

# STAYS SAFE 34

## **A 50 KM/H GENERAL URBAN SPEED LIMIT FOR NEW SOUTH WALES**

Report 7/51

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*STAYSAFE 34*

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# CHAIRMAN'S FOREWORD

**Paul Gibson MP, Member for Londonderry**  
Chairman, STAYSAFE  
Joint Standing Committee on Road Safety

The linkage between the speed of travel of motor vehicles and the likelihood and severity of crashes has been recognised from the time these vehicles first began to appear on streets and roads. Indeed, the law recognised the role of speed as a factor in causing harm on the road during the age of horse-drawn vehicles: for example, through the now antiquated offence of 'furious driving'.

The rise of the motoring age has seen excessive and inappropriate speeding figure as a major causal factor in the occurrence and severity of road trauma. In New South Wales, speeding is typically held to be a major cause of more than one third of the fatal crashes each year. Speeding ranks with drink-driving as a leading cause of crashes on New South Wales roads.

The identification, development and implementation of appropriate countermeasures to excessive or inappropriate speed is a difficult task faced by road safety workers. There is a degree of community resistance to explicit mechanisms of speed control such as speed limits, physical devices on roadways designed to restrict speed, governors and other control devices on motor vehicles, and so on. Police enforcement methods, using technologies such as radar detection and speed cameras, are often challenged as mechanisms for 'revenue raising' rather than as methods for promoting trauma reduction and deterring unsafe behaviour.

Often, it is said, the solution to the speeding problem is more and better designed driver education and driver training programs, in order that drivers can better perceive and respond appropriately to the variety of road conditions that occur, yet still drive at the speed they wish, rather than in accord with any predetermined speed limit set by the roads authority and enforced by police.

The fundamental issue for the STAYSAFE Committee, however, is the simple physics involved in bringing a motor vehicle to a stop when sudden, unanticipated events happen—the 'dart out' of a child onto the roadway, the vehicle drift when the driver is inattentive or momentarily distracted, the unexpected manoeuvre of another vehicle, or the misperception of the nature of the roadway with its curves, crests, and regulatory signs and signals. These events do occur, and occur commonly in driving. The facts are simple. A car travelling at 60 km/h will need around 50 metres to come to a complete halt. A car travelling at 70 km/h will need almost 60 metres. A car travelling at 80 km/h needs almost 75 metres.

A car travelling at 50 km/h needs less than 40 metres to stop. A pedestrian who suddenly steps in front of a car travelling at 60 km/h and 40 metres away is likely to be struck at a speed of about 40-44 km/h; if the same car was travelling at 50 km/h, the driver should have just enough time to stop the vehicle and avoid the pedestrian altogether, partly due to the shorter

distance travelled in the time required for the driver to react and commence braking, and partly due to a reduced braking distance.

In situations when a driver is faced with an emergency stop, even a difference of 10 km/h in initial speed can mean either crash involvement or the avoidance of impact with a pedestrian, another vehicle, or a roadside fixture or feature.

The tension and debate over the countermeasures suggested by road safety workers and others in the community provided the backdrop to the deliberations of the STAYSAFE Committee on the proposed introduction of a 50 km/h general urban speed limit in New South Wales.

The proposal to alter the New South Wales general urban speed limit has been derived from a consistent series of major reviews and researches conducted by roads authorities in Australia, sometimes individually, but more often in co-operative ventures. The STAYSAFE Committee is impressed by the quality and balance of these projects. They provide a strong basis for the future development and implementation of speeding countermeasures.

The STAYSAFE Committee, however, did not accept the original proposal for 50 km/h speed limits as put forward by the Roads and Traffic Authority.

The proposal was for 50 km/h speed limits to apply to local streets in residential areas. The STAYSAFE Committee recommends the adoption of 50 km/h as the general urban speed limit in New South Wales, applicable to all roads in urban areas that are not otherwise signposted with a different speed limit.

The proposal was for the adoption of 50 km/h speed limits without the necessity for review of speeding offences and penalties. The STAYSAFE Committee recommends a revision of the current speeding offences and penalties as part of a comprehensive program to address urban speeding problems.

The proposal was for the adoption of 50 km/h speed limits without the necessity for modification or increases in levels of police enforcement. The STAYSAFE Committee recommends a review of police operational strategies and tactics as part of a comprehensive program to address urban speeding problems. The adoption of new operational policies and practices follows logically from the introduction of new speed detection technologies by police.

In discussing these modifications of the original proposal for the use of 50 km/h speed limits in urban areas with a large number of expert witnesses, the STAYSAFE Committee has noted a general agreement with its findings and recommendations.

The STAYSAFE Committee has sought to identify and recommend a comprehensive series of actions to address urban speeding. The primary recommendations made in this report include:

- A general urban speed limit of 50 km/h should be introduced in New South Wales, that is, a speed limit of 50 km/h should apply to all urban streets and roads unless otherwise signposted with a different speed limit.

- The current structure for speeding offences and penalties should be revised to provide for increments of 1-10 km/h, 10-20 km/h, 20-30 km/h, and over 30 km/h only, with the 1-10 km/ speeding offence attracting a penalty of 2 demerit points with only a minimal \$65 monetary penalty.
- The Government should examine the feasibility of allowing recorded cautions for isolated instances of the speeding offence of 1-10 km/h, with demerit points and monetary penalties only resulting from two or more offences within any twelve month period.
- The introduction of new speed detection technologies, and the continued use of existing speed detection technologies, should be matched by a revision and re-examination of the operational deployment strategies used by police.
- The community should be able, through the use of appropriate traffic management methods as road markings, signs and (where necessary) physical devices, to quickly and accurately recognise the speed limit applicable for the roads they use.
- The community should be informed of the new speed limit, its uses on New South Wales roads, and the new policing technology and methods through advertising that informs and allows drivers to identify the choices they must make in modifying their unsafe speeding behaviours.

In a modern society where the pace of life is so much faster than it once was, it will be difficult for some people to understand the necessity for slowing drivers down. But, as this report notes, a 50 km/h general urban speed limit will add virtually nothing to travel times, while helping to save lives, reduce the severity of injuries in road crashes, and reduce the cost of property damage.

In inquiring into urban speed management, the STAYSAFE Committee has noted an analogy with the development of appropriate and effective countermeasures to drink-driving. A significant reduction in alcohol-related road trauma did not occur until the development of a robust, comprehensive set of drink-drive countermeasures, including new drink-driving laws, new breathalyser technologies, new operational policing methods (random breath testing and the highly visible 'booze buses'), and a coherent publicity and advertising campaign that alerted the community to the wide-ranging changes that were being implemented and emphasised the high probability of detection for driving while impaired by alcohol. As a result, unlike their parents, today's young people have grown up in a society where drink-driving is socially unacceptable.

The STAYSAFE Committee believes that the development and implementation of a comprehensive and coherent program of urban speeding countermeasures, including new speeding laws, new speed enforcement technologies, new operational policing methods, and a coherent publicity and advertising campaign that aims to alert the community to the wide-ranging changes that are being implemented and emphasises the high probability of

detection for speeding, will go a long way towards fostering an attitude among young people today that speeding is socially unacceptable.

The STAYSAFE Committee recognises that this report into the proposed introduction of a 50 km/h general urban speed limit has, of necessity, touched upon more general issues relating to excessive speeding across all New South Wales roads, including rural highways, freeways, and excessive speeds on urban traffic routes. There are general issues associated with technologies for detection of excessive speeding, the standard operating procedures for police enforcement of excessive speeding, road design and urban and transport planning, and traffic management strategies for the safe and efficient movement of motor vehicles that merit further, more detailed examination than was possible in this inquiry. Hopefully, the STAYSAFE Committee will continue its examination of the problems of excessive and inappropriate speeding in later inquiries.

## **Acknowledgments**

A significant aspect of the STAYSAFE Committee's operation is the bipartisan manner in which the Committee members conduct their inquiries and deliberations. I am grateful for the hard work of my colleagues, be they Government Members, Opposition Members, or from the cross bench. Collectively, the Members of the STAYSAFE Committee bring their wide ranging experience and understanding, and a critical approach to monitoring, investigating and reviewing road safety issues, and their scrutiny ensures that policies and programs in the area of road trauma reduction remain focussed, and are developed and delivered efficiently and effectively.

As ever, the STAYSAFE Committee has been ably served by its Director, Mr Ian Faulks, and the Secretariat: Mrs Cheryl Samuels, Committee Officer, Mr Chris Papadopoulos, Research Officer, and Mrs Maria Tyrogalas and Ms Susan Want, Assistant Committee Officers. The work of these Parliamentary officers has greatly assisted the Committee's deliberations.

The Members of the STAYSAFE Committee thank the Parliamentary Reporting Staff for their excellent efforts, and the Parliamentary Printing Section for the printing and publication of this report.

I commend this report to Parliament.

# **EXECUTIVE SUMMARY**

This report arises from a Ministerial Reference requesting STAYSAFE to examine a proposal to introduce a lower urban speed limit in New South Wales. STAYSAFE has concluded that the introduction of a 50 km/h general urban speed limit will bring New South Wales in line with best practice world-wide, and will yield considerable benefits—both social and



financial—through reductions in road trauma. STAYSAFE has therefore recommended the adoption of a 50 km/h general urban speed limit in New South Wales.

It is important that a 50 km/h general urban speed limit as a countermeasure to the problems of excessive and inappropriate speed should be introduced as one action within an integrated package of measures associated with traffic management, traffic law, police enforcement and communications strategies which will be required to make drivers aware of the new general urban speed limit.

STAYSAFE has drawn an explicit analogy with the situation appertaining to the road safety and road trauma problem posed by drink-driving prior to the early 1980s. Following recommendations made in STAYSAFE 1 (1982), the New South Wales Government introduced a comprehensive and coherent package of drink-drive countermeasures centred around a new method of police operational deployment: random breath testing; but including new offences and penalties for excessive blood alcohol, increased conspicuousness of police operations relating to drink-driving enforcement, including highly visible breath testing; the introduction and use of modern screening and evidentiary equipment; public education about the road safety and road trauma problems posed by drink-driving and extensive media publicity regarding new drink-driving offences and penalties, new police drink-driving enforcement technologies, and new methods of police operational deployment to target drink-driving.

STAYSAFE has made recommendations for a comprehensive and coherent package of countermeasures to excessive and inappropriate speeding centred around a new general urban speed limit of 50 km/h and new speed detection technologies and methods of police operational deployment.

#### *Traffic management*

STAYSAFE has rejected the minimalist approach to implementation favoured by the Roads and Traffic Authority and has recommended a structured approach to traffic management in support of the new 50 km/h speed limit. This approach should incorporate the widespread use of unique road markings together with signage and, where appropriate, traffic calming devices, to be installed at the junction of 50 km/h roads and those with higher speed zonings. STAYSAFE has anticipated some controversial issues in the identification of streets which would retain their current 60 km/h zoning, and argued that the debate will centre around the speed zoning of collector (or local distributor) roads. STAYSAFE has recommended that the Roads and Traffic Authority establish a formal road hierarchy that is correlated with the various speed limits in use in New South Wales. Further, STAYSAFE has emphasised the need for detailed consultation between the Roads and Traffic Authority and local councils to produce maps depicting the appropriate road hierarchy for each local government area and to establish the appropriate speed zoning for each collector road within urban environments. This should facilitate a consistent and predictable application of the new speed limit throughout New South Wales.

The effective introduction of a 50 km/h general urban speed limit depends also on actions in the

areas of traffic law, and police enforcement. STAYSAFE reviewed the speed detection technology available to support enforcement of excessive speeding, and examined issues associated with the organisation of police speed enforcement operations.

#### *Traffic law*

STAYSAFE was particularly concerned to address the emotive claim of ‘revenue raising’ that is often associated with speed enforcement. STAYSAFE believes that the implementation of the recommendations for a recorded cautionary system for the offence of excessive speeding by 10 km/h or less, and for an emphasis on non-monetary penalties for repeated instances of such a speeding offence, should address any concerns that the New South Wales speed management program is not based upon considerations of safety and trauma reduction.

The recommendations made regarding speeding offences and penalties have general applicability for excessive speeding offences on all roads, not just on urban local roads. In that respect, these recommendations are supportive of a coherent general speed management program throughout New South Wales.

#### *Police enforcement of excessive speeding*

STAYSAFE supports the implementation of new speed detection technologies, including laser speed detection devices, new mobile and stationary speed camera technologies, and the introduction of video camera technologies in police vehicles. STAYSAFE has noted the development of a new form of police operational deployment—random road watch—and has called for an independent review of the efficacy of random road watch.

#### *Consultation with local councils*

The majority of roads which will be affected by the new 50 km/h speed limit will be roads which are the responsibility of councils, and not of the Roads and Traffic Authority. Against that background, STAYSAFE examined the concerns which councils have expressed over various aspects of the implementation process, not the least of which was the question of funding. STAYSAFE’s own consultations with councils indicated a high degree of acceptance of a lower general urban speed limit. Nevertheless, the Roads and Traffic Authority will need to devote resources to influencing local councillors and traffic committees and, through them, rural populations, if New South Wales is to take full advantage of lower speeds on local roads.

#### *Environmental and other issues*

Reducing the general urban speed limit is likely to be perceived in some sections of the driving community as an unwarranted addition to the already considerable delays they face on the roads, particularly in Sydney. However, as STAYSAFE points out, various studies have shown that by far the greater proportion of a typical journey is spent on those roads which will retain their current speed zonings. Concerns over significant additions to journey times therefore appear to be unfounded. STAYSAFE has examined the merits of other objections likely to be raised in sections of the community, such as the effect on performance and fuel

economy of vehicles travelling at 50 km/h, and subsequent implications for air quality. While unable to comment on impacts on motor vehicle performance, STAYSAFE has found that there is little evidence to suggest that a 50 km/h speed limit will add to fuel consumption. While STAYSAFE is satisfied that the 50 km/h speed limit poses no additional threat to air quality, it is possible that the community concern over air quality may warrant the monitoring of relevant environmental indices to reassure the public that the new speed limit is as safe as the old.

*Transport planning and urban design*

STAYSAFE is unable to make any definitive statement on how a 10 km/h reduction in the general urban speed limit will affect residential planning and street design, but there is wide acceptance among road safety and transport planning experts that there needs to be far more thought given to the proper function of residential streets in the planning stage of new developments, particularly in terms of vehicle speeds. This should insure against the very considerable costs associated with the seemingly inevitable retrofitting of residential streets with appropriate facilities to ensure the highest possible level of safety for residents, in particular child pedestrians and cyclists.

*Communications strategy*

STAYSAFE has proposed a comprehensive communications strategy to support the introduction of a 50 km/h general urban speed limit. STAYSAFE recognises that there is a major Australian literature dealing with mass road safety advertising and publicity campaigns which will provide a strong basis for the development of an appropriate communications strategy. In particular, STAYSAFE notes Job's (1988,1990) comments regarding the psychological aspects of health and road safety campaigns, and believes that it would be appropriate for the issues identified by Job to be given serious consideration in the creation of any advertising regarding the introduction of the 50 km/h general urban speed limit. The communications strategy should address not only the information and notification requirements of the introduction of the new speed limit, but also present information regarding speed enforcement technology and police operational deployments, address issues of environmental and urban amenity, and provide for the education of the local council representatives and officials and the general community.

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*EXECUTIVE SUMMARY*

## RECOMMENDATIONS

**RECOMMENDATION 1:** The general urban speed limit in New South Wales be reduced by 10 km/h from 60 km/h to 50 km/h, and that the Minister for Roads amend the Traffic Act 1909 s.4A(2)(a) to provide for a default speed limit of 50 km/h for any public street subject to street lighting and for which the Roads and Traffic Authority has given no direction regarding a speed limit.

(Page 57, Paragraph 2.100)

**RECOMMENDATION 2:** The term ‘general urban speed limit’ be retained to describe the general default speed limit on urban roads in New South Wales.

(Page 65, Paragraph 4.9)

**RECOMMENDATION 3:** The Roads and Traffic Authority:

- (i) formally establish a defined road hierarchy that integrates the various speed limits used in New South Wales; and
- (ii) produce, in consultation with local councils, maps of the defined road hierarchy for each local government area in New South Wales;

in order to facilitate the identification of roads which would retain a speed limit of 60 km/h or more following the introduction of a general urban speed limit of 50 km/h, and to achieve consistency in implementing appropriate speed limits across the urban road network in New South Wales.

(Page 68, Paragraph 4.19)

**RECOMMENDATION 4:** The Roads and Traffic Authority, in consultation with relevant local councils, undertake an assessment of streets in entertainment, commercial and shopping areas which also serve as major traffic routes, having regard to the road user needs of pedestrians, cyclists and patrons of public transport, to determine which of those streets, if any, should be zoned with the lower general urban speed limit of 50 km/h.

(Page 73, Paragraph 4.32)

**RECOMMENDATION 5:** The adoption of a 50 km/h general urban speed limit should not preclude the continued provision, where appropriate, of lower speed zones.

(Page 74, Paragraph 4.33)

**RECOMMENDATION 6:** That appropriate road treatments be installed at the entry and exit points between local streets zoned as 50 km/h and defined traffic routes zoned as 60 km/h or higher, and that:

- (i) in the first instance, such treatments should be limited to a unique road marking indicating a 50 km/h speed limit applies;
- (ii) if appropriate, signs indicating a 50 km/h speed limit are to be used; and
- (iii) in locations where significant speed control is necessary, installation of physical devices such as raised platforms is to be considered.

(Page 84, Paragraph 4.65)

**RECOMMENDATION 7:** The Traffic Act 1909 and associated statutory rules be amended to provide for the imposition of fines and demerit points based on increments of 10 km/h for speeding offences. (Page 93, Paragraph 5.29)

**RECOMMENDATION 8:** The primary punishment emphasis following a conviction of an offence of exceeding the speed limit by 10 km/h or less placed on demerit points rather than on a monetary fine.

(Page 94, Paragraph 5.31)

**RECOMMENDATION 9:** The Minister for Police, in consultation with the Minister for Roads and other appropriate Ministers, assess the feasibility of adopting a system whereby a motorist who is detected exceeding the speed limit by 10 km/h or less:

- (a) is issued with a cautionary traffic infringement notice such that details of the offence and the motorist are recorded but that the traffic infringement notice is marked to indicate that a formal caution is recommended;
- (b) the traffic infringement notice is processed and the issue of the caution annotated to the licence record of the motorist;
- (c) if the motorist has received a previous caution for a speeding offence within the preceding twelve months, the full penalties for the offence (i.e., demerit points and a monetary fine) should be incurred;
- (d) at the time of the offence the attending police officer should advise the motorist of the caution, and that the full penalties will apply if a previous caution has been recorded.

(Page 96, Paragraph 5.38)

**RECOMMENDATION 10:** The Roads and Traffic Authority and local councils investigate the feasibility of using speed measurement and display equipment to inform motorists of their vehicle's speed on roads with a speed limit of 50 km/h.

(Page 105, Paragraph 6.20)

**RECOMMENDATION 11:** The Minister for Police ensure that the New South Wales Police Service has the sole responsibility for the operational deployment of speed enforcement technologies, including the selection of sites for enforcement, and that other agencies or organisations are restricted to an advisory or consultative role.

(Page 107, Paragraph 6.28)

**RECOMMENDATION 12:** The Minister for Police instruct the Commissioner for Police to remove the current instruction restricting the use of speed detection devices within 200 metres of a change in speed zone, particularly in relation to school zones, and to develop more suitable and flexible guidelines for speed enforcement.

(Page 109, Paragraph 6.35)

**RECOMMENDATION 13:** For a period of three months from the commencement of the new general urban speed limit of 50 km/h:

- (a) a moratorium be placed on the issuing of fines or demerit points to motorists who are caught exceeding the 50 km/h speed limit;
- (b) such motorists be issued with a warning letter advising them of the introduction of the new 50 km/h speed limit and of the date from which fines and demerit points will be incurred when the new law is contravened;
- (c) the moratorium should be restricted to roads which had previously been zoned at 60 km/h, but which will, under the new law, be subject to a 50 km/h speed limit.

(Page 111, Paragraph 6.43)

**RECOMMENDATION 14:** The New South Wales Police Service, in collaboration with the Roads and Traffic Authority, conduct an independent review of random road watch policing as an operational deployment policing strategy for traffic enforcement, and, in particular, for speed enforcement.

(Page 113, Paragraph 6.48)

**RECOMMENDATION 15: The Minister for Roads:**

- (i) ensure that adequate funding is made available to local councils for road markings, signage and associated works to support the implementation of a 50 km/h general urban speed limit; and
- (ii) provide a public assurance to local councils that such funding will be available for road markings, signage and associated works to support the implementation of a 50 km/h general urban speed limit.

(Page 122, Paragraph 7.26)

**RECOMMENDATION 16: The Roads and Traffic Authority, in consultation with the Environmental Protection Agency and other relevant agencies, should monitor relevant environmental indices following the introduction of a 50 km/h general urban speed limit in order to ensure that no untoward environmental consequences arise within the road transport system that affect urban residents' amenity.**

(Page 138, Paragraph 8.22)

**RECOMMENDATION 17: The Roads and Traffic Authority ensure that any communication strategy developed to support the lowering of the general urban speed limit from 60 km/h to 50 km/h addresses issues of potential resistance from the public, including questions concerning travel time, vehicle performance, and 'revenue raising'.**

(Page 140, Paragraph 9.8)

**RECOMMENDATION 18: The Roads and Traffic Authority ensure that, wherever possible, advertising and publicity materials that are developed to support the introduction of a 50 km/h general urban speed limit utilise dual messages about speeding and about pedestrian safety issues.**

(Page 142, Paragraph 9.13)

**RECOMMENDATION 19: The Roads and Traffic Authority ensure that a component of any communication strategy developed to support the introduction of a 50 km/h general urban speed limit is the inclusion of advertising and publicity that informs the community of:**

- (i) new offences and penalties for excessive speeding; and
- (ii) new police speed detection technology and changes to operational deployment policies and practices for the enforcement of excessive speeding.

(Page 142, Paragraph 9.15)



**RECOMMENDATION 20:** As part of its communication strategy, the Roads and Traffic Authority specifically target local councillors, traffic committees and traffic engineers with an education campaign which should address issues such as:

- (i) the erroneous perception that speeding is not a significant issue on local roads in rural areas;
- (ii) the need for local governments to assist in educating their communities about the road safety and amenity benefits of a lower general urban speed limit;
- (iii) the costing and funding of implementation; and
- (iv) the role of local government in the decision-making process.

(Page 143, Paragraph 9.18)

**RECOMMENDATION 21:** The Roads and Traffic Authority revise curricular and other road safety educational materials relating to speeding to incorporate the new general urban speed limit of 50 km/h, and the new speed enforcement technologies and operational methods used by police.

(Page 144, Paragraph 9.24)



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# 1

## INTRODUCTION

### *The Ministerial Reference to STAYSAFE - The reasons for the Ministerial Reference - The organisation of this report*

**1.1** Speeding behaviour by motorists has proven to be a difficult and seemingly intractable road safety and road trauma problem in modern, developed communities, not only in New South Wales, but across Australia, and globally. Excessive or inappropriate speeding behaviour<sup>1</sup> has been identified by road safety experts and governments throughout the world as one of the key areas where effective management and enforcement measures are required to minimise road crashes, and their attendant fatalities and casualties. In New South Wales, speeding is typically held to be a major cause of more than one third of the fatal crashes each year. Speeding ranks with drink-driving as a leading cause of crashes on New South Wales roads.

**1.2** The identification, development and implementation of appropriate countermeasures to excessive or inappropriate speed is a difficult task faced by road safety workers. There is a degree of community resistance to explicit mechanisms of speed control such as speed limits, physical devices on roadways designed to restrict speed, governors and other control devices on motor vehicles, and so on. Police enforcement methods, using technologies such as radar detection and speed cameras, are often challenged as mechanisms for 'revenue raising' rather than as methods for promoting trauma reduction and deterring unsafe behaviour.

### **The Ministerial Reference to STAYSAFE**

**1.3** In late 1995, the Hon. Michael Knight MP, in his capacity as Minister for Roads, provided a Ministerial Reference requesting the STAYSAFE Committee to conduct an inquiry into the proposed introduction of 50 km/h local road speed limits in residential areas of New South Wales.

**1.4** The terms of reference adopted for the inquiry required STAYSAFE were comprehensive, and required an assessment of:

- previous research into lower residential speed limits that has been conducted in Australia and overseas
- speed management practices in New South Wales and in other jurisdictions in Australia and overseas, particularly in terms of identification of

current practices for setting of urban speed limits

- community concerns with effective speed management in urban areas, particularly vehicle speeds on residential streets
- the most effective and appropriate traffic management strategies to be adopted to ensure compliance with 50 km/h local road speed limits, including an assessment of trials under way on the lower North Shore of metropolitan Sydney
- the decision processes involved in the selection of the local streets to be subject to a 50 km/h speed limit
- communication strategies required to support the introduction of 50 km/h local road speed limits in residential areas, including advertising, publicity, and education of drivers and the general public
- changes required for the effective enforcement of lower local road speed limits, including an assessment of speed enforcement technologies, techniques and procedures, and operational instructions
- implications for penalty and demerit point system, including the need for revision of current speeding offences under the Traffic Act 1909, and the possible adoption of a cautioning system to operate together with the Traffic Infringement Notice system
- the road safety implications of the introduction of a 50 km/h local road speed limit, particularly in terms of a reduction of intersection crashes and for pedestrian and bicycle safety generally
- an appropriate schedule for the introduction of a 50 km/h local road speed limit in residential areas through New South Wales
- processes and procedures required to monitor and evaluate the effectiveness of a 50 km/h local road speed limit in promoting road safety
- implications of a lower residential speed limit for local government traffic planning and practices, and, in the longer term, for residential planning and street design
- future directions in speed management in urban areas
- environmental implications of lower local road speed limits, particularly in terms of traffic noise, greenhouse gas emission, and travel time
- any other relevant matters

### **The reasons for the Ministerial Reference**

1.5 Speeding behaviour compromises road user safety. As the speed of a motor vehicle



increases the motor vehicle becomes less stable and may be more difficult to control, the driver of the motor vehicle has less time to react to any potential hazard, other road users similarly have less time to react to the speeding motor vehicle, and the likelihood and severity of injury in any consequent crash increases.

1.6 Yet, despite the evidence that speed is associated with increased risks of crashing and with more severe injury outcomes once a crash has occurred, motorists—*en masse*—will typically drive at a speed in excess of the posted maximum speed limit.

1.7 Speeding is a particular issue in urban environments, and roads authorities in Australia have been active in seeking to develop suitable policies and practices to address urban speed management. A brief review of some of the major projects and studies into speed management is provided in Appendix B: A brief review of speed management in New South Wales.

1.8 The Ministerial Reference to STAYSAFE was provided following the preparation of a draft report by AUSTROADS under the urban speed management project. In the early 1990s, a project on urban speed management had been initiated under the AUSTROADS Road Safety Program, and the ARRB Transport Research Ltd was engaged to assist with research support and preparation of working papers and reports. STAYSAFE notes that the final report into urban speed management in Australia was released during the course of the inquiry, following a request by STAYSAFE for the report to be made public (AUSTROADS, 1996).

### **The organisation of this report**

1.9 This STAYSAFE report discusses matters relevant to the rationale for and introduction and enforcement of a 50 km/h general urban speed limit. The report illustrates why a 60 km/h urban speed limit is too high and has its basis an historical anomaly rather than a road safety measure. STAYSAFE discusses the rationale for a reduction in the general urban speed limit, and presents a summary of some of the best-known research on lower speed limits, particularly as it relates to the potential benefits to vulnerable road users, namely, children and the elderly. The relationship between travel speed, reaction time, stopping distance, impact speed, and injury severity is presented in some detail.

1.10 Traffic management issues are discussed, with emphasis on the way in which streets with a 50 km/h speed limit will be identified and delineated so that motorists are always aware of the speed limit applicable to the area they are in. The crucial issue of effective enforcement strategies is discussed, including the introduction of sophisticated radar technologies which might be deployed to assist police in ensuring a satisfactory level of compliance.

