YOUNG DRIVER
RESEARCH STRATEGY

by

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Road accidents remain a leading cause of injury and death for young drivers in Australia. This Research Strategy provides a plan for young driver research and outlines some interventions to redress the young driver problem. Initially, the factors involved in young driver accidents are reviewed. It is argued that a comprehensive and coordinated approach to young driver research and intervention offers the most promise, and that such an approach should encompass education, licensing, legislation, enforcement and technology (e.g. simulation). A prioritised list of programs for research and countermeasure development across these areas is provided. It is envisaged that road safety agencies will utilise this information when planning research and interventions to address the young driver problem.
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EXECUTIVE SUMMARY

BACKGROUND

Young drivers constitute a large, robust and, to date, an intractable road safety problem worldwide. At the same time there is significant potential for improvements to their risk of road trauma.

This Research Strategy identifies key areas for young driver research and also proposes the types of interventions which can help achieve a safer driving system for young drivers.

The aim of the research proposed in this Strategy is to facilitate the development of a comprehensive, well co-ordinated and integrated set of intervention programs, backed up by sound scientific data. In line with this, a programmatic focus is used in defining research needs. The contents of this document can be used to support the recently launched "Safety First" Victorian Road Safety Strategy.

This Research Strategy draws on a more comprehensive paper entitled "Directions for Improving Young Driver Safety in Victoria: A Discussion Paper".

THE PROBLEM

Despite a significant improvement between 1990 and 1994, the cost of young driver deaths and injuries in this time is estimated to be in the vicinity of $750 million in total, and approximately $150 million per annum.

Road accidents continue to be the primary cause of death for young adults aged 15 to 24 years for both Victoria and Australia.

PROPOSED RESEARCH

A variety of research topics and programs across the domains of education, licensing, legislation, enforcement and technology has been proposed to reduce young driver involvement in road accidents. Optimisation of some current programs, significant changes to others, and new types of initiatives are suggested.

A comprehensive and integrated range of interventions and related research projects have the most potential for achieving young driver accident reductions. Improving young driver skill for instance, without the containment of young driver overconfidence and risk acceptance or the deterrence of high risk behaviours for example, could limit the effectiveness of efforts in this area.

A two-staged process was used to define research projects:

1. consideration of factors contributing to young driver accidents and general types of measures which could counter or reduce these factors, and

2. consideration of research topics to augment and facilitate the development of effective and efficient interventions and strategies.

The first stage of this process is reported in its entirety in the companion discussion paper. The second stage is reported more completely in this Strategy document.
The framework used for defining research topics and intervention strategies is depicted below.

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It is argued that a combination of integrated and interlocking strategies with consistent aims will produce greatest effect. Hence research topics are derived from across this framework. Potential countermeasures and intervention strategies are discussed at a general level only.
because several policy variants could equally be justified, based on current knowledge of likely effectiveness.

Initiatives across the strategic areas summarised below are proposed within the Research Strategy:

◆ Research and development of a comprehensive new driver licensing system and new programs and methods to prepare and train new drivers

◆ Research and development of policies & programs to manage travel patterns & reduce high risk driving situations for young drivers

◆ Research and development of educational and promotional programs to reduce the impact of age related motivations, moderate risk acceptance & risky driving

◆ Research and development of optimised deterrence programs to reduce specific high risk driving behaviours by young drivers: Speed, Alcohol & Restraints

◆ Research & review to improve deterrence programs & penalty systems to reduce traffic offences and related high risk behaviours amongst young drivers

◆ Research and interventions to target young offenders and young problem drivers to reduce illegal & aberrant driving

◆ Research for effective incentives to encourage the adoption of safe behaviours, use of safety devices and driving under low risk conditions for newly licensed drivers

◆ Research into the use of technologies for the development of training & licensing programs, & for in vehicle highway systems

◆ Other research including accident risks, longitudinal research, evaluation of programs, international review of developments in licensing, technology, and other relevant areas.

It is envisaged that road safety agencies will utilise this Research Strategy for planning future research and setting directions for the development of young driver interventions. A prioritised listing of program areas and projects for research and countermeasure development is provided for planning future directions. An expert group should review the proposed research and provide guidance as to the expected timing, costs and priority of the projects which are likely to lead to cost effective countermeasures.

A list of potential action items, which with modest or minimal research could be usefully implemented in advance of an integrated package of research and measures, is provided in Appendix A of this report.

It is recommended that a Young Driver Taskforce be established to ensure the use of research outcomes and implementation of appropriate interventions in a co-ordinated, integrated and timely way.
YOUNG DRIVER RESEARCH STRATEGY

Foreword

This project was instigated and funded through the Baseline Program of the Monash University Accident Research Centre (MUARC). Baseline sponsors of the Centre are the Department of Justice, Royal Automobile Club of Victoria, the Transport Accident Commission, VicRoads and Victoria Police.

For several years Victoria has developed a general Road Safety Strategy. The need for a Research Strategy specifically for the young and novice driver area was borne out of the recognition that the magnitude and difficulty of this problem warrants special attention and targeted resourcing if advances are to be made. This Research Strategy can be used to support the recently launched "Safety First" Victorian Road Safety Strategy.

This Young Driver Research Strategy evolved from a more comprehensive discussion paper entitled "Directions for Improving Young Driver Safety in Victoria: A Discussion Paper". It provides the background information upon which the Research Strategy is based and can be used as a companion document.

The emphasis in this Research Strategy has been on developing directions for young driver research across a comprehensive range of risk factor and countermeasure areas. Through the process of identifying research needs, however, some specific programs and broader intervention strategies were also identified as having potential benefits. These have been noted throughout the document where appropriate. However, even programs which could be introduced in the relatively short-term require some data modelling and quantification of effects either to aid policy decisions or further investigation to facilitate implementation.

The project utilises and builds upon information from a wide variety of sources and attempts to integrate this information to provide directions for future effort in the area of young and novice driver research and countermeasure development. The best available data, literature and research were used as the basis for the Strategy’s development. Its development is therefore indebted to the work and intellectual contribution of a large number of experts and their funding bodies, both nationally and internationally. The necessary brevity of the document precludes the inclusion of a bibliography and reference listing. This report is not intended to be a review of the area of young and novice drivers.

The Strategy is primarily intended for use by road safety agencies and practitioners. It is hoped that it will aid the planning of much needed research and program development. It may also be of interest to researchers in this field.

The authors would like to thank members of the Project Advisory Committee for their support and comments.

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1.0 PURPOSE

Young drivers constitute a large, robust and, to date, an intractable road safety problem. Yet there is enormous scope for improvement in this area. Recent and imminent initiatives and research findings in the field have opened up a variety of areas for investigation, countermeasure development and evaluation.

Applied research projects which focus on problem areas for young drivers can create greater opportunities for accident reductions. A comprehensive, well co-ordinated and integrated set of interventions backed up by sound scientific data has the potential to achieve significant improvements.

This Research Strategy provides a plan highlighting key areas for young driver research and proposes some interventions which can help to achieve a safer driving system for young drivers. A variety of programs across the domains of education, licensing, legislation and enforcement can best prevent their involvement in road accidents. Optimisation of some current programs, significant changes to others, and new types of interventions are suggested.

Whilst the Research Strategy was developed within the Victorian context, the directions may apply across Australia and to some extent internationally.

1.1 Development of the Research Strategy

This Strategy was developed by using a range of data sources and relevant information:

- previous reviews, research and published literature
- outcomes from recent Australian research, such as the Federal Office of Road Safety Young Driver Research Program
- accident data analyses
- current and imminent developments in programs and research both locally & overseas
- knowledge regarding the status of effective measures.

