community education on motorcycle safety together is anticipated to result in a reduction in motorcycle crashes by 5-10 per cent (1 to 3 lives saved and 22 to 40 serious injuries prevented annually).
- The value of reductions in the risk of physical harm or the value of statistical life for the purposes of the cost-benefit analysis in the RIS will be based on "willingness to pay". Based on international and Australian research a credible estimate of the value of a statistical life is $3.5m and the value of a statistical life year is $151,000[26].
- The value of a serious injury to a motorcycle rider for the purposes of the cost-benefit analysis in the RIS will be $410,000. Motorcycle crash data shows that riders suffer multiple and more severe injuries than other road


users with injuries to the legs/lower extremity (31 per cent) and the head (30 per cent) which increases the risk of brain injury and/or permanent injuries and long term healthcare costs[14, 27]. As a result, the average road crash claims costs for motorcyclists are approximately double the average road crash claims costs for car occupants[28].

- Government Policy is committed to minimising the overall regulatory burden which means that regulatory measures must be the minimum necessary to achieve the desired objectives, while avoiding or reducing the risks of undesirable side effects[29]. The economic impacts to industry and business by the proposed options are anticipated to be minimal. Some businesses may require increased resources to accommodate any increased supervised riding and/or on-road training/testing. While the options will not require additional premises or sites for range-based training, some accredited trainers may wish to adopt this strategy. This PIA will assist to identity significant impacts not yet identified.
- Government costs are difficult to isolate from the overall ongoing costs to Government to deliver and administer the current driver and motorcycle graduated licensing scheme. The ongoing review, management and support (including information services) of licensing services will not be evaluated as part of this PIA.
- Enforcement costs will not change because costs will remain part of their normal enforcement activity.

A2.3 Evaluation of options regarding the type and duration of phases

A2.3.1 Feasible options: type and duration of phases

Options include:

- Do nothing/no change which is referred to as the 'base case'
- Introduce P1 and P2 phases as the intermediate phases for riders with a full car driver licence
- Extend term of the "e" condition (the current condition on newly licensed motorcyclists) from one (1) to three (3) years as the intermediate phase for riders with a full car driver licence

A2.3.2 Assumptions made to assess the type and duration of phases:

Assumptions include:

- Worldwide crash data and research shows that there are significant direct road safety benefits of a zero BAC and engine size/power to weight restriction for novice motorcycle riders[25].
- While the presence of an illegal BAC is a significant factor for up to 49 per cent of fatal crashes for riders[30], research and crash data show that the effect of alcohol consumption on motorcycle riding is more dramatic than its effects on car driving, and alcohol has been reported to be a major contributing factor to fatal motorcycle crashes[6]. In addition BAC impaired riders are significantly more likely to be speeding and not wearing a helmet[25]. An extension of the requirement to have zero BAC for novice riders with a full car licence for an additional two (2) years is likely to have significant road safety benefits.
- A direct road safety benefit is unlikely to be demonstrated by one road safety initiative alone. For example the extension of an "e" condition on a licence will extend the zero BAC, LAMS and no pillion passenger restrictions, which when supported by information and enforcement will together achieve road safety benefits.
- The main groups affected by options to change the number and duration of phases are potential and current novice riders and accredited trainers.




A2.3.3 Preliminary evaluation of feasible options for the type and duration of phases

Measure	Capacity to increase awareness of risks	Capacity to improve skills and competence	Capacity to promote safer riding	Estimate reduction in crashes
Base case	*No change*	*No change*	*No change*	*No change*
Introduce P1 and P2 phases as the intermediate phases for riders with a full car driver licence	✔	✔	✔	✔
Extend term of the "e" condition from one (1) to three (3) years as the intermediate phase for riders with a full car driver licence	✔	✔	✔	✔

A2.3.4 Preliminary assessment of impacts of type and duration of phases

Criteria	Sub-criteria	Anticipated negative impacts	Anticipated positive impacts
Economic impacts	• Costs to learner riders • Costs to supervisors • Costs to accredited providers • Costs to Government	• No change	• Reduced costs of road trauma to the community • Reduced costs as a result of lives saved and injuries prevented
Social impacts	• Safety and wellbeing of learner rider • Safety and well being of supervisor	• No change	• More time to build skills
Environmental impacts	• Traffic congestion • Noise • Pollution	• No change	• No change

A2.3.5 Assessment of feasible options for the type and duration of phases

The preliminary assessment and impacts of options show that there are road safety benefits and no negative impacts on key stakeholders from extending the period of the intermediate phase.

The preliminary assessment of options also shows that extending the 'e' condition would provide a positive community/road safety benefit with no negative impacts on key stakeholders.