1.11 STAYSAFE canvasses the views of local government on the proposal and its funding, and makes some observations on the implications of a lower general urban speed limit for local government traffic planning. STAYSAFE then explores the issue of the environmental implications of a 50 km/h speed limit, and finds that there is unlikely to be any perceptible effect at all.

1.12 Communications strategies designed to heighten public awareness of the speeding problem and the new law are addressed. An appropriate schedule for the introduction of a 50 km/h general urban speed limit and a monitoring and evaluation system is suggested. Finally, STAYSAFE canvasses some possible future directions for urban speed management in New South Wales.

# 2

## THE NECESSITY FOR A 50 KM/H GENERAL URBAN SPEED LIMIT IN NEW SOUTH WALES

*Issues in speeding - The historical anomaly of urban speed limits in Australia  
- Community concerns with effective speed management - Road safety  
implications: benefits for vulnerable road users - The link between speed and  
injury severity - A note on speed and the frequency of crashes - The  
experience with 50 km/h limits in comparable developed countries - Australian  
research into lower residential speeds - A 50 km/h or 40 km/h general urban  
speed limit? - Why reduce speed limits on residential streets? - Potential cost  
savings - STAYSAFE's general recommendation for a 50 km/h speed limit -  
Concluding comments*

2.1 This chapter reviews evidence of the need for a lower urban speed limit in New South Wales. Speed has been identified by experts and governments the world over as one of the key areas where effective management and enforcement measures are required to minimise road crashes, and their attendant fatalities and casualties. Matters addressed as part of this review include the findings of major research projects and Parliamentary inquiries into the role of speed in road trauma. In particular, the available research on lower urban speed limits is examined. The emphasis of the research has been on the effects of lower urban speed limits on vulnerable road users, and has demonstrated convincingly that even modest reductions in vehicle travel speeds can have profound effects on stopping distances and the severity of injuries sustained by pedestrians, who have the most to gain from lower speeds. As will be seen, adoption of a 50 km/h speed limit will bring New South Wales in line with best practice world-wide, and will yield considerable benefits, both social and financial, through reductions in road trauma.

2.2 In a report proposing a new speed management strategy for Victoria, the Road Traffic Authority (1987) commented:

"It is difficult to conceive of another road safety issue that generates as much heat and as little light as 'speeding' does when raised in public discussion. At the same time there can be no doubt that it represents one of the few issues in road safety where a break-through is still awaited." (p.1)

2.3 Road safety research clearly demonstrates that speeding behaviour compromises road user safety. Speeding has long been recognised as a major factor in many road crashes. The systematic study of the causes of road crashes and road trauma began in the 1940s, and by the early 1950s a close connection had been identified between the speeds of motor vehicle and the occurrence and severity of road crashes. Vehicle speed is at the core of the problem of road trauma: higher speeds reduce the time that is available to avoid a crash, and higher speeds make the impact of a crash more severe on vehicles and their occupants and increases the likelihood of serious injury or death (European Transport Safety Council, 1995). Other factors that have been identified as contributory to the hazard associated with higher speeds include: greater stopping distances as speeds increase; the skid resistance between motor vehicles and wet roads decreases as speeds increase; and the minimum safe separation distance between vehicles moving in the same direction increases with the square of the speed (Newby, Breen & Gilbert, 1986).

2.4 Typically, overseas studies have reported that excessive speed is noted as a definite cause in up to one in ten crashes and up to twice that as a probable cause. In Australia, excessive speeding has been noted as a contributing factor in up to 30% of fatal crashes. On these statistics, speed related road trauma is likely to cost the Australian community up to A\$1 billion annually (Fildes and Lee, 1993).

2.5 There is a strong debate over the role of speeding in the community, and the view presented by road safety workers is not without its critics. For example, McKay (1996) recently wrote:

“Those responsible for keeping our roads as safe as possible—the politicians, bureaucrats and highway police—regularly and consistently target speedsters with the zeal of folk who know on which side their bread is buttered.

Speed is the victim of a bum rap. While in some circumstances, speed is not acceptable, it’s not quite as bad as portrayed by those who shape our road safety and enforcement policies.

Speed is an easy transgression to ‘sell’ to the public via images of death and injury and bereaved friends and family. But Australian motorists are not entirely blind to the extensive marketing of the evils of speed which clears the paths for the law enforcers to reap a bountiful harvest.

This is not to suggest speed can be justified without qualification. But a few km/h here or there is not really the dreadful evil painted by the bureaucrats and politicians...”

2.5 In similar vein, McSpedden (1996) recently wrote:

“It’s that time of the year — just prior to school holidays — when the authorities unveil their latest weapons against the road toll.

This year it’s another batch of cleverly crafted commercials emotionally tagging speed as the culprit. “Speed Kills” is their unambiguous slogan and those guilty of it are

effectively branded murderers.

At the same time, news bulletins this week have featured the latest — and even sneakier — radar cameras, released just in time to capture any drivers who haven't been covered by the television message.

It's all very synergistic — but the message is the wrong one. Speed doesn't kill. *Inappropriate* speed certainly can. But this makes the problem one of judgement, not one of sheer velocity. Nor, necessarily, does a combination of cars and speed kill.

A simple way to understand this is to consider, that if speed alone was the problem there'd be huge fatalities every weekend in motor sport. There aren't: there are more in football.

So we get more ads, more gimmicks, more revenue and at the end of the holiday season, as always, more road deaths.

What's more, putting such weight behind a message as overly simplistic as Speed Kills means that what really kills isn't being addressed: lack of judgment, lack of awareness, lack of car control, lack of behind-the-wheel emergency experience or drill.

Again, motor racing demonstrates that if a driver knows how to handle a car in unexpected situations speed doesn't have to be a problem. Of course it can be, and a serious one, but it doesn't have to be. It's not, as the commercials imply, a given.

Thinking drivers see other reasons for regarding the campaign as a furphy. It's 1996. The Morris Major is no more; cars are designed to travel faster, with a previously unimagined degree of primary safety; roads are designed and illuminated to accommodate more efficient travel; tyres are capable of higher performance; and the distances to be covered in Australia are great enough already without drifting back into an artificial drone zone."

## Issues in speeding

2.6 Lay (1984) identifies four major decrements to safe driving that occur as the speed of a motor vehicle increases: the motor vehicle becomes less stable and more difficult to control in certain driving situations (e.g. cornering, heavy braking); the driver of the motor vehicle has less time to react to a potentially hazardous situation; other road users similarly have less time to react to the detected presence of the speeding motor vehicle; and, the likelihood and severity of injury in any consequent crash increases.

2.7 Zaal (1994) has made similar observations:

"Firstly, as speed increases the probability of being able to react successfully to an unforeseen incident or to correct a misjudgment decreases sharply. This occurs because the 'thinking distance', defined as the length of road covered whilst the driver is

assessing the situation, increases linearly with speed. Secondly, perception is affected because the faster the travel speed the more difficult it is to estimate the speed of other road users and the approach speed towards fixed road side objects. Finally, divided attention skills are also affected because as speed increases information is received at a faster rate and must be processed in a shorter time period.” (p.69)

2.8 STAYSAFE has noted the conclusions of researchers in the United States and Europe that the greater the impact speed of a vehicle in a crash, the greater the likelihood of death or serious injury. For example, the European Transport Safety Council’s (1995) review indicated that for car occupants involved in crashes with an impact speed of 80 km/h, death is some 20 times more likely than at an impact speed of 30 km/h. A review of pedestrian road trauma statistics revealed that about 5% of pedestrians struck by a vehicle travelling at 30 km/h can be expected to die, but that the likelihood of death increases rapidly with higher speeds: at an impact speed of 50 km/h 45% of pedestrians can be expected to die, and at 65 km/h some 85% of pedestrians are likely to die (Ashton & Mackay, 1979, cited in European Transport Safety Council, 1995).

2.9 Yet, despite the evidence that speed is associated with increased risks of crashing and with more severe injury outcomes once a crash has occurred, motorists—*en masse*—will typically drive at a speed at or in excess of the posted maximum speed limit. Witnesses representing the Roads and Traffic Authority stated that about one-third of New South Wales motorists exceed the existing 60 km/h speed limit on the local road system:

**Mr CROFT:** “... surveys show us that even on residential streets some 35% of cars exceed the 60km/h limit that is already in place”. (Minutes of Evidence, 4 December 1995, p.3)

and later acknowledged that excessive speed was a problem on sub-arterial and arterial roads as well:

**Mr CROFT:** “In the local residential streets you will find that something like 35% of people travel at greater than 60km/h speed limit already. In the sub-arterial roads, you will find that up in the range of 60% of people travel at more than the speed limit. And it is even worse on the arterials. That is why we have seen in recent years the arterials having their speed limits changed.” (Minutes of Evidence, 4 December 1995, pp.27-28)

2.10 A motorist driving a motor vehicle on a public road is usually faced with a very complex environment of roads, footpaths and surrounds, with a mix of road users, a changing roadway of curves and crests, varying lane and road markings, and a multiplicity of signals, signs and advertisements including posted speed limits and advisory speed signs. Motorists must react to the road and its complexities through a continuous stream of moment-by-moment decisions and adjustments. It is easy to ignore posted maximum speed limits—after all, any illegal speeding behaviour is by its nature transient as lawful behaviour can be shown more or less immediately if required (cf. drink-driving, where the relatively fixed rate of metabolism of alcohol restricts the ability of drink-drivers to act lawfully—drink-drivers simply cannot modify their physiology as speeding drivers can alter their behaviour).

2.11 Numerous surveys and studies have provided data that indicates that motorists do not regard the posted speed limit as a maximum speed under good driving conditions. At best, motorists seem to regard the posted speed limit as an indication of a target speed to be maintained. More often, it seems that motorists regard the posted speed limit as representative of the lower end of a continuum of acceptable speeds that has, at its upper margin, some speculation or estimate of the highest speed that will be tolerated by police before enforcement action is taken.

2.12 Some of the reasons advanced as factors that can be contributory to drivers' choice of speed (and hence decisions to drive at excessive or inappropriate speeds) include, but are not limited to:

*Driver related factors*

- the reinforcement of habitual speeding behaviour as drivers build up a history of safe driving at higher speeds than the posted speed limit
- the intrinsically rewarding aspects of speeding, such as excitement and the rewards associated with demonstrations of skill or courage
- personal characteristics such as age, gender, driving experience, risk acceptance and risk taking behaviour
- the driver's specific motivations associated with the trip
- level of blood alcohol or other drug impairment
- ownership of the vehicle
- presence of passengers in the vehicle

*Road and vehicle related factors*

- the performance and handling characteristics of the vehicle being driven, including the type of vehicle, the maximum speed of the vehicle and the power:weight ratio of the vehicle
- the driver's perception of safety and comfort on the road, including roadway features such as width, gradient, alignment, surroundings, layout, markings and surface quality

*Traffic and environment related factors*

- the imposed speed limit
- the perception of the level to which the speed limit is enforced
- advisory and warning signs
- traffic density and composition
- the prevailing speed of the traffic
- weather and climatic conditions, including natural light and road surface condition associated with weather
- the presence of road lighting

*Other factors*

- a tolerant judicial attitude to speeding and the severity or laxity with which offenders are treated;
- media and other community depictions of excessive and inappropriate speeding

(after Zaal, 1994; European Transport Safety Council, 1995; see also Lay, 1984)

2.13 Zaal (1994) also referred to a theory that speeding behaviour, which is “extremely common” in Western culture, might be a reflection of Western societal lifestyles. He noted that:

“... in Western society the notion of speed is often portrayed as a positive quality, associated with an active, powerful, dynamic and fast lifestyle. In contrast, attributes such as slowness, passivity, staticity and weakness are considered to be negative aspects of Western culture. They concluded that such societal lifestyles led to a kind of contradiction to efforts aimed at reducing the level of speed behaviour.” (p.67)

2.14 Zaal was strongly influenced by the work of Oei. In an as yet unpublished paper on automatic speed management in the Netherlands, Oei commented:

“In western societies speed in general is regarded as a positive quality, e.g., speedy telecommunications and computers, speed in thinking and decision making. Time is money! See adverts praising speedy, powerful, aggressive vehicles. Improvements in sound isolation, tyres, braking systems, and road surfaces make fast, comfortable, smooth driving in silence possible. In contradiction to this general attitude and developments, drivers on the road are expected to drive slowly and carefully!” (Oei, unpublished manuscript, p.3)

2.15 In New South Wales, the Roads and Traffic Authority conducted regular triennial surveys of community attitudes, beliefs and knowledge concerning speeding since the 1980s.

Typically, these surveys obtain information on speeding behaviour by drivers, drivers’ perceptions of the likelihood of being detected for speeding on different types of roads in urban and rural areas, drivers’ knowledge of the offences and penalties associated with excessive speeding, and their perception of the danger associated with excessive or inappropriate speed. On occasion, specific issues might be examined in detail (e.g., prior to the banning of radar detectors an issue examined was the difference in attitudes, beliefs and knowledge about speed-related issues between drivers who used radar detector and those who did not).

Unfortunately, these surveys have not been published and the results of the surveys are not widely known. STAYSAFE 31 (1996) has commented on the failure to publish relevant research projects in road safety, and this issue will be addressed in further detail in Chapter 7: Consultation with local councils.

2.16 There has, however, been some discussion of these surveys in review and commentary papers released by the Roads and Traffic Authority. These discussion indicate a consistent and persistent community view that speeding behaviour was widespread, deeply entrenched and socially condoned (see, e.g., Croft, 1993).

2.17 Surveys of community attitudes, beliefs and knowledge concerning speeding are also conducted in other Australian jurisdictions, and some have been published. For example, Cavallo (1991) reported on surveys of Victorian drivers over the five year period 1987-1991.



Of specific interest are the results she reported for speeds on residential streets. The stated intended average speed of driving on a residential street on a Saturday afternoon tended to be about the speed limit, with nearly half of the drivers surveyed indicating that they would drive above 60 km/h. This indication that they would drive at an excessive speed was constrained, however, with most indicating that they would exceed the speed limit by less than 10 km/h, and drivers generally indicated that it would be very dangerous to drive on a residential street at a speed of 90 km/h. Drivers thought that the risk of detection for excessive speeding on a residential street was very low.

- 2.18 There has been a tendency among road users to fail to appreciate the role speed plays in road trauma on urban roads. There appears to be a perception among drivers that serious speed-related crashes occur outside the urban road network. The key issue before STAYSAFE in this inquiry is the extent to which fatalities and injuries can be reduced by lowering the speed limit in local streets from 60 km/h to 50 km/h.

### **The historical anomaly of increasing urban speed limits in Australia**

- 2.19 The general urban speed limit in Australia is currently 60 km/h. This was not always so. A 30 mph general urban speed limit, equivalent to 48 km/h, was introduced in New South Wales in 1937. On 1 May 1964 the limit in built-up areas was increased from 30 miles per hour to 35 miles per hour.

- 2.20 STAYSAFE was interested in the reasons why the general urban speed limit was modified and increased, and questioned Roads and Traffic Authority officials:

**Mr JEFFERY (STAYSAFE):** “What were the circumstances involved in changing the New South Wales urban speed limit from 30 mph to 35 mph during the 1960s?”

**Mr FORD:** “That decision was taken by the Government at that time in recognition of improving roads and certainly improving vehicles and driver behaviour on roads. We have had a very quick search of our documentation at the Roads and Traffic Authority, and anything that we can turn up in relation to briefing papers, memorandum, Cabinet submissions, and so on, we would be more than pleased to hand across to the inquiry.”

**Mr GIBSON (CHAIRMAN):** “Would there be much material available on that?”

**Mr FORD:** “Precious little, Mr Chairman.” (Minutes of Evidence, 4 December 1995, pp.5-6)

- 2.21 NRMA Ltd witnesses advised that some of the important points for that change were

listed in National Roads and Motorists' Association publications at the time as: firstly, it brought New South Wales into line with other States and Territories and with the national traffic code at the time; secondly, that motor vehicles and roads were thought to be far superior to what they were when the 30 mph speed limit was introduced and a higher general urban speed limit could be supported without effect on the incidence or severity of road trauma. NRMA Ltd witnesses stated:

**Mr GIBSON (CHAIRMAN):** "Did NRMA support that increase from 30 miles an hour to 35 miles an hour in the speed limit at the time?"

**Mr MACKY:** "I would say that the NRMA would not have opposed that change, given the fact that roads had improved, vehicles had improved, and there were implementations such as the seat belt requirements, which had a dramatic effect on the road toll; and, therefore, in order to balance out those tougher measures with some measures which the community would accept, they would not formally have opposed that 60km/h limit. But, having said that, I cannot verify that, I cannot verify that because we have not got any documentation to enable me to do so." (Minutes of Evidence, 4 December 1995, p.29)

2.22 In later hearings the Roads and Traffic Authority confirmed that no further information was available about the change in the general urban speed limit from 30 to 35 mph. STAYSAFE wonders about the importance of 'improved safety' in the decision to raise the general urban speed limit. It is likely that particular consideration was given to general non-compliance of motorists with the 30 mph speed limit and a general inability of police to enforce the 30 mph speed limit effectively. That is, the decision to increase the general urban speed limit may have been more a function of pragmatism than any particular safety consideration.

2.23 With metrication in 1974, the general urban speed limit was further increased from 35 mph—or 56 km/h—to 60 km/h. The rationale for this increase appears to have been simply pragmatic desire to 'round off' the conversion from imperial measurement units to metric units so that the speed limit was presented as a multiple of 10 km/h increments.

2.24 To summarise, the increases in the general urban speed limit since the mid-1960s have seen the general urban speed limit raised twice. In metric measurements, the increases have been from 48 km/h to 56 km/h, and then to the current level of 60 km/h. The reasons for these increases are unclear, but do not seem to have been related to safety.

## **Community concerns with effective speed management**

2.25 There is evidence from a number of surveys that a substantial proportion of the community would prefer urban speed limits to be lowered. In its submission, the Roads and

Traffic Authority made the following comment:

“Survey research indicates that the community wants and will accept a lower speed environment for the local streets where they live, but there is still some resistance to the installation of speed humps in local streets. People will not always slow down sufficiently when driving down other people’s residential streets.

People want higher speeds on major traffic routes, and want a clear indication of what the speed limit is on a particular road.

Recent survey research by NRMA Ltd has indicated that the community is divided on the issue of a “lower general urban speed limit”, but with a trend toward greater acceptance of the concept, particularly for residential streets. The specific concept of a new local street speed limit has not been presented to the community.” (Submission USL 22, p.v)

2.26 STAYSAFE noted the results of several recent surveys of public opinion regarding lower urban speed limits.

2.27 In 1993, NRMA Ltd conducted a survey on speeding to ascertain perceptions as to the main causes of motor vehicle accidents and to elicit suggestions for possible ways of reducing the incidence of speed-related crashes. Part of the survey asked respondents to rate their level of agreement with two suggestions to reduce the incidence of speed related crashes:

Reducing the general urban speed limit from 60 km/h to 50 km/h; and  
Introducing a 50 km/h speed limit on local residential streets only, but maintaining existing speed limits on other roads.

Seventy-four per cent of respondents agreed with the proposal to introduce a 50 km/h limit on local residential streets only. Only 30% agreed with the suggestion of reducing the general urban speed limit to 50 km/h (NRMA Ltd., Submission USL 21).

2.28 Another survey carried out in 1993 for the Roads and Traffic Authority found that 54% of respondents thought that a 50 km/h general urban speed limit was a good idea and 41% thought otherwise. The proposition was put in the context of the implementation of the 50 km/h limit as part of an overall package of speed measures (Roads and Traffic Authority, Submission USL 22).

2.29 The Royal Automobile Club of Victoria published a speed limit survey in the August 1992 issue of the Royalauto magazine, to which more than 7,000 replies were received. Respondents to the survey wanted lower speed limits in residential areas. Seventy per cent of all respondents wanted a lower limit of either 50 km/h or 40 km/h. Of these, two out of three preferred the 50 km/h limit (Royal Automobile Club of Victoria submission to the inquiry into revision of speed limits, Road Safety Committee, Victorian Parliament, 1994).

2.30 In their evidence to STAYSAFE on the Mosman/North Sydney 50 km/h trial, the Mayors of North Sydney and Mosman councils advised that, although their public information meetings prior to the trial were not well attended, this, in fact, pointed to an overwhelming level of community support for lower speed limits in the area. The Mayors asserted most people in the community attend meetings and generally voice their opinions only when they are opposed to a government initiative.

### **Road safety implications: benefits for vulnerable road users**

2.31 A recurring theme in the literature on road safety is that a reduction of traffic speeds is the key to making local streets safer. In addition, it is widely accepted that those who will benefit most from the introduction of a 50 km/h general urban speed limit are those who are the most vulnerable of road users: pedestrians and cyclists, and children and the elderly in particular.

2.32 Fifty per cent of elderly pedestrian casualties, 65% of young (0-16) pedestrian casualties, and 73% of young cyclist casualties occur on local streets (KIDSAFE, Submission USL 45). Together, these road users form a significant section of the New South Wales road casualties each year. Of the 620 road users killed in New South Wales in 1995, 130 were pedestrians and 11 were pedal cyclists; of the 6,016 seriously injured, 928 were pedestrians and 200 were pedal cyclists; and of the 19,947 otherwise injured, 2,226 were pedestrians and 970 were pedal cyclists (Roads and Traffic Authority, 1995).

2.33 Road trauma has been the largest cause of fatal injury to Australian children aged 5-14, and the second largest for ages 0-4 (KIDSAFE, Submission USL 45). Twenty-one per cent of serious pedestrian casualties in New South Wales in 1994 were children in the 5 to 16 age group. Federal Office of Road Safety data shows that children in this age group have a greater exposure than adults in terms of the amount of time spent walking. In particular, 9 to 15-year-olds spend twice as much time walking as 30 to 59-year-olds. The Roads and Traffic Authority believes that the high rate among 5 to 9-year-old children reflects the increased mobility of children who may be unsupervised but who are still lacking the skills necessary for crossing roads safely. Moreover, 50% of elderly pedestrian injuries, 65% of young (0-16) pedestrian casualties, and 73% of young cyclist casualties occur on local streets.

2.34 People aged over 60 years account for almost 40% of pedestrian fatalities, despite the fact that they only make up about 15% of the total population. They are more likely to be killed during the daytime, on weekdays and in residential areas. In addition, older people injured in pedestrian collisions are far less likely to survive than younger people. The Federal Office of Road Safety has argued that lower speed limits in residential areas and in shopping precincts during the middle of the day were likely to be effective in reducing both the incidence and severity of pedestrian trauma among the elderly.

2.35 Struik, Alexander, Cave, Fleming, Lyttle and Stone (1988) have postulated that a child's experience and behaviour on and around a road are essentially governed by the age-related development and maturation of the child physically and cognitively. The researchers catalogued the following specific behaviours that have been associated with increased risk:

- 'darting out' or running from the footpath into a moving line of traffic
- playing in local streets near home
- paying little attention to the crossing situation, or otherwise careless crossing; and
- stepping out into a moving line of traffic from behind obstacles such as parked cars.

2.36 Struik et al. (1988) also identified other characteristics of the child pedestrian that predisposed the child toward an increased risk of being involved in a collision with a passing vehicle:

- the child's small stature makes it difficult for the child to be seen by motorists
- children have limited physical development
- children have limited perceptual development, particularly related to peripheral vision
- children cannot identify the direction of sound or judge distance accurately
- children's cognitive capacities regarding the demands of moving traffic are subject to development and maturation
- children have a limited understanding of possible pedestrian-vehicle interactions
- children tend to see traffic as a series of discrete independent events rather than a dynamic ongoing movement.

2.37 In short, young children simply do not react to traffic in the same way as adults. The elderly, while having more experience with traffic than children, may have a hearing, sight or mobility impairment which could affect their reaction time in a traffic-related stress situation. It therefore makes more sense to adjust street design and vehicle behaviour to pedestrian behaviour than to try to make pedestrians adjust to traffic. The implementation of a lower general urban speed limit, with appropriate awareness and enforcement measures, would be one such adjustment to driver behaviour:

2.38 This approach is also reflected in evidence presented to STAYSAFE by Ms Christine Gowdie, representing KIDSAFE:

**MS GOWDIE:** "This goes to the core of KIDSAFE's philosophy, which is that while it is all very well educating people and telling parents to supervise their children, in general blame is not a useful concept in injury prevention. Blaming people rarely stops injuries.

More importantly, and I am quoting here from our 1995-96 annual report, which I will table in a moment, the philosophy emphasises the environment and modification approach to injury prevention. It recognises that while there is no substitute for supervision, no person can be totally vigilant 100% of the time, and that effective injury prevention requires that all of the environment in which a child lives should be

as free of hazards as possible.

In that context, I would like to stress that that word, environment, does not refer just to matters ecological, it refers to physical surroundings of everybody, ourselves, our children, whatever.

I would also like to table KIDSAFE's response to a request by the Minister for Local Government to respond to his manifesto on child friendly environments. We are very supportive of that. We feel that children as a group tend to lack advocates, not because people do not like children necessarily, but they are frequently overlooked, but in taking the child friendly environment approach into all government planning processes, with any luck will in time reduce the toll of injury on our children.

It might also be worth mentioning that KIDSAFE's concern for the environment modification approach is particularly being addressed at the moment through work we are doing on safer playgrounds. I know that has nothing to do with road safety, but it does give a very good example of making safer playgrounds; rather than yelling at kids, trying to make certain they don't get hurt.

You do not blame children for being children, you try to make it safer for them.  
(Minutes of Evidence, 20 May 1996, pp.41-42)

2.39 Witnesses representing Bicycle New South Wales argued that the speed limit on local streets could be even lower, in order to gain a major reduction in road trauma:

**THE HON. J. S. TINGLE (STAYSAFE):** "Bicycle New South Wales seems to suggest that a 50 km/h limit in residential streets is desirable from what I have had the chance to read of this in the last couple of minutes, but that in some situations the speed limit would perhaps be better brought down to 40 km/h or even 30 km/h. Is that realistic? Are you seriously suggesting there should be 30 km/h limits in some streets, or is that what you might call an ambit claim?"

**Mr SALOMON:** "... What we are looking at is saving lives, particularly the lives of children. I do not think anyone would seriously condone motorists doing whatever they choose through residential street systems.

The evidence that we have seen clearly indicates that for every 10 km/h you drop the speed, you can almost count the number of children you can save. We are certainly concerned because a lot of our constituents are child cyclists and we are concerned that in this area, where we spend a lot of money in this bussing children to school, and you only have to look at the traffic you can see fall away during school holidays, to see that we are not only bussing them but we are motoring them to school.

In a sense we think they should be riding their bikes to school. What we have to provide and what we have to look at providing is a safe environment for those children. Children cannot withstand or cannot survive a crash from a motor car even travelling 60 km/h. At a 30 km/h speed limit they have a chance, and that is important."

**Ms GERENCER:** "I think it is important to note that overseas, in particular in

Europe, it is quite common for 30 km/h speed limits in residential areas and strip shopping areas, where there are a lot of people on the streets.” (Minutes of Evidence, 20 May 1996, pp.24-25)

2.40 An expert witness, Professor Michael Taylor, of the University of South Australia, argued that the fundamental consideration in setting speed limits was the safety of pedestrians and other vulnerable road users:

**Professor TAYLOR:** “Questions about how one sets a speed limit are very complicated and cover a large number of factors beyond the movement of traffic. I think that is something not commonly understood in the community. For instance, if I wanted to simplify I would argue that it is the amount and type of pedestrian activity one could reasonably expect on a street would be a major determinant about what the speed limit on that street should be. In a residential environment one can expect reasonably high levels of pedestrian activity, particularly by those people who are perhaps most vulnerable as pedestrians—the young and the elderly. Therefore, the speeds of vehicles using those streets might well be set in accordance with those other road users who are likely to be present in that environment.” (Minutes of Evidence, 19 August 1996, p.53)

2.41 STAYSAFE examined a number of representative studies of the safety of vulnerable road users on local streets.

2.42 Drummond and Ozanne-Smith (1991) undertook a study of crash involvement risk for child pedestrians and bicyclists in response to a recommendation of the Victorian Parliament’s Social Development Committee. One of the significant results of the study was that: “... two-thirds of total child pedestrian exposure is on local streets. Local streets may not be as ‘pedestrian-friendly’ as might be expected, as around 50% of road entries were made in the presence of potentially conflicting vehicles and all age groups display greater frequencies of less safe crossing behaviours, relative to their behaviour on arterial roads”.