1.2 Contents of the Research Strategy

This Research Strategy contains:

- a brief overview of the young driver problem
- a proposed range of key areas for research and some interventions, which can be achieved in the short, medium and longer term
- a task listing of proposed research and interventions graded by priority.
2.0 YOUNG DRIVER ACCIDENT INVOLVEMENT

2.1 Victoria

In spite of substantial reductions in road accidents generally, they continue to be the primary cause of death for young adults aged 15 to 24 years for both Victoria and Australia.

Despite the fact that there was a general improvement between 1990 and 1994, the cost of young driver\(^1\) deaths and injuries in this time is estimated to be in the vicinity of $750 million in total, and approximately $150 million per annum.

Young drivers remain substantially over-involved in casualty accidents, both in absolute and relative risk terms. Improvements in accident involvements appear to have reached a new plateau and further gains will require increased efforts. Those factors remaining to be tackled may be less subject to global influences and provide significant challenges to implementation on a cost effective basis.

2.2 Other places

Across Australia and in other countries, the accident involvement rates of younger drivers are typically 2 to 4 times those of drivers who are older and who have been driving for longer. This pattern has been relatively stable over time and across countries and states, regardless of whether the rates are calculated in terms of fatal, injury or all casualty accident involvements per licences held or per distance travelled.

2.3 Characteristics of young driver accidents

A number of salient features of young driver accidents have been identified from analyses of mass accident data and special studies. It is important to note that many of these characteristics overlap and that many influence injury severity outcomes.

- **Night time accidents** constitute around 36% of young driver casualty accident involvements and 50% of their fatal accident involvements; accident risk has been reported as highest at night for first and second year drivers.
- **Single vehicle accidents** make up 20% of casualty accidents involving 18-21 year old drivers compared with only 10% for older drivers; young male drivers are more likely to have such accidents.
- **Alcohol** - compared with 20% of older drivers, 23% of 18-20 year olds and 43% of 21-23 year olds involved in fatal accidents during 1992-1994 had a Blood Alcohol Concentration (BAC) over 0.05 g/100ml; alcohol related fatal accident involvement appears to have dropped most for 18-20 year old drivers.

\(^1\) Drivers aged 18, the minimum licensing age in Victoria, to 25 years are defined as young drivers as they have the highest accident involvement levels. Drivers under 18 years of age are involved in only 1% of casualty accidents. However, in the context of countermeasure development and related research directions, a broader definition of young drivers which includes pre-licensed drivers and adolescents has been used.
Gender - per kilometre driven, young male and female drivers have a similar chance of being involved in a casualty accident. However males are more likely to be involved in the less frequent, more severe accidents.

Passengers are present in around 40% of the accident involvements of 18-21 year olds compared with around 35% for older drivers, and the risk of accident involvement appears to increase with passengers particularly in the first and second years of driving.

Accident type patterns for young drivers show that they are over-represented in single vehicle accidents (especially males and the youngest drivers), as drivers proceeding straight ahead in 'right through', 'emerging', and 'U turning' type accidents, as drivers colliding with pedestrians and drivers (particularly females) of the rear vehicles in 'rear end' type accidents.

Early months of driving - accident risk is highest within the first four thousand kilometres of driving and the earlier months of driving.

3.0 FACTORS CONTRIBUTING TO YOUNG DRIVER ACCIDENTS

Five general groups of factors have been identified as contributing to the young driver’s over representation in accidents. These relate to:

- inexperience and underdeveloped driving skill
- age and youthful motivations which affect driving
- young problem drivers
- travel patterns and exposure to high risk driving situations
- alcohol

3.1 Interactions and relative importance of factors

Estimates of the independent contribution to accident involvement of each of the factors discussed above has been difficult to determine. It is very clear that all these factors operate and contribute to the young driver’s accident risk. Any individual factor on its own accounts for only part of the total problem. These factors are often present together thereby compounding the young driver’s accident risk.

4.0 SCHEMATIC MODEL OF YOUNG DRIVER ACCIDENT RISK & INVOLVEMENT

A schematic model which attempts to illustrate the general factors and processes which lead to young driver accident involvement/risk is shown in Figure 1. The relative proximity of the various factors to accident events is illustrated by their location in the diagram. Those with a more general influence occur to the left and those with a more specific influence are shown towards the right side of the diagram. Detailed interactions between factors are not shown for reasons of simplicity. External constraints such as enforcement, driving restrictions, safety education and promotion, are important mediators of accident related factors but are not specifically shown in the diagram.
FIGURE 1

Schematic model of factors which contribute to young driver accident risk/involvement
5.0 RESEARCH REQUIREMENTS FOR PROGRAM DEVELOPMENT

Research and interventions which tackle the range of accident related factors for young drivers concurrently are required. Improving young driver skill, for instance, without containing young driver overconfidence and risk acceptance, for example, or deterring high risk behaviours, could limit the effectiveness of efforts in this area.

Preventive measures focusing on the driver are emphasised. General accident measures toward safer vehicles and roads will be beneficial to young drivers but are not dealt with specifically in this Strategy.

Measures aimed at the whole population appear to be the best way to effect behavioural change for the majority of individuals. These can be supported by low cost group or individually oriented programs at a local level for identified or at-risk groups. Benefits from small changes amongst the vast majority of the population are very likely to outweigh benefits derived from changes by a small group of individuals.

5.1 Inexperience and skill deficits

The early months of licensed driving are particularly hazardous for new drivers. The design of a "safe passage" for novices through the danger period is required. There are two basic ways to tackle lack of inexperience:

1. better preparation for licenced driving by enhancing the driving skill of new drivers
2. reduction of driving risk during the early part of licensed driving.

The licensing system offers a possible best mechanism to achieve both of these. A new driver licensing system which:

1. appropriately structures young drivers' learning experience to maximise skill development
2. incorporates improved and integrated graduated licensing
3. relies on quality licence tests, competency assessment and methods of testing

is likely to reduce the susceptibility of novice, inexperienced drivers to accident.

5.1.1 Improved Graduated Licensing

Benefits would be derived from an improved Graduated Licensing Scheme (GLS) which enhances skill development under low risk driving conditions over the learner permit and probationary licensing period. Candidate schemes exist and further research, development and evaluation is required as discussed below.

Learner driving

Learner drivers need to increase their driving practice as much as possible. Rough estimates for Victoria suggest that learner drivers currently undertake around 500 kilometres of driving practice before provisional licensing on average. This is almost certainly insufficient for safe driving. A recent English estimate of learner driving practice was in the vicinity of 1,000
kilometres. On the basis of recent research evidence, a suitable goal appears to be 4,000 kilometres of supervised learner driving prior to licensing. The best method for attaining such a goal (regulatory, voluntary, via incentives or a combination) needs to be researched and evaluated. The aviation area provides a precedent for defining minimum learning hours and requiring log books. Development & trialing of a smart card (perhaps combined with the learner permit) which automatically logs driving sessions for the learner driver might lead to an efficient and effective method of ensuring minimum driving distances/hours for learners and may help overcome any potential operational problems related with such an initiative.

Probationary driving
A review of current international best practice is needed to facilitate the development of a new GLS. Evaluation of the German probationary licensing system has demonstrated accidents reductions of 4-6% for males and 2-3% for females. Using information regarding probationary licensing overseas (such as in France and Germany, for example) and accident characteristics of novice drivers, research is needed so that a better graded system of driving can be designed to move new drivers progressively from low to higher risk driving conditions.