A2.4 Evaluation of options to improve the skills and competence of riders through testing

A2.4.1 Feasible options: Improved skills and competence of riders through testing

Options include:

- Do nothing/no change which is referred to as the 'base case'
- A more comprehensive and rigorous practical range-based skills test to obtain a learner permit
- Introduction of a motorcycle computer based Hazard Perception Test (HPT) to obtain an intermediate licence
- A more comprehensive and rigorous practical on-road skills test to obtain an intermediate licence
- Introduction of a practical exit test to obtain a full rider licence
- Introduction of a practical motor trike test.

A2.4.2 Assumptions made to assess options to improve skills and competence of riders through testing

Assumptions include:

- The main groups affected by options to change the requirements for testing are current novice and potential novice riders and accredited trainers.
- Road safety benefits from testing of riders will depend on the components of tests and the assessment of skills. While direct safety benefits from testing cannot be demonstrated, knowledge and practical testing encourages riders to learn road laws, undertake training and gain experience to pass the tests. Adequate testing of hazard perception and on-road riding skills to progress to the intermediate rider licence phase will ensure that riders have greater crash avoidance skills while riding solo on the road.
- Consultation with stakeholders indicates that currently 95 per cent of learner riders do some form of professional pre learner range-based training and assessment (including tests) at an all up cost of approximately $300 per rider. Where training is compulsory, it is not possible to split the costs for training with the costs for testing.
- Government costs to develop new tests are difficult to isolate from the overall costs of running the VicRoads registration and licensing systems. The costs of development of new tests and fees for tests are part of the ongoing review, management and support of licensing services and will not be evaluated as part of this PIA.

A2.4.3 Preliminary evaluation of feasible testing options

Measure	Capacity to increase awareness of risks	Capacity to improve skills and competence	Capacity to promote safer riding	Estimate reduction in crashes
Base case	***No change***	***No change***	***No change***	***No change***
A more comprehensive and rigorous practical skills test (range-based) to obtain a learner permit	✔	✔	✔	Possibly <5%
Introduction of a motorcycle HPT test to obtain an intermediate licence	✔	✔	✔	Possibly <2%
A more comprehensive and rigorous on-road practical skills test to obtain an intermediate licence	✔	✔	✔	Possibly <5%
Introduction of a practical exit test to obtain a full rider licence	✔	✔	✔	Possibly <2%
Introduction of a practical motor trike test	✔	✔	✔	None

A2.4.4 Preliminary assessment of impacts of testing options

Criteria	Sub-criteria	Anticipated negative impacts	Anticipated positive impacts
Economic impacts	• Costs to learner/novice riders • Costs to motor trike riders • Costs to accredited providers • Costs to Government • Costs to other road users	• Increased costs to obtain learner permit and/or licence • Increased training and resource costs to accredited providers • Increased costs to Government to design and introduce new tests	• Reduced costs of road trauma to the community • Reduced costs as the result of lives saved and injuries prevented
Social impacts	• Safety and wellbeing of learner rider • Safety and wellbeing of motor trike riders • Safety and well being of other road users	• Legal responsibility for on-road testing	• Improved riding skills for novice riders and motor trike riders • Lives saved and injuries prevented • Greater awareness of risks of motorcycle riding by novice riders • Riders who are not competent will not be permitted to advance to the next phase
Environmental impacts	• Traffic congestion • Noise • Pollution	• No change	• No change

A2.4.5 Preliminary assessment of costs of testing options

Measure	Calculation of costs	Anticipated costs
Base case	***No change***	***No change***
A more comprehensive and rigorous practical skills test (range-based) to obtain a learner permit	The cost of current pre learner range-based training and assessment is approximately $300 per rider.	$300
Introduction of a computer based rider HPT test to obtain an intermediate licence	All riders must already undertake a driver HPT test to obtain a learner rider permit.	$19.50
A more comprehensive and rigorous on-road practical skills test to obtain an intermediate licence	Current costs for training and assessment of on-road riding skills in Queensland is between $300 and $450.	$300-$450
Introduction of a practical exit test to obtain a full rider licence	Training may not be required – therefore costs are based on a test only.	$200
Introduction of a practical motor trike test	The need for a double process (initially range based, then on-road) could mean two lots of training and testing costs.	$600

A2.5 Evaluation of options to improve the skills and competence of riders through training and skill development

A2.5.1 Feasible options: Training and skill development

Options include:

1. Do nothing/no change which is referred to as the 'base case'
2. Mandatory range-based training by an accredited trainer at pre-learner phase to authorise riding on-road
3. Supervision by an experienced rider of 120 hours on-road riding during learner phase
4. Mandatory 50 hours of on-road supervised riding by an accredited trainer during learner phase
5. Mandatory 50 hours of on-road supervised riding by an experienced rider during learner phase
6. Mandatory 50 hours of on-road supervised riding (25 hours by an accredited trainer and 25 hours by an experienced rider) during learner phase
7. Mandatory 25 hours of on-road supervised riding by an accredited trainer during learner phase
8. Mandatory 25 hours of on-road supervised riding by an experienced rider during learner phase