2.43 The researchers found that while arterial locations generate many more accident involvements than their proportion of the total road network would suggest, the study revealed an interesting pattern: children aged from 5-11 and 12-17 years display higher crash involvement risks on arterial roads by a factor of 3 and 4.8 respectively, but very young children—those under 5 years—demonstrate a 50% higher risk on local streets than on arterial roads. The significant differences in these injury rates may be explained by the fact that very young children are, naturally, more dependent on adults for mobility than are older children, who have greater access to both the larger area in which they live and places outside their residential precincts.

2.44 Drummond and Ozanne-Smith (1991) reported that certain unsafe behaviours by child pedestrians were much more common on local streets. For example, children injured on local streets were more likely to have entered onto the roadway without stopping, without looking, and were more likely to attempt to cross the roadway indirectly.

2.45 Drummond and Ozanne-Smith’s (1991) accident data analysis can be summarised as

follows. The presence of child pedestrians on roads rises with increasing age, with primary and secondary school aged children having approximately ten times the exposure of children under 5 years of age. Two-thirds of total child pedestrian exposure is on local streets. Local streets may not be as 'pedestrian-friendly' as might be expected, as around 50% of road entries were made in the presence of potentially conflicting vehicles and all age groups display greater likelihood of less safe crossing behaviours compared with crossing arterial roads.

2.46 Drummond and Ozanne-Smith (1991) found that pedestrian deaths and hospital admissions were the second largest category of road user type (after vehicle passengers) for both the 0-4 and 5-16 age groups. The risk of crash involvement for child pedestrians under 5 years of age is three times higher than for the two older age groups which have risks comparable to each other. Overall, the risk of pedestrians on arterial roads is more than three times higher than that on local streets. While the 5-11 years and 12-17 years age groups display higher crash involvement risks on arterial roads by a factor of 3 and 4.8 respectively, the under 5 age group demonstrates a 50% higher risk on local streets. Some 70% of all bicyclists observed over the age of 5 years (and including adults) were not wearing bicycle helmets. Wearing rates within each group were: 5-11 years, 54%; 12-17 years, 18.8%; 18 years or older, 34.1%. These rates had all increased substantially since the previous survey and were the last collected prior to the introduction of mandatory bicycle helmet wearing.

2.47 STAYSAFE also noted Proctor's (1991) analysis of pedestrian crash figures for Birmingham, England, which revealed that accidents involving young (under 20) pedestrians were split into a further two categories.

"Whilst adults and teenagers are often injured on main roads, many children under 10 years tend to be injured on the roads in which they live. In the Birmingham study up to one-third of those who died were killed immediately outside their own homes. Many were accompanied by adults immediately prior to the accident, and they were struck by local drivers, travelling at 'average' speeds (25-35mph) within 30mph residential areas. Other research suggests that 95% of pedestrian accidents take place at speeds under 30mph. The over-riding impression from the accidents is the 'ordinariness' of the event, and the absence of any tangible conventional treatable factors." (p.54)

While it is not possible to translate Proctor's findings directly to an Australian setting, it seems likely that young Australian children would be similarly vulnerable in their own streets.

### **The link between speed and injury severity**

2.48 Since travel speeds have a direct bearing on impact speeds where crashes occur, a reduction in travel speeds will have benefits not only for motorists but, more importantly in residential areas, for vulnerable road users who live in these residential areas. Research has shown that even small increases in speed can result in a dramatic increase in the forces applied to crash victims. The research findings are supported by physical law: kinetic energy is a function of mass times velocity squared. Thus, a 20% increase in impact speed, for example, will result in a 44% increase in the energy to be dissipated, while a 50% increase in impact speed will increase the energy to be dissipated by 125%.



2.49 The laws of physics have significant implications for crash victims, particularly pedestrians and cyclists. Lower travel speeds mean lower impact speeds, and therefore less severe injuries for those involved. Ashton (1982) has outlined the injuries to pedestrians struck by cars travelling at various speeds. Ashton found that modest reductions in travel speeds can lead to large reductions in the rate and extent of injuries and the incidence of fatal pedestrian crashes. The study showed that pedestrians hit at impact speeds of less than 25 km/h usually sustain only minor injuries, while those struck at more than 30 km/h are likely to sustain severe injuries. Pedestrians hit at 50 km/h sustain injuries which they are likely to survive, while those hit at more than 55 km/h are more likely to die than to survive. Figure 1 clearly illustrates this disproportionate relationship between impact speed and injury severity.

2.50 Although the link between speed and crash rates has not been definitively established, the relationship between speed and braking distance is readily assessed: stopping distance under braking is proportional to the square of the initial speed. Figure 2 illustrates the link between speed and stopping distances under emergency conditions. (The speed/stopping distance statistics here diverge from those used by the Federal Office of Road Safety in its “Every 10 km/h Makes A Difference” campaign recently, however, the differences between the various stopping distances relative to initial speeds are essentially the same.)

2.51 The curves relating speed to distance are preceded in each case by a horizontal straight section which represents the distance covered during the driver’s reaction time, with the vehicle proceeding straight ahead at the initial travel speed. Once braking commences, the speed of the vehicle decreases with the distance travelled in the manner shown, quite slowly at first and then with increasing rapidity. By way of example, if a car is travelling at 60 km/h and is just 40 metres away from a person who darts onto the roadway, then the resulting impact speed would be about 44 km/h (and the person would likely sustain serious or fatal injuries). By contrast, if the same car was travelling at 50 km/h, the driver would have just enough time, thanks to the reduced braking distance, to stop the vehicle and avoid the person altogether.

2.52 The probability of a pedestrian fatality increases dramatically with an increase in impact speed (and, by extension, travel speed). The likelihood of a fatality is 5% at 32 km/h, rising to 37% at 48 km/h and 83% at 72 km/h (European Transport Safety Council, 1995).

2.53 STAYSAFE noted an important study by McLean, Anderson, Farmer, Lee, & Brooks (1994) which reviewed cases of fatal pedestrian crashes on arterial and sub-arterial roads in Adelaide but applied reduced vehicle travel speeds from those determined in the real crashes. The results of their analysis indicated that a reduction of 10 km/h in the speed limit, given similar levels of compliance with the existing limit, should have resulted in 32% of the pedestrians surviving. In 10% of cases, a collision would have been avoided altogether. These data should, STAYSAFE believes, be applicable to local streets equally.

2.54 The chances of survival also depend to some extent on the age of the pedestrian. A small child, for example, is more likely to sustain a lethal initial impact to the head, whereas a taller adult might take the same blow on the legs (although this is usually complicated by the adult then being thrown on to the bonnet and back in front of (or behind) the car, resulting in leg, chest, hip and head contacts). Ashton (1982) commented that for adults an increase in age

of 2.5 years was roughly comparable to an increase in impact speed of 1 km/h in affecting the severity of an injury.

**FIGURE 1: Impact speed and injury severity (ISS)**

Source: McLean et al, 1994

**FIGURE 2: Speed versus distance for emergency braking time**

Source: McLean et al, 1994

2.55 In evidence given to STAYSAFE's inquiry into pedestrian safety, Mr Rigby, representing the Roads and Traffic Authority, elaborated on Ashton's findings:

**Mr SMITH (STAYSAFE):** "[My question] ... relates to kilometres per hour, hitting pedestrians, and so on. You have written that generally if a pedestrian is struck by a motor vehicle travelling at less than 55 km/h, he or she is likely to survive. If the road speed of a vehicle is 55 km/h, what is the likely impact speed for a typical pedestrian crash? Is this relationship also relevant to child pedestrians, and should the travel speeds be lower still, as has been found for elderly pedestrians?"

**Mr RIGBY:** "There are a number of issues to run through. The reference speed you talk about there came from a paper I presented at the pedestrian safety conference last November. The reference to that speed differential came from a paper by Ashton<sup>2</sup>... which is about the impact of vehicle design on pedestrian injury....

... the essential point I was making was that at around 50-55 km/h, the average pedestrian has a greater than 50% chance of being killed. It was a situation where the odds of you getting killed were greater than not getting killed, so the critical speed from this graph seemed to be about 55 km/h; that is the analysis that the author drew. The difficulty in relating speeds to levels of injury is manifold.

Firstly, as you pointed out, it depends on the age of the person. For an elderly person, say, over 60 years old you tend to find that the average injury speed is dropped by 7.5 km/h, relative to a younger person. At the other end of the scale, for children, I have not seen anything that defines at what level of speed at impact it becomes critical or not critical.

The essential thing to remember is that every pedestrian accident has actually three impacts. The first is when the vehicle impacts part of the pedestrian. Typically, for an adult, for example, it is below the knee. The pedestrian then slips over and his head often hits part of the front of the vehicle—typically, the bonnet or the windscreen—at a certain speed. Then he usually gets carried forward to the speed of the vehicle, which is usually decelerating, and he gets thrown off. The third impact is when his head or part of his body hits the ground, so there are three parameters where injury can occur. One is the initial force of the impact—typically broken shins or knee cartilage damage.

Head or chest damage is associated with the secondary impact, particularly if the person hits the pillar of the car. Sometimes, if the car is fast enough, he will rotate totally and land behind the car. That is the tertiary impact. The third impact can be the most severe.

Looking at the situation with children, children are typically impacted at a much higher level; the first impact can occur between the thigh and the hips. If it is a very small child, below about 5 years old, it can occur in the shoulder and the head. A tremendous amount of damage can occur from that primary impact, and even very low speeds can cause critical injury in that situation. The very small child tends to get run over—the car goes over the top—whereas a bigger child or adult can go over the car so that they are run under, rather than over. There is a critical distinction there. If the child gets caught under the car and is dragged along—and I have been to a few of those—the impacts are often fatal, so a very low speed can be very severe.

There is another dimension to that as well, and that is the type of vehicle. It is interesting to note that the newer generation of cars—when I say newer, I mean the last 20 years—has a much more aerodynamic pedestrian friendly design, and have tended to slip underneath pedestrians. Older vehicles had higher moments of acceleration and their height tended to cause more injuries. That is where the bullbar issue comes in because it actually extends the height of the impact point. In fact, I was interested in that area. Some work was done on bullbars in the early 1980s, when a lot of pedestrian dummies were tested with bullbars. It was found that there were significantly higher trauma levels with the traditional bullbar, which was the metal one. I cannot recall what the result was for the plastic model, but it was less than the metal one. But with the traditional, fairly substantial bullbar, the pedestrian tended to whip over and get much higher primary injuries and much higher secondary impact injuries. Many got entangled in the bullbar.

The vehicle design and the way it hits the pedestrian is quite significant as well. The purpose of my raising that safety issue was to illustrate in the context of that pedestrian conference the significance of that speed—around the 50-60 km/h level—and to foreshadow the idea that we must look at lower urban speed limits. It was to say that the difference between 50 km/h and 60 km/h is extremely significant. I cannot emphasise that more other than by saying that if you have two vehicles driving along, one going 50 km/h and one going 60 km/h, and they both break under emergency braking, ...the one going 60 km/h will still be going 44 km/h an hour at the time that the one going 50 km/h stops. So it was in the context of the speed issue and the critical issue that seems to be on people's minds of life versus death that that question was raised. If you look at the question of injury, that is a different matter. A relatively low speed, generally below 30 km/h, is considered to be the point at which serious injury is avoided, whereas above 30 km/h serious injury is a much higher likelihood. But once again, while research on this issue seems to be fairly supportive—there are slight differences between different researchers—you generally get fairly clear messages that round 50 km/h or 60 km/h is that critical life-death thing, and 30 km/h is the serious injury level.” (Minutes of Evidence, 19 June 1995, pp. 93-96)

### **A note on speed and the frequency of crashes**

- 2.56 While there is much evidence to show that the risk of injury severity rises substantially with increases in speed, there has been no definitive study of the relationship between speeding and the frequency of crashes. As a result, this relationship is not well understood. The temptation to make such a link should therefore be tempered with this knowledge.
- 2.57 Zaal (1994) documented some of the research on the involvement of speed in crashes: “Treat et al. (1977) estimated that excessive speed was a definite causal factor in 8% of all traffic accidents and a probable causal factor in between 12% and 15% of all accidents. Bowie and Walz (1991), in an evaluation of over 1.4 million accident vehicle records, reported that 12% of all traffic accidents involved excessive speed. These results were supported by Fildes and Lee (1993), who in an extensive review of the available evidence relating to speed and accidents, concluded that excessive speed was a factor in between 12% and 16% of all vehicle accidents.

However, the results from a number of additional studies have indicated that the above estimates of speed involvement may be somewhat conservative. Rushman et al. (1981), in a review of a number of studies relating to speed and accident rates, stated that speed was a causal factor in up to 37% of all accidents. Accident investigations by the Transport Research Laboratory (1992) in the United Kingdom found that in between 22% and 32% of the accidents examined excessive speed was a causal factor. In Australia, speed has also been shown to be at least a contributing factor in up to 30% of all fatal road traffic accidents. (p.71)

Bowie and Walz (1991) reported that speeding was the most prevalent driver error-related factor contributing to accident involvement. The strong relationship between speed and driver error was made clearly evident by the finding that over 70% of all speed related fatal traffic accidents were single vehicle accidents. (p.69)

### **The experience with 50 km/h limits in comparable developed countries**

2.58 Preston (1990) compared death rates of pedestrians aged 25-64 in a number of European countries and the United States. Preston found that countries with an urban speed limit of 50 km/h or less had an average death rate 30% lower than the average for countries with an urban speed limit of 60 km/h.

2.59 The New South Wales general urban speed limit of 60 km/h is high by world standards. Most developed countries have a lower general urban speed limit: Countries with general urban speed limits of 50 km/h (or 30 mph) include Austria, Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, Greece, Hong Kong, Hungary, Ireland, Israel, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland and the United States of America (AUSTROADS, 1996).

2.60 It is instructive to look at some of the outcomes in countries where the general urban speed limit has been reduced from 60 km/h to 50 km/h.

#### *Denmark*

2.61 Denmark's general urban speed limit changed from 60 km/h to 50 km/h in 1985. On major roads (i.e., arterial and sub-arterial roads), national average speeds of 58 km/h fell by 2-5 km/h. Minor roads had lower national average speeds to begin with—45 km/h—and smaller speed reductions of up to 1 km/h. Following the adoption of a 50 km/h general urban speed limit, there was a reduction in crashes overall of 9%, with fatalities reduced by 24%, serious injuries by 7% and slight injuries by 11%. The crash reductions were statistically significant only on the major roads (Roads and Traffic Authority, Submission USL 22, p.16). It should be noted that, unlike the present proposal before STAYSAFE, the general urban speed limit Denmark also applies to arterial roads.

#### *Norway*

2.62 Norway reduced its general urban speed limit from 60 km/h to 50 km/h, resulting in a 6% reduction in average speeds (3.5-4 km/h) and a 45% reduction in fatal crashes in urban areas. While there was a small and insignificant increase in total crashes, the number of fatal

crashes decreased by 45%. Where average pre-change speeds were already over 50 km/h, mean speeds were reduced by up to 10 km/h. Imposing speeds as low as 30 km/h or 40 km/h had no effect on mean speeds where pre-change speeds were below 50 km/h. Again, the 50 km/h speed limit applied to arterial roads as well as local roads, giving proportionately greater reductions than would be the case under the proposal for New South Wales (Roads and Traffic Authority, Submission USL22, p.16).

*France*

2.63 In December 1990, France's general urban speed limit was reduced from 60 km/h to 50 km/h, with provisions for other limits where appropriate. Average daytime speeds had fallen to 60 km/h by the end of the two-year study period. Although casualty crashes and fatalities decreased substantially in the first month, reductions over the two-year study period were more modest. However, a number of other road safety measures were introduced during this period, including a very controversial points demerit system and changes in restraint use laws. One researcher concluded that the 50 km/h limit had saved 14,500 casualty crashes and fatalities in its first two years of operation.

*Zurich, Switzerland*

2.64 A two-year, 50 km/h trial in Zurich, Switzerland had mixed results in terms of its effect on casualty numbers. After the first year of the test phase, areas with a speed limit of 50 km/h showed a 16% reduction in traffic casualties, while in areas with a 60 km/h limit casualties increased by 7.5%. However, at the end of the second year of the trial, the overall difference had shrunk to 10 % as the general level of compliance had fallen by the end of the test phase, with the result that mean speeds had increased again (Walz, Hoefliger & Fehlmann, 1983).

2.65 The researchers noted that compliance with the 50 km/h limit could only be effective if motorists were compelled to comply with the law through frequent speed checking and enforcement.

2.66 The improvement in pedestrian casualty rates and injury severity, however, was more encouraging. An analysis was made of all 946 pedestrian crashes during two years, one before and one after the introduction of the 50 km/h limit. Using as the basis for comparison the year 1978, which represented a six-year low in pedestrian casualties in Zurich, researchers found that during the first phase of the trial in 1981, pedestrian injuries were reduced by 20% and pedestrian deaths by 25%. The results relating to injuries to child pedestrians are particularly revealing. Analysts found that there was a statistically significant 47% reduction in accidents involving child pedestrians up to the age of nine in 1981 compared with 1978. The number of collisions with slow vehicles such as buses and trucks remained unchanged, a reduction attributed to lower vehicle speeds following the change in speed limits. Not surprisingly, the severity of injuries, as assessed by the Injury Severity Scale (ISS), was also reduced, with the mean ISS falling from 28 to 20. Moreover, the incidence of the most severe injuries (an ISS rating of 30 or more, signifying a 7% chance of survival) dropped by 83%.

## **Australian research into lower residential speeds**

- 2.67 There have been several trials in Australia of lower speed limits in local areas (see Table 1). Generally they have set out to gauge the effects on speeds of a lower speed limit compared with either publicity campaigns or physical speeds controls, or a combination of these. Mr McDonald, representing NRMA Ltd, commented:

**Mr McDONALD:** “There has not been a great deal of research or experience with lower speed limits in Australia. Most Australian experience with lower speed limits in local areas has been associated with local area traffic management, which has involved the provision of physical devices, such as speed humps, to reduce speeds.

The Australian trials that the NRMA has noted in our submission include the trial in Unley, South Australia, of a 40km/h limit; 50km/h in the Wahroonga-Turramurra area; and the pending 50km/h speed limit trial in the Mosman and North Sydney areas. There have been a number of 50km/h trials in Melbourne also, including the suburban municipality of Preston. They have been reported as having little effect on traffic speeds. A similar trial in New South Wales, in Wahroonga-Turramurra, reached a similar conclusion. However, we would like to point out that those trials have generally been applied to limited geographical areas, over short periods of time, without high levels of education, enforcement or other supporting measures. It is therefore difficult for us to raise any important points or draw any conclusions from Australian trials.” (Minutes of Evidence, 4 December 1995, p.28)

- 2.68 According to the Urban Speed Limits Advisory Group in South Australia (1994), “... they have all failed in their primary goal of providing a cheap and easy alternative to physical device-based local area traffic management (LATM) schemes. They have resulted in average speed reductions varying from zero to 5 or 6 km/h, which fall short of the reductions required to achieve comparability with traditional LATM treatments. But this is not to say that the speed reductions that have been achieved have not been worthwhile.” (p.20)



**TABLE 1: Summary of local area speed limit trials conducted in Australia**

<b>Location</b>	<b>Limit</b>	<b>Duration</b>	<b>Area</b>	<b>Details</b>	<b>Speed Change</b>
Preston, Victoria (1981)	50 km/h	Several months	35 sq km	Included a one-week period of intensive police enforcement	Mean, median and 85th percentile: no change
Sydney, NSW — various local areas	40 km/h	3 months	7 sq km (total)	Eight areas — included gateway treatments and physical speed controls in some areas	Mean speeds reduced overall by 5 km/h; largest reductions occurred in physical devices areas
Victoria — various precincts	40 km/h	6 months	Various	Ten precincts — included gateway treatments and physical speed controls in some precincts	85th percentile speeds changed by average of: -6.0 km/h (incl physical devices and gateways)-0.9 km/h (incl gateways)+3.3 km/h (speed limit signs only)
Wembley, WA (1988)	40 km/h	6 months	1 sq km	Two areas — both included gateway treatments; one included physical speed controls	85th percentile speeds reduced by average of: 5.2 km/h (incl gateways)10.4 km/h (incl physical devices)
Unley, South Australia	40 km/h	15 months	Various	Use of control streets; some streets had existing physical slowing treatments; systematic enforcement of speed limit at different levels of intensity; radar speed cameras principal means of enforcement	85th percentile and median speeds: reduced by 4-5 km/h before start of systematic enforcement; further 1.5 km/h reduction for six-month period of low intensity; virtually unchanged during high intensity enforcement

Source: Local Area Speed Limit Working Party, South Australia

2.69 Indeed, seemingly modest speed reductions, such as those emanating from these trials, are in fact significant in road safety terms. Recent evidence from Europe suggests that for each 1 km/h that average motor vehicle speeds are reduced, there is a 3% reduction in serious casualties. (European Transport Safety Council, 1995).

2.70 The trials have generally resulted in a favourable local community reaction. With the exception of the Unley trial in South Australia, they have all been of a short duration.

*Preston, Victoria (1981)*

2.71 In 1981, the speed limit in all local streets in the whole of the City of Preston and part of Collingwood, a total area of about 35 square kilometres, was reduced from 60 km/h to 50 km/h (Ove Arup Transport Planning, 1982). This large-area trial included a brief (one week) but intensive period of police enforcement of the lower limit, the only trial to explicitly include enforcement as part of the study design. However, speed cameras were not used in the enforcement, and it was conducted before local area traffic management was widely used in Australia, and when the level of local community focus on lower speeds was not as great as it is today. Speeds remained virtually unchanged (Roads and Traffic Authority, Submission USL 22, p.5).

*Unley, South Australia (1991-1993)*

2.72 A trial of a 40 km/h speed limit in local streets was conducted in Unley, South Australia, from December 1991 to February 1993. The Unley trial was therefore the first urban speed limit reduction trial to be conducted over a significant period of time.

2.73 The trial's objective was to:  
"assess the reductions in traffic speeds following the imposition of the lower limit accompanied by systematic police enforcement using radar speed cameras at low and high intensity levels."  
The Working Party was particularly interested in establishing whether the lower limits could act as an alternative to physical speed controls within local area traffic management schemes.

2.74 The use of speed cameras was the principal new element compared with similar trials conducted elsewhere; police enforcement (before speed cameras were in use in Australia) had been specifically included in only one previous Australian trial of lower local area speed limits. The design of the Unley trial subsequently further provided for the sustained use of speed cameras over an extended period.

2.75 The trial included three surveys of residents, the use of both low and high level enforcement through speed cameras, and the employment of control streets, where no changes to the speed limit were made. While the Working Party found that the overall median and 85th percentile speeds were reduced, it also made the following observations:

- the targeted speed levels were not achieved on any of the main survey streets;
- median and 85th percentile speeds were virtually unchanged during the four-month period of high intensity enforcement (five times greater than low intensity), a surprising result given the conventional wisdom that only rigorous enforcement will ensure compliance with a lower speed limit;
- 85th percentile speeds were reduced by an average of 1.9 km/h in the streets where speed measurements were conducted (approximately one-third of a total of 79 streets within

the trial area), but only two streets experienced reductions significantly greater than 5 km/h, and speeds increased in six others;

- average speeds reductions in Unley were a 2 km/h drop across all streets, and about 5 km/h in the main survey streets representing a 10% drop;
- the effectiveness rating of the lower limit by residents was not very high, and perceptions of safety levels and traffic problems remained largely unchanged.

2.76 Nevertheless, the Working Party considered a 40 km/h speed limit was appropriate for local streets, and was superior to a 50 km/h limit:

“The data collected in the Unley trial, while by no means definitive, suggests that a lowering of the general speed limit to 40 km/h would have a greater prospect of producing lower speeds in local streets than lowering it to 50 km/h; i.e., a speed limit lower than 50 km/h is probably necessary to achieve a speed environment commensurate with the expectations of residents.”

(pxii-xiii)

#### *50 km/h speed limits in Sydney*

2.77 A 50 km/h speed limit trial in the Mosman/North Sydney area is discussed in detail in Chapter 4: Traffic management strategies to support a 50 km/h speed limit.

2.78 STAYSAFE was surprised to discover that there were several additional 50 km/h speed limit precincts in the Sydney metropolitan area, including precincts in the Hurstville and Turramurra areas. In general, however, these 50 km/h speed limits are applied in precincts of local streets, importantly, after substantial community consultation. STAYSAFE understands that these various precincts with 50 km/h speed limits have not been evaluated.

### **A 50 km/h or 40 km/h general urban speed limit?**

2.79 STAYSAFE sought the Roads and Traffic Authority’s views on whether a 40 km/h speed limit in residential streets was more appropriate than a 50 km/h limit:

**Mr HUNTER (STAYSAFE):** “Is there a case then for reducing the speed limit on residential streets to 40 km/h, with the expectation that motorists would travel at 45 or 50 kilometres per hour and make it more likely to obtain the sort of safety benefits that is at the root of this inquiry?”

**Mr MORAN:** “Yes, there is a case on technical grounds, as you suggest. However, it again comes back to the question of finding an appropriate balance and of course the need to establish and maintain public credibility.

A 50 km/h speed limit, as outlined in the Roads and Traffic Authority’s submission, is considered an appropriate balance between what is needed, what is manageable and what is publicly acceptable.

The natural low density of the New South Wales—and for that matter the Australian—residential environment is not naturally conducive to encouraging motorists to travel at or around 40 km/h without making physical changes to the environment as have been identified here today.” (Minutes of Evidence, 20 May 1996, pp.4-5)

2.80 The Unley Working Party observed that, if a 40 km/h limit were adopted:  
“In practice, the actual speed reductions which might occur could be less than was achieved in the Unley trial, which had the benefit of a special status as the only such trial area, together with the attendant publicity.” (p.33)

2.81 The AUSTROADS (1996) report on urban speed management in Australia also considered 50 km/h to be a more realistic urban speed limit than 40 km/h:  
“For the present time at least, a 40 km/h speed limit appears to be inappropriate for local streets unless geometric characteristics limit speeds to this level or speed reduction devices are installed. The application of 40 km/h zones should, however, continue where appropriate, for example school speed zones.

As there is a general view that 60 km/h is too high for local streets and 40 km/h is too low to achieve a high level of compliance, a 50 km/h limit would appear to be appropriate for the majority of local streets ... [and is] ... probably a sufficient change from the current 60 km/h to make it clear to drivers that the system has changed and to cause them to re-evaluate, and perhaps modify, their habitual speed choices.” (p.23)

2.82 In response to questioning by STAYSAFE, one of the report’s technical writers, Ms Donald, said that she had concluded that vehicle speeds would be similar, whether a 40 km/h or 50 km/h limit was applied:

**Mr SMALL (STAYSAFE):** “In general, at 50 km/h pedestrians involved in a crash are just as likely to die as to survive. Is there a case for reducing the speed limit on residential streets to 40 km/h or 30 km/h, as is now implemented, or at least being considered, in many European countries?”

**Ms DONALD:** “When we were doing the work involved in the AUSTROADS report we felt that 50 km/h was more acceptable to the driving public. Care had to be taken not to put everyone off side by putting in 40 km/h, which is probably a bit low. The report states that that is not to say that in the future attitudes will have changed and that possibly 40 km/h would be more appropriate. We based it on a range of things. We concluded that vehicle speeds would be similar, whether a 40 km/h or 50 km/h limit was applied.”