The development of an improved GLS, which aims to maximise skill development through enhanced learner driving experience and minimises early licenced driving in risky conditions, could be devised and implemented within the short term. The scheme should be evaluated in detail following implementation, particularly in terms of effects on accidents in the early months of driving.

5.1.2 Improved licensing tests & methods of testing
A strong case can be made that benefits would be derived from improved licence tests which better assess the critical aspects of an applicant’s driving performance. The aim here is to increase the skill level of licenced novice drivers. Research is needed into new forms of licence testing. For example, simulation may allow advances in licence testing by providing a medium for testing perceptual and cognitive aspects of driving. Research to develop a battery of tests to assess perceptual and cognitive aspects of performance and workload management would be highly desirable. Research is also required to investigate the possible adoption of Competency Based Testing (CBT) during the learner period, to assess whether it leads to significant improvements over current licensing procedures.

5.1.3 Driver training programs
A broader conceptualisation of driver training is required in which alternative methods and a greater diversity of applications are developed. The use of high technology for the purposes of driver training requires further investigation and development. High technology (including driver simulation) provides several advantages for enhancing driver performance:

- provision of controlled conditions
- presentation of standardised and replicable driving tasks
- precise measurement of performance
- high risk driving can occur in a (safe) simulated environment.
Research and development of driver training curricula aimed at enhancing perception and cognition should also be undertaken. Investigation of the potential benefits from a Royal Society for Prevention of Accidents (ROSPA) advanced driving course from the U.K. should be undertaken and its applicability across the young driver population investigated.

5.1.4 Skill research

The processes involved in skill development and the amount and type of experience required to become as skilled as an experienced driver are still not known. Research to track the nature of driving skill acquisition and to develop measures of perceptual and cognitive skill, and workload management should be undertaken. The outcomes from skill based research might help to increase and accelerate the skill development of novice drivers through:

a) formulation of learner driver programs

b) licence test development to measure critical perceptual and cognitive driving skill

c) foundations for the development of driver training programs, which currently lack a scientific basis.

Hence such research could aid the development of programs as described in sections 5.1.1, 5.1.2, and 5.1.3, respectively. Outcomes from this research could be available in the medium to long-term for implementation purposes. This area has been only partially addressed by the Transport Accident Commission (TAC) simulator project.

5.2 Managing travel patterns & reducing high risk driving situations

Reducing the amount and type of driving, especially in high risk driving situations, is an effective method of reducing the accident involvement of new drivers. Implementation of such measures can be achieved in the immediate future. Whilst some additional research should be undertaken to examine these issues or quantify benefits and disbenefits using more recent data, positive outcomes can already be confidently predicted.

5.2.1 Night-time driving

Night-time driving has been reported as one of the riskiest conditions for novice drivers and reduction of driving at these times would substantially reduce such accidents. Legislated nighttime driving restrictions for the first 3, 6 or 12 months are likely to provide the greatest reductions, but the exact time period would need to be determined by additional research. An indicative estimate of a 5:1 benefit/cost ratio in favour of a curfew between 11pm to 5am has been reported. Alternative methods of discouraging nighttime driving also need to be considered.

However, these data are based on 1984-1988 figures. Research to determine current nighttime accident risk for first and second year drivers and an examination of the relative costs and benefits of the various options for such a program should be undertaken using recent accident trends and driver exposure data. Investigation of the potential role of nighttime enforcement/deterrence strategies, as opposed to driving restrictions, to reduce nighttime accident risk amongst young drivers could be considered (see 5.4 & 5.5).
A study which examines nighttime driving accidents involving young drivers in detail could also be undertaken. The study should attempt to ascertain the importance of a range of factors, such as skill and the effect of reduced visibility on driver performance, age related motivations and high risk driving behaviours such as speed, alcohol, and the possible role of driver fatigue.

5.2.2 Licensing age

Dropping the licensing age from 18 to 17 years of age in Victoria is currently a matter under discussion. Evidence to date suggests that this would result in substantial increases in the road toll and casualty accidents. Previous investigations have shown that imposing tougher driving restrictions are unlikely in general to offset these increases. However a project to determine whether such driving restrictions would mitigate these increased accidents using more recent data should be undertaken.

5.2.3 Passengers

First year drivers have a greater risk of accident involvement when they carry passengers. A study to determine the cost-benefits of limiting carriage of passengers for young drivers in the first 3 to 12 months using more recent data may be desirable. The influence of the sex and age of the occupant(s), and time of day/day of week on accident risk should also be explored in such a study to determine whether restrictions should apply for a sub-set of driving times only, for example between 11pm to 5am on weekends.

5.2.4 Accident types

Recent research has identified particularly high risk traffic situations and accident types for young drivers. Research is needed to evaluate new ways of better preparing young drivers to deal directly with these particular traffic situations. Such information could be used to counter the deficits that young drivers have in these situations. This would be a useful adjunct to driver training, licensing/competency assessment, education and other measures which attempt more generally to improve the skill level, especially hazard detection skills of young drivers.

5.2.5 Rural driving

Rural driving is particularly risky for 18-20 year old drivers. Speed is implicated as an important factor in rural accidents for these drivers. Greater driving distances, older vehicles and fatigue may also be important. Further research on accidents in rural localities for this group may be needed to identify suitable countermeasures such as environmental treatments, speed enforcement, or tailored training programs.

5.3 Age, youthful motivations & risky behaviour

This area has proven to be a challenge to researchers because, to date, much needs to be learned about the relationship between attitudinal factors, behaviour and accident rates. Effectively encouraging safe behaviours or discouraging unsafe behaviours amongst young people (and all road users) still remains a major challenge and more research is needed on the methods and processes of changing accident-related behaviours. However, it is clear that behavioural change related to driving is maximised by using multiple strategies to target the
same behaviour. A mixture of legislative, educational and promotional influences needs to be brought to bear on any one behaviour and its antecedent and mediating factors. Research and evaluation to optimise the effectiveness of both legislative and educational influences is recommended.

Educational measures are considered in the following section, whilst legislative influences (particularly enforcement) are considered separately in later sections of this report. The development of more effective educational and promotional programs with consistent messages can address young driver safety in a number of ways:

1. maximise the effect of deterrent (legislation and enforcement) and licensing programs because in some instances legislative influences can quickly achieve behavioural changes and act as catalyst in changing attitudes and social norms

2. directly change the behaviour of young drivers using innovative methods, appropriate communication strategies and relevant information to counter risk acceptance/unsafe behaviours and adoption of safe behaviours

3. indirectly change the behaviour of young drivers by altering social norms and the perceptions of the social standing of an issue or behaviour.

A number of medium to longer term activities and research are required to develop effective educational and promotional programs.

5.3.1 Risk judgements and assessment

The modification of risk perceptions and risk acceptance amongst young drivers through effective education, promotion and training programs may lead to reductions in accident related behaviours. A multi-faceted research program to examine and identify the factors moderating risk perception is required to develop such programs. These factors are not well understood; skill deficits, lack of driving experiences, overconfidence, social norms and assessment of behaviours amongst peers and in the general community all seem important. How the young person defines occasional versus frequent risk behaviour in relation to themselves and others is an important aspect of risk perception requiring examination. Risk perception in relation to specific driving contexts, and in relation to their subjective perceptions of themselves, peers, and other road users should be examined.