A2.5.2 Assumptions made to assess options for training and skill development

Assumptions include:

- The main groups affected by options to change the requirements for training and testing are current novice and potential novice riders and accredited trainers.
- Some options will operate in conjunction with other options. For example the benefit of supervision has been reported to be the interaction between the supervisor and the learner. Therefore a night time restriction may be necessary to maximize the effectiveness of supervision[6].
- Crash data that shows 15 per cent greater use of a collision avoidance manoeuvre by those who had training[9]. See also the results of the introduction of training and education for novice riders in the US[24].
- Road safety benefits from training will depend on the components of the training and the assessment of skills acquired from training. While a direct safety benefit from training cannot be demonstrated, knowledge and practical testing encourages riders to learn road laws, undertake training and gain experience to pass the tests. Adequate on-road riding skills to progress to the intermediate rider licence phase will ensure that riders have greater crash avoidance skills while riding solo on the road.
- Cost of current pre-learner training depends on the course components, number of learner riders/students and hours. Research of other jurisdictions suggests that the course components may have significant consequences on the costs ranging from $250 to $3,000.
- Learners with 120 hours supervised learner practice have a 30 per cent lower crash risk in the first two years of licensed driving than learners with around only 40 hours of supervised practice[31].
- The Regulatory Impact Statement for the Driver Graduated Licensing System reported that 40 per cent of car learners voluntarily choose to undertake approximately 120 hours of practice prior to the licence test. It is assumed that learner riders will undertake many hours of practice before attempting a motorcycle test. Therefore the value of time spent travelling, or the opportunity cost of travel time for the rider is not included in the assessment of costs.
- It is difficult to estimate the cost of non-professional supervised riding. To assess the cost of supervised riding, information must be collected about:
  - number of hours anticipated or required for supervised riding; and
  - demographic information about people who are available to be supervisors; and
  - round-trip distance of each supervised trip; and
  - travel costs per kilometre; and
  - the value of time spent travelling, or the opportunity cost of travel time.
- To facilitate the consideration of impacts of the cost of non-professional supervised riding, the costs to the supervisor have been calculated as $31.22 per hour. This consists of an estimate of the value the supervisor's recreational time, (by using the average cost of a movie theatre ticket of $17.50), added to the cost of petrol of $2.47 per hour (based on hourly running cost calculations made by driving instructors) plus $11.25 per hour for private passenger travel (as calculated by Austroads and adjusted by CPI to December 2006)[32].
- To facilitate the consideration of impacts of the cost of non-professional supervised riding, the costs to the learner rider have been calculated as $13.72 by adding the cost of petrol of $2.47 per hour (based on hourly running cost calculations made by driving instructors) plus $11.25 per hour for private passenger travel (as calculated by Austroads and adjusted by CPI to December 2006[32]).

A2.5.3 Preliminary evaluation of feasible options for training and skill development

Measure	Capacity to increase awareness of risks	Capacity to improve skills and competence	Capacity to promote safer riding	Estimate reduction in crashes
Base case	***No change***	***No change***	***No change***	***No change***
Mandatory range-based training by an accredited trainer at pre learner phase to authorise riding on-road.	✔	✔	✔	Possibly 5-10% combined with other measures.
Supervision by an experienced rider of 120 hours on-road riding during learner phase.	✔	Not able to be determined	Not able to be determined	Possibly 5-10% combined with other measures.
Mandatory 50 hours of on-road supervised riding by an accredited trainer during learner phase.	✔	✔	✔	Possibly at the upper end of 5-10% combined with other measures.
Mandatory 50 hours of on-road supervised riding by an experienced rider during learner phase.	✔	✔	✔	Possibly 5-10% combined with other measures.
Mandatory 50 hours of on-road supervised riding (25 hours by an accredited trainer and 25 hours by an experienced rider) during learner phase.	✔	✔	✔	Possibly at the upper end of 5-10% combined with other measures.
Mandatory 25 hours of on-road supervised riding by an accredited trainer during learner phase.	✔	✔	✔	Possibly at the lower end of 5-10% combined with other measures.
Mandatory 25 hours of on-road supervised riding by an experienced rider during learner phase.	✔	✔	✔	Possibly at the lower end of 5-10% combined with other measures.