**Mr SMALL:** “Do you support 50 km/h at this stage?”

**Mrs DONALD:** “Yes, it was felt that 50 km/h had much more community support, although that may change in the future.” (Minutes of Evidence, 19 August 1996, pp.66-67)

2.83 To summarise, although many witnesses felt that a 40 km/h speed limit was preferable in terms of the road safety benefits which would follow, this was considered too steep a reduction for motorists in a culture which has yet come to terms with the speeding problem. Setting the speed limit at 50 km/h was considered a happy medium, and one which could foster acceptance in lower speed limits in residential areas, with a view to reducing it to 40 km/h some time in the future. STAYSAFE notes a similarity to the tightening of drink-driving laws during the 1980s, where the maximum legal concentration of alcohol in blood was reduced from .08 to .05 mg/l over time. In addition, a 50 km/h general urban speed limit could be implemented without the widespread and very expensive installation of physical devices which would be required if a 40 km/h speed limit were adopted in the present climate.

## Why reduce speed limits on residential streets?

### *The street as a non-traffic space*

2.84 A key component of the rationale for lowering speed limits on local roads is the growing recognition that a single speed limit cannot simultaneously be appropriate for both the large scale traffic movement function of arterial roads and the resident access needs of local streets.

2.85 For too long, the main consideration in the planning, construction and speed limiting of residential streets seems to have been the accommodation of the motor vehicle, with pedestrians and cyclists coming in a very poor second. The adoption of a lower general urban speed limit will assist in making residential streets more conducive to the healthy and non-polluting modes of travel such as walking and cycling, which are favoured in particular by young children. These children will also be able to play more safely around their homes. A reduction in the speed limit in residential areas is an ideal way to redress the imbalance between the interests of motorists who merely drive through local streets and the people who live in them.

2.86 The deleterious effect which the presence of vehicular traffic can have on neighbourhoods has been described by Brindle (1989/1996), among others, in the concept of the street as a non-traffic space:

“The central issue is one of territory. In a quiet cul-de-sac it is easy to imagine that each household’s territory (the area where the household feels ‘at home’, secure, able to leave things, maintains the quality of appearance, etc.) spills out into the street space, often embracing the roadway itself and overlapping that of their neighbours. The absence of front fences — where they are optional — is often an indicator of extended territory.

As the household becomes more uneasy about the street space and traffic it carries, particularly with increasing importance in the hierarchy and traffic volume that it carries, it will draw its perceived territory inwards. On busy roads it may even surrender the ‘private’ space between the dwelling and the front fence line if it becomes noisy, threatened or simply too ‘public’. Solid high front fences are symptomatic of an attempt to define the boundary between private and public space, to retrieve part of the interface zone.

This concept of extended territories in quiet streets and sharply defined, withdrawn territories on busier streets is fine if everyone is aware of the ‘rules’. But a child, or the family dog, or even unaware visitors, may not register the subtle differences.” (p.136)

### *Crashes in urban areas*

2.87 A large proportion of all crashes occurs in urban areas, a predictable outcome given that the urban network is so large and carries so much traffic. In 1994, more than 70% of all crashes happened on New South Wales roads with a speed limit of 60 km/h or less. The problem is not confined to the major metropolitan areas: comparable proportions for metropolitan and country areas were 82% and 48% respectively. (Roads and Traffic Authority, Submission USL22, p.4)

2.88 According to the Roads and Traffic Authority (1995), crashes in 1994 which involved speeding represented at least 31% of fatal accidents, 18% of serious injury accidents and 13% of all accidents. The Roads and Traffic Authority has estimated casualty crash reductions of between 100 and 520 per year with annual savings ranging from \$6 million to \$31 million following the introduction of a 50 km/h local street speed limit. (Roads and Traffic Authority, Submission USL 22, p.3)

2.89 Of all speeding-related crashes causing death or serious injury in New South Wales, more than one-third (37%) occurred in major metropolitan areas, and 4 out of 5 of these were on 60 km/h roads. Urban roads in country areas accounted for a further 21% of all speeding-related serious casualty crashes. Overall, more than 40% of all *speeding-related* crashes occur on roads with a speed limit of 60 km/h. (Roads and Traffic Authority, Submission USL 22, p.4)

2.90 Nationally, pedestrian-motor vehicle collisions in speed zones to 60 km/h or less accounted for 13% of hospitalisation crashes (FORS, 1996). The majority of crashes (59%) were in speed zones to 60 km/h, reflecting the predominance of intersection events and low-speed pedestrian collisions (FORS, 1996).

2.91 Crash statistics such as these reveal that speed-related crashes in urban areas, including residential streets, represent a significant challenge for those charged with minimising road trauma, although the general public may be unaware of the true extent of the problem in their local streets. An extensive and well thought out community awareness campaign will play an important part in the success of alerting the public to the problem and persuading motorists to accept and therefore comply with the new limit should it be introduced.

2.92 STAYSAFE 8 (1986) referred to a review by Samdahl of the Traffic Authority of New South Wales' Neighbourhood Road Safety Programme. Samdahl noted that one of the objectives of the Neighbourhood Road Safety Programme was to further define the safety problems of local streets. The project team under the Neighbourhood Road Safety Programme found that:

“... 25 to 35% of total casualty crashes and casualties in New South Wales occur on local streets. A similar percentage of pedestrian casualties occur on local streets, which also account for almost 45% of cyclist casualties. During the 1982 to 1984 period, there were an estimated 19,000 casualty crashes with 27,000 persons injured or killed on local streets.

The problem is particularly acute for pedestrians and cyclists, who are the most vulnerable. Children in particular account for 40% of all casualties, 60% of pedestrian casualties and 85% of all cyclist casualties. Young children under the age of eight are up to four times as likely to be involved in an accident on a local street than on an arterial road.

Speed is seen as a major contributing factor to many local street crashes. Speed surveys at over 25 sites around the State showed that almost 50% of drivers on local streets exceed the legal speed limit of 60 km/h. Over 90% exceed more appropriate speeds of 40 to 50 km/h on streets in residential areas.” (STAYSAFE 8, 1985, p.20)

2.93 The following passage, also taken from STAYSAFE 8, is interesting because it illustrates that, in spite of the high number of motorists exceeding the posted speed limit on urban roads, most crashes on 60 km/h residential streets occur at speeds *below* the legal limit: “Although ... police rarely have good evidence of vehicle speed in individual crashes, detailed on-scene studies by research organisations have produced convincing evidence indicating that many deaths and injuries, especially among pedestrians and pedal cyclists, occur in crashes on local access residential streets. Although these streets are posted 60 km/h speed limit, the crashes occurred at speeds lower, and sometimes much lower, than 60 km/h. The evidence of Mr Fred Schnerring in a personal submission addressed this issue thus:

From a series of in-depth studies, Jamieson (1980) concluded that the problem of vehicle speeds in urban areas was not one of vehicles illegally “speeding” but that the vehicles were travelling at an excessive speed for the particular environment. Of the 195 vehicles involved in crashes in a 60 km/h zone, only eight were travelling above the speed limit. Of the 187 travelling at or below 60 km/h, 126 were judged to be travelling at an excessive speed for the environment. Since most of these crashes occurred away from urban arterial roads, it can be concluded that the 60 km/h speed limit on minor roads is too high.

In a pedestrian exposure study carried out in 1980, Jamieson (1981) found that the overall pedestrian crash risk was highest on local access streets. Furthermore, in a comparison of speeds at fatal pedestrian crash sites and control sites, speeds were lower at the fatal sites for all road classes.”

2.94 The preceding passages illustrate an apparent contradiction between the high incidence of excessive speeds on urban roads and the relatively low speeds at which pedestrian crashes occur. Proctor (1991) offered an explanation for this anomaly: “‘Excessive speed’ is not a suitable index for analysing the contribution that motor vehicle speed makes towards urban road accident causation. It is the mis-match of vehicle and vulnerable road user mass that often leads to injuries, and it will be important to define acceptable speed levels to combat this problem.

An analysis of accident patterns reveals two broad categories of accidents that can be treated with a variety of speed reduction techniques. The first accident type involves injury to drivers and passengers of (mainly) cars where genuine excess speed above existing posted limits is often (but not always) a factor in contributing to ‘loss of control’ collisions. In 1988 a national total of nearly 21,000 single vehicle non-pedestrian accidents occurred in urban areas. In addition, a significant number of vehicular collisions at junctions involve high speeds.

The second, and larger accident category with a potential for introducing speed reduction techniques involves accidents to vulnerable road users, particularly pedestrians and pedal cyclists. In 1988, just over 56,000 pedestrians and 23,000 pedal cyclists were injured in built-up areas in Great Britain.”

2.95 Taken together, these passages indicate why a 60 km/h speed limit is inappropriate for residential streets. If the needs of those who live in a local street are to be given greater weight than those who drive through them — a change of emphasis which is long overdue — then the speed limit in that street should be lower than that applying on the arterial network. Otherwise not only are the needs of drivers taking precedence over residents’ needs, but there will be little or no scope for pursuing lower speeds in the local network.

## **Potential cost savings**

2.96 It is not possible to translate the apparent benefits of these overseas and Australian studies to what might happen on New South Wales streets, in part as it is not clear in many studies as to what extent the crash reductions were achieved on major traffic routes and local streets together rather than just on local streets, nor how the road environment in which the crashes occurred compare with Australian conditions. Even so, the observed link between speed reduction and casualty reduction in these countries, particularly with regard to reductions in the more serious casualties, suggests that reducing urban speeds in Australia would also reduce casualties.

2.97 In addition to the major goal of saving lives, experts have noted that the 50 km/h general urban speed limit would result in significant savings to the health system, insurance companies, and employers, among others. For example, during the 50 km/h trial in Zurich, fractures of the ribs and the pelvis were reduced by 50%, and the mean length of hospital stay following road trauma in 1981 fell from 28 to 22 days, for a total saving of 1439 treatment days or a reduction of 36%. One analysis found that virtually the whole reduction should be attributed to the lower speed limit and not to other factors (Walz et al., 1983).

2.98 The Roads and Traffic Authority (Submission USL 22) put forward estimates of savings in accident costs (see Table 2). Assuming that all casualty crashes would be reduced by 6% at 5 km/h, the Roads and Traffic Authority concluded that it was reasonable to expect reductions of 2% with a reduction in speed of 2 km/h, and 10% with reductions of 7 km/h. Using VicRoads' value of \$60,000 as the (conservative) estimate of the cost of an urban accident, the Roads and Traffic Authority tabulated casualty and cost reductions.



**TABLE 2: Estimated accident reduction and savings on introduction of 50 km/h speed limit (Adapted from Roads and Traffic Authority, Submission USL 22).**

<b>Speed Reduction (km/h)</b>	<b>Casualty Accident Reduction (%)</b>	<b>Casualty Accident Reduction (No.)</b>	<b>Savings (\$m)</b>
2	2	104	6
5	6	312	19
7	10	520	31

2.99 Fildes and Lee (1993a) have estimated that the annual cost of speed related accidents in Australia is over \$1 billion. Logic dictates that a reduction in road trauma resulting from accidents in residential streets will be accompanied by significant cost savings.

### **STAYSAFE's general recommendation for a 50 km/h speed limit**

2.100 After reviewing the available evidence, STAYSAFE recommends that the general urban speed limit in New South Wales should be reduced from 60 km/h to 50 km/h. A speed limit of 50 km/h would thus become the default speed limit for all urban areas in New South Wales cities, towns and villages. Lower or higher speed limits would continue to be applied to appropriate roads or sections of roads serving as shared zones, local area traffic calming precincts, or as traffic routes.

**RECOMMENDATION 1: The general urban speed limit in New South Wales be reduced by 10 km/h from 60 km/h to 50 km/h, and that the Minister for Roads amend the Traffic Act 1909 s.4A(2)(a) to provide for a default speed limit of 50 km/h for any public street subject to street lighting and for which the Roads and Traffic Authority has given no direction regarding a speed limit.**

### **Concluding comments**

2.101 This chapter has examined evidence of the need for a lower urban speed limit in New South Wales. STAYSAFE has recommended the adoption of a 50 km/h general urban speed limit in New South Wales. The introduction of a 50 km/h speed limit will bring New South Wales in line with best practice world-wide, and will yield considerable benefits, both social and financial, through reductions in road trauma.



# 3

## WHAT IS NEEDED TO IMPLEMENT THE 50 KM/H GENERAL URBAN SPEED LIMIT?

*A comprehensive approach to excessive and inappropriate speeding - STAYSAFE 1 (1982) and the proposed introduction of random breath testing: A lesson from history?*

3.1 The previous chapter outlined the rationale for reducing the general urban speed limit to 50 km/h, citing the research into the potential benefits of such a reduction for road users, particularly pedestrians and children. It was demonstrated that such a seemingly modest reduction in vehicle speeds can have profound implications for the distance required to bring a vehicle to a stop, and on the severity of injuries resulting from a pedestrian-vehicle collision. STAYSAFE has recommended that, in the interests of road safety, the general urban speed limit should be reduced from 60 km/h to 50 km/h.

3.2 STAYSAFE then turned to examine the strategies that will be required to successfully implement the new speed limit.

### **A comprehensive approach to excessive and inappropriate speeding**

3.3 To this end, STAYSAFE has endeavoured to resolve some pressing issues relating to the successful implementation of the new general urban speed limit, including:

- the development of appropriate traffic management strategies, such as the decision-making process relating to the identification of streets which would retain their current, 60 km/h speed limit, and the delineation of 50 km/h streets (Chapter 4)
- whether it was appropriate to make changes to the penalty and demerit point system as they relate to speeding offences, including sanctions and the increments on which they are based (Chapter 5)
- the deployment of sophisticated radar technologies and possible changes to operational instructions to assist police in enforcing the new speed limit (Chapter 6)
- consultation between the Roads and Traffic Authority and local government on the

development of a road hierarchy to foster consistency throughout the State in the implementation of the new speed limit, and to come to an understanding on funding arrangements (Chapter 7);

- the implications of a 50 km/h general urban speed limit for the environment, travel times and residential planning (Chapter 8);
- the communications strategies which will be required to make drivers aware of the new general urban speed limit and changes, if any, to the penalty and demerit points system (Chapter 9); and
- possible future directions for urban speed management in New South Wales (Chapter 10).

3.4 The Roads and Traffic Authority has taken what might be described as a minimalist approach to the implementation strategies to support the introduction of a 50 km/h limit on local roads, suggesting that the cheapest and simplest way of dealing with the signage requirements associated with the introduction of a 50 km/h general urban speed limit was simply to reduce the default speed limit to 50 km/h and sign only those roads which would retain a 60 km/h zoning. The Roads and Traffic Authority argued that since motorists are aware that the current 60 km/h general urban speed limit applies on any urban road unless otherwise signposted, an effective communication strategy would be adequate to educate motorists that the new default speed limit was 50 km/h, and there would be no need for 50 km/h signs on urban roads.

3.5 The Roads and Traffic Authority further argued that there was no fundamental requirement for a change in the speeding penalty system specifically for the new limit, although it acknowledged that its introduction would provide an opportunity to consider revising the current penalty system structure, including the possible provision of a cautioning system.

3.6 STAYSAFE is of the view, however, that a 50 km/h general urban speed limit should be introduced as an integrated package. STAYSAFE believes that the 60 km/h general urban speed limit is so entrenched in people's minds that merely reducing the speed limit from 60 km/h to 50 km/h by regulation and relying on a publicity and education campaign to change motorists' speeding behaviour—which research and experience suggests is extremely difficult—is unlikely to succeed. STAYSAFE's proposed implementation strategies are outlined in detail throughout this report, but it is appropriate to summarise them here.

3.7 STAYSAFE agrees that the reduction in the general urban speed limit to 50 km/h should be preceded by an effective communication strategy incorporating advertising, publicity and education. However, an ideal approach to urban speed management should aim to be comprehensive, and to be coherent across the areas of legislation, police enforcement, and traffic management. An urban speed management strategy associated with the introduction of a general urban speed limit of 50 km/h should include actions regarding speeding offences and penalties, speed enforcement policies and practices, and appropriate traffic management. In particular, STAYSAFE recognises the need to ensure that detailed consultations occur with

local councils regarding traffic management on local roads and streets.

3.8 STAYSAFE considers that the introduction of a new general urban speed limit presents an opportunity to reconsider the penalty and demerit points system as it relates to speeding offences, both in terms of appropriate sanctions and the increments of speed on which they are based.

3.9 Police enforcement strategies should take maximum advantage of emerging technologies such as mobile radar speed detection devices, and policies and instructions governing their use should be reviewed as necessary so as to permit police to enforce compliance with urban speed limits more effectively.

3.10 STAYSAFE considers that the reduction in the general urban speed limit to 50 km/h should be preceded by a program of appropriate road treatment to give motorists the best possible opportunity to be aware of and comply with the new speed limit when they enter local roads.

3.11 Finally, STAYSAFE recognises that the streets and roads affected by a new general urban speed limit of 50 km/h are the streets and roads administered by local councils, and that a significant consultative effort will be required to ensure that local councils are satisfied with the road hierarchies established within each local government area and the speed zoning that applies to local streets and traffic routes.

### **STAYSAFE 1 (1982) and the proposed introduction of random breath testing: A lesson from history?**

3.12 In this report on the proposed introduction of the 50 km/h general urban speed limit as a countermeasure to the problems of excessive and inappropriate speed, STAYSAFE wishes to draw an explicit analogy with the situation appertaining to the road safety and road trauma problem posed by drink-driving prior to the early 1980s. Following recommendations made in STAYSAFE 1 (1982), the New South Wales Government introduced a comprehensive and coherent package of drink-drive countermeasures centred around a new method of police operational deployment: random breath testing.

3.13 The recommendations made by STAYSAFE 1 (1992) called for more than just the introduction of random breath testing in New South Wales. STAYSAFE called for a substantial package of countermeasures:

- for new offences and penalties for excessive blood alcohol
- for increased conspicuousness of police operations relating to drink-driving enforcement, including highly visible breath testing
- for the introduction and use of modern screening and evidentiary equipment
- for public education about the road safety and road trauma problems posed by drink-driving
- for the need to monitor and evaluate the introduction and implementation of the new countermeasures to drink-driving

- for extensive media publicity regarding new drink-driving offences and penalties, new police drink-driving enforcement technologies, new methods of police operational deployment to target drink-driving.

3.14 The introduction of random breath testing following the tabling of the STAYSAFE 1 (1982) report resulted in immediate changes in drinking and driving behaviour in New South Wales (Homel, 1990; Johnston, 1991; Evans, 1992). Homel has written:

“Deciding ‘what works’ depends to some extent on what standard of evidence one sets. By any standard, RBT in New South Wales must surely be one of the most effective drinking and driving countermeasures ever enacted anywhere in the world.” (Homel, 1990, p.15)

3.15 STAYSAFE believes that it is possible for additional countermeasures to the problems of excessive and inappropriate speed to be taken in concert with the proposed introduction of the 50 km/h general urban speed limit that will serve similar functions with regard to the road safety problem of speeding as random breath testing and other related countermeasures did to the problems of drink-driving in 1982. Ideally, STAYSAFE would like to see a distinguished commentator, some ten years from now, conclude that the New South Wales speed management program is one of the most effective set of countermeasures to excessive and inappropriate speeding anywhere in the world. The following chapters examine and investigate the actions needed to support a 50 km/h general urban speed limit.

# 4

## TRAFFIC MANAGEMENT ISSUES ASSOCIATED WITH 50 KM/H SPEED LIMITS

*The Roads and Traffic Authority's proposal for a 'local street speed limit' - The relationship between speed limits and the road hierarchy in New South Wales - Identifying a local street or a collector road - A 'trade-off' of speed limits - Entertainment, commercial and shopping precincts - How best to apply a new speed limit - Factors affecting compliance levels - The general applicability of the Mosman/NorthSydney 50 km/h speed limit trial - Delineating streets with a 50 km/h speed limit - Concluding comments*

4.1 Throughout the urban areas of New South Wales there is an extensive road network of local streets and traffic routes. Since the late 1980s the traffic management strategies in use within urban areas have been based on an unsigned general urban speed limit of 60 km/h for local streets and major traffic routes signposted with speed limits of 60 km/h or higher speed limits (70 km/h, 80 km/h and above).

4.2 This chapter discusses the traffic management strategies that will be required to support the introduction of a general urban speed limit of 50 km/h.

### **The Roads and Traffic Authority's proposal for a 'local street speed limit'**

4.3 The Roads and Traffic Authority proposed a new lower local residential speed limit with the following features:

- The speed limit for local streets would generally be 50 km/h, applying on all unsigned streets in all built-up areas, in metropolitan centres and rural towns.



- This speed limit would be known as the as local street speed limit, and be applied as a general limit by regulation.
- It would replace the current general urban speed limit of 60 km/h which applies to the wide range of roads in built-up areas.
  
- Roads or sections of road not suitable for a general limit of 50 km/h would have higher or lower speed limits, according to traffic function and physical characteristics, and would be signposted accordingly, as at present.

4.4 In its submission, the Roads and Traffic Authority stated its view that it was important to consider the nomenclature that might be adopted for the 50 km/h initiative: "The term 'general urban speed limit' is possibly misleading to the general public as it appears to refer to a speed limit applying to all urban roads. Any suggestion of lowering the general urban speed limit might therefore meet with resistance from the community if it is interpreted to mean applicability to all urban roads. With the advent of more specifically applied speed zoning on traffic routes, as has been achieved in recent years, the term general urban speed limit may no longer be appropriate." (Submission USL 22, p.26)

4.4 This proposal is in line with the AUSTROADS (1996) report, which also advocated use of the new term 'local street speed limit':

"With the advent of more specifically applied speed zoning on traffic routes ... the term 'general urban speed limit' ... may no longer be appropriate. This term is possibly misleading to the general public as it appears to refer to a speed limit applying to all urban roads.

If a general limit of 50 km/h was applied to local streets, consideration should be given to adopting a term such as Local Street Speed Limit ... which accurately reflects this more limited scope." (p.28)

4.5 The Roads and Traffic Authority maintained that the issue was one of adopting a general default speed limit for local streets, and, like AUSTROADS, suggested the adoption of a term such as 'local street speed limit', which more accurately reflected the limited scope of the proposed speed limit. Implementation of the new limit could then be marketed in terms of "introducing a new limit" rather than "lowering" the existing limit.

4.6 STAYSAFE does not share the view that the potential for community resistance to lowering the general urban speed limit would be so pronounced as to warrant the abolition of so widely accepted a term. If, as appears to be the case, there is enough confidence in motorists to accept the new 50 km/h speed limit on local and residential streets, then surely they can be expected to accept terminology consistent with reducing the general urban speed limit from 60 km/h to 50 km/h. This issue will be addressed further in [Chapter 9: Communication strategies to support a 50 km/h speed limit](#).

4.7 STAYSAFE was not convinced that the introduction of a new term such as local

street speed limit would result in any clarification or improved understanding of speed limits for the general public. In fact, the term ‘local street speed limit’ may itself be misleading as the general public might think it only applies to residential streets. Cr Walton, representing Sydney City Council, drew STAYSAFE’s attention to this issue when she said:

**Cr WALTON:** “I know the focus of this Committee is on the question of speed limits on residential roads but the Lord Mayor and I thought it was important that we promote the fact that there is a very high concentration of pedestrians in places like the city centre, which would be a key example, and also in all the former high streets throughout Sydney.” (Minutes of Evidence, 19 August 1996, p.36)

4.8 STAYSAFE considers that ‘general urban speed limit’ is a well known and widely used term which accurately reflects the fact that the default speed limit applies on urban roads where there is no signage to indicate otherwise. This is consistent with the Roads and Traffic Authority’s favoured implementation option. Moreover, if the term ‘general urban speed limit’ were to be superseded by ‘local street speed limit’, it would be at odds with the situation on roads which traditionally have no signage, for example, the streets of Central Sydney and industrial/commercial areas. If a 60 km/h speed limit were to apply to these streets, then, under the Roads and Traffic Authority’s proposal, the streets would have to be signed, a situation which may meet resistance from local authorities and interest groups, particular in places like Central Sydney where there is a proliferation of other physical features of one kind or another cluttering the urban landscape. If, on the other hand, these streets were designated as 50 km/h zones on safety grounds, the term ‘local street speed limit’ would not accurately reflect the proper place of these roads in the road hierarchy.

4.9 To summarise, STAYSAFE considers the term ‘local street speed limit’ too narrow to adequately convey all the conditions under which a 50 km/h speed limit might be applied in the short to medium term, and can find no compelling argument for substituting it for the term ‘general urban speed limit’. STAYSAFE recommends that the term ‘general urban speed limit’ be retained, and that the 50 km/h speed limit be the general urban speed limit in New South Wales.

**RECOMMENDATION 2: The term ‘general urban speed limit’ be retained to describe the general default speed limit on urban roads in New South Wales.**

## **The relationship between speed limits and the road hierarchy in New South Wales**

4.10 The Roads and Traffic Authority (Submission USL 22) noted that the introduction of a 50 km/h speed limit would provide a coherent set of speed limits for different types of

roads:

10 km/h	Shared zones	Limited areas with extensive physical treatments where vehicles and pedestrians intermingle
40 km/h	Speed Zones	Residential or shopping areas generally where physical devices (eg. narrowings, humps) are applied, and at school zones
50 km/h	General Urban Limit	The majority of streets providing a local access function in built-up urban areas, including residential and commercial areas.
60 km/h	Speed Zones	Undivided traffic routes having direct access from abutting development; also school speed zones in 80 and 90 km/h zones.
70 km/h	Speed Zones	Higher standard urban traffic routes, generally divided roads with some or full direct access from abutting development; also for undivided roads having low levels of direct access from abutting development.
80-90 km/h	Speed Zones	Higher standard urban traffic routes, generally divided roads with no access from abutting development; also for undivided roads having very low levels of direct access from abutting development; also limited application on outer urban arterials.
100 km/h	General Rural Limit	Open road speed limit
110 km/h	Speed zones	High standard freeways and motorways, and selected rural highways

4.11 The arrangement of speed limits suggested by NRMA Ltd (Submission USL 21) is similar to that proposed by the Roads and Traffic Authority, but includes a proposed zoning of 120 km/h for the safest high standard rural freeways. STAYSAFE notes that the New South Wales speed management program includes a proposed action to trial 120 km/h speed limits on selected freeways (Roads and Traffic Authority, 1995). STAYSAFE strongly suggests that any proposal to increase the speed limit to 120 km/h in rural areas or on freeways should be subject to the same detailed scrutiny as the proposed introduction of a lower urban speed limit.

4.12 STAYSAFE examined how well the speed limits proposed by the Roads and Traffic Authority fits with the road hierarchy used in New South Wales. The Roads and Traffic Authority needs to formally establish a road hierarchy which would assist in achieving consistency in urban speed limits across the urban road network, and help build the public credibility in speed limits which is so important to the willingness of drivers to comply with them. The process of establishing such a road hierarchy would also facilitate the

identification of those roads which would have their speed limits reduced to 50 km/h.

### **Identifying a local street or a collector road**

4.13 One of STAYSAFE's terms of reference was to report on the "decision processes involved in the selection of the local streets to be subject to a 50 km/h speed limit". In considering this issue, STAYSAFE had some difficulty in defining precisely what is meant by a "local street". Certainly the definition of a local road which appears in the glossary to this report, namely, a road which caters for local, short distance travel and access to adjacent properties, is a useful one. Yet there does not appear to be general agreement on what constitutes a local road, at least not in the context of what roads should be subject to a 50 km/h speed limit. Specifically, STAYSAFE detects some contention in relation to the classification of collector roads, which may serve both local access and traffic route functions.