5.3.2 Education & Training

The swift development of vehicle control skills amongst new drivers may give them a false sense of confidence in their driving ability. Shifting the emphasis away from traditional skills training to risk consciousness and insight into the limitations of the driver’s own capability and that of other road users, may provide the basis for a new approach to driver training and education programs. An example of this is the Swedish PILOT program. The use of high technology, such as simulation and/or interactive multi-media packages to raise risk awareness amongst pre-driver or new driver cohorts should be investigated. Typical accident situations in which young drivers are over involved, particularly those where the young driver has not anticipated the actions of other road users might provide the most appropriate content for such programs.
Investigation, trialing and evaluation of school based education and programs in other relevant settings using successful educational techniques from other health education areas should be undertaken. In particular, peer education concepts appear to have been under-utilised in road safety education programs. Peer education/support programs typically train young people to be peer educators who then, via peer networks, are able to disseminate appropriate harm reduction information into the broader youth community. The use of these techniques could lead to programs which increase the likelihood of direct (via social modelling for example) or indirect shifts (via changes in broader social perceptions) in behaviour during the probationary driving period. Licensing and deterrence goals can also be supported through such programs.

5.3.3 Information & communication

An applied research program to develop effective communication strategies to change high risk behaviours or improve compliance of young drivers should be undertaken. This work should utilise existing research into risk perceptions and evaluations of information campaigns across various health and safety disciplines. Issues of content, method and source of communications are important and should be addressed. Biases in how a message is received and interpreted may currently limit the use of current information strategies. Results can be used for promotion, education or to improve compliance.

5.3.4 Interdisciplinary approaches & multiple interventions

Successes in the health promotion area in relation to smoking, exercise and diet related shifts in behaviour over the last decade, and research explicating this success may have some relevance to the road safety context, particularly in increasing the effectiveness of education and promotion in support of regulatory measures. A review of the community-health intervention research literature including models of behavioural change, effects of various measures on the different stages of the behaviour change process, and the benefits and limitations of different measures should be undertaken. Recommendations regarding the applicability of these models and research findings to risky driving behaviours of young drivers and potential initiatives which flow from these should be provided. Programs across a wide variety of settings (families, school, peers, health settings, communities, media, legal) should be proposed. Best practise across these program areas should be described. U.S. transport authorities have acknowledged the special role of parents in young driver safety. Programs aimed at utilising parents as a resource should be given particular attention. In addition, research to determine the usefulness and broader application of peer education programs is desirable.

5.4 High risk driving behaviours: Speed, Alcohol & Restraints

Reductions in speeding and drink driving, and increases in seat belt wearing of young drivers would lead to reductions in their accident involvement, particularly in more severe accidents, and lowered injury severity. Integrated initiatives, particularly legislative and enforcement measures, across a number of areas will have the greatest effect.

5.4.1 Speed

An effective speed camera program has been operating in Victoria since 1990 but the exact effect on young drivers is not fully known. The extent of changes in young driver speed profiles, speed perceptions and attitudes, and accident reductions linked to the program should
be determined through a detailed research study. The speed camera program should also be expanded to cover the most risky times and locations (including nighttime and rural zones) for young drivers.

Speed limiters in vehicles for repeat P-Plate offenders or all P-Plate drivers have been proposed as a potential means for preventing speeding. Research is needed to evaluate various options for implementation. Subsidiary measures such as special warning letters or penalties (see section 5.5.3) for P-Plate drivers after the commission of speed offences should also be investigated. A research study which examines the risk and speed perceptions of young drivers in relation to a series of speed related traffic scenarios should be undertaken. Such results should support the development of environmental treatments to aid appropriate choice of speed.

5.4.2 Alcohol

Research to determine the BAC levels of drivers or self-reported drink driving behaviour by age should be undertaken to help determine the extent to which young drivers have been deterred from drink driving. Alcohol remains a significant problem in fatal accidents involving young drivers, especially amongst 21-23 year olds.

Research to optimise current Random Breath Testing operations to increase deterrence amongst young drivers specifically should be undertaken (eg. licence checks). Although research will benefit such enforcement strategies, they can nevertheless be implemented swiftly given appropriate resourcing. It is likely that promotion of low alcohol beer and the use of public breath testers would yield particular benefits for young drivers. Such measures however would require formal evaluation. A study to investigate the costs and benefits of requiring P-Plate drivers to drive vehicles fitted with an alcohol ignition interlock could also be undertaken. Most of these studies and initiatives can be achieved in the short to medium term.

In addition, the issue of drugs other than alcohol also warrants research attention.

5.4.3 Restraints

Drivers aged 21-30 years are the lowest restraint wearers amongst drivers and this is reflected in their over-involvement in fatal accidents where they are unrestrained. The danger of non seat-belt use especially when the driver is alcohol affected and speeding makes it imperative that targeted enforcement and promotional activity is increased for this group. The threat of on the spot breath testing of drivers caught speeding or not wearing seat belts may also decrease this behaviour, but such enforcement strategies should be further developed and evaluated.

5.5 Deterrence & incentive strategies

5.5.1 Enforcement strategies

A review and refinement of enforcement strategies to deter high risk behaviours more effectively is required. Some areas have been identified in section 5.4 for speed, alcohol (and other drugs) and restraint wearing but there are others. Evaluation of the zero BAC laws on the behaviour and alcohol related road accidents of probationary drivers is also needed.
Changes in BAC levels of drivers involved in fatal accidents, for 18-20 and 21-23 year olds separately, since the introduction of the zero BAC requirement should be examined.

5.5.2 Penalty systems

The effectiveness of current penalties and demerit points for deterrence purposes should be reviewed. The review should recommend how to improve the key elements of general deterrence, that is, swiftness, severity and certainty of penalty (or sanction) specifically for young drivers.

5.5.3 Targeting offenders

Whilst traffic offenders constitute only a minority of young drivers who have accidents, they appear to be a high risk sub-group warranting complementary intervention. It would appear that detection for speeding and disobeying traffic controls could be a way of identifying a small proportion of novice drivers at risk of accident involvement. Initiatives to reduce the accident risk of such drivers should be researched. These could include:

- individual treatment approaches (depending on cost and effectiveness)
- fitting of speed limiters for speeding offenders
- special warning letters to these drivers
- extension of the P-Plate period for offenders

a program involving accumulation of points for various classes of traffic offences, linked with increased insurance premiums and in which violation free drivers are rewarded by maintaining the basic insurance rate. An example of such a program is the North Carolina Safe Driver Incentive Plan.

5.5.4 Incentives

Incentive programs for new/young drivers may have potential for accident reductions if linked to accident-related factors. Incentives might be an effective way of encouraging various safety related behaviours and/or use of safety devices, such as:

- increased driving practice during the learner period
- limiting nighttime driving in the first months/year of driving
- installing and using a speed limiter.

A study to evaluate feasibility of application and cost-benefit considerations should be performed.

5.6 Young problem drivers

Young drivers who take excessive risks appear to contribute to a relatively small proportion of total young driver accidents, and accordingly should be given low priority in terms of research and intervention efforts. Evaluation of small scale informal programs with identified and “at risk” young people such as peer support and other remedial programs should be undertaken. Programs targeted at multiple traffic offenders would go some way to addressing this issue. The research discussed in section 5.5.3 is likely to have some relevance here. A trial of a new
Electronic Driving Licence card which replaces the starting key in a vehicle to reduce unlicensed driving and joy riding is highly desirable.

5.7 Use of technologies

5.7.1 Training & assessment for licensing

Driving simulators may provide a new, efficient means of assessing novice drivers for licensing purposes. The ability to assess hazard detection and other skills which are difficult to observe directly and in a reliable fashion would be an added benefit of technologically based assessment. The ability to test applicants in relation to high risk situations in a simulated environment is an added advantage of simulator based assessment. The following research projects should be undertaken:

- monitoring of simulator based licence testing in California USA
- examination of the cost and efficiency of simulator training and licensing methods
- driving skill research to develop better quality licence testing, and ways of promoting skill development as outlined in section 5.1.3.