A2.5.4 Preliminary assessment of options for training and skill development

Criteria	Sub-criteria	Anticipated negative impacts	Anticipated positive impacts
Economic impacts	• Cost to learner rider • Cost to supervisor • Cost to accredited providers • Cost to Government	• Increased costs to obtain learner permit and/or licence • Increased training and resource costs to accredited providers • Increased costs to Government to design training components	• Reduced costs of road trauma to the community • Reduced costs as the result of lives saved and injuries prevented
Social impacts	• Safety and wellbeing of learner rider • Safety and well being of supervisor	• Lost available recreational time due to supervised riding requirements and training • Legal responsibility during supervised riding	• Improved riding skills for novice riders • Lives saved and injuries prevented • Greater awareness of risks of motorcycle riding by novice riders • Riders who are not competent will not be permitted to advance to the next phase
Environmental impacts	• Traffic congestion • Noise • Pollution	• No change	• No change

A2.5.5 Preliminary assessment of costs of training and skill development options

Measure		Calculation of costs	Anticipated costs
Base case	***No change***	***No change***	***No change***
Mandatory range-based training and assessment by an accredited trainer at pre learner phase/ prior to on-road riding	Lowest cost	$50 per hour x six hours (1 day) training and one hour assessment	$350
	Average cost	$50 x 10 hours training and one hour assessment per one learner rider	$550
	Highest cost	$50 x 25 hours training and one hour assessment per one learner rider	$1,300
Supervision by an experienced rider of 120 hours of on-road riding during learner rider phase	Lowest cost	$31.22 x 120 to calculate hours riding for supervisor $13.72 x 120 to calculate hours of riding for learner rider $16.70 for log book $31.22 x 1 for supervisor to complete log book	$5,440.72
	Average cost	$31.22 x 120 to calculate hours riding for supervisor $13.72 x 120 to calculate hours of riding for learner rider $16.70 for log book $31.22 x 1 for supervisor to complete log book $100 x 2 for two hours preliminary training for supervisor and learner rider	$5,640.72
	Highest cost	$100 x 120 to calculate hours riding for accredited trainer (learner rider may have to engage a professional supervisor if they have no access to an experienced rider) $13.72 x 120 to calculate hours of riding for learner rider $16.70 for log book $100 x 1 for supervisor to complete log book	$13,763.10
50 hours supervision (50 hours by an accredited trainer) during learner rider phase	Average cost	$100 x 50 to calculate hours riding for accredited trainer $13.72 x 50 to calculate hours of riding for learner rider $16.70 for log book $100 x 1 for supervisor to complete log book	$5,802.70

Measure		Calculation of costs	Anticipated costs
Base case	***No change***	***No change***	***No change***
50 hours supervision (50 hours by an experienced rider) during learner rider phase	Lowest cost	$31.22 x 50 to calculate hours riding for supervisor $13.72 x 50 to calculate hours of riding for learner rider $16.70 for log book $31.22 x 1 for supervisor to complete log book	$2,294.92
	Average cost	$31.22 x 50 to calculate hours riding for supervisor $13.72 x 50 to calculate hours of riding for learner rider $16.70 for log book $31.22 x 1 for supervisor to complete log book $100 x 2 for two hours preliminary training for supervisor and learner rider	$2,494.92
	Highest cost	See above for cost of 50 hours of supervised riding provided by accredited trainer for a learner rider who engages a professional supervisor	$5,802.70
25 hours supervision (25 hours by an accredited trainer) during learner rider phase	Average cost	$100 x 25 to calculate hours riding for accredited trainer $13.72 x 25 to calculate hours of riding for learner rider $16.70 for log book $100 x 1 for supervisor to complete log	$2,959.70
25 hours of on-road supervision by an experienced rider during learner phase.	Lowest cost	$31.22 x 25 to calculate hours riding for supervisor $13.72 x 25 to calculate hours of riding for learner rider $16.70 for log book $31.22 x 1 for supervisor to complete log book	$1,171.42
	Average cost	$31.22 x 25 to calculate hours riding for supervisor $13.72 x 25 to calculate hours of riding for learner rider $16.70 for log book $31.22 x 1 for supervisor to complete log book $100 x 2 for two hours preliminary training for supervisor and learner rider	$1,371.22
	Highest cost	$100 x 25 to calculate hours riding for accredited trainer (learner rider may have to engage a professional supervisor if they have no access to an experienced rider) $13.72 x 25 to calculate hours of riding for learner rider $16.70 for log book $100 x 1 for supervisor to complete log	$2,959.70

A2.5.6 Assessment of feasible options for training and skill development

The preliminary assessment of options shows that there are significant potential road safety benefits from training, supervision and assessment of learner riders.

However, the preliminary assessment of costs shows that the cost of training and supervision (and possibly testing and assessment) may exceed the dollar value of the lives saved and serious injuries prevented. Consequently community feedback is particularly sought in relation to the value and benefits of training and supervision during on-road riding by learner riders.