4.14 The Roads and Traffic Authority explained current speed zoning practices would continue in their present form, with the speed limit in local streets defaulting to 50 km/h unless signposted otherwise:

"All streets in a built-up urban area are subject to a general urban speed limit, unless otherwise indicated. At present this limit is 60 km/h. Under the proposal, all local streets would be subject to a new 50 km/h limit unless their traffic function dictated that a higher or lower limit was more appropriate. There are comprehensive Speed Zoning Guidelines which help to assess whether a particular road should be zoned above or below the general limit. The Roads and Traffic Authority would continue to determine appropriate speed zoning in consultation with local councils, and hold the formal authority for any change. Streets not subject to the 50 km/h local street speed limit would be assessed in accordance with this process." (Submission USL 22, p.vi)

4.15 The NRMA Ltd submitted that, based on a hierarchy of arterial/sub-arterial, collector and local roads,

"NRMA recommends a 50 km/h speed limit apply on local streets, with speed limits of 60 km/h or higher applying on arterials and sub-arterials. The determination of a suitable speed limit for collector routes is less clear, as they serve both traffic flow and property access functions. The Australian Model Code for Residential Developments (AMCORD) outlines a performance based assessment that could be used to determine the main functions of a particular collector, taking into consideration factors such as road user needs including public transport, pedestrians and cyclists, route connectivity and urban planning considerations." (Submission USL 21, p.6)

4.16 During the course of this inquiry, STAYSAFE has had cause to alter the focus of the term of reference to examine the "decision processes involved in the selection of the local streets to be subject to a 50 km/h speed limit". As STAYSAFE advocates the adoption of a 50 km/h general urban speed limit, it would seem more efficient and less contentious to simply identify the roads which would *retain* their present speed limit of 60 km/h, rather than

attempt to identify the massive number of local streets which would have their speed limits reduced to 50 km/h.

4.17 STAYSAFE tends to the view that all such roads should be subject to a 50 km/h speed limit unless there are good reasons for not doing so. STAYSAFE has been strongly influenced by the work of (1989/1996), who has argued that a 'collector' road is a road which is clearly a local road.

4.18 In other words, STAYSAFE is of the view that a general urban speed limit of 50 km/h should be assumed to prevail in any given residential precinct, with the onus on the Roads and Traffic Authority and local councils to show cause why any particular road should not be subject to the general urban speed limit. This will not cause contention in relation to major traffic routes, but will compel the authorities to think carefully about the grey area which seems to surround the classification of collector roads in residential areas. In fact, a focus of determining those roads which would not be subject to a 50 km/h should encourage the Roads and Traffic Authority and local councils to consult the community prior to any decision being made, in order that any major disagreements may be avoided.

4.19 It is therefore essential that the State Government, through the Roads and Traffic Authority, and local governments come to a mutually agreed position on this matter based on well-defined and unambiguous guidelines. To this end, STAYSAFE recommends that the Roads and Traffic Authority establish a formal road hierarchy that integrates the various speed limits used in New South Wales, and that maps depicting the hierarchy in particular local government areas be produced in consultation with each local council to facilitate the consistent implementation across New South Wales of a 50 km/h speed limit in residential streets.

**RECOMMENDATION 3: The Roads and Traffic Authority:**

- (i) formally establish a defined road hierarchy that integrates the various speed limits used in New South Wales; and**
  - (ii) produce, in consultation with local councils, maps of the defined road hierarchy for each local government area in New South Wales;**
- in order to facilitate the identification of roads which would retain a speed limit of 60 km/h or more following the introduction of a general urban speed limit of 50 km/h, and to achieve consistency in implementing appropriate speed limits across the urban road network in New South Wales.**

**A 'trade-off' of speed limits**

4.20 It was proposed to STAYSAFE that a corollary of adopting a 50 km/h general urban speed limit should be the consideration of increasing the speed limits on arterial roads. That is, there should be a ‘trade-off’, with lower speeds on local streets and higher speeds on traffic routes. Witnesses representing NRMA Ltd stated:

**Mr MACKY:** “... [on roads such as ] freeways, rural freeways and urban freeways, we would like to see speed limits increased, where appropriate, to better match the roadside environment. From our perspective, that will be a crucial step if we are to get community support for lower speed limits in residential areas.” (Minutes of Evidence, 4 December 1995, p.29)

4.21 NRMA Ltd witnesses gave further evidence on this matter:

**Mr HUNTER (STAYSAFE):** “From the point of view of the NRMA, what important lessons can be learned from an examination of the speed management practices in other jurisdictions in Australia and overseas, particularly in terms of identification of current practices for setting of urban speed limits and the introduction of lower local road speed limits in residential streets?”

**Mr MACKY:** “Based on the research that we have been able to obtain, the lesson seems to be that we very much need to ensure that speed limits match the prevailing traffic conditions. One is for the reason that this concept of setting speed limits to better match the road environment reduces speed dispersion. Now, speed dispersion has been identified as a cause of crashes. So, in other words, if you have a stream of traffic or platoon of traffic all travelling at a similar speed, that is much safer than having vehicles travelling at different speeds within that traffic stream.

A good example can be gained from what happened in Victoria. In 1990-91 there was a parliamentary inquiry into speed limits in Victoria. The result of that inquiry was a decision to have a comprehensive review of speed limits across Victoria. In other words, a review of speed limits on all roads in Victoria. A set of speed zoning guidelines were developed. What resulted was that speed limits were uniformly set across the Victorian road network.

So, in other words, a road of similar appearance or similar traffic characteristics in one part of Victoria would have speed limits similar to a road in another part of the State, given that those two roads had similar traffic characteristics. We feel that such a review is urgently required in New South Wales. The Roads and Traffic Authority has recently reviewed and issued its new speed zoning guidelines. NRMA would like to see these guidelines put into practice immediately and a comprehensive review of all speed limits take place in New South Wales. We feel this is crucial in order to gain uniformity on speed limits but also to gain community support.” (Minutes of Evidence, 4 December 1995, p.30)

4.22 By way of example, the NRMA witnesses then described a number of arterial roads in the Sydney metropolitan area, indicating inconsistencies in speed limits that would be apparent to motorists, including:

- Pennant Hills Road, West Pennant Hills—a recently constructed road, with six lanes, wide median, hazards set back from the roadside, with no roadside poles, with some residential access. Turning traffic is accommodated by turning bays, and most recently has signalised intersections. The speed limit here is 70km/h.

- Homebush Bay Drive, Homebush Bay—a four-lane road, still divided, but it is a fairly high standard road, with good alignment, wide shoulders, very limited access, with no direct roadside development, no lighting throughout the major length of it, apart from the intersections similar to urban freeway type conditions. However, this has exactly the same speed limit, 70 km/h, as Pennant Hills Road.
- King Georges Road, South Hurstville—a four-lane road, undivided, frequent residential access, poor vertical alignment, no provision for turning traffic such as turning bays, with roadside poles direct on the kerb line. Yet this again is 70km/h, the same speed as the roadways at the other two locations.
- Further along King Georges Road, Beverly Hills shopping centre— a six-lane road, although the left lane terminates and there are parked cars causing a lot of merger movements; there is still a wide median, but there is also a lot of parking activity and a lot of pedestrian activity generated by the shopping district, railway station, and the cinema and so on. Again, this has a speed limit of 70km/h.

The NRMA witnesses proposed that each of these roads are completely different road environments according to the motorists's perceptions, and yet they have exactly the same speed limit. This can be contrasted with other, similar roads:

- The Kingsway, Gymea—a six-lane road, wide median, fairly good setback to residential properties, still residential access; there is separation for turning traffic. The speed limit is 60km/h.
- Pacific Highway, Wahroonga—a six-lane road, a fairly narrow median, limited kerbside parking, residential accesses, but all turning movements are accommodated with turning bays and signalised intersections and the like; it is a fairly flat road; the alignment is rather good, compared with some of the other routes; and this has a speed limit of 60km/h.
- Joseph Street, Lidcombe. This road has six lanes, with median separated traffic; turning bays accommodate turning traffic, along with signalised intersections. The speed zoning is 80 km/h.

4.23 The NRMA witnesses continued:

**Mr MACKY:** “Mr Chairman, I think you would appreciate that that gives a snapshot of a relatively small sample of our road network, but the problem is that when we have so many anomalies across our roads, firstly, it is very difficult for the community to understand what the speed limits are; and, secondly, the police are expected to enforce those speed limits, and that again detracts from the credibility of the overall speed enforcement program, fuelling community concerns about revenue raising. Therefore, we think it is vital that the speed limits are set uniformly across the State to better match the road and traffic environments.” (Minutes of Evidence, 4 December 1995, p.32)

4.24 This view was not supported by other witnesses before STAYSAFE. For example, witnesses representing the Australian College of Road Safety stated:

**Mr HARRISON (STAYSAFE):** “What is the view of the Australian College of Road Safety on the argument that a reduction to 50 km/h in residential streets should be accompanied by an increase in speed limits on major urban roads?”

**Dr HENDERSON:** “The Australian College of Road Safety is of the view that we should not be trading these things off, that we should be looking at the most appropriate speed for each particular environment. Therefore, we should be trying to match the speeds to the activities that are in existence. We support the establishment of hierarchies within the network and the main thing is to look at them in their own right and see what is appropriate for each particular environment.”

**Mr PALMER:** “The Australian College of Road Safety, like yourselves, is very conscious about the need for good public relations and the need to sell these sorts of concepts with great care. It has already been picked up wrongly that a 50 km/h local street limit is in some way a trade for letting people hoon around at higher speed on other roads. It is very important for spokesmen in governments and administration not to give that sort of impression. It may well be that roads are zoned to the higher speed, but that is happening all the time anyway, and some are being zoned at a lower speed. Any idea of a trade-off is absolutely unwarranted.” (Minutes of Evidence, 19 August, p.71)

4.25 STAYSAFE accepts that it would be appropriate to review the guidelines for setting speed limits, but does not consider a trade-off to be appropriate. STAYSAFE also notes that since the late 1980s the Traffic Authority of New South Wales, and later the Roads and Traffic Authority, have been committed to a re-appraisal of speed zoning. The introduction of 70 km/h and 90 km/h speed zones and the review of most major traffic routes throughout New South Wales have resulted from this process (see Appendix B: Brief comments on speed management in New South Wales).

## **Entertainment, commercial and shopping precincts**

4.26 STAYSAFE is of the view that ‘local streets’ is too narrow a term for streets where a lower speed limit might be appropriate. As noted earlier, the term ‘local streets’ is easily confused with ‘residential streets’. STAYSAFE suggests that there are streets which serve entertainment, commercial and shopping functions which merit a lower speed limit. For example, King Street, the main street in the inner Sydney suburb of Newtown, is a traffic route rather than a local street. It is a long strip shopping street replete with vehicles and pedestrians. There is very little in the way of residential premises, though these exist in abundance just off King Street. There is only one school on King Street. The street is certainly not used specifically for “local, short distance travel”, as there are many vehicles travelling from the south and west of Sydney which use King Street to connect to the city from other major roads.



4.27 As another example from metropolitan Sydney, Oxford Street, from Darlinghurst to Paddington, and surrounding streets such as Flinders and Bourke, are, in STAYSAFE's view, worthy of consideration for a speed limit review, as the preponderance of licensed premises add a further dimension to the traffic problems which exist there as a result of the intersection of major traffic routes and the sheer volume of vehicles which pass through the area. Ninety pedestrians have been injured or killed over the past six years at the intersection of Oxford, Bourke, and Flinders streets, otherwise known as Taylor Square, identified in 1994 as the State's second-worst traffic black spot. Drink-walking pedestrians are particularly common and vulnerable in and around this area.

4.28 STAYSAFE notes that there is strong encouragement to re-develop the main streets in suburbs and towns to provide for all road users, not just vehicular traffic (see, e.g., Armstrong, Black, Lukovich, Sheffield & Westerman, 1992; Roads and Traffic Authority, 1993; Roads and Traffic Authority and Federal Office of Road Safety, 1993; Westerman, 1994)

4.29 STAYSAFE also notes various findings regarding the involvement of alcohol in pedestrian fatalities and injuries. Nationally, pedestrian intoxication was involved in at least 10% of the hospitalisation of adult and youth pedestrians (Federal Office of Road Safety, 1996). In a 1992 paper, the Federal Office of Road Safety reported that in relation to fatal pedestrian collisions, 70% of pedestrians in the 15-28 year age group and 59% in the 29-59 year who died as a result of a road crash had a blood alcohol concentration (BAC) over 0.05. Of those with a BAC over 0.05, 70% had a BAC over 0.15. As is often the case, young males were over-represented in the figures: of those tested in the 15-28 age group which involved a BAC over 0.05, 93% were males. The report concluded that alcohol and drug use by pedestrians was a factor in 28% of all fatal pedestrian crashes. As noted in Chapter 2: The necessity for a 50 km/h speed limit, the major road safety benefit anticipated for the adoption of a 50 km/h general urban speed limit is a reduction in vulnerable road user trauma. The problem posed by impaired pedestrians, particularly around strip shopping areas and entertainment precincts, leads to the suspicion that lower speed limits could well be appropriate for these shopping areas and entertainment precincts.

4.30 During the public hearings, STAYSAFE pursued the matter of defining the kinds of streets which should be designated "local streets", or a similar term, for the purposes of applying the 50 km/h limit. STAYSAFE questioned Mr Moran, representing the Roads and Traffic Authority:

**Mr HARRISON (STAYSAFE):** "If, as has been suggested, all speed limits are reviewed in order to rectify inconsistency in speed zones and to help to win over a motorist in relation to the 50 km/h limit, what would your view be of the appropriate speed limit for busy shopping streets, for example, Glebe Point Road in Glebe, and King Street in Newtown, etc., if pedestrians are to gain significantly from a reduction to 50 km/h? Is not there a case for reducing the limit

in these streets, even though they are not, strictly speaking, residential roads?"

**Mr MORAN:** "I might start answering that by saying that the speed of traffic in strip shopping centres or strip shopping streets is not always inappropriate, due to the level of what we traffic engineers call friction which exists within that environment.

By friction I mean you have vehicles parking and unparking, you have people circulating around the system and there are a lot of specific facilities provided for pedestrians in that environment. That friction, by its very nature, tends to keep the speed down.

Now, in the setting of a speed limit for busy strip shopping streets, it is again a case of achieving community credibility in setting a limit which provides an appropriate balance between traffic function and the physical characteristics.

In shopping precincts where there is a high level of pedestrian activity, a 40 km/h limit would be desirable if traffic function was not a consideration. This would require physical treatment of the road environment, so that motorists on the traffic route are made aware of the surrounding land use and this would obviously be a site specific exercise and it would not be appropriate on major traffic routes, such as King Street, but may be appropriate on Glebe Point Road.

I would suggest that there is a need to consider the management of strip shopping streets as an entity in themselves, through physical means of control and regulation to provide an appropriate balance between traffic function of the route and pedestrian mobility. The Roads and Traffic Authority's main street guidelines have been specifically established for this purpose. There are a number of things that those guidelines indicate can be done on busy strip shopping streets and the establishment of speed limits is but one of those measures." (Minutes of Evidence, 20 May 1996, p.7)

4.31 At the public hearings, Cr Julie Walton, of Sydney City Council, asked that, where appropriate, lower speed limits be considered for streets other than residential streets. It should not be forgotten that the streets of Central Sydney, with more pedestrian activity than probably anywhere else in Australia, are subject to the default speed limit of 60 km/h:

**Cr WALTON:** "The purpose ...[of] my appearance is to reinforce the fact there are pedestrians in high concentration on non-residential roads. I know the focus of this Committee is on the question of speed limits on residential roads but the Lord Mayor and I thought it was important that we promote the fact that there is a very high concentration of pedestrians in streets throughout Sydney. There were some press reports which intimated as a trade-off for lower speed limits and more protection for pedestrians in residential streets there might be higher speed limits on so-called arterial roads.

You need to take into account a great deal more than the status of a road under the guidelines of the Roads and Traffic Authority. The mere classification of a road as arterial does not mean that it does not have a high concentration of pedestrians. Indeed, in some cases you might expect it to be otherwise, because arterial roads are roads like Military Road, Mosman, and Parramatta Road, Leichhardt, which are major shopping streets; the city centre being the heart of it all." (Minutes of Evidence, 19 August 1996, p.36)

4.32 STAYSAFE is of the view that consideration should be given to applying the 50 km/h urban speed limit to entertainment, commercial and shopping precincts.

**RECOMMENDATION 4: The Roads and Traffic Authority, in consultation with relevant local councils, undertake an assessment of streets in entertainment, commercial and shopping areas which also serve as major traffic routes, having regard to the road user needs of pedestrians, cyclists and patrons of public transport, to determine which of those streets, if any, should be zoned with the lower general urban speed limit of 50 km/h.**

4.33 Cr Walton also explained that Sydney City Council had introduced a 40 km/h zone in Millers Point, on the edge of Sydney's central business district, and sought an assurance that a general speed limit of 50 km/h would not override the lower speed limits that have been introduced by councils where they are deemed appropriate. STAYSAFE is aware that local councils, subject to the approval of the Roads and Traffic Authority, have the right to create 40 km/h zones with appropriate physical devices to compel drivers to reduce their speed in these zones. Roads and Traffic Authority witnesses told STAYSAFE there would be no changes to the provision of 40 km/h zones if a lower general urban speed of 50 km/h is adopted. STAYSAFE supports the continuation of special, low-speed zones on streets or in precincts where there is significant conflict between pedestrians and vehicles. Such zones empower the pedestrian, helping to redress the long-running predominance of the motorist's interests over that of the pedestrian, and are desirable on the grounds of both safety and amenity.

**RECOMMENDATION 5: The adoption of a 50 km/h general urban speed limit should not preclude the continued provision, where appropriate, of lower speed zones.**

## **How best to apply a new speed limit**

*Background: the Roads and Traffic Authority's view*

4.34 In its submission, the Roads and Traffic Authority outlined four ways in which a 50 km/h limit could be applied to local streets:

OPTION 1 Retaining a 60 km/h general urban speed limit and signing individual streets where a 50 km/h limit was appropriate.

OPTION 2 Introducing a general limit of 50 km/h to apply on all local streets, and signing only those streets where a higher or lower speed limit was appropriate.

OPTION 3 Defining areas or precincts where the 50 km/h limit would apply and indicating by peripheral signposting.

OPTION 4 Abolishing the use of a general urban speed limit, signing all streets where either a 50 km/h or a 60 km/h limit applied.

4.35 Each of these options has different implications for the costs and difficulties of implementation. The signing requirements of these options may be directly compared as shown in the following table.

OPTION	Streets having a speed limit of 50 km/h	Streets appropriate for a speed limit of 60 km/h
OPTION 1 (retain a 60 km/h general urban speed limit)	Signs needed	No signs needed
OPTION 2 (introduce a general local street limit of 50 km/h)	No signs needed	Signs needed
OPTION 3 (introduce 50 km/h within specified precincts)	Signs at boundaries	No signs needed
OPTION 4 (abolish the concept of a general urban speed limit)	Signs needed	Signs needed

4.36 The Roads and Traffic Authority advised STAYSAFE that the intangible nature of many of the costs of implementation made it impossible to give a complete and balanced account of each of the courses of action described above. The one area where the costs are known and can be evaluated with some confidence is in terms of the amount of signage. Based on proposed changes to the 60 km/h limit on local streets in Melbourne, Cunningham and Barton (1993) undertook an analysis of different options for signing streets in the Melbourne Metropolitan region. The two options of relevance to this inquiry were:

- retaining a 60 km/h general limit and signing downwards as appropriate — estimated to cost \$12.2 million (extensive publicity not required);
- introducing a 50 km/h general limit, signing upwards for the arterials and downwards where appropriate — estimated to cost \$3.4 million, with a further \$1 million required for

publicity.

4.37 On the assumption that a similar proportion of signing would be required in cities in New South Wales, the Roads and Traffic Authority has costed the implementation of its preferred option, Option 2, at around \$5 million. That figure is based on the costs of physical signing only, and takes no account of the administrative, political or other costs associated with determining where a 60 km/h limit should apply. It is the cheapest and least visually intrusive of the four options proposed.

4.38 STAYSAFE will return to the issue of signage and other road treatments later in this chapter.

### **Factors affecting compliance levels**

4.39 Submissions to this inquiry emphasised the need for a combination of credible speed limits across the road network, together with information campaigns and appropriate enforcement procedures, in order to effect a successful transition to a 50 km/h limit on local streets. Merely changing the speed limit would not result in a satisfactory level of compliance.

NRMA Ltd (Submission USL 21), for example, made this observation:

“Speeding is a very difficult behaviour to address and much harder than drink driving, for example, to make socially unacceptable. Changing community attitudes is a long term process, and cannot be achieved through “quick fix” solutions such as additional enforcement operations or tougher penalties. It is therefore necessary to develop a package of elements that will generate community support for speed management initiatives and enable a 50 km/h local street speed limit to be introduced with broad community endorsement.” (p.2)

4.41 STAYSAFE 10 (1985) also noted the difference between controlling drink-driving and speeding:

“Random breath testing reduces illegal drink-driving, because the public knows the BAC level below which it is safe to drive. Speed control measures will reduce speed only when the public knows at what speed it is safe to drive in each of the wide variety of driving conditions encountered.” (p.4)

4.42 Fildes and Lee (1993a) have observed that speed control relies to a considerable extent on self-compliance by motorists:

“Speed limits must match the expectations of drivers to some degree. General acceptance of speed limits is required to ensure adequate levels of voluntary compliance in the absence of enforcement.

The credibility of speed limits rests on drivers’ perception of their appropriateness in terms of

specific road sections, and relativities with other limits on equivalent road sections.” (p.22)

4.43 During this inquiry, STAYSAFE has heard many times that a key factor in obtaining satisfactory levels of compliance with speed limits is to make motorists feel that a particular speed limit is appropriate to the road environment to which it is applied. While law enforcement is necessary to keep excessive speeds down to acceptable levels, STAYSAFE recognises that compliance levels will be higher if a traffic management program for urban speeds can increase the willingness of motorists to comply with speed limits for safety reasons.

4.44 STAYSAFE expects that if a 50 km/h limit is introduced there will still be a substantial number of motorists who will continue to travel above the speed limit at least some of the time. The Roads and Traffic Authority has pointed out that motorists think in terms of 10 km/h increments and think in terms of tolerances for excessive speed: motorists feel they will not be booked for speeding as long as they do not exceed the limit by more than 10 km/h.

4.45 All this means that a significant number of motorists will continue to travel at 60 km/h, 10 km/h over the proposed new speed limit and a speed at which, if a pedestrian is struck, would probably kill that pedestrian. STAYSAFE therefore asked the Roads and Traffic Authority whether anything would be gained by lowering the speed limit to 50 km/h. Mr Moran, representing the Roads and Traffic Authority, commented:

**Mr MORAN:** "Let me start by saying that obviously it would be unrealistic to expect to ever achieve 100% compliance. People who live by the attitude that they can travel at 10 km/h over the speed limit, obviously under a 50 km/h scenario would be travelling at 60 km/h, as you suggest. However, under the current arrangement, the same people who ran by those same attitudes, would be travelling at 70 km/h. Taking this scenario, under the proposal that the Roads and Traffic Authority has put before you, there would be an overall reduction in speed on the local street environment, which would result in improving the stopping distance, not the sight distance, the stopping distance, means people overall would be able to pull their vehicles up quicker and thus that would improve their ability to avoid an incident in the first instance. An overall reduction in speed would be beneficial in terms of amenity and, as indicated in the Roads and Traffic Authority's submission of November 1995, evidence from research in Adelaide indicates that a 10 km/h reduction in residential speed limits, even allowing for the same degree of enforcement and compliance which currently exists, could achieve a reduction of about 27% in pedestrian fatalities.

If your scenario is realised, I would say yes, we as a community would benefit from lowering the speed limit.” (Minutes of Evidence, 20 May 1996, p.3)

4.46 As has been noted, lowering speed limits does not necessarily mean that drivers will reduce their speeds in strict accordance with those limits, although some reduction can be

expected. In evidence, Ms Ludmilla Hawley, of Geoplan Urban and Traffic Planning, told STAYSAFE that motorists often thought of the posted speed limit as an advisory limit rather than the maximum limit, a situation which must be addressed if speeding behaviour is to be modified:

**Ms HAWLEY:** "In a 60 km/h zone we would expect to have 15% of people travelling at 72-75 km/h, mainly because they feel that they can get away with it; they feel that there is enforcement leeway. People change their speed depending on their personal assessment of the road conditions. It also relates to people's interpretation of what the speed limit means. From work that I have seen in relation to focus groups and discussions groups on speed limits, many people—this is why I say that education is important—think that the speed limit is the minimum speed limit; it is an advisory minimum that you can go, and you are able to go above that. People do not understand that it is the maximum. The message that must get through to the community is that when we talk about 60 km/h, that is the maximum that we expect people to go; when we talk about 50 km/h, that is the maximum." (Minutes of Evidence, 19 August 1996, p.15)

4.47 STAYSAFE has concerned itself with the question of whether drivers would comply with a lower speed limit in residential streets—little would be gained from introducing a 50 km/h speed limit if drivers continue to travel at the same speeds they are presently. It is evident that, in the absence of any specially targeted traffic management measures, compliance levels will vary quite substantially across the State, and even within the Sydney urban road network. The typically narrow streets in the residential areas of inner Sydney, many of which were built before the advent of the motor car, are very different to the generously proportioned roads found in the outer suburban areas of Sydney.

4.48 STAYSAFE pursued this matter with Ms Hawley:

**The Hon. A. B. MANSON (STAYSAFE):** "The geographic and urban planning features of North Sydney and Mosman are quite different to those of most of Sydney, particularly new outer suburban areas. Can you elaborate on some of the essential differences and nominate a particular feature of contemporary urban design that may aid an acceptable level of compliance with a speed limit of 50 km/h?"

**Ms HAWLEY:** "There is a big difference between Mosman and North Sydney and areas further out from the central business district. Speeds tend to increase, and there is less traffic on the roads, so there is less congestion, at least in peak hours, to control traffic. Free speed is the rule. The topography and design of the roads is different, with long straight stretches in middle suburbs such as Bankstown and Ryde. Mosman and North Sydney have old, last-century layout roads, rather higgledy-piggledy, with some four-way intersections but a lot of topographies up and down, following ridge lines and so on. Further out the suburbs were historically laid out on more of a grid pattern. In the middle ring of suburbs you start to get higher speeds. A lot of these are being controlled by councils with roundabouts, because there are so many intersections. It is quite a useful way of controlling speed.

Further out in the suburbs, particularly those that were developed in the 1960s, like Minchinbury and Mount Druitt, masses of them were laid out a bit like Canberra, on rather circuitous routes. You constantly drive on an arc on a main road through the suburb and all the other roads feed on to it. They are probably the worst roads of all when it comes to speeding, because there are very few cross-intersections. Most of them are T-intersections because people thought that was the safest way to design intersections. In fact, less accidents occur at T-intersections than at cross-intersections. There is less opportunity to put in roundabouts, which can control speed very effectively.

Also, the width of a road has an impact on how fast vehicles will travel. Mosman and North Sydney have roads that are generally reasonably narrow but are also very congested because they have on-street parking. Anything on the street that interferes with that openness of a street has an impact on the speed at which people travel. If there is a lot of on-street parking, people will go slower. Once you get into the outer suburbs there is very little on-street parking. There are wide roads, or roads even as wide as those in North Sydney but with no impediments, no cross-intersections with roundabouts and no on-street parking. The roads look like continuous stretches of highway, yet they are residential streets. In applying a speed limit of 50 km/h to those existing suburbs of the 1950s, 1960s and 1970s, which were laid out on that sort of mentality, one would have to try much harder than we have tried in Mosman. That is one of the things we will have to think about in producing a kit for the Roads and Traffic Authority.

We are looking probably at more enforcement and more engineering measures, and the introduction of roundabouts and perhaps slowing devices. That did not need to be done in Mosman and North Sydney. In the new subdivisions in Liverpool—Wattle Park for example—and fringe subdivisions in Blacktown and the Rouse Hill area, we are getting into a much greater sensitivity of speed and designing for speed. That has been assisted by the Federal AMCORD guidelines, which you are probably aware of. They have been developed by Professor Hans Westerman and a group of people. Speed has been one of the major inputs: how to design subdivisions where speed is not encouraged. Some of the tricks you use are narrower roads, giving less pavement to the car so drivers do not feel they can go as fast, and making sure you do not have continuous roads that go on for two or three kilometres without any impediment.