5.7.2 Enhancement of driving performance

Computerised decision aids placed permanently in vehicles may help novice drivers, who are at an earlier stage of driving skill, to make decisions in traffic. Such aids may, for instance, improve decision making during lane changing.

5.7.3 Vehicle capability

Intelligent Vehicle Highway Systems may also be capable of preventing risky driving actions through features such as brake sensors and technology to maintain adequate following distances to reduce rear end accidents. Speed control would also be a desirable feature of such vehicles.

Outcomes of all these developments would be available only in the longer term.

5.8 Other research, information, data and evaluation

5.8.1 Importance of monitoring and evaluation

Concurrent with the above activities, programs which are trialed or fully implemented need to be monitored and evaluated to ensure efficient use of resources, and improvement of programs. On-going monitoring of basic information such as accident involvement, licensing rates and driving exposure patterns are an integral part of evaluation and re-adjustments to the adopted Strategy. In some instances this requires regular surveys, such as for driving exposure. Such monitoring might help to identify changes in trauma patterns and appropriate allocation of resources.

5.8.2 Accident risks study

An accident risks study is currently being undertaken using more recent accident and exposure data. The study will compare trends over time. Detailed analysis of accident risk and different
exposure patterns by sex and age, and other important characteristics such as nighttime driving, rural driving, driving with passengers, accident severity and other characteristics noted throughout this Strategy is expected. The outcomes of this study should be taken into account when considering the content of this Strategy document.

5.8.3 Review of international best practice

Several topics were highlighted in the Strategy requiring monitoring or review of best practice. In particular, this should be undertaken for licensing regimes, application of simulator technology and for new educational and insurance-traffic offence programs being trialed overseas.

5.8.4 Longitudinal research

A study which follows learner drivers over their permit and probationary driving periods could achieve several important objectives. It could examine the role of age, experience and other factors in accident risk. It could also allow monitoring of the effect of licensing initiatives on behaviour and attitudes. Gender differences in terms of learner driving and inexperience could be assessed allowing special initiatives to be developed if necessary. The relationship between offences and accidents can also be examined. The role of risk perception and maturational factors in accident involvement could also be incorporated into such a study. Changes in driver attitudes, age related motivations, behaviours and other psychological factors can also be monitored over time.

5.9 Research relating to current activities

The following research projects relating to current and planned initiatives should be undertaken.

- Promotion -
The TAC has recently launched a program specifically directed at young, inexperienced drivers: “Learn & Live”. An evaluation of the effects of the many facets of this program is recommended.

- School based education -
In Victoria, a new Traffic Safety Education (TSE) Action Plan has been formulated which involves a range of educational programs directed at all schooling levels. Evaluation of the TSE programs should be undertaken.

- Hazard Perception Test -
VicRoads is planning to introduce a screen-based computerised Hazard Perception Test (HPT) as part of computerised knowledge testing in early 1996. Formal evaluation of the test’s ability to discriminate amongst novices is being undertaken. Formulation and trialing of an evaluation methodology has begun. Initial results should be available by the end of 1997.
- Competency Based Testing -
The concept of Competency Based Testing (CBT) has been addressed by an AustRoads Working Party and currently has a high profile in the licensing field. Research to develop an optimum competency based testing system for Victoria should be undertaken if the concept is adopted. A framework for evaluating the various changes which potentially can occur through implementation of CBT which has been adopted by AustRoads in principle, should also be undertaken.

- Simulator based licensing tests in California -
Progress in the development of licence tests using simulation should be monitored.

- Simulator research -
The Transport Accident Commission (TAC) has recently commissioned a simulator based research program into driving performance of inexperienced drivers. The research will culminate in the development of a training program for learner drivers using simulators or other media. If successful the program will provide much needed information on the skill deficits of inexperienced drivers which may be useful for the development of licence tests.

- Other research & development -
Based on a pilot study by VicRoads, a study to determine the amount and type of learner driving experience which leads to reduced accident involvement post-licensing should be undertaken. VicRoads has also been developing and trialing a pilot program using peer support groups amongst young people dealing with high risk driving behaviour and related issues through youth worker agencies and networks. Research to determine the usefulness and broader application of peer support methods is desirable.
6.0 STRATEGIC DIRECTIONS FOR IMPROVING YOUNG DRIVER SAFETY TO THE YEAR 2001

Strategic directions for the development of young driver programs and related research initiatives to the year 2001 have been distilled from the contents of this report. These are outlined below, with a preliminary estimate of priority (high, medium or low) and timing (short, medium or longer term). Some areas will require more research and development than others before effective countermeasures can be implemented.

<table>
<thead>
<tr>
<th>STRATEGIC AREAS &amp; ASSOCIATED PROGRAMS</th>
<th>PRIORITY</th>
<th>TIMING</th>
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<tbody>
<tr>
<td>INEXPERIENCE &amp; SKILL DEFICITS</td>
<td></td>
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<tr>
<td>• A new driver licensing system with stronger learner driving and Graduated Licensing components</td>
<td>high</td>
<td>short</td>
</tr>
<tr>
<td>• Training, preparation &amp; licence testing in perceptual &amp; cognitive higher order aspects of driving skill</td>
<td>high</td>
<td>medium-long</td>
</tr>
<tr>
<td>• Competency based licence testing to replace practical drive end test</td>
<td>medium</td>
<td>short</td>
</tr>
<tr>
<td>MANAGE TRAVEL PATTERNS &amp; REDUCE HIGH RISK DRIVING SITUATIONS</td>
<td></td>
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<tr>
<td>• Manage novice driver travel patterns through policies and programs to encourage low risk driving and reduce high risk driving, separate to or as part of Graduated Licensing</td>
<td>high</td>
<td>short</td>
</tr>
<tr>
<td>Address rural and nighttime driving risk factors for young drivers through in depth studies</td>
<td>medium</td>
<td>medium</td>
</tr>
<tr>
<td>AGE RELATED MOTIVATIONS &amp; RISKY DRIVING</td>
<td></td>
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<tr>
<td>• Educational and training programs and techniques to reduce risk acceptance &amp; risky driving</td>
<td>medium</td>
<td>medium-long</td>
</tr>
<tr>
<td>• Mass media methods, content &amp; strategies to discourage unsafe behaviours, encourage adoption of safe behaviours &amp; support legislative, deterrence &amp; licensing programs</td>
<td>medium</td>
<td>short-medium</td>
</tr>
</tbody>
</table>
REDUCE HIGH RISK DRIVING BEHAVIOURS:
SPEED, ALCOHOL & RESTRAINTS
- Target speed, alcohol and non restraint wearing through optimised deterrence programs, particularly combined enforcement and publicity

DETERRENCE & INCENTIVE STRATEGIES
- Optimise deterrence and penalty programs & systems
- Incentives to encourage adoption of safe behaviours, safety devices & driving under low risk conditions

YOUNG PROBLEM DRIVERS & MULTIPLE TRAFFIC OFFENDERS
- Target multiple offenders and young problem drivers to reduce illegal and aberrant driving

USE OF TECHNOLOGIES
- Use of technologies in training, licensing & in vehicle highway systems

GENERAL RESEARCH, EVALUATION & ACTIONS
- Monitoring of accident data, trends and international developments in licensing, technology, training and education programs
- Longitudinal & cohort studies to determine the impact of age, inexperience, learner driver experience, and interventions on young driver accidents
- Evaluation of current & imminent programs to assess and ensure their effectiveness for reducing young driver accidents

Greater detail for related research components at a project level under these program groupings is provided in an expanded table (see Table 1). Provided are the reference page relating to the issue, whether the project is short, medium or long term in nature and an assessment of the priority for the project area. Where a project is relevant to more than one program area it is noted under both areas.