A2.6 Evaluation of options to promote safer riding through licence conditions

A2.6.1 Feasible options: Safer on-road riding conditions and restrictions

Options include:

1. Do nothing/no change which is referred to as the 'base case'
2. Display of plates to denote the intermediate phase of licensing
3. Introduce a night time restriction for the learner phase
4. Introduce a ban on mobile phone use by riders in the intermediate phase
5. Introduce a towing restriction for riders in the intermediate phase
6. Introduce an automatic transmission restriction for riders who pass the test on an automatic motorcycle (e.g. motor scooter)
7. Introduce requirements to wear protective clothing by novice riders
8. Introduce requirements to wear highly reflective and visible clothing by novice riders
9. Introduce requirements to ride with 'headlights on' by novice riders



A2.6.2 Assumptions made to assess on-road riding conditions and restrictions

Assumptions include:

- The base case will retain the trend of increasing numbers of deaths and serious injuries for motorcycle riders.
- A direct road safety benefit may not be able to be attributed to any one condition or restriction individually.
- Road safety benefits from conditions and restrictions on novice riders depend on knowledge, acceptance, compliance and enforcement.
- Strong public support is required for the acceptance of a night time curfew because reduced acceptance could lead to reduced restriction compliance and, in turn, reduced effectiveness.
- Research has found that protective clothing can prevent or reduce 43 per cent of soft tissue injuries and 63 per cent of deep and extensive injuries. Injured riders who wear leathers or other protective clothing spent 7 days less in hospital, and returned to work 20 days earlier than unprotected riders. Riders who wear protective clothing are 40 per cent less likely to suffer permanent physical effects[23].
- Recent evidence-based data suggests that protective equipment and clothing both mitigates and can prevent injuries. The MAIDS injury statistics suggest that protective trousers have a protective factor of 65-96 per cent, protective jackets have a protective factor of 69-92 per cent, protective footwear have a protective factor of 46-93 per cent and gloves have a protective factor of 93-95 per cent[33].
- TAC research shows 90-97 per cent of riders choose to purchase protective gear but 50-83 per cent fail to wear protective gear. The TAC has reported that of 1,154 surveyed motorcyclists:
  - 97 per cent have jackets
  - 95 per cent have gloves
  - 90 per cent have boots
  - 86 per cent have pants
  - 1 per cent has no gear
  - 77 per cent wear a jacket all the time
  - 83 per cent wear gloves all the time
  - 64 per cent wear boots all the time
  - 53 per cent wear pants all the time
- A requirement for 'headlights on' has been estimated to increase fuel consumption and carbon dioxide emissions by around 1-2 per cent on passenger vehicles. A similar result could be expected for motorcycles.

A2.6.3 Preliminary evaluation of feasible options for safer on-road riding conditions and restrictions

Measure	Capacity to increase awareness of risks	Capacity to improve skills and competence	Capacity to promote safer riding	Estimate reduction in crashes
Base case	***No change***	***No change***	***No change***	***No change***
Display of plates to denote the intermediate phase of licensing	✔	✘	✔	Possibly 5-10% combined with other measures.
Introduce a night time restriction for the learner phase.	✔	✘	✔	Possibly 5-10% combined with other measures.
Introduce a ban on mobile phone use by riders in the intermediate phase.	✔	✘	✔	Possibly 5-10% combined with other measures.
Introduce a towing restriction for riders in the intermediate phase.	✔	✘	✔	Possibly 5-10% combined with other measures.
Introduce an automatic transmission restriction for riders who pass the test on an automatic motorcycle	✔	✘	✔	Possibly 5-10% combined with other measures.
Introduce requirements to wear protective clothing by novice riders	✔	✘	✔	None, but a reduction in injury severity is expected.
Introduce requirements to wear highly reflective and visible clothing by novice riders	✔	✘	✔	Possibly 10% or more combined with other measures.
Introduce requirements to ride with 'headlights on' by novice riders	✔	✘	✔	Possibly 10% or more combined with other measures.

A2.6.4 Preliminary assessment of options for on-road riding conditions and restrictions

Criteria	Sub-criteria	Anticipated negative impacts	Anticipated positive impacts
Economic impacts	• Costs to learner/ novice riders • Costs to industry and business • Costs to Government • Costs to other road users	• Increased costs to novice riders • Increased costs to Government to design plates and vests • Increased cost to industry to develop and market motorcycle gear	• Reduced costs of road trauma to the community • Reduced costs as the result of lives saved and injuries prevented
Social impacts	• Safety and wellbeing of novice riders • Safety and well being of other road users	• Inconvenience	• Safer riding environment for novice riders • Lives saved and injuries prevented • Greater awareness of risks of motorcycle riding by all road users
Environmental impacts	• Traffic congestion • Noise • Pollution	• Increased energy use and carbon dioxide emissions	• No change

A2.6.5 Preliminary assessment of costs of options for on-road riding conditions and restrictions