Mosman and North Sydney have a totally different population, a totally different social group of people, to outlying suburbs. There are many more young people in the western suburbs than there are in Mosman and North Sydney—young people who drive; teenagers, who have the worst record for accidents. They are much less likely to respond rationally to rational information than adults are. The 17-25 year age group is over represented in the outlying suburbs and under represented in our trial area. That would make a difference also to the behaviour and what would have to be done in terms of engineering, enforcement and education. (Minutes of Evidence, 19 August 1996, pp.17-18)

4.49 In addition to the speed-conducive nature of outer suburban roads, therefore, the large numbers of young drivers in the outer suburbs will also pose a challenge to those responsible for implementing and enforcing a lower general urban speed limit. There is abundant statistical evidence that males aged 17-25 years old are over-represented in vehicle crashes and, as a consequence, in the road death and injury toll. The behaviour of these drivers, in particular, will need to be monitored carefully to ascertain the level of success of the new



speed limit.

4.50 The problems associated with modifying speeding behaviour in outer suburban residential streets can be expected to be replicated, and perhaps exceeded, in rural areas of New South Wales, where many streets in regional cities and towns are typically wide, long and straight.

### **The general applicability of the Mosman/NorthSydney 50 km/h speed limit trial**

4.51 At the time the terms of reference for this inquiry were being developed, STAYSAFE was given to understand that the 50 km/h speed limit trial in Mosman and North Sydney Councils was of a similar nature to the proposal before this inquiry. However, subsequent discussions with representatives of the Councils—including the Mayors of North Sydney and Mosman—and the Roads and Traffic Authority revealed that the primary objective of the Mosman/North Sydney trial was to improve the suburban amenity for residents of these areas, and further, that Roads and Traffic Authority officials were anxious that the 50 km/h trial in Mosman/North Sydney not be seen as its proposal for implementation on a State-wide basis.

4.52 STAYSAFE was curious as to why this was the case, considering that the initial brief from the Roads and Traffic Authority stated that:

“The strategy will form the foundation for the introduction of a 50 km/h speed limit on residential streets, initially within the area of the demonstration project, but with a vision to possible future expansion to residential areas throughout Sydney and New South Wales.”

4.53 While suburban amenity is a worthwhile objective in itself, STAYSAFE is of the view that the proposal which is the subject of this inquiry is primarily about road safety. Improved suburban amenity would be one of the potential by-products of reducing the speed limit in residential streets; but the saving of lives and the reduction in the number of injuries and their severity is STAYSAFE’s chief concern with respect to any proposal to reduce residential street speed limits.

4.54 Ms Hawley advised STAYSAFE that no meaningful crash analysis of the Mosman/North Sydney trial could be made, as a sample large enough to permit a finding of statistical significance required a 5-year before and after period. STAYSAFE is therefore unable to make any analysis of the crash and injury rates during the Mosman/North Sydney trial.

4.55 Apart from its emphasis on amenity, the Mosman/North Sydney trial differs from the proposal before this inquiry in at least two important respects:

- *Mosman/North Sydney's blanket application of the 50 km/h zone*—the 50 km/h limit is not restricted to residential streets, but extends over all streets within the trial area, including both local streets and traffic routes.

- *Mosman/North Sydney's use of both road markings and signage to delineate 50 km/h speed limit zones*—entry into the trial area is indicated by both road markings and signs indicating a 50 km/h speed limit, with these markings and signs repeated at intervals on traffic routes throughout the trial area.

4.56 At the public hearings, STAYSAFE sought the views of the Roads and Traffic Authority, on the extent to which the North Sydney trial could be seen as a precursor to the introduction of a 50 km/h speed limit:

**Mr THOMPSON (STAYSAFE):** “Mr Moran, do you see the Mosman/North Sydney 50 km/h trial as a prototype for the proposal before the Committee? In the Committee’s research under this inquiry, there seems to be some confusion about that. Can you indicate how the Mosman/North Sydney trial differs from the Roads and Traffic Authority's proposal for a 50 km/h speed limit on local roads?”

**Mr MORAN:** “Having been the Roads and Traffic Authority's manager for that project for two years, the answer is no. I would not see that particular initiative as a prototype for the proposal before the Committee. However, I do see it as an input to your deliberations and as a convenient avenue for tapping community opinion and also practical experience with a 50 km/h limit.

The Roads and Traffic Authority's proposal for a 50 km/h local speed limit is focussed on changing the general limit, as I have just mentioned, or statutory limit if you like. Fifty km/h would become the rule, rather than the sign posted exception. Additionally, it would only automatically apply to streets having predominantly a local access function and traffic routes would be zoned as 60 km/h.

By contrast the Mosman and North Sydney initiative involved identifying a residential precinct, including both local access and traffic routes and applying a 50 km/h limit across the whole area. This basically was the case of 50 km/h being the signposted exception to the current 60 km/h rule.

The Mosman/North Sydney initiative was essentially an exercise in trialing an alternative treatment to conventional local area traffic management using physical measures such as speed humps and roundabouts and it did not provide any different definition between the road functions and motorists as the Roads and Traffic Authority's proposal for a general 50 km/h speed limit does.” (Minutes of Evidence, 20 May 1996, p.6)

4.57 North Sydney Council representatives also emphasised the primacy of amenity objectives in the trial:

**Mr LEHMANN:** “This trial was introduced not so much as a road safety issue but more a

residential amenity issue. For years the traditional tools of traffic engineers have been speed humps and roundabouts. As we are aware, they have their own problems: they generate a very intrusive noise, particularly in the early hours of the morning. This trial was an attempt to try to adjust the behaviour of motorists using some other method. Road safety spin-offs have certainly occurred and we appreciate those. The results of the first speed surveys show that although there was not a great reduction in the average speed in the area, there was a significant reduction in high speed vehicles, free-flowing vehicles travelling at 100 or 80 km/h in residential areas. Sometimes vehicles travel at those speeds at night, but they have adjusted their behaviour quite significantly. Such road vehicles are often involved in high trauma accidents. If we can reduce them, maybe such incidents can be avoided.” (Minutes of Evidence, 19 August 1996, p.10)

4.58 STAYSAFE has concluded that the Mosman/North Sydney trial has limited application for the introduction of a 50 km/h limit in residential streets in New South Wales. It may, as the Roads and Traffic Authority told STAYSAFE, provide an avenue for tapping into community support for and experience with a 50 km/h speed limit, and does provide one model for the implementation of a 50 km/h speed limit. However, STAYSAFE is not convinced that a blanket 50 km/h speed limit in urban areas, including all traffic routes, is warranted or desirable.

### **Delineating streets with a 50 km/h speed limit**

4.59 The Roads and Traffic Authority proposed that a 50 km/h speed limit should be implemented in the following manner:

“Considered from the point of view of the number of signs, their cost and associated visual clutter, and efficiency in covering the majority of local streets in all urban areas, the best option for applying a 50 km/h limit would appear to be by means of a 50 km/h general limit. In effect, this would mean a lowering of the current general urban speed limit from 60 km/h to 50 km/h, with speed zones of 60 km/h applied to those roads for which a lower speed limit would not be appropriate.” (Submission USL 22, p.26)

4.60 STAYSAFE notes that this would indeed be the most cost-effective and visually neutral way of dealing with the signing question, and is preferable by far to the comprehensive signing of streets subject to 50 km/h in New South Wales.

4.61 Nevertheless, STAYSAFE has serious reservations about the adequacy of a strategy which relies on the *absence* of signage or other road markings to alert the motorist to the fact that he or she is entering a 50 km/h zone:

**Mr SMITH (STAYSAFE):** “Professor Taylor, in general terms you have answered my question with your description of the Unley trial. In more specific terms, would you indicate the most effective and appropriate traffic management strategies that need to be implemented to

ensure compliance with the 50 kilometre local road speed limit and, in particular, what modifications are desirable or required to improve the road infrastructure and street signage?"

**Professor TAYLOR:** "There are a number of things there. Firstly, the question of the signing of the speed limits. The more important roads with speed zones higher than the general limit would obviously have to be signed and motorists given information they have left those roads and gone on to other parts of the network. So there is a significant amount of speed zone signage to be put in place. In the case of the Unley trial, it was realised that repetition of the message about the speed limit had to be given to drivers. Of course, we then have the question of it being a one-off zone as opposed to the rest of the network and if this was the norm and had become established in the community perhaps that repetition would not be required. But you would still need a distinction between the roads zoned at a faster speed and those set at the general limit. The road environment would still need to be made very clear to motorists. It is only fair to everybody in the community that people are not left wondering about the speed limit when they turn the corner." (Minutes of Evidence, 19 August 1996, p.58)

4.62 The roads authorities most affected by decisions on any road treatments needed to support should a new 50 km/ general urban speed limit are the Roads and Traffic Authority and local governments. The Local Government and Shires Associations considered it important that signage be put in place to alert motorists to the change in speed limits from traffic routes to residential streets. Cr Bott addressed this issue in response to questioning by STAYSAFE:

**Mr SMITH(STAYSAFE):** "I do not know whether you have sufficient information from the Roads and Traffic Authority to answer my question, which is very specific to the Mosman area where the trial has been conducted. What information should motorists encounter when they leave a major road or sub-arterial collector road and drive into a local or residential street? Have you undertaken a study of that issue?"

**Cr BOTT:** "I have not, and there is a difficulty with that. I believe the most important thing is signage and appropriate line marking to indicate the change to traffic conditions occurring at that point. With a reduced speed limit obviously there would be opportunity in new subdivisions to create narrow carriageways and grassed verges which would be the desirable way to go, particularly in residential areas. We have actually been doing some of it as we redesign and redevelop features,. There are all sorts of things one can do and I need not go into great detail. One can snake the carriageway and have a retention basis for stormwater drainage in the grassed areas, swale drains and what have you rather than moving it rapidly through the stormwater.

There is an enormous amount of opportunity in new design but the difficulty is that most of the streets have been here and will be here for a considerable length of time. They are designed with width of carriageway and, particularly in the area I come from and in rural areas, with straight construction. With the resources that are available the probability of their being redesigned in the foreseeable future is certainly minimal. In that context I would say that the most important thing is signage and line marking." (Minutes of Evidence, 19 August 1996, pp.26-27)

4.63 Roads and Traffic Authority officials, on the other hand, did not see signage in or

around 50 km/h streets as necessary, except in limited circumstances and for a limited period:

**The Hon. A. B. MANSON (STAYSAFE):** “What sort of information will a motorist encounter when he or she leaves a major road and drives onto a local residential area, for instance, from a sub-arterial or collector road?”

**Mr CROFT:** “If we look at what we have got at the moment, the current 60 km/h general urban speed limit and the motorist leaves a major road which might be at 60 km/h, 70 km/h, 80 km/h or 90 km/h or something like that, and turns into a local street he receives absolutely no indication whatsoever other than the geometry of the street to indicate that it is 60 km/h. This is because all motorists are expected to know and are, in fact, inculcated with the understanding that 60 km/h is the default limit: it is 60 km/h everywhere unless signposted otherwise. An identical approach would be the case for a proposal which had 50 km/h as a general urban speed limit, that is, if it is not signposted, it is 50 km/h. At the point of changeover there might well be a need for some introductory or interim advice in some particular areas, either signage or road markings, to remind drivers that the law has changed. We would expect that that would be in the vast minority of cases. If, in fact, it was deemed necessary that could be provided at some strategic locations, not at every point of diversion to a 50 km/h area. It would be provided only as an initial reminder of the change in the law but it is the law which the people need to know. Our advertising and publicity campaigns would ensure that that message got through.” (Minutes of Evidence, 19 August 1996, pp.115-116))

4.64 STAYSAFE is aware that signing every 50 km/h street—or even the periphery of every 50 km/h ‘precinct’—would be a very expensive option, and takes the view that such a step should not be carried out in the first instance. As has been noted, STAYSAFE has doubts about the efficacy of a system which gives no visual cue to motorists as they leave a 60 km/h road and turn on to a 50 km/h. Having regard to the significant cost of installing signage or physical devices on 50 km/h streets, STAYSAFE recommends that, in the first instance, unique road markings be installed at the entry and exit points between local streets zoned as 50 km/h and defined traffic routes zoned as 60 km/h or higher. STAYSAFE also recommends that, if appropriate, speed limit signage should also be installed at the entry and exit points between local streets zoned as 50 km/h and defined traffic routes zoned as 60 km/h or higher.

4.65 STAYSAFE is aware that road markings or a road sign may be inadequate for the purposes of slowing down vehicles at locations where the particular characteristics are such that speed control needs to be more stringently applied. STAYSAFE further recommends that in locations where significant speed control is found to be necessary, some form of alteration to the road environment or road infrastructure—for example, chicanes, raised platforms, and like engineering measures—which compels a motorist to slow down should be considered.

**RECOMMENDATION 6: That appropriate road treatments be installed at the entry**

**and exit points between local streets zoned as 50 km/h and defined traffic routes zoned as 60 km/h or higher, and that:**

- (i) in the first instance, such treatments should be limited to a unique road marking;**
- (ii) if appropriate, signs indicating a 50 km/h speed limit are to be used; and**
- (iii) in locations where significant speed control is necessary, installation of physical devices such as raised platforms is to be considered.**

4.66 Various witnesses, including representatives of NRMA Ltd and ARRB Transport Research, and Professor Taylor, told STAYSAFE that physical measures were not required on 50 km/h streets. Indeed, one of the reasons for choosing 50 km/h over 40 km/h as a default speed limit was that reducing vehicle speeds to around 40 km/h would necessitate the widespread modification of the road environment through the installation of physical devices. Although many organisations felt that a 40 km/h speed limit was preferable in terms of the road safety benefits which would follow, this was considered as too steep a reduction for motorists in a culture which has yet to come to terms with the speeding problem. Setting the speed limit at 50 km/h was considered a happy medium, and one which could foster acceptance in lower speed limits in residential areas, with a view to reducing them further at some time in the future when a lower speed culture has taken root.

## **Concluding comments**

4.67 In this chapter, STAYSAFE has outlined the traffic management strategies which it considers are necessary to support the introduction of a 50 km/h general urban speed limit. The emphasis on the identification of streets which would be subject to the new speed limit has been changed so that the focus is on those streets which would retain their current, 60 km/h zoning, reflecting the recommendation that 50 km/h become the new general urban speed limit rather than categorising it as a local street speed limit, as suggested by the Roads and Traffic Authority.

4.68 To facilitate this process, STAYSAFE has recommended that the Roads and Traffic Authority establish a formal road hierarchy that is correlated with the various speed limits in use in New South Wales, and, in consultation with local councils, produce maps depicting the appropriate road hierarchy for each local government area.

4.69 STAYSAFE has rejected the minimalist approach to implementation, noting the entrenched nature of the 60 km/h speed limit in the minds of motorists, and has recommended that unique roadmarkings and, where appropriate, traffic calming devices, be installed at the junction of 50 km/h roads and those with higher speed zonings. In addition, STAYSAFE has

identified issues associated with speed limits in entertainment, commercial and shopping precincts.

4.70 It is important that a 50 km/h general urban speed limit should be introduced as an integrated package of measures associated with traffic management, traffic law, police enforcement and communications strategies which will be required to make drivers aware of the new general urban speed limit. The following chapters further describe and discuss the measures that are appropriate to support a 50 km/h general urban speed limit.





# 5

## SPEEDING OFFENCES AND PENALTIES

*The law relating to motor vehicle speeds - Speeding offences - Penalties upon conviction for speeding offences - Monetary fines - Demerit points - Loss of driver's licence - Does the offence and penalty structure need to be modified to support a 50 km/h general urban speed limit? - A formal cautioning system for certain speeding offences? - Concluding comments*

5.1 This chapter looks at the offences with which a driver detected driving in excess of the speed limit may be charged. The purpose is to give a general understanding of the offences that may be committed when a motorist drives at an excessive or inappropriate speed, and to examine the penalties that may be imposed when a motorist is convicted of an offence involving speeding.

5.2 In general, the offences relating to circumstances where a motorist drives at an illegal speed on a public road are contained within the Traffic Act 1909 and the Crimes Act 1900. Clauses under the Motor Traffic Regulations 1935 also define a number of specific speeding offences. There are a number of additional Acts and statutory rules which define speeding offences in limited circumstances associated with type of vehicle and location of the roadway.

5.3 The legislation relating to speeding offences has been modified considerably over the years, and does not present in a coherent and logical manner. STAYSAFE notes that a revised specification of speeding offences forms part of the development of national uniform traffic law—the Australian Road Rules.

### **The law relating to motor vehicle speeds**

5.4 The Traffic Act 1909 sets out the basic law relating to speed limits in New South Wales. In brief, the law provides that:

- apart from a prescribed speed limit of 10 km/h on any public road that is within a

shared traffic zone (i.e., a road used by pedestrians and motor vehicles jointly), the Roads and Traffic Authority can define and set speed limits for public roads, and can revise or vary the speed limits on public roads other than the roadway within a shared traffic zone;

- speed limits established by the Roads and Traffic Authority are to be indicated by the display of signs indicating the speed limit, and any other means necessary or convenient to give effect to the speed limit, and that in any court proceedings this display of signs is to be prima facie evidence that the speed limit indicated by the signs applies to that roadway;

- in the absence of any direction by the Roads and Traffic Authority, the default speed limit on a public road that is lit by street lighting is 60 km/h (i.e., the general urban speed limit is 60 km/h);

- in the absence of any direction by the Roads and Traffic Authority, the default speed limit on a public road that is not subject to street lighting is 100 km/h (i.e., the general rural speed limit is 100 km/h);

- the regulations may limit the maximum speed at which a motor vehicle or class of motor vehicles may be driven;

- a driver of an ambulance attending an emergency or the scene of an accident or conveying an injured person to hospital, or a fire engine attending a fire or emergency, or a vehicle carrying a police officer on urgent duty or to an emergency, is exempt from the provisions of the Traffic Act 1909 s.4A if: first, observance of speed limits would be a hindrance; and second, the driver gives best practicable warning to other road users;

- subject to any conditions which may be imposed, the provisions of the Traffic Act 1909 s.4A do not apply if the Commissioner of Police has approved in writing the holding of a race, speed record-breaking attempt, speed trial or competition involving motor vehicles on a public street.

5.5 Importantly, the Traffic Act 1909 s.4A(6) sets out that, notwithstanding any specific speed limit that might apply, a motorist shall not drive a motor vehicle on a public road at a speed which is dangerous to the public.

5.6 The allegation that a motorist has driven a motor vehicle on a public road at a speed which is dangerous to the public forms an important element to the criminal law relating to driving. Under the Crimes Act 1900, where a driver uses a motor vehicle in a negligent, dangerous or reckless manner, and death or serious injury results, there are various charges available to either the police or the prosecuting authorities, including the offences of murder, manslaughter, dangerous driving causing death, dangerous driving causing grievous bodily

harm, and wanton driving.

## **Speeding offences**

5.7 The Traffic Act 1909 prescribes a number of offences associated with the speed with which a motorist drives a motor vehicle.

5.8 Under the Traffic Act 1909 s.4A, the following offences are specified:

- a motorist who drives a motor vehicle on a public road at a speed in excess of the speed limit applicable to that length of road commits an offence;
- a motorist who drives a motor vehicle on a public road at a speed in excess of 45 km/h the speed limit applicable to that length of road commits an offence;
- if a motorist drives at a speed in excess of 45 km/h of the maximum speed to which the vehicle is limited by regulation, then the motorist commits an offence

5.9 The Traffic Act 1909 s.4B also provides that an offence is caused if a person organises, promotes or takes part in any race, speed record-breaking attempt, speed trial or competition involving motor vehicles on a public street without prior written approval of the Commissioner of Police.

5.10 The Traffic Act 1909 s.4 also provides offences for an motorist who drives a motor vehicle on a public road negligently, furiously, recklessly, or at a speed or in a manner dangerous to the public.

## **Penalties upon conviction for speeding offences**

5.11 If a motorist is convicted of driving a motor vehicle on a public road at a speed in excess of the speed limit applicable to that length of road, then the motorist is usually subject to a penalty of a monetary fine and the motorist's licence record attracts demerit points under the demerit point system for licence administration. In circumstances where the breach has been very serious, a minimum period of licence disqualification can be imposed.

5.12 As well, motorists who hold certain types of driver's licence are subject to specific speed limits, for example, the holders of a learner's licence or a provisional driver's licence are subject to restrictions on the maximum speed they can drive even if the posted speed limit is higher, and specific penalties apply upon conviction of a speeding offence for these drivers.

## **Monetary fine**

5.13 The major penalty associated with speeding offences is the imposition of a monetary fine. The monetary fines associated with speeding offences are graded, such that offences where the speed limit was exceeded by a considerable amount attract larger monetary fines than offences where the speed limit was exceeded by a lesser amount. Currently, a motorist driving a car or riding a motorcycle who is convicted of exceeding the speed limit by 15 km/h or less incurs a monetary fine of \$109, which increases to \$174 for exceeding the speed limit by more than 15 km/h, \$334 for exceeding the speed limit by more than 30 km/h, and \$668 for exceeding the speed limit by more than 45 km/h.

5.14 Drivers of particular classes of motor vehicle (such as a bus or other heavy vehicle) may, upon conviction, incur more severe monetary penalties of up to \$1004.

5.15 If a motorist is prosecuted for driving a motor vehicle on a public road at a speed in excess of 45 km/h of the speed limit applicable to that length of road under the Traffic Act 1909 s.4A(1A), then the motorist can be subject to a maximum penalty of 20 penalty units (currently \$2,060).

## **Demerit points**

5.16 Convictions for speeding offences can attract demerit points against a driver's licence record. Under the Motor Traffic Regulations 1935 clause 10B the licensing authority may keep a record of an offence, its penalty, the demerit points for the offence, and the date of the offence, and if a person incurs a total of 12 or more demerit points within any period of three years then that person's licence may be cancelled. Lower demerit point limits are associated with drivers who hold provisional or probabtionary licences.

5.17 Currently, demerit points associated with speeding offences include:

exceeding the speed limit by 15 km/h or less	1
exceeding the speed limit by more than 15 km/h but not more than 30 km/h	3
exceeding the speed limit by more than 30 km/h but less than 45 km/h	4
exceeding the speed limit by 45 km/h or more	6

5.18 STAYSAFE notes that a task force, comprising Roads and Traffic Authority staff and members of the Police Service's Traffic Services Branch, has been created to review of the demerit point system. The task force's basic philosophy is that demerit points should be allocated to drivers for road safety related offences rather than technical breaches. STAYSAFE understands that a draft document setting out the recommended demerit point offences has been sent to the Minister for Police and the Minister for Roads for their consideration.

## **Loss of driver's licence**

5.19 In general, if a motorist is convicted of driving a motor vehicle on a public road at a speed in excess of the speed limit applicable to that length of road, then the motorist will not lose their driver's licence.

5.20 If, however, the speeding offence conviction results in the accumulation of 12 or more demerit points on the driver's licence record, then a motorist must choose to either lose their licence for a mandatory period of three months or enter into a probationary licence for twelve months (the probationary licence is cancelled if there are further convictions for traffic offences within the twelve month period).

5.21 If the motorist is convicted of major offences involving driving and dangerous speed is an element of the offence—such as may result from convictions for offences under the Crimes Act 1900—then loss of licence may result.

5.22 Finally, if a motorist is convicted of driving a motor vehicle on a public road at a speed in excess of 45 km/h of the speed limit applicable to that length of road, then a minimum period of licence disqualification of 3 months is required.

## **Does the offence and penalty structure need to be modified to support a 50 km/h general urban speed limit?**

5.23 A lowering of the general urban speed limit from 60 km/h to 50 km/h would not, of itself, require any change in the current system of speeding offences and penalties. Speeding offences are specified in general terms of the range of speeds by which a speed limit is exceeded, not as increments specific to each speed limit. Thus the legislation prescribes speeding in brackets of 15 km/h above the speed limit: in 60 km/h speed zones these brackets are at 75 km/h, 90 km/h, and 105 km/h; while in a 100 km/h speed zone these brackets are at 115 km/h, 130 km/h, and 145 km/h.

5.24 However, STAYSAFE notes that the New South Wales Speed Management Program and Action Plan 1994-1995, a document arising out of the Road Safety 2000 strategic planning process, explicitly states that actions to be taken regarding speeding legislation and regulation is to develop a proposal to change the structure of excessive speeding offences from 15 km/h brackets to 10 km/h brackets, to review the penalties to suit the new offence structure, and to make a submission to the Minister for Roads for change (Roads and Traffic Authority, 1994).

5.25 STAYSAFE discussed with the Roads and Traffic Authority and New South Wales

Police Service whether increments of 10 km/h in excessive speeding offences might be a more appropriate basis for determining fines and demerit points:

**The Hon. J. S. TINGLE (STAYSAFE):** “What about the question of penalties and the demerit points system? I would imagine there would need to be changes to the Traffic Act 1909 because of the fact that we would be working on different speed limits and so on. And what about the adoption of a cautioning system, since people would need to get used to the lower speed limit? Have you thought of that?”

**Mr CROFT:** “Speeding penalties are referred to in terms of how many kilometres per hour above the limit that one is travelling at when apprehended. So that it does not really matter what the limit is in terms of the particular offence. At the moment, if one is travelling 15 km/h above the limit, or between 15 km/h and 30 km/h, or over 30 km/h, there is a particular penalty regime that applies in terms of demerit points and momentary penalties and, at the very top end, licence loss.

+Introducing something like a 50 km/h speed limit does not require that any of that structure should change. Coincidentally, there is some review of that penalty structure going on at the moment, and it might well lead to some change. But change is not necessary or essential for the introduction of a 50 km/h speed limit, as we have outlined.” (Minutes of Evidence, 4 December 1996, pp.14)

Mr Croft continued:

**Mr CROFT:** “...[the definition of speeding offences] is 15 km/h increments. I think if you trace it back, it comes back to 10 mph way back in the early 1970s. But, obviously, we cannot deny what social research is telling us. People think in terms of 10 km/h increments. Our research quite clearly shows that people think in terms of 10 km/h above a limit, or 10 km/h below a limit, and they tend to behave accordingly in their understanding of 10 km/h increments. So it is an alternative that must be looked at.” (Minutes of Evidence, 4 December 1996, p.14)

5.26 Police witnesses agreed that consideration should be given to changing the structure of excessive speeding offences from 15 km/h increments to 10 km/h increments:

**Mr HARRISON (STAYSAFE):** “The Committee has suggested that the current speeding offences under the Traffic Act 1909 should be revised to specify increments of 10 km/h rather than the current increments of 15 km/h. This would bring the speeding offences increments in line with the increments in posted speed limits. Does the New South Wales Police Service support such a suggestion?”

**Inspector LESTER:** “Basically we do support such a suggestion. The issue has been considered at length and the New South Wales Police Service has participated in consultations with the Road Traffic Authority on this issue through its representation on the speed management task force...” (Minutes of Evidence, 19 August 1996, p.89)

5.27 STAYSAFE concurs with the view that the threshold determining fines and demerit points with respect to speeding offences should be based on increments of 10 km/h rather than 15 km/h. Apart from the evidence of the Roads and Traffic Authority that motorists think in increments of 10 km/h, a narrowing of these thresholds would remind motorists of the

seriousness with which governments, road safety experts and the community view the speeding problem.

5.28 STAYSAFE noted that the New South Wales Police Service also had some specific concerns with the proposed shift from 15 km/h speeding offence brackets to 10 km/h brackets. Inspector Lester commented:

**Inspector LESTER:** “... A number of concerns were identified by the police organisation during the consultation and were raised with the Roads and Traffic Authority. The latest advice we have is such that it would appear that the concerns held can be overcome and that there is no real impediment to the introduction to the system....”