The priority assessment framework was adapted from the system used by the Commonwealth Scientific and Industrial Research Organisation (which is also used for developing the National Research & Development Program of the National Road Safety Strategy for Australia). Priorities are based on two criteria:
1. **Attractiveness:**

- **potential benefits** - the maximum safety & associated returns possible from advances in the research under consideration, i.e. the absolute safety benefits from the suggested issue for research (this relates to the size of the problem addressed by the research).

- **likely effectiveness** - reflects the likely effectiveness of the intervention resulting from the research.

2. **Feasibility:**

- **R&D potential** - a measure of the likely ability to achieve the research or intervention outcomes, that is, ease or difficulty in successfully undertaking the research and creating an intervention.

- **R&D or intervention capacity/timeliness** - likelihood of getting a developed intervention implemented; efficiency and ability to achieve timely safety goals.

A rating scale between 1 to 10 (with 1 indicating the lowest priority and 10 the highest level of priority) was used to rate these priorities.

Throughout this document and its companion discussion paper, reference is made to a number of potential action items which with modest or minimal research could be usefully implemented in advance of an integrated package of research and measures becoming available. These are listed in Appendix A.

### 7.0 FUTURE DIRECTIONS

It is envisaged that road safety agencies will utilise this Research Strategy for planning future research and setting directions for the development of young driver interventions.

A Young Driver Taskforce, convened to oversee the use of research outcomes and implementation of countermeasures, may provide an appropriate vehicle to ensure that integrated and timely programs are delivered.

A panel of experts should be convened to review the research recommended in this Strategy to provide further assistance to road safety agencies for planning purposes. Issues to be addressed include:

- review the sub or program grouping of research components

- indication of relative timings of components within each research program and across such programs where appropriate

- indication of the relative priorities for research components and programs in terms of the potential for realisation of effective countermeasures estimate resources and costs for each research component.
<table>
<thead>
<tr>
<th>RESEARCH PROGRAMS &amp; PROJECT COMPONENTS</th>
<th>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</th>
<th>SHORT, MEDIUM OR LONG TERM OUTCOMES</th>
<th>PRIORITY attractiveness</th>
<th>PRIORITY feasibility</th>
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</thead>
<tbody>
<tr>
<td>1. INEXPERIENCE &amp; SKILL DEFICITS</td>
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<tr>
<td>1.1 Research &amp; develop a revised novice driver licensing system</td>
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<tr>
<td>1.1.1 Develop strategies and programs to enhance and increase learner driving experience and improve graduated licensing (p. 5, 6)</td>
<td>RDI</td>
<td>S</td>
<td>8</td>
<td>7.5</td>
</tr>
<tr>
<td>1.1.2 Develop &amp; trial a smart card to log type &amp; length of driving sessions for learner drivers (p. 6)</td>
<td>RD</td>
<td>S-M</td>
<td>6.7</td>
<td>5.8</td>
</tr>
<tr>
<td>1.1.3 Review of international best practice in probationary/graduated licensing systems (p. 6, 13)</td>
<td>R</td>
<td>S</td>
<td>5.3</td>
<td>7.3</td>
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<tr>
<td>1.2 Research &amp; develop training programs &amp; licence testing in perceptual &amp; cognitive higher order aspects of driving skill</td>
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<tr>
<td>1.2.1 Skill research using simulator and field studies to: (i) understand the nature of skill development with accumulation of experience, (ii) how much experience and what type of experience is needed to drive safely, and (iii) develop measures of perceptual, cognitive and/or workload management performance with a view to improving preparation for licenced driving and improving the quality of licence tests (p. 7)</td>
<td>RD</td>
<td>M-L</td>
<td>8.3</td>
<td>5.8</td>
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<tr>
<td>1.2.2 Research, develop and implement quality licence tests to assess perceptual and cognitive aspects of driving performance and workload management based on outcomes of skill research (p. 6)</td>
<td>RDI</td>
<td>M-L</td>
<td>8.3</td>
<td>7</td>
</tr>
<tr>
<td>1.2.3 Research into new forms of licence testing (e.g. technology &amp; simulation) with reference to work in California, USA (p. 6, 12)</td>
<td>R</td>
<td>S-M</td>
<td>5.3</td>
<td>5.2</td>
</tr>
<tr>
<td>1.2.4 Investigate and develop the use of high technology for the purposes of driver training (p. 6)</td>
<td>RD</td>
<td>M</td>
<td>6.5</td>
<td>5.7</td>
</tr>
<tr>
<td>1.2.5 Research and develop driver training curricula to enhance perception and cognition (p. 6)</td>
<td>RD</td>
<td>M</td>
<td>6.2</td>
<td>5</td>
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<tr>
<td>RESEARCH PROGRAMS &amp; PROJECT COMPONENTS</td>
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<tr>
<td>1.2.6 Investigate benefits and feasibility of ROSPA advanced driver training program for mass application (p. 6)</td>
<td>R</td>
<td>S-M</td>
<td>3.7</td>
<td>6.7</td>
</tr>
<tr>
<td>1.2.7 Research to develop and enhance ways to prepare young drivers to deal with specific risky traffic situations linked to accident types in which they are over-represented (p. 8)</td>
<td>R</td>
<td>M</td>
<td>6.2</td>
<td>4.8</td>
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<tr>
<td>1.3 Research &amp; develop competency based licence testing to replace practical drive end test</td>
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<tr>
<td>1.3.1 Research to investigate whether Competency Based Testing is likely to lead to significant improvements over current licensing procedures (p. 6)</td>
<td>R</td>
<td>S</td>
<td>7.7</td>
<td>7</td>
</tr>
<tr>
<td>1.3.2 Skill research using simulator and field studies to improve the quality of licence tests (p. 7)</td>
<td>R D</td>
<td>M-L</td>
<td>8.2</td>
<td>5.5</td>
</tr>
<tr>
<td>1.3.3 Research and develop a competency based testing system which maximises driving experience and enhances skill development according to known principles and young driver safety issues, and in keeping with GLS framework (p. 14)</td>
<td>R D</td>
<td>S</td>
<td>7.3</td>
<td>5.5</td>
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</table>

2. MANAGE TRAVEL PATTERNS & REDUCE HIGH RISK DRIVING SITUATIONS

2.1 Manage novice driver travel patterns through policies & programs to encourage low risk and reduce high risk driving, separate to or as part of Graduated Licensing

2.1.1 Develop innovative strategies/programs/options to discourage nighttime driving amongst drivers in the first 3, 6, or 12 months of driving (p. 7) | D I | S | 8.7 | 5.5 |