Measure	Calculation of costs	Anticipated costs
Base case	***No change***	***No change***
Display of plates to denote phase of licensing	Current plate prices	$5-20
Introduce a night time rider restriction for learner phase.	Unknown. Anticipated to be minimal.	No change
Introduce a ban on mobile phone use by riders in the intermediate phase.	Anticipated to be minimal.	No change
Introduce a towing restriction for riders in the intermediate phase.	Anticipated to be minimal.	No change
Introduce an automatic transmission restriction for riders who pass the test on an automatic motorcycle	Anticipated to be minimal.	No change

Measure	Calculation of costs	Anticipated costs
Introduce requirements to wear protective clothing by novice riders	Lowest estimate of costs: Jacket =$300 Boots= $200 Pants= $250 Gloves= $100	$850
Introduce requirements to wear highly reflective and visible clothing by novice riders	Cost of reflective vest= $15	$15
Introduce requirements to ride with 'headlights on' by novice riders	Anticipated to be minimal.	No change

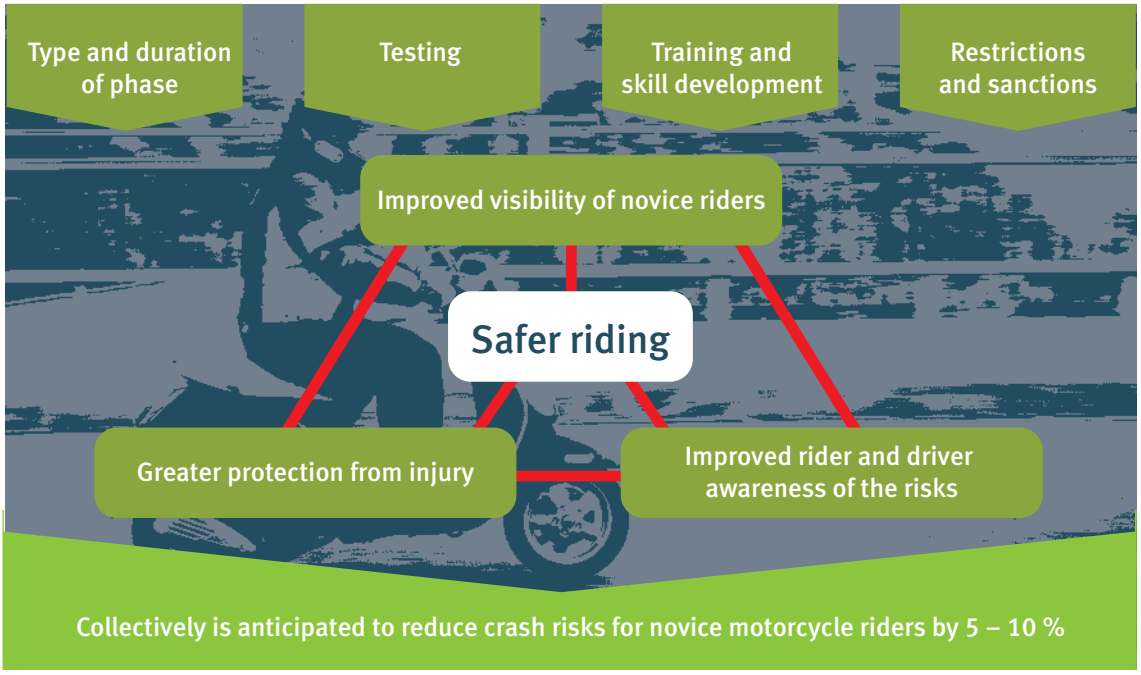
A2.6.6 Assessment of options for safer on-road riding conditions and restrictions

The preliminary assessment of options shows that there are road safety benefits to be gained from the introduction of additional conditions and restrictions. Community feedback is required to consider the impacts of any proposal to limit learner on-road riding to day time riding/night time restriction and the use of protective clothing and high-visibility reflective vests by novice riders.

A2.7 Summary of preliminary impact assessment

A2.7.1 Conclusions

Based on the assumptions made on available evidence, and the preliminary assessment of impacts and costs, the range of options (increased duration of the intermediate phase, testing, training, supervision and conditions) is anticipated to result in a reduction in motorcycle crashes by 5-10 per cent (1 to 3 lives saved and 22 to 40 serious injuries prevented).



A2.7.2 The potential model

This PIA has considered and evaluated a number of options to improve riding skills of novice riders. The PIA has identified that collectively, a number of options will provide the most effective and efficient model to reduce the overrepresentation of novice motorcyclists in road trauma statistics.