**Mr GIBSON (CHAIRMAN):** “You mentioned you had concerns. What concerns did you have?”

**Inspector LESTER:** “Probably the base concern was 10 km/h and under, where an offender received one demerit point and no fine and there was a legal impediment where there was no right to appeal. An offender received an infringement notice, lost one point and did not get a monetary fine. Because of that, there was some complicating factor that it could not be appealed against, which goes against the grain in most of western society. So there must be some sort of right of appeal. We are working through that and it is looking good.” (Minutes of Evidence, 19 August 1996, pp.89)

5.29 STAYSAFE recommends that the structure of speeding offences under the Traffic Act 1909 be amended to provide for increments of 10 km/h over the applicable speed limit.

**RECOMMENDATION 7: The Traffic Act 1909 and associated statutory rules be amended to provide for the imposition of fines and demerit points based on increments of 10 km/h for speeding offences.**

5.30 While recognising the prerogative of the Minister for Roads to establish the level of monetary penalty and the number of demerit points to be associated with each speeding offence, STAYSAFE suggests that the monetary fines and demerit points for speeding offences based on 10 km/h increments be essentially the same as those for the current speeding offences based on 15 km/h increments, with the exception of the speeding offence of 10 km or less over the speed limit.

5.31 For speeding offences of 10 km or less, STAYSAFE suggests that the primary punishment emphasis be placed on demerit points rather than on a monetary fine. This will have the effect of providing an indication to the general public that the rationale for the reformulation of speeding offences and penalties is based on considerations of road safety and road trauma reduction, rather than on more emotive notions of 'revenue raising'.

**RECOMMENDATION 8: The primary punishment emphasis following a conviction of an offence of exceeding the speed limit by 10 km/h or less placed on demerit points rather than on a monetary fine.**

5.32 Again, respecting the prerogative of the Minister for Roads to establish the level of monetary penalty and the number of demerit points to be associated with the speeding offence of 10 km or less over the speed limit, STAYSAFE recommends that the penalties should be a minimal monetary fine—perhaps \$65, in line with the monetary penalty for a number of other lesser known speeding offences—and 2 demerit points.

### **A formal cautioning system for certain speeding offences?**

5.33 A formal or recorded cautioning system could be a valuable adjunct to other measures proposed to foster public credibility in a lower urban speed limit. STAYSAFE is aware that there have been proposals advanced to introduce a recorded cautioning system for certain offences previously (see, e.g., Ireland, 1991).

5.34 STAYSAFE raised the issue of a cautioning system with New South Wales Police officials:

**Mr HUNTER (STAYSAFE):** “If the Government adopts the proposal to introduce a 50 km/h local road speed limit on residential streets, what are the implications for the current penalty and demerit point system, including the need for revision of current speeding offences under the Traffic Act 1909 and the adoption of a cautioning system to operate together with a traffic infringement system?”

**Inspector LESTER:** “The reduction of the speed limit itself does not really require any alteration to the current penalty and demerit point system. However, it seems an appropriate time for review of that system to be carried out. I know that there are reviews on the agenda, both interstate and nationally, for the demerit and point system. Some twelve months ago there was discussion on the development of a cautioning system by the New South Wales Police Service. That discussion actually lapsed due to events that have happened between then and now. It now might be an ideal time, because of this review, to revisit the whole topic of a formal cautioning system. But neither the penalty nor the cautioning system is critical to the introduction of the 50 km/h speed limit.” (Minutes of Evidence, 4 December 1996, pp.49-50)

5.35 When the cautioning proposal was raised later, STAYSAFE was informed that matters had not progressed:

**Mr MILLS (STAYSAFE):** “The Police Service acknowledged in previous evidence last December that there had been discussion on the development of a cautioning system about two years ago. Has there been any further examination of the question of a formal cautioning system to operate in conjunction with the traffic infringement notice system?”

**Inspector LESTER:** “It was indicated in earlier evidence that the Police Service previously considered this on-the-spot cautioning system. At that stage we prepared a file to go to the Minister for Police. The matter was then considered by Cabinet and it was decided to defer the proposal. The Police Service was further advised that it would be appreciated if it could arrange for no further action to be taken in regard to implementation of this proposal until the matter was further considered by Cabinet. To date, no further advice has been received. So, after two years, it may have been lost in the system. However, papers relating to the proposal are being resubmitted for consideration by the current Government. We have copies of the main file, so we will breathe new life into it.” (Minutes of



Evidence, 19 August 1996, p.89)

5.36 STAYSAFE is of the view that there is room for consideration of a recorded cautioning system with respect to minor traffic offences, such as low-range speeding offences.

5.37 Under current policing instructions, police may issue a discretionary caution for a traffic offence. However, this caution is informal in nature, and no record of the caution is made against the licence record of any motorist so admonished. While there are strong advocates for police to retain this discretionary power when it relates to speeding offences, STAYSAFE has noted the general views of the New South Wales Chief Justice on the granting or adoption of discretionary power by police:

“The fact that the police force is part of the executive branch of government carries with it, as a corollary, certain consequences flowing from the principle of separation of powers.

First, police do not exercise legislative power; that is to say, they do not make laws. This observation may seem trite, but its implications are sometimes overlooked. Less obvious, but equally important, is the need to guard against vesting in the police discretionary powers which, for practical purposes, may amount to powers to make law, or to dispense with compliance with the law. There is a need to be on guard against the temptation, in the interests of administrative convenience, to confer upon officers of executive government, including members of the police force, discretionary powers to impose legal obligations upon some citizens or to relieve other citizens of obligations. Appropriate delegation of powers to make rules and regulations subject to parliamentary scrutiny is one thing, but it is not the function of police to make the law, or to decide by whom, or to what extent, the law is to be obeyed.” (Gleeson, 1993, p.2)

The Chief Justice continued:

“There is a related consideration which is worth remembering. It affects the exercise by Parliament of its law-making power. On occasions laws are made, or left on the statute-book, which have a width, or which operate with a theoretical severity, that is not intended to apply in practice. This can produce the result that the police are put in the position of having a de facto discretion as to whether and in what circumstances they will enforce the law.... The police should not be left in a position where it is up to them to decide which laws they will enforce. Bad laws should be repealed or reformed, not left to be tempered in their practical operation by police discretion.” (Gleeson, 1993, p.2)

5.38 STAYSAFE is supportive of a view that a motorist who is caught exceeding a speed limit by 10 km/h or less should be issued with a formal, recorded caution rather than incur the penalties of a fine and demerit points, and recommends that the feasibility of a scheme be investigated. Such a cautioning scheme should have several features. First, the caution should be issued on the traffic infringement notice, such that the details of the offence and the motorist are recorded but that the traffic infringement notice is marked to indicate that a formal caution is recommended. Second, the traffic infringement notice should be processed and the issue of the caution annotated to the licence record of the motorist. Third, if the motorist has received a previous caution for a speeding offence within the preceding twelve months, the full penalties for the offence (i.e., demerit points and a monetary fine) should be incurred. Finally, at the time of the offence the attending police officer should advise the motorist of the caution, and that the full penalties will apply if a previous caution has been recorded.

**RECOMMENDATION 9: The Minister for Police, in consultation with the Minister for Roads and other appropriate Ministers, assess the feasibility of adopting a system whereby a motorist who is detected exceeding the speed limit by 10 km/h or less:**

- (a) is issued with a cautionary traffic infringement notice such that details of the offence and the motorist are recorded but that the traffic infringement notice is marked to indicate that a formal caution is recommended;**
- (b) the traffic infringement notice is processed and the issue of the caution annotated to the licence record of the motorist;**
- (c) if the motorist has received a previous caution for a speeding offence within the preceding twelve months, the full penalties for the offence (i.e., demerit points and a monetary fine) should be incurred;**
- (d) at the time of the offence the attending police officer should advise the motorist of the caution, and that the full penalties will apply if a previous caution has been recorded.**

## **Concluding comments**

5.39 The revision of the traffic law relating to excessive speeding is an essential component of an integrated urban speed management program. STAYSAFE believes that the recommendations for revision of speeding offences and penalties will support enforcement activities to be taken by police, and contribute to an improvement in the acceptability of a new general urban speed limit of 50 km/h.

5.40 The recommendations made regarding speeding offences and penalties have general applicability for excessive speeding offences on all roads, not just on urban local roads. In that respect, these recommendations are supportive of a coherent general speed management program throughout New South Wales.

5.41 STAYSAFE is particularly concerned to address the emotive claim of 'revenue raising' that is often associated with speed enforcement. STAYSAFE believes that the implementation of the recommendations for a recorded cautionary system for 'minor' traffic offences and for an emphasis on non-monetary penalties for repeated instances of such offences should address any concerns that a speed management program, which must necessarily include specific enforcement strategies, is not based upon safety and trauma reduction considerations.



# 6

## EFFECTIVE ENFORCEMENT OF A 50 KM/H SPEED LIMIT

*Research into effectiveness of enforcement measures - Tolerance of excessive speed - Enforcing the new general urban speed limit of 50 km/h - Technologies for informing motorists of excessive speeding - Enforcement technologies - A moratorium on penalties for exceeding the 50 km/h general urban speed limit? - Issues in the deployment of speed enforcement technologies - Concluding comments*

6.1 The predominant doctrine among Australian road safety workers is a commitment to the use of deterrence as the mechanism to achieve desired social and economic objectives in reducing the frequency and severity of road crashes with concomitant reductions in the personal and community costs associated with road trauma and property damage. STAYSAFE has discussed the use of deterrence in some detail in previous reports into drink-driving matters (see, e.g., STAYSAFE 20, 1993). To review briefly, deterrence can be used as a general mechanism, based on appealing to motorists' fears that they are likely to be caught and punished for illegal behaviour; or it can be targeted specifically, where the objective is to make an individual motorist more careful after being caught and punished for a driving offence.

6.2 The effective use of deterrence relies heavily upon visible, credible police enforcement that targets unacceptable road behaviour. In this chapter, research into the effectiveness of speed enforcement is reviewed, and the technologies and operational methods used by police to combat excessive speed are examined.

### Research into the effectiveness of enforcement measures

6.3 Fildes and Lee (1993a) reviewed some of the findings of the literature on enforcement strategies and their success in reducing travel speeds. Some of the observations reported by Fildes and Lee include:

- raising fines may not necessarily lead to a reduction in speeding offences
- the severity of fines is less crucial to their success as a deterrent than is their mere existence
- if police enforcement is removed (e.g., during a strike by police officers), the number

of serious speeding offences increases, and may even double

- warning letters can be as effective as fines in reducing speeding offences.

6.4 Fildes and Lee (1993a) observed that:

“The certainty of punishment in speed behaviour has been well researched. While there is some evidence to support its role in moderating travel speed, the relationship is not established. The severity of the punishment too appears to have some influence on travel speed from reports in the literature. However, it seems unlikely to have a predominant role in long term behaviour change and needs to be used in conjunction with greater enforcement effort to ensure lasting effects. Evidence of the importance of punishment celerity (immediacy) was inconclusive among the road safety literature reviewed.”

6.5 A good recent review of the literature on traffic law enforcement has been provided by Zaal (1994). He made the following conclusions on speed enforcement:

- The primary focus of speed enforcement should be on increasing surveillance levels, and hence the actual and the perceived risk of detection.
- Traditional vehicle based enforcement methods should focus on increasing the visibility and unpredictability of traffic policing operations.
  - highly visible stationary enforcement operations have the greatest deterrence potential when using police vehicle deployment methods
  - these activities should also be supported by the use of both marked (visible) and unmarked (non-visible) mobile speed enforcement operations in order to increase the unpredictability of where, how and when enforcement will be encountered.
- Primary consideration should be given to the implementation of strategies based around the intensive use of automated speed enforcement devices.
  - to maximise the benefits and community acceptance of speed camera operations it is important that the enforcement is primarily targeted at accident locations where speed is known to be a causal factor
- The use of new automated digital imaging systems can increase the apprehension effectiveness of speed camera operations.
- The use of both fixed (unmanned) and temporary site (manned) speed camera operations can maximise the system wide effectiveness of speed camera enforcement operations.
  - The development of strategies designed to ensure better spatial deployment of available policing resources can increase the efficiency of enforcement operations.
  - The use of publicity to support speed enforcement activities is an essential requirement to raise community awareness and improve the effectiveness of enforcement operations.
  - Reducing the size of enforcement tolerance levels on speed limits can assist in reducing the level of speeding behaviour and ensuring greater adherence to posted speed limits.
  - Behaviour feedback strategies such as the public posting of speed information displays and incentive programs can increase the effectiveness of speed enforcement operations.
  - Greater emphasis should be placed on the use of licence suspension/revocation procedures.
- The implementation of strategies designed to target and deter repeat offenders, such as point demerit systems, should be given a high priority.
- In order to be effective, speed limits must be perceived by road users as being

appropriate for the existing road environment conditions.

- emphasis should be placed on increasing the credibility of speed zones so as to ensure the greater acceptance and adherence, by road users, to the posted speed limits
- the use of 'expert' systems for speed zoning classification and the use of variable speed limits are possible methods of increasing speed limit credibility.
- Enforcement should not be relied upon as the sole means of reducing the level of speeding behaviour. Preventative strategies which target the "agents" of speeding, namely the vehicle and roadside environment should be considered as an alternative or supplementary means of reducing the level of speeding behaviour.
  - the use of speed limiting devices and measures designed to physically modify the roadside environment have considerable potential.
  - the use of perceptual speed countermeasures may also offer a low cost means of reducing the level of speeding behaviour.
  - vehicle design characteristics to improve the accident avoidance capability of vehicles, as well as the level of protection provided to vehicle occupants, can potentially reduce the injury consequences of speeding behaviour. (p iii-iv)

## **Tolerance of excessive speed**

6.6 An important issue in police enforcement of excessive speed is the phenomena of tolerance of limited speeds in excess of the speed limit. Tolerance levels tend to be unofficial in nature, but are widely appreciated by motorists. Commonly, the acceptable tolerance of excessive speed is said to be '10% or 10 kms'. This means, it is said, that motorists are 'safe' from police enforcement if their vehicles do not exceed 65-70 km/h in a 60 km/h speed zone, or 115-120 km/h in a 110 km/h zone. It is not uncommon for motorists travelling on rural highways in vehicles fitted with cruise control to set the speed to be maintained at or just under the perceived tolerance level for speed enforcement.

6.7 Originally, tolerance levels in conducting speed enforcement were adopted in order to minimise potential court challenges to charges based on technological imperfections such as speedometer error and inaccuracies in speed measuring equipment. The application of tolerance levels also extends goodwill to motorists because it demonstrates a concentration on catching excessive and potentially more dangerous offenders. However, it also means that many motorists add this tolerance level to official speed limits to arrive at the desired and tolerable travel speed.

## **Enforcing the new general urban speed limit of 50 km/h**

6.8 The enforcement of a new 50 km/h speed general urban speed limit must take place within a mix of strategies: publicity campaigns, appropriate levels of police enforcement, the building of credibility in the speed limit among motorists, and appropriate sanctions for exceeding the limit.

6.9 The Roads and Traffic Authority stated that:

“The 50 km/h local street speed limit would be subject to enforcement in the same way as the current 60 km/h general limit—as part of the normal deployment of police patrols, and in response to specific problem sites. Following the introduction of a new limit, a special period of ‘enhanced’ enforcement, targeting local streets, would be negotiated with police.” (Roads and Traffic Authority, Submission USL 22, p.xi)

6.10 The Roads and Traffic Authority sees no fundamental requirement for a permanent increase in enforcement resources specifically for the new limit. Continued adoption of developing technologies (such as laser speed guns) and alternative deployment strategies (such as random patrol allocation), and the increasing involvement of local councils in monitoring and managing the speed problem would continue to assist in the effectiveness and efficiency of speed enforcement patrols on residential streets.

6.11 As STAYSAFE has noted elsewhere in this report, the literature on speed suggests that there is a strong link between credible speed limits and effective enforcement measures. In evidence, Mr Macky, an NRMA witness, stated:

**Mr SMITH (STAYSAFE):** “My questions are mainly to do with enforcement, technology, penalties and those types of things. What changes are required to enable effective enforcement of lower local road speed limits? Are there any parallels to be drawn with the NRMA's experience concerning the introduction and use of speed camera technologies in New South Wales?”

**Mr MACKY:** “There is no doubt that police enforcement is integral to an effective speed management strategy. However, it would be impossible, as well as undesirable, to expect enforcement alone to ensure compliance with a lower speed limit. If people are to travel at 50km/h, it will be because they endorse the concept of a lower speed limit on local streets, not because they are threatened with enforcement.

From that perspective, we think it vitally important that the community own this project and therefore that they drive willingly at the lower speed limits. In terms of police enforcement, nevertheless, there may be a need for some highly visible police enforcement immediately after any introduction of a slower speed limit in residential areas. That would really be a case of the police being out there and, if people are exceeding the speed limit, stopping them and either cautioning them or issuing warning letters, so that they can educate the driving public and not just issue infringement notices.

That approach was similar to what was undertaken when speed cameras were introduced in New

South Wales. There was, I think, a one-month or two-month period where warning letters were issued to people who had been detected by a speed camera. Research indicates that that measure was very well accepted by the community. Some additional research also indicates that the use of warning letters can be as effective as the use of fines or penalties or demerit points in changing driver behaviour. That really is what enforcement should be all about - changing driver behaviour.” (Minutes of Evidence, 4 December 1996, pp.34-35)

6.12 When questioned by STAYSAFE, the New South Wales Police Service officials concurred with this view:

**Mr HUNTER (STAYSAFE):** “Based on the information held by the New South Wales Police Service, what important lessons can be learned from an examination of the speed management practices in other jurisdictions in Australia and overseas, particularly in terms of identification of current practices for setting of urban speed limits and the introduction of lower local road speed limits in residential areas?”

**Inspector LESTER:** “One of the important aspects we believe of lower speed limits is that they should, as in all other forms of traffic regulation, be self-enforcing rather than having strong enforcement as the major and sole approach to control. A major aspect of the lower speed limit is the level of compliance, and this level should be achieved first of all by public acceptance and education, linked with appropriate levels of engineering and then enforcement. It is the old 3Es, really - education, engineering, and then enforcement, each of which has got to be a strong component.” (Minutes of Evidence, 4 December 1995, p.45)

6.13 Equally, the system cannot depend solely on the self-compliance of motorists to keep speeds down to safe levels: drivers are unlikely to always obey speed limits if experience tells them that enforcement levels are such that there is little likelihood of incurring a speeding fine and demerit points.

6.14 Fildes and Lee (1993a) drew the following conclusions on effective traffic law enforcement in relation to speeding offences:

“Highly visible police enforcement activities seem to be effective at reducing travel speeds especially when there are multiple regional activities. Non-visible police enforcement has greater impact on fixed offences such as drink-driving and may result in a greater general deterrence effect through greater uncertainty. Stationary police operations seem more effective at reducing speed than mobile ones, although the mechanisms are poorly understood. The role of driver attitude in speed behaviour is not clear. However, publicity should not be used as the sole medium for eliciting speed reductions, but rather as a supporting environment for other activities. A multi-faceted program would seem to be desirable to bring about long term speed behaviour change. There was some suggestion that roadside signs displaying speed violation information was effective in reducing travel speed overseas, although local experience so far has been equivocal. There may be merit in altering the form of this information from population to individual indiscretions to embarrass speeding motorists into slowing down. New technology brings with it the possibility of greater specific and general deterrence from increased probability of detection (both perceived and actual) and punishment. There is also some evidence of crash reductions from these devices overseas. There is an urgent need for a full evaluation of the effectiveness of new technologies in this area.” (p.50)

6.15 In his review of the literature, Zaal (1994) referred a study on speed and traffic enforcement by Ostvik and Elvik:

“According to Ostvik and Elvik (1990), increasing the perceived risk of detection is one of the most



important objectives of all speed enforcement strategies. However, to achieve this objective, it is essential to significantly increase the actual risk of detection and hence the intensity of enforcement operations. If motorists are to be deterred from speeding they must be made aware of the fact that there is a high probability that such behaviour will be detected and result in some form of punishment. This proposition highlights the need to introduce enforcement techniques designed specifically to increase detection rates. These techniques would also need to be sustained over a long period of time and be accompanied by high levels of associated publicity in order to highlight the enforcement operations and the increased risk of detection. These requirements have major implications for enforcement based speed management strategies, suggesting the need to re-evaluate traditional policing methods and adopt more intensive enforcement practices.” (p.73)

6.16 STAYSAFE concludes that the efficacy of enforcement will depend to some extent on motorists’ willingness to comply with speed limits on safety grounds, a judicious use of suitable road treatments to alert drivers to the fact that they are driving in a 50 km/h zone, together with a mix of overt and covert enforcement strategies.

### **Technologies for informing motorists of excessive speeding**

6.17 The traditional approaches to informing motorists of the speed limit are through signs and road markings. However, it is known that signs and road markings can have reduced effect on speed behaviour in the long term (see, e.g., Oei, 1996).

6.18 In recent years new technologies have been created to inform motorists of excessive speeding. These technologies utilise flashing reminder signs that indicate the speed of the vehicles under notice. The published research on dynamic traffic signs to reduce the speed of traffic indicates that dynamic signs can reduce speed effectively and increase attentiveness. The extent of the effect depends on the relevance, credibility and specificity of the information.

6.19 In New South Wales, trials have already commenced of dynamic speed advisory signs on the F6 freeway between Sydney and Wollongong. New electronic incident management systems are being installed on other freeways and motorways which can provide detailed information on recommended routes and traffic diversions.

6.20 STAYSAFE recommends that the Roads and Traffic Authority and local councils investigate the feasibility of using speed measurement and display equipment to inform motorists of their vehicle’s speed on roads with a speed limit of 50 km/h.

**RECOMMENDATION 10: The Roads and Traffic Authority and local councils investigate the feasibility of using speed measurement and display equipment to inform motorists of their vehicle’s speed on roads with a speed limit of 50 km/h.**

6.21 STAYSAFE also notes proposals for mounting dynamic speed display systems into police vehicles, so that even if a motorist is not exceeding the speed limit and therefore not subject to specific speed enforcement action, advice can be given about the speed of travel and the activity of police in conducting speed enforcement operations is made more visible.

## **Enforcement technologies**

6.22 The New South Wales Police Service advised STAYSAFE that three major new enforcement technologies had been either adopted or under consideration for use in speed enforcement in New South Wales:

- The tripod-mounted AWA slant speed radar cameras are being replaced with tripod-mounted or vehicle-mounted Traffipax Speedphot speed radar cameras. It is intended that the Traffipax Speedphot speed radar cameras will also be used as 'static' or pole-mounted cameras in locations where other speed enforcement is not possible or practicable. The Traffipax Speedphot speed radar cameras use analogue photography, that is, film is exposed and developed, rather than digital imaging technology.
- Hand-held Pro Laser 11 laser speed detection equipment is being introduced.
- The vehicle-mounted Kustom KR10 radars in use currently are being replaced on an 'as needed' basis by vehicle-mounted Kustom Silver Eagle radars. The Kustom Silver Eagle radars are already 'in contract'.
- The use of on-board video recorders in police vehicles is under active consideration (see STAYSAFE 27, 1994). There is a provision with the Kustom Silver Eagle radars for a video attachment, which enables video speed camera deployments to be considered. Currently, no video technology for speed enforcement is 'on issue'. No formal evaluation of the use of video technology in conjunction with the Kustom Silver Eagle radars has been conducted. The Kustom Silver Eagle radars are deployed for uses similar to the Kustom KR10 radars, that is, as vehicle-mounted devices without a camera attachment.

6.23 Police Service officials advised STAYSAFE that the current, stationary speed camera equipment was somewhat limited in its application, as it was prone to interference or 'bounce' from common roadside features such as signs and railings. Laser guns, which are to be introduced this year, are less vulnerable to interference from such reflective material.

6.24 The new, vehicle-mounted Traffipax Speedphot radar speed cameras have the obvious advantage of being mobile, with greatly reduced set-up times compared with the tripod-mounted versions and, most importantly, allow up to 600 shots on the same roll of film. This means that police will be able to use more locations per shift, greatly improving productivity. In addition, unlike the stationary speed cameras, they can be operated by a single officer and can detect speeding vehicles moving in either direction. They are also more reliable at night and under unfavourable weather conditions.

6.25 Twelve of these units will be installed in highway patrol vehicles over the next few months. At the time of the hearings, new site selection criteria and standard operating procedures were awaiting Ministerial approval prior to the introduction of the mobile speed cameras.

6.26 STAYSAFE wanted to establish whether speed cameras were deployed, or could be deployed, on local streets throughout the State.

**The Hon. A. B. MANSON (STAYSAFE):** “Is the speed camera technology used currently employed on collector and local roads as well as arterial and subarterial roads? Are there any plans for the wider development of speed camera technology, for example, on a wider variety of roads than those as negotiated between the police, the Roads and Traffic Authority and the NRMA including on residential streets? Using the stationary speed camera sites including those at intersections fitted with red light cameras and speed cameras mounted in police vehicles rather than on roadside devices?”

**Inspector GRAINGER:** “Speed camera devices are only operated at locations which have been assessed and approved in accordance with negotiated police, Roads and Traffic Authority and NRMA speed camera site criteria. Any site, irrespective of what type of road, which conforms to the agreed criteria can be approved as a speed camera site. Further to that, negotiations have taken place between the police, the Roads and Traffic Authority and the NRMA in regard to broadening site criteria and to expand the range of sites suitable for this type of operation. This type of operation was recently approved. The new criteria will give the Police Service greater flexibility in deploying this type of technology while maintaining a focus on the reduction of road trauma. In regard to the different types of speed camera technologies the Service has looked at stationary type speed camera equipment. The papers are currently with the Minister for Transport seeking approval. In this regard a certain legislative change and gazettal is required. A number of sites including existing red light camera sites are currently under consideration.”

**Mr GIBSON (CHAIRMAN):** “Would the police prefer to put the cameras on any street rather than go through this procedure with the Roads and Traffic Authority and the NRMA?”

**Inspector LESTER:** “In one way but with a limited amount of resources we have also got to make sure that the speed camera activities or any of our road safety activities are directly related to the reduction of road trauma. One of the main things that we are about is relating our activities to reduction of road trauma. It saves a lot of criticism coming from other areas saying we are doing it for other reasons. I think the speed camera activity at this stage is more important to relate that directly to the reduction of road trauma. By having some sort of site selection criteria relating to the use of cameras we basically at this stage agree with that so we can directly relate it.” (Minutes of Evidence, 19 August 1996, pp.83-84)

6.27 STAYSAFE is pleased to note that there will be greater flexibility given to police in their deployment of speed cameras, and is assured by New South Wales Police Service officers’ statements that they are deployed only on the basis of potential road safety benefits, and not on where they are likely to raise the most revenue. STAYSAFE is of the view that the potential danger to pedestrians and cyclists posed by speeding vehicles on residential streets warrants the deployment of speed camera technology on those streets where appropriate. Mr Scruby, representing the Pedestrian Council of Australia, commented:

**Mr SCRUBY:** “In our submission we state that there is room for all types of lesser zones. We are not saying that, because we bring the standard down to 50 km/h that suddenly gives us reasons to make other streets higher. All areas outside residential streets and inside should be considered on their merits, and in consultation with the community generally through its traffic committees, the NRMA,

the Roads and Traffic Authority, the Police and the Pedestrian Council. Once these speed limits are established proper enforcement must take place. No-one should be allowed to suggest that it is revenue raising; that is absolute nonsense. As the police force gets its image back and starts to become the organisation that we want it to be, it should be left unfettered to enforce. It is important to emphasize that random use of these cameras and technology must be the way that we will enforce the law. At present everyone knows where the cameras are located...