2.1.2 Research to determine current nighttime accident risk for first and second year drivers, and examine costs and benefits of various options for a nighttime driving restriction/discouragement using current data (p. 7) | R | S | 6.7 | 7.7 |
<table>
<thead>
<tr>
<th>RESEARCH PROGRAMS &amp; PROJECT COMPONENTS</th>
<th>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</th>
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<th>PRIORITY</th>
<th>PRIORITY</th>
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<tbody>
<tr>
<td>2.1.3 Investigate the potential role of nighttime enforcement/deterrence strategies to reduce nighttime accident risk amongst young drivers as an alternative/adjunct to reduced nighttime driving (p. 7)</td>
<td>R</td>
<td>S</td>
<td>6.7</td>
<td>7</td>
</tr>
<tr>
<td>2.1.4 Address issues related to possible changes to the current minimum driver licensing age of 18 years of age (p. 7)</td>
<td>I</td>
<td>S-M</td>
<td>7.3</td>
<td>7</td>
</tr>
<tr>
<td>2.1.5 Quantify the effects of reducing the minimum driver licensing age, taking into account the possible introduction of tougher for restrictions for first year drivers (p. 7)</td>
<td>R</td>
<td>S</td>
<td>5.8</td>
<td>6.8</td>
</tr>
<tr>
<td>2.1.6 Research to determine the cost-benefits of limiting carriage of passengers for young drivers in the first 3 to 12 months of licensed driving and/or specific times of week/day using current data (p. 8)</td>
<td>R</td>
<td>S</td>
<td>3.8</td>
<td>5</td>
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<tr>
<td>2.2 Research to address rural and nighttime driving risk factors for young drivers through in depth studies</td>
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<tr>
<td>2.2.1 Undertake a study of nighttime young driver accidents to determine contributing factors more precisely (p. 7)</td>
<td>R</td>
<td>M</td>
<td>6.3</td>
<td>6.3</td>
</tr>
<tr>
<td>2.2.2 Rural accident research for young drivers (p. 8)</td>
<td>R</td>
<td>M</td>
<td>7.2</td>
<td>5.7</td>
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<tr>
<td>3. AGE RELATED MOTIVATIONS &amp; RISKY BEHAVIOURS</td>
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<tr>
<td>3.1 Research &amp; develop educational and training programs and techniques to moderate age-related motivations, reduce risk acceptance &amp; risky driving</td>
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<tr>
<td>3.1.1 Investigate the use of high technology, such as simulation and/or interactive multimedia packages to raise consciousness of risk and limitations of own skill/capacity amongst pre-driver or new driver cohorts as part of driver training/education programs (p. 9)</td>
<td>R</td>
<td>M</td>
<td>7.7</td>
<td>5.5</td>
</tr>
<tr>
<td>3.1.2 Investigate, trial &amp; evaluate school based programs using successful models from other health education areas (p. 9)</td>
<td>R</td>
<td>M-L</td>
<td>6.2</td>
<td>4.5</td>
</tr>
<tr>
<td>RESEARCH PROGRAMS &amp; PROJECT COMPONENTS</td>
<td>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</td>
<td>SHORT, MEDIUM OR LONG TERM OUTCOMES</td>
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<tr>
<td>3.1.3 Research to determine the usefulness and broader application of peer education and support programs (p. 10)</td>
<td>R</td>
<td>S-M</td>
<td>6.7</td>
<td>5.7</td>
</tr>
<tr>
<td>3.1.4 Risk perception research (p. 9)</td>
<td>R</td>
<td>M-L</td>
<td>5.7</td>
<td>4.3</td>
</tr>
<tr>
<td>3.2.1 Communication research and development of strategies (p. 10)</td>
<td>R</td>
<td>D</td>
<td>M</td>
<td>3</td>
</tr>
<tr>
<td>3.2.2 Review health promotion literature to determine applicability to young driver safety and provide guidelines and recommendations for safety promotion programs (p. 10)</td>
<td>R</td>
<td>S-M</td>
<td>5</td>
<td>7.8</td>
</tr>
<tr>
<td>3.2.3 Risk perception research (p. 9)</td>
<td>R</td>
<td>M-L</td>
<td>5.7</td>
<td>4.3</td>
</tr>
</tbody>
</table>

### 4. REDUCE HIGH RISK DRIVING BEHAVIOURS: SPEED, ALCOHOL & RESTRAINTS

**4.1 Research to target speed, alcohol and non restraint wearing through optimised deterrence programs, particularly combined enforcement and publicity**

| 4.1.1 Undertake speed research to identify changes in the speed profiles and related attitudes of young drivers and to determine the extent of young driver accident reduction due to the speed camera program (p. 10) | R | S-M | 7.2 | 7.3 |
| 4.1.2 Expand speed enforcement and speed cameras to cover the most risky times and locations for young drivers, including nighttime and rural locations (p. 10) | I | S-M | 7.7 | 7.2 |
| 4.1.3 Research various options for speed limiters for repeat P-plate offenders or all P-platers (p. 10) | R | M | 6.2 | 5.2 |
| 4.1.4 Investigate utility of special warning letters or penalties for P-Plate drivers after commission of speeding offences (p. 10) | R | M | 4.3 | 7.8 |
### RESEARCH PROGRAMS & PROJECT COMPONENTS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</th>
<th>SHORT, MEDIUM OR LONG TERM OUTCOMES</th>
<th>PRIORITY</th>
<th>PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.5 In-depth study of risk and speed perception for controlled driving scenarios to support development of environmental treatments (p. 10)</td>
<td>R</td>
<td>M</td>
<td>5.4</td>
<td>5.2</td>
</tr>
<tr>
<td>4.1.6 Determine drink driving level, use of other drugs &amp; profiles of young drivers in the population (p. 11)</td>
<td>R</td>
<td>S-M</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>4.1.7 Research to optimise current RBT to increase deterrence of drink driving amongst young drivers, e.g. licence checks (p. 11)</td>
<td>RI</td>
<td>S-M</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>4.1.8 Implement and publicise optimised enforcement strategies (p. 11)</td>
<td>I</td>
<td>S</td>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td>4.1.9 Evaluate strategies such as promotion of low alcohol beer and public breath testers (p. 11)</td>
<td>RI</td>
<td>S</td>
<td>5.5</td>
<td>7.5</td>
</tr>
<tr>
<td>4.1.10 Develop, implement &amp; evaluate targeted seat belt enforcement strategies and promotion for 21-30 year old drivers (p. 11)</td>
<td>RI</td>
<td>S</td>
<td>8</td>
<td>6.2</td>
</tr>
</tbody>
</table>