Category	Potential model
Number of phases (Chapter 4.1 of Discussion Paper)	**With car licence** ● Learner (3-15 months) ● Intermediate (3 years) ● Full
	Without car licence ● Learner (3-15 months) ● P1 (12 months) if ‹21 yrs old ● P2 (3 years) ● Full
Testing (Chapter 4.2 of Discussion Paper)	**Learner permit** ● A more comprehensive and rigorous assessment of practical skills (range-based only)
	Licence ● A more comprehensive and rigorous assessment of practical skills incorporating an on-road component ● Motorcycle hazard perception test
Training and skill development (Chapter 4.3 of Discussion Paper)	**Learner phase** ● Mandatory pre-learner training (standardised curriculum) ● Minimum hours of on-road supervised riding
	Intermediate licence phase ● Mandatory pre-licence training (standardised curriculum)
Restrictions / sanctions (Chapter 4.4 of Discussion Paper)	**Learner phase** ● May only ride Learner Approved Motorcycle Scheme (LAMS) bike ● Zero BAC ● No pillion passenger ● No towing ● Must wear a high-visibility vest while riding ● Must wear motorcycle protective clothing ● Must be supervised when riding ● Must not ride during defined night time hours ● Automatic transmission restriction if practical test is passed on an automatic motorcycle/scooter
	Intermediate licence phase ● May only ride LAMS bike ● Zero BAC ● No pillion passenger ● Licence status of rider must be identifiable for enforcement purposes (e.g. similar to an L plate) ● Automatic transmission restriction if practical test is passed on an automatic motorcycle/scooter ● Good riding record
	Full licence phase ● Automatic transmission restriction if practical test is passed on an automatic motorcycle/scooter

APPENDIX 3

Transport Integration Act 2010

STATEMENT OF POLICY PRINCIPLES CHECKLIST

A3.1 Purpose & scope

The purpose of this checklist is to set out a procedure and to demonstrate that consideration has been given to the decision making principles in making decisions under the Road Safety Act 1986.

A3.2 Objectives

To ensure that decisions are made in accordance with the Transport Integration Act 2010 objectives:

Objective	Considered in recommendations	Outcome or evidence of consideration
Social and economic inclusion	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS
Economic prosperity	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS
Environmental sustainability	✔	Demonstrated by this PIA and will be further considered in the RIS
Integration of transport and land use	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS
Efficiency, coordination and reliability	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS
Safety, health and well being	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS

A3.3 Decision making principles

Principle	Considered in recommendations	Outcome or evidence of consideration
Principle of integrated decision making	✔	Consulted with Victoria Police, Department of Justice, TAC, Department of Transport and key stakeholder groups in the development of policy and the development of the Discussion Paper and PIA.
Principle of triple bottom line assessment	✔	Considered in this PIA and will be further considered in the RIS
Principle of equity between persons	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS
Principle of the transport system user perspective	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS
Precautionary principle	✔	Considered in this PIA and will be further considered in the RIS
Principle of stakeholder engagement and community participation	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS
Principle of transparency	✔	Demonstrated by the Discussion Paper, this PIA and will be further considered in the RIS

A3.4 Statement of reasons

Options have been prepared based on evidence-based research, road safety principles, jurisdictional comparisons, crash data analysis and in consultation with affected stakeholders. This document is evidence that the objectives and decision making principles as set out in the Transport Integration Act 2010 have been complied with.

APPENDIX 4

Government policy checklist

A4.1 Purpose & scope

The purpose of this checklist is to set out a procedure and to demonstrate that consideration has been given to relevant Government policies in the evaluation of options in this PIA.

A4.2 Objectives

To ensure that decisions are made in accordance with the following:

- Subordinate Legislation Act 1994
- Transport Integration Act 2010
- Charter of Human Rights and Responsibilities Act 2006
- Reducing the Regulatory Burden
- Growing Victoria Together
- Victoria's Road Safety Strategy: *arrive alive* 2008-2017

A4.3 Procedure

Relevant legislation/Policy	Considered in recommendations	Outcome or evidence of consideration
Subordinate Legislation Act 1994	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS
Transport Integration Act 2010	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS
Charter of Human Rights and Responsibilities Act 2006	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS
Reducing the Regulatory Burden	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS
Growing Victoria Together	✔	Improving road safety is one of the key priorities of the Victorian Government's vision for building friendly, confident and safe communities under Growing Victoria Together
Victoria's Road Safety Strategy: *arrive alive* 2008-2017	✔	Considered in the Discussion Paper, this PIA and will be further considered in the RIS

Endnotes

1 AIHW: Berry JG and Harrison JE (2008). Serious injury due to land transport accidents, Australia 2005–06. Injury research and statistics number 42. Cat. no. INJCAT 113. Adelaide: AIHW.

2 National Highway Traffic Safety Administration. (2006). Motorcycle safety program plan. Washington, DC.

3 Christmas, S., Young, D., Cookson, R., & Cuerden, R. (2009). Passion, performance, practicality: motorcyclists' motivations and attitudes to safety. Transport Research Laboratory, Report PPR442.

4 Transport Monitoring, Ministry of Transport (2009). Motorcyclists : Crash Statistics for the Year ended 31 December 2008.

5 Christie, R. (2008). Analysis of involvement of scooters in crashes and their common crash characteristics. Report for VicRoads.

6 Mitsopoulos-Rubens, E., Ruding-Brown, C., Scully, J., Newstead, S., Hodge, G., & Lenne, M. (2010). Graduated Licensing for Motorcyclists. Report for VicRoads

7 Western Australia Department of Transport, Motorcycle Graduated Rider Training & Licensing Discussion Paper, April 2010.

8 Sexton, B., Baughan, C., Elliot, M., & Maycock, G. (2004). The accident risk of motorcyclists, TRL Report 607, UK.

9 ACEM (2009). MAIDS In-depth investigations of accidents involving powered two-wheelers Final report 2.0.

10 Haworth, N., & Mulvihill, C. (2005). Review of Motorcycle Licensing and Training, Monash University Accident Research Centre, Report No 240.

11 Haworth, N., Smith, R., Brumen, I. and Pronk, N. (1997). Case-control study of motorcycle crashes (CR174). Canberra: Federal Office of Road Safety.

12 Imberger, K, Pyta, V & Styles, T (2006). Redevelopment of the VicRoads motorcycle licence knowledge test phase one - preparation for test development, ARRB Group, Vermont South, Victoria (report for ACER, unpublished).

13 Wells, S., Mullin, B., Norton, R., Langley, J., Connor, J., Lay-Yee, R., & Jackson, R. (2004). Motorcycle rider conspicuity and crash related injury: case-control study. British Medical Journal 328:857

14 World Health Report on Road Traffic Injury Prevention. www.who.int/violence_injury_prevention/publications/road_traffic/world_report/chapter4.pdf.

15 Road Safety Act, 1986 (s.17(d)).

16 Haworth, N., Grieg, K., & Wishart, D. (2007). Motorcycle and scooter training and licensing, QUT report for VicRoads

17 Crundall, D., & Underwood, G. (1998). Effects of experience and processing demands on visual information acquisition in drivers, Ergonomics, 41:4

18 Mayhew, D., & Simpson, H. (2001). Graduated licensing for motorcyclists. Traffic Injury Research Foundation

19 Hosking, S., Liu, C., Mulvihill, C., Mayly, M., Murdoch, C., Haworth, N., & Regan, M. (2008). Hazard perception and responding by experienced and inexperienced motorcyclists: Stage 2. Report for VicRoads.

20 Imberger, K., & Gan, C. (2003). Review of Graduated Licensing for Motorcyclists. Australian Road Research Board report for VicRoads.

21 Williams and Preusser (1997). cited in Mayhew, D., & Simpson, H. (2001). Graduated licensing for motorcyclists. Traffic Injury Research Foundation.

22 Williams, A.F. (2007). Contribution of the components of graduated licensing to crash reductions. Journal of Safety Research, 38, 177-184.

23 Schuller, E.; Beir, G. & Spann, W. (1986). Disability and impairment of protected and unprotected motorcycle riders, Proceedings of the SAE International Congress and Exposition - Crash Injury Impairment and Disability: Long Term Effects, Detroit, MI, Warrendale, PA, pp.51-56, ISBN 0-89883-932-7.

24 www.usatoday.com/news/nation/2010-04-21-motorcycle-crash-deaths_N.htm

25 Department of Transport, London (2004). Road Safety Research Report No 54: In-depth Study of Motorcycle Accidents.

26 Australian Government, Department of Finance and Deregulation, Office of Best Practice Regulation. Downloaded 22 April 2010 from: http://www.finance.gov.au/obpr/docs/ValuingStatisticalLife.pdf

27 Access Economics (2009). The economic cost of spinal cord injury and traumatic brain injury in Australia.

28 Transport Accident Commission.

29 Department of Treasury and Finance (2007). Victorian Guide to Regulation.

30 Stephan, K. et. al. (2008). Characteristics of Fatal Motorcycle Crashes Involving Excessive and/or Inappropriate Speed. Monash University Accident Research Centre. Report for VicRoads

31 Gregersen, N.P. et. al. (2000). Sixteen years age limit for learner drivers in Sweden : an evaluation of safety effects, Accident Analysis and Prevention, 32 : 25–35.

32 Austroads Technical Report (2004). Update of Road User Cost Unit Values for June 2005, AP-T70/06, Austroads, Sydney

33 eSUM, Protective Equipment fro Riders. Downloaded on 27 April 2010 from www.esum.eu


vic roads


State Government
Victoria