... in the United Kingdom speed cameras are set and fixed in certain black spots. The cameras are simply left there full time, like we leave a red light camera there. The cameras stay there permanently; they have had a marked impact on the accident rate. But in the same instance the police must be able to use speed cameras randomly, so that when you travel in a back street you can expect to see a camera, just as much as you might see a drink-drive bus. Enforcement should be random, not prescribed. No-one should have the right to tell the police where they can use these things; the police should be allowed to use them where they want, so that the element of surprise is always there all of for us.” (Minutes of Evidence, 19 August, p.40)

6.28 STAYSAFE recommends that the Minister for Police ensure that the New South Wales Police Service has the sole responsibility for the operational deployment of speed enforcement technologies, including the selection of sites for enforcement, and that other agencies or organisations are restricted to an advisory or consultative role.

**RECOMMENDATION 11: The Minister for Police ensure that the New South Wales Police Service has the sole responsibility for the operational deployment of speed enforcement technologies, including the selection of sites for enforcement, and that other agencies or organisations are restricted to an advisory or consultative role.**

6.29 In a previous report, STAYSAFE had examined the possibility of deployment of speed cameras in 40 km/h school zones. A recommendation made in STAYSAFE 26 (1994) requested the New South Wales Police Service to revise the procedural guidelines for the operation of speed radar technologies such as slant radar and speed cameras, to ensure that warning signs indicating the operation of speed cameras and other radar technologies are placed on the approaches to school speed zones; and to ensure that an appropriate level of advertising and publicity occurs to inform the New South Wales motoring community of the changes to the operational deployment of speed cameras and other radar technologies.

6.30 STAYSAFE 26 (1994) had found that the effective enforcement of 40 km/h speed limits during school travel times has proven problematic for police. The current guidelines limit the operation of down-the-road radar units, slant radar units, and speed cameras within 200 metres of a change in speed zone. Obviously, as school zones often only exist for the several hundred metres of a school site and its adjacent environs, opportunities for speed enforcement activities are limited and it can be difficult indeed for police to select an appropriate site for speed enforcement activities.

6.31 STAYSAFE 26 (1994) felt that the placement of signs indicating that school speed zones of 40 km/h can and will be policed by speed cameras could be expected to have a strong

deterrence effect, provided that the measure is well publicised. For example, warning signs indicating the operation of speed cameras and other radar technologies should be placed on the approaches to school speed zones, and an appropriate level of advertising and publicity should be developed to inform the New South Wales motoring community of the changes to the operational deployment of speed cameras and other radar technologies around schools.

6.32 The 200-metre restriction around changed speed zones is primarily aimed at giving motorists moving from higher to lower speed zones the chance to slow down their vehicles safely and in time to comply with the lower speed limit into which they are moving. This allowance, however, has backfired in relation to the enforcement of the 40 km/h zones around schools, giving the motorist unwarranted protection from scrutiny on these sections of road. However, Police Service officials advised STAYSAFE that the 200 metre restriction on the deployment of radar speed detection instruments was not the only problem:

**Inspector LESTER:** “The point is that it was nice to have the deceleration zone for 200 metres after the change of speed limits, but another factor involves radars, which includes cameras. You cannot operate them in a certain area of reflective material, whether it is a vehicle or whether it is a sign. So technically we have to be careful of that as well. Lasers do not do that. They will be an excellent piece of technology and they will go a long way to solving our problems both in 40 km/h school zones and residential speed limits in the same area. You just point the laser.” (Minutes of Evidence, 19 August 1996, p.91)

6.33 It would appear, then, that the current stationary radar equipment is not really suitable for the purposes of enforcing 40 km/h speed limits around school zones, nor the general urban speed limit in residential streets. However, STAYSAFE notes the imminent deployment of sophisticated Pro Laser 11 laser guns, which are extremely mobile, very cost-effective, and have tremendous potential for the successful enforcement of the laws relating to speeding. Around 50 Pro Laser 11 laser guns will be distributed to police.

6.34 STAYSAFE assumes that the problems which the 200-metre restriction has caused with respect to the enforcement of the 40 km/h speed limit around schools would, if they are permitted to remain unchanged, be replicated in the attempt to enforce a 50 km/h general urban speed limit. There will be innumerable instances of drivers moving from, say, a 60 km/h zone into a 50 km/h street. A situation where police are unable to enforce the 50 km/h speed limit when drivers enter these streets from a road further up the hierarchy must be avoided.

6.35 STAYSAFE therefore recommends that the restriction on the use of radar speed detection devices within 200 metres of a changed speed zone be expunged, and replaced with a more suitable and flexible guideline. STAYSAFE is particularly concerned to ensure that there is effective enforcement of excessive speeding within zones.

**RECOMMENDATION 12: The Minister for Police instruct the Commissioner for Police to remove the current instruction restricting the use of speed detection devices within 200 metres of a change in speed zone, particularly in relation to school zones, and to develop more suitable and flexible guidelines for speed enforcement.**

6.36 As noted earlier, another item of new technology that is potentially available to police for the enforcement of speed limits is the use of on-board video recorders.

6.37 New South Wales Police Service officials advised STAYSAFE that the Privacy Committee had concerns about the deployment of on-board video recorders with respect to what is known as 'technology creep'. Because speed cameras and on-board video recorders use frontal photography, the Privacy Committee needs to be convinced that police will use these devices for precisely the purposes they are intended, and not for some other, unauthorised reason. However, Police Service officials told STAYSAFE they were confident that the issue would be worked through and that a solution acceptable to both sides would be arrived at:

**Mr JEFFERY (STAYSAFE):** "The Committee in Recommendation 17 of the STAYSAFE 27 report ... made a recommendation that the New South Wales Police Service install video cameras and recorders in highway patrols and accident investigation squad vehicles. That was to record drivers' behaviour. This technology would be very appropriate for use in areas that are otherwise difficult for police, such as speed offences in a 40 kilometre speed zone outside schools and also speed offences on residential streets and local roads. Apart from what has happened in Parliament, what has been the progress in implementing this recommendation?"

**Inspector LESTER:** "We have one type of video recording system that is being tested within the Police Service. The initial results are proving quite effective and are quite positive. The Police Service will be further evaluating other types of on-board videos—there are quite a few on the market—before decisions are made, and there will be consultation with the Privacy Committee and the judiciary. From first-hand experience the Privacy Committee is very interested in on-board videos. The effectiveness or otherwise of the devices cannot be commented on prior to these proper evaluations being carried out.

Following evaluation of all the available equipment the appropriate tendering policies will be employed, along with the application for capital funding for the purchase and the fitting of the devices. So whilst there is one on trial, we are gradually proceeding down the line to get them on board."

**Mr JEFFERY (STAYSAFE):** "Is the Privacy Committee interested positively or negatively?"

**Mr LESTER:** "I am sure with appropriate negotiation we can come up with a solution to both sides of the argument—the police enforcement side and the Privacy Committee. The major concern is what is called technology creep. The new speed cameras use frontal photography and the Privacy Committee is concerned, as with the videos, that the Police Service uses the speed camera or the on-board video for exactly what we say we are going to use it for and not allow it to creep into other areas and do other things we did not say we would do in the first place. Technology creep is their major concern. We can certainly work our way through negotiations and come up with a good solution from both sides." (Minutes of Evidence, 19 August 1996, pp.87-88)

## **A moratorium on penalties for exceeding the 50 km/h general urban speed limit?**

6.38 The Roads and Traffic Authority, NRMA Ltd and the New South Wales Police Service voiced their support for a moratorium or limited period of grace after the introduction of a 50 km/h general urban speed limits, whereby motorists would be issued with a caution by police if caught exceeding the new general urban speed limit of 50 km/h by 10 km/h or less (see Chapter 5: Excessive speeding offences and penalties).

6.39 STAYSAFE favours an enforcement strategy whereby the initial focus would be on intercepting offending drivers and cautioning them about the new limit, followed some weeks later by full enforcement of the limit. This strategy was supported by the Roads and Traffic Authority, New South Wales Police Service, and NRMA Ltd.

6.40 STAYSAFE sees merit in a scheme which would extend goodwill to motorists who may be unaware of the change in the general urban speed urban speed limit. STAYSAFE notes that a period of grace, or moratorium, was a feature of the process of introducing speed camera enforcement into New South Wales in the early 1990s. More recently, a similar scheme was employed for the changes to the laws governing vehicle movement at multi-lane roundabouts. A moratorium for a limited period of time is a good example of how new road safety measures can be implemented without putting drivers off-side by allowing such measures to have the appearance, however false, of being mere revenue raising exercises.

6.41 STAYSAFE therefore recommends that motorists who are caught exceeding the 50 km/h speed limit be issued with a caution by police, and should not incur a fine or demerit points. However, the moratorium should not be extended to those who are guilty of excessive speeding.

6.42 While recognising that it is the prerogative of the responsible Minister to determine the period of time for which a moratorium might apply, STAYSAFE proposes that a moratorium of three months would be sufficient to allow motorists to gain experience with the new speed limit and new speed enforcement technologies and operational deployments. As noted in earlier chapters, speeding is an habitual behaviour for most drivers, and it will take time and repeated experience of speed limit signage and enforcement operations for such firmly established behaviour to be unlearned. A moratorium of up to three months, which is a fairly prolonged period of time, should ensure that those drivers who will need experience with changed speed limit signage and enforcement operations will gain that experience with sanctions which will not be seen as unnecessarily onerous. As well, a moratorium of up to three months will allow any initial problems associated with the introduction and operational deployment of new speed enforcement technologies to be identified and resolved.

6.43 Again, while STAYSAFE recognises the Minister's responsibility for setting the upper limit of speeds for which the moratorium might apply, STAYSAFE proposes that it be set at 60 km/h. In this way, motorists travelling at the current 60 km/h general urban speed limit would not be penalised during the adjustment period nominated by the Minister, while those

travelling at higher speeds will be left in no doubt that excessive speeding will not be tolerated. Motorists who are detected travelling at speeds in excess of the upper limit for the moratorium should be dealt with in accordance with STAYSAFE's recommendations relating to changes in the penalty and demerit points system (see **RECOMMENDATION 7**).

**RECOMMENDATION 13: For a period of three months from the commencement of the new general urban speed limit of 50 km/h:**

- (a) a moratorium be placed on the issuing of fines or demerit points to motorists who are caught exceeding the 50 km/h speed limit;
- (b) such motorists be issued with a warning letter advising them of the introduction of the new 50 km/h speed limit and of the date from which fines and demerit points will be incurred when the new law is contravened;
- (c) the moratorium should be restricted to roads which had previously been zoned at 60 km/h, but which will, under the new law, be subject to a 50 km/h speed limit.

### **Issues in the deployment of speed enforcement technologies**

6.44 Finally, STAYSAFE noted that a feature of police enforcement in the Mosman/North Sydney 50 km/h speed limit trial was the use of static deterrence, or random road watch policing

(see, e.g., Edwards & Brackett, 1978; Leggett, 1988; Tasmania Police, 1989; AGB Australia, 1991; Queensland Police Service, 1993). Random road watch policing is an operational deployment method of policing that focuses on maximising and controlling the spread of police enforcement by randomising the presence of police across a large number of enforcement localities. In contrast, traditional police enforcement has tended to focus on a limited number of sites—which may, or may not, have been selected because of the propensity for crashes or unsafe driving behaviours occur—to the exclusion of large sections of roadway or areas when motorists learn to expect little or no enforcement activity. The Queensland Police Service (1993) has described random road watch policing:

“The principle behind random road watch is that a very small number of total man hours spent on traffic checks, spread out randomly across a wide area and over an extended period of time, can have a very large impact on driver behaviour, and this [can] markedly reduce accident occurrence.

Enforcement programs based on this principle have operated successfully in Australia since the mid-1980s. The programs are based on initial American research conducted in the 1970s, which showed that accident reduction—albeit at the modest level of 10 per cent—did indeed occur when enforcement of this type was carried out.” (p.1)

6.45 STAYSAFE notes claims that random road watch policing can lead to crash reductions of up to one-third and contribute to hundreds of millions of dollars in savings relating to the community costs associated with road trauma. Further, these outcomes are achieved at minimal operational cost, and thus are claimed to yield exceptionally high benefit:cost ratios.



6.46 Witnesses before STAYSAFE described the operation of random road watch policing. Ms Andersson, the road safety officer for Mosman and North Sydney councils stated:

**Ms ANDERSSON:** “One of the concepts to actually get people to comply with the new speed limit was self-enforcement. Admittedly, a lot of the traffic is through-traffic—people who do not live in the area. I have had calls from people objecting to the trial because they are trying to get from A to B as quickly as possible and often using Kurraba Road through Neutral Bay as an alternative access route to Military Road.

One of the self-enforcement strategies, residents were asked to drive 50 kilometres an hour, so theoretically a motorist travelling behind needs to drive 50 kilometres an hour because it is generally only a one-lane road. I find if I stick to 50 when I drive around the council area, some people get frustrated but they cannot go faster. Another strategy is raising police profile by using random road watch, which, I believe, began in Queensland.

The trial area is broken up into 40 sectors, including laneways and streets, and the general duty police are allocated to each sector randomly by computer for, say, a two hour period once a week, because, as Mr Lehmann mentioned, normal police stations like North Sydney and Mosman do not have the speed detection equipment that the highway patrol have. The idea is that police cars are in streets, roads and laneways that may never have seen a police car before. Obviously if another call comes, such as theft, domestic violence or other crimes, it takes priority and the cars have to be available. The theory is that when people see a police car they tend to slow down.” (Minutes of Evidence, 19 August 1996, pp.9-10)

6.47 The following discussion between STAYSAFE and witnesses for the New South Wales Police Service is instructive:

**Mr GIBSON (CHAIRMAN):** “Would random speed camera operations be better?”

**Inspector LESTER:** “That is what we are heading for. With the new site selection criteria it is a lot looser. Our standing operating procedures at the moment restrict us to one site per roll of film virtually. The new cameras—the new Traffipax Speedphot—will allow us to move on the same roll of film and take up to 600 shots. The new site selection criteria, the new standard operating procedures and a lot of other things are currently in the Minister's office awaiting approval....”

**Mr GIBSON (CHAIRMAN):** “It is a little bit like fighting Mike Tyson with one hand tied behind your back, in a lot of ways.”

**Inspector LESTER:** “One might say that.”

**The Hon. J. S. TINGLE:** “If, in fact, the cameras and technology are concentrated in areas where you are going to reduce accident trauma, is the inference they would not normally be used in areas of low speed limits such as 50 km/h roads? Would that mitigate against their being used there because if you have a 50 km/h limit and people observe it we hope there will not be so many accidents. In other words you would be looking at 100 km/h limits and 80 km/h limits more than say 50 km/h limits.”

**Inspector LESTER:** “If speed is a factor in crashes that is where we use whatever technology is available to us. Now if that is the new lasers, if it is a radar or if it is a speed camera, depending on the areas, we are still restricted because the manufacturer's requirement for the operation of radar is quite strict because you have got all sorts of bounce ..., so we are restricted in using them where there are signs and where there is Armco railing, ... etc.. However, with the lasers it will go a fair way in solving that problem. If speed is a problem in a specific area, it does not matter what speed limit it is, we will attempt to enforce it.” (Minutes of Evidence, 19 August 1996, pp.84-85)

6.48 In light of the introduction of new speed enforcement technologies, STAYSAFE strongly recommends that the implications of random road watch policing be subject to critical scrutiny. Currently, no independent critique of random road watch has been published, and virtually the only recent accounts of the effectiveness of random road watch policing are associated with Leggett.

**RECOMMENDATION 14: The New South Wales Police Service, in collaboration with the Roads and Traffic Authority, conduct an independent review of random road watch policing as an operational deployment policing strategy for traffic enforcement, and, in particular, for speed enforcement.**

6.49 STAYSAFE notes the proposed introduction of new police speed detect technologies includes the use of static mounted speed cameras, or automatic speed cameras. The use of automatic speed cameras has been adopted in a number of jurisdictions, including New Zealand and England, and enables the effective speed enforcement of locations where the deployment of manned police enforcement is unsafe or otherwise impracticable.

## **Concluding comments**

6.50 The effective introduction of a 50 km/h general urban speed limit must, in STAYSAFE's view, rest upon an integrated set of actions in the areas of traffic management, traffic law, and police enforcement. In this chapter, STAYSAFE has reviewed the technology

available to support speed enforcement, and also examined issues associated with the organisation of police enforcement. STAYSAFE supports the implementation of new speed detection technologies, including laser speed detection devices, new mobile and stationary speed camera technologies, and the introduction of video camera technologies in police vehicles. STAYSAFE has noted the development of a new form of police operational deployment—random road watch—and has called for an independent review of the efficacy of random road watch.

6.51 STAYSAFE believes that if the various recommendations it has made regarding police enforcement of speed, and enforcement of a 50 km/h general urban speed limit in particular, are implemented, then there is likely to be significant acceptance by the general public of the new urban speed limits.

6.52 Above all, it is critical to reinforce the perception that action taken to lower the urban speed limit is based on the necessity to improve the safety of road users and to reduce the risk of road trauma associated with excessive speed in local streets. Therefore, specific actions are required to counter the emotive claims of ‘revenue raising’ that are often associated with speed enforcement action.

# 7

## CONSULTATION WITH LOCAL GOVERNMENT

*The Victorian experience - Response from New South Wales Councils - Funding the initiative - Implications for traffic planning and residential planning - Suburban amenity - Planning for safety on residential streets - Concluding comments*

7.1 The majority of roads which will be affected by the new 50 km/h speed limit will be roads which are the responsibility of councils, and not of the Roads and Traffic Authority. It is therefore imperative that the views of local councils are given strong and detailed consideration.

7.2 To that end, STAYSAFE sought advice from all local councils in New South Wales regarding the proposal to introduce a 50 km/h general urban speed limit, and a majority of local councils forwarded submissions presenting their views. This chapter reports on the views of local councils and local government officials regarding the question of 50 km/h speed limits. STAYSAFE also examines a similar process undertaken in Victoria in the early 1990s.

### **The Victorian experience**

7.3 It is instructive to briefly outline the history of the mooted implementation of a 50 km/h general urban speed limit in Victoria in the early 1990s.

7.4 The Social Development Committee of the Parliament of Victoria—a similar Parliamentary committee to STAYSAFE—released a report of its inquiry into speed limits in Victoria in November 1991. The Committee recommended, inter alia, that:

- RECOMMENDATION 11: The Minister for Transport amend the Road Safety (Traffic) Regulations to set the speed limit for residential streets at 40 km/h.
- RECOMMENDATION 12: The Minister for Transport amend the Road Safety (Traffic) Regulations to enable local government in conjunction with VIC ROADS to nominate residential streets in which other speed limits will apply (Social Development Committee, 1991).

7.5 In early 1993, a 50 km/h speed limit was foreshadowed for introduction as a blanket urban limit later that year. In the event, Victorian local councils were informed in November 1993 that the Government had in fact decided to retain the 60 km/h limit, but to allow councils to apply for the 50 km/h limit on certain streets or precincts. However, legislation provided for the declaration of 40 km/h precincts but not for 50 km/h precincts. Moreover, it was put to the Victorian Road Safety Committee during a later inquiry into revision of speed limits in 1994 that councils had always had the right to apply for a particular speed limit in a specific street (Road Safety Committee, 1995). VicRoads—the roads authority in Victoria—told the Road Safety Committee that only a handful of councils had applied for the 50 km/h limit in the first six months. The Municipal Association of Victoria countered that this was in response to the offer of a precinct approach to implementation, which councils were not empowered to utilise. The Royal Automobile Club of Victoria told the Road Safety Committee that it believed the State government should have introduced legislation to implement a 50 km/h limit, as the system of councils applying for approval to do so would mean that the limits were not applied consistently across the State and would therefore create significant problems for motorists.

7.6 A survey of Victorian councils revealed overwhelming support for the 50 km/h concept from metropolitan municipalities. A bare majority of provincial municipalities responded, and slightly more than half were in support. Yet there was, to use the Road Safety Committee's words, "a massive non-response" from rural councils, with the majority opposed to the idea.

7.7 The Road Safety Committee (1995) noted that the Victorian Government's stated intention to implement a general urban speed limit of 50 km/h was reversed in late 1994, and that this reversal was in conflict with the views of Victoria Police, the Royal Automobile Club of Victoria, the Municipal Association of Victoria, bicycle groups and possibly other State Governments.

7.8 The Road Safety Committee (1995) recommended that Victoria should await the outcome of the AUSTRROADS study into urban speed management (recently released as AUSTRROADS, 1996) and discussions at the Australian Transport Council before taking any action on changes to urban speed limits. The Road Safety Committee did, however, also recommend that as a matter of speed management principle speed limits on local streets should be lower than on traffic-carrying arterial roads.

## **Response from New South Wales local councils**

7.9 A detailed understanding by local councils of the issues associated with lowering the general urban speed limit from 60 km/h to 50 km/h is critical to their support for and cooperation with the implementation of the new law. In addition, as an arm of government so close to the community, local councils will have a significant influence on community support for the 50 km/h general urban speed limit and the consistency with which it is applied on appropriate streets across the New South Wales roads. Recognising this, in early 1996 STAYSAFE wrote to each of the 177 councils in New South Wales to seek their views on the 50 km/h proposal. As of October 1996, STAYSAFE received some 111 replies from local

councils.

7.10 It is fair to say that there was a divergence of opinion across local councils regarding support for the proposed introduction of a 50 km/h general urban speed limit. Urban councils were almost unanimous in their support for the proposal, while rural councils were overwhelmingly opposed to the introduction of a general urban speed limit of 50 km/h.

7.11 In evidence at the public hearings, officials of the Local Government and Shires Associations confirmed this divergence of opinion, and told STAYSAFE that the two associations differed on the 50 km/h proposal:

**Mr BOTT:** “At this particular stage the policy of the two associations in regard to the proposal is divergent. The Local Government Association’s policy supports the general urban speed limit of 50 km/h, the Shires Association, the rural-based association, had a policy of support for 50 km/h in 1995, but at the recent conference that policy went to 60 km/h general urban speed limit. Perhaps I need to address that area in more detail during questions. A rationalisation of the two positions can be arrived at. The common ground in both associations would be the general recognition for uniformity across all spectrums, whatever the determination. The associations believe it should go further than just State level and be uniform at national level. While the divergence in policy is present at this particular time, I am certain that the wish of all local governments is that there should be as near possible uniformity in the urban speed limit.” (Minutes of Evidence, 19 August 1996, pp.21-22)

7.12 Cr Bott said he believed there was a misunderstanding among some councils as to how widely the speed limit would be applied, i.e. that some thought it might apply to arterial roads. Cr Bott was confident that, if a definitive position as to the application of the 50 km/h speed limit could be arrived at, the conflict between the two associations could be resolved.

7.13 One recurring theme in the arguments advanced by rural councils to illustrate their opposition to the proposal was that a 50 km/h limit would not be appropriate in their jurisdictions because the real speeding problems for them were away from the residential areas and on the higher speed network. They pointed to the differences in traffic volumes and patterns in urban and rural environments.

7.14 STAYSAFE sought to establish the extent to which serious crashes and injuries on local roads differ from those on the higher speed roads in rural centres. Witnesses representing the Roads and Traffic Authority told STAYSAFE that most road casualties in rural centres occurred on local road networks:

**Mr JEFFERY (STAYSAFE):** “Mr Moran, a number of councils, particularly those in the rural areas, have argued that a 50 km/h limit would not be appropriate in their jurisdictions, because the real problems for them are not associated so much with residential areas, but lie on the higher speed roads within their council area and network. Could you comment on that?”

**Mr MORAN:** “I would expect that the issues of amenity would not be as prevalent

in rural towns compared to major urban centres such as Sydney, Newcastle and Wollongong, where you have much higher traffic volumes, therefore you have a lot more traffic passing through the local street system because of the restrictions on capacity on the major routes.

However, as I understand it, in rural centres two-thirds to three-quarters of all casualty accidents occur on the local networks.” (Minutes of Evidence, 20 May 1996, pp.7-8)

7.15 In contrast, Mr Ullman, of Manilla Shire Council, told STAYSAFE that most crashes in areas similar to Manilla Shire were on higher speed rural arterial roads, and that pedestrian accidents were minimal.

7.16 STAYSAFE did not resolve this difference of opinion regarding road trauma statistics for local streets and arterial routes in rural areas, but notes that it would be appropriate for detailed statistical summaries of road crash injuries in each local government area to be available as part of any future communications strategy in support of the introduction of a 50 km/h general urban speed limit throughout New South Wales (see Chapter 9: Communication strategies to support a 50 km/h speed limit).

7.17 It is clear that a reduction in the general urban speed limit in rural areas of New South Wales from 60 km/h to 50 km/h is likely to be contentious, and to remain so, at least in the short term. STAYSAFE believes that comments of Mr Camkin, a witness representing KIDSAFE, captured the essential issues which the relevant State and local government authorities and stakeholders must face in considering their position on the issue of a 50 km/h general urban speed limit:

**MR CAMKIN:** “I guess this is the problem inherit in the perpetual search for uniformity. Conditions in Walgett are different to those in Wagga, different to those in Wollongong and different to those in Woollahra, just as they are different in Darwin today as in Sydney.

It is a question if we want uniformity, and the general consensus these days seems to be that at least we need harmony as much as uniformity in the road rules across the country, there have to be some checks and balances in the system and that uniform rule will not be appropriate in some circumstances.

On the other hand, I think most people would take the view that speeds in local streets in rural areas, in small towns in rural areas, are generally not as great as speeds in local streets in major areas where they are subject to more peak hour traffic, for example, so that a lower speed limit is perhaps not necessary because people are already tending to drive a little bit slower, but at the same time it would do less to disrupt those people.

Distances are shorter therefore if you in fact travel slower, you are going to waste even less time than you have wasted, and finally, it is my understanding that with the exception of effectively villages, where the only street is the main road, there is not much difference in the ratio of accidents to vulnerable road users between local streets and through streets in country areas, compared with metropolitan areas. They are down a little bit, but my understanding or my recollection from data I have seen up

until I retired a couple of years ago, was that those ratios are relatively similar.”  
(Minutes of Evidence, 20 May 1996, p.34)

7.18 Local councils who forwarded submissions in opposition to the 50 km/h proposal indicated that the reasons for their decision to oppose the proposal included:

- the cost of implementation—in fact, many local councils in favour of the proposal were at pains to point out that they could not bear the total cost
- the so-called impracticability of enforcing the new speed limit
- the potential for confusion among drivers of an additional speed limit, particularly while moving in and out of different speed zones.

7.19 To obtain a clearer picture of the concerns of local governments and their citizens in rural areas, STAYSAFE visited the Riverina and Murray areas in New South Wales in July 1996. During its visit of inspection, STAYSAFE had meetings in Wagga Wagga, Leeton, Deniliquin, Moama and Albury with local government officials, community groups, police, transport companies and professional drivers.

7.20 Based on these discussions, STAYSAFE came to the firm view that the introduction of a 50 km/h speed limit on local roads would have very significant support in regional centres and rural areas provided that appropriate and comprehensive education and information about the proposed introduction of a 50 km/h general urban speed limit, and its implication for each specific local community, was made available. Given the pivotal role councils will play in the implementation of the 50 km/h speed limit, the Roads and Traffic Authority’s communication strategy should seek to maximise understanding of the issues among councillors, engineers and traffic committees (see Chapter 9: Communication strategies to support a 50 km/h speed limit).

7.21 Similarly, it is important that local councils consult with their communities on the new speed limit. STAYSAFE would see this being primarily in relation to the appropriateness of a 50 km/h urban speed limit in the road hierarchy, and in particular to the issue of collector roads, which STAYSAFE has identified as a source of potential controversy.

## **Funding the initiative**

7.22 The question of who will fund the 50 km/h initiative is the major issue of concern among councils, irrespective of whether or not they support the proposal. Local councils made it abundantly clear that they were unwilling and were, in most part unable, to meet the costs associated with the appropriate road treatment which would necessarily precede the introduction of the new speed limit.

7.23 The Local Government and Shires Associations of New South Wales (Submission USL182) drew STAYSAFE’s attention to the additional costs and responsibilities placed on councils in recent times, such as changes to sales tax exemptions and the increase in heavy vehicle registration costs as