### 5. DETERRENCE & INCENTIVE STRATEGIES

#### 5.1 Research to optimise deterrence and penalty programs & systems

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</th>
<th>SHORT, MEDIUM OR LONG TERM OUTCOMES</th>
<th>PRIORITY</th>
<th>PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.1 Review and refinement of enforcement strategies to increase general deterrence of high risk behaviours amongst young drivers, e.g. licence checks (p. 11)</td>
<td>RD</td>
<td>M</td>
<td>6.7</td>
<td>5.5</td>
</tr>
<tr>
<td>5.1.2 Evaluate Zero BAC law on the behaviour and accidents of young drivers (p. 11)</td>
<td>R</td>
<td>S-M</td>
<td>5.8</td>
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</tr>
<tr>
<td>5.1.3 Investigate reasons for high alcohol related fatal accident involvement of young drivers with particular attention of differential between 18-20 and 21-23 year olds (p. 11)</td>
<td>R</td>
<td>S</td>
<td>6.3</td>
<td>4.2</td>
</tr>
<tr>
<td>5.1.4 Review penalty system for young drivers (p. 11)</td>
<td>RD</td>
<td>S-M</td>
<td>6.2</td>
<td>5.2</td>
</tr>
<tr>
<td>5.1.5 Research initiatives to reduce the accident risk of novice traffic offenders, and deter traffic infringements, particularly speeding and disobeying traffic controls (p. 11, 12)</td>
<td>R</td>
<td>M</td>
<td>6.5</td>
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</tr>
<tr>
<td>RESEARCH PROGRAMS &amp; PROJECT COMPONENTS</td>
<td>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</td>
<td>SHORT, MEDIUM OR LONG TERM OUTCOMES</td>
<td>PRIORITY attractiveness</td>
<td>PRIORITY feasibility</td>
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<tr>
<td>5.2 Research into incentives to encourage adoption of safe behaviours, safety devices &amp; driving under low risk conditions</td>
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<tr>
<td>5.2.1 Research to evaluate the feasibility of application and cost-benefit of incentive programs for encouraging safe behaviours and/or use of safety devices (p. 12)</td>
<td>R</td>
<td>S-M</td>
<td>6.2</td>
<td>5.7</td>
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<tr>
<td>6. YOUNG PROBLEM DRIVERS &amp; MULTIPLE TRAFFIC OFFENDERS</td>
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<tr>
<td>6.1 Research to target multiple offenders and young problem drivers to reduce illegal &amp; aberrant driving</td>
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<tr>
<td>6.1.1 Review and evaluate peer support programs within youth agencies for at-risk youth (p. 12)</td>
<td>R</td>
<td>S</td>
<td>3.7</td>
<td>4.3</td>
</tr>
<tr>
<td>6.1.2 Research programs for multiple traffic offenders (also see 5.5) (p. 12)</td>
<td>R</td>
<td>S-M</td>
<td>4.8</td>
<td>5.5</td>
</tr>
<tr>
<td>6.1.3 Monitor electronic licensing card trials being undertaken overseas to assess the potential for reductions in unlicensed driving &amp; joyriding (p. 12)</td>
<td>R I</td>
<td>S</td>
<td>4.7</td>
<td>7.5</td>
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<tr>
<td>7. USE OF TECHNOLOGIES (also refer to INEXPERIENCE &amp; SKILL)</td>
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<tr>
<td>7.1 Use of technologies in training, licensing &amp; in vehicle highway systems</td>
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<tr>
<td>7.1.1 Research to examine the cost and efficiency of driving simulators for licensing and training (p. 12)</td>
<td>R</td>
<td>S</td>
<td>6.5</td>
<td>5.7</td>
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<tr>
<td>7.1.2 Trial computerised decision aids (p. 13)</td>
<td>R</td>
<td>M-L</td>
<td>4.5</td>
<td>5.3</td>
</tr>
<tr>
<td>7.1.3 Review developments in Intelligent Vehicle Highway Systems in relation to potential for reducing risky driving actions through brake sensors, technology to maintain adequate following distances and speed control (p. 13)</td>
<td>R</td>
<td>L</td>
<td>5.5</td>
<td>3.8</td>
</tr>
<tr>
<td>8. GENERAL RESEARCH, EVALUATION &amp; ACTIONS</td>
<td>RESEARCH, DEVELOPMENT OF INITIATIVE, INTERVENTION</td>
<td>SHORT, MEDIUM OR LONG TERM OUTCOMES</td>
<td>PRIORITY attractiveness</td>
<td>PRIORITY feasibility</td>
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<tr>
<td>8.1 Monitoring of accident data, trends and international developments in licensing, technology, training and education programs</td>
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<tr>
<td>8.1.1 Monitor trends in accidents, licensing rates, driving exposure, and accident risks (p. 13)</td>
<td>R</td>
<td>M</td>
<td>6.8</td>
<td>7.3</td>
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<tr>
<td>8.1.2 Undertake regular collection of driver exposure data (p. 13)</td>
<td>R</td>
<td>M</td>
<td>6.7</td>
<td>7.5</td>
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<tr>
<td>8.1.3 Analyse/evaluate reduction in young driver accidents since 1989 (p. 13)</td>
<td>R</td>
<td>S</td>
<td>6.5</td>
<td>6.5</td>
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<tr>
<td>8.1.4 Review outcomes from accident risks study for young drivers in relation to Strategy recommendations and priorities (p. 13)</td>
<td>R</td>
<td>S</td>
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<td>6.5</td>
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<tr>
<td>8.1.5 Review international best practice in relation to licensing, education, programs with traffic offenders, insurance and incentive programs (ongoing) (p. 13)</td>
<td>R</td>
<td>M</td>
<td>6.7</td>
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<tr>
<td>8.2 Longitudinal &amp; cohort studies to determine the impact of age, inexperience, learner driver experience, and interventions on young driver accidents</td>
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<tr>
<td>8.2.1 Undertake a longitudinal cohort study to investigate a range of important young driver issues and evaluate the effect of implemented programs (p. 13)</td>
<td>R</td>
<td>M-L</td>
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<tr>
<td>8.2.2 Undertake a study to determine the amount &amp; type of learner driver experience which leads to reduced accidents post-licensing (p. 15)</td>
<td>R</td>
<td>M</td>
<td>7.5</td>
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<tr>
<td>8.3 Evaluation of current &amp; imminent programs to assess &amp; ensure their effectiveness for reducing young driver accidents</td>
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</table>
### RESEARCH PROGRAMS & PROJECT COMPONENTS

<table>
<thead>
<tr>
<th>8.3.1 Evaluate current programs, in particular:</th>
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<tbody>
<tr>
<td>• Hazard Perception Test (begun)</td>
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<td>• Competency Based licence testing (if introduced)</td>
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<td>• TAC Learn &amp; Live program</td>
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<td>• VicRoads Traffic Safety Education programs (p. 14)</td>
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<thead>
<tr>
<th>9. Convene a Young Driver Taskforce made up of appropriate road safety practitioners, researchers and program implementers to oversee implementation, the use of research outcomes and development of programs into initiatives (p. 15)</th>
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<table>
<thead>
<tr>
<th>Research, Development, Intervention</th>
<th>Short, Medium or Long Term Outcomes</th>
<th>Priority Attractiveness</th>
<th>Priority Feasibility</th>
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<tbody>
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<td>R</td>
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<td>7.5</td>
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<td>I</td>
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POTENTIAL SHORT-TERM ACTION ITEMS

Throughout this Strategy and the companion discussion paper, reference is made to a number of potential action items which with modest or minimal research and/or policy consideration could be usefully implemented in advance of an integrated package of research results and measures becoming available. Selected actions are those which can be undertaken within the current legislative and licensing framework. These are listed below.

- encouragement of learner drivers, including the use of appropriate incentives, to undertake more supervised driving under a variety of conditions prior to licensing
- develop & trial smart card to log type & length of driving sessions for learner drivers
- institute a pilot program that prepares and trains learner drivers in some specific high risk traffic situations, namely right turn situations, following distances and pedestrian related scenarios, once sufficient driving practice has accumulated
- provide advice to newly licensed drivers and parents about risky driving situations and ways to reduce accident risk in the early months of driving, such as nighttime driving, driving with more than two passengers, reduced driving speed and support/encourage alternative transport in critical situations
- optimise successful enforcement strategies and introduce new strategies and supporting publicity which address young driver behavioural and accident profiles and which are likely to be differentially beneficial to young drivers, particularly for drink driving, speeding and non restraint use; for instance speed enforcement at night, combined speed and breath testing enforcement strategies, early morning RBT at strategic locations
- undertake on-road licence checking independently or as an adjunct to current enforcement activities
- integrate innovative techniques (such as peer education) from successful health education and promotion into road safety education programs where possible
- utilise multi-media education packages which provide relevant, age-appropriate information, demonstrate hazards for young drivers and illustrate skill limitations of young drivers and other road users
- support community programs which promote use of public breath testers, low alcohol beer, responsible serving practices in licensed premises, and availability of non-licensed social venues
- support early intervention for adolescents and young adults with high, frequent alcohol consumption patterns through community health centres, general practitioners, youth workers, and schools
- trial incentives such as lower insurance premiums for learner and probationary drivers to reduce risky driving (and therefore demerit point accumulation), to promote safe behaviours, to encourage use of safety features in cars, and to increase learner driving experience
- trial Electronic Driving Licences (smart-card) to reduce unlicensed driving and illegal/joy riding
APPENDIX B

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RACV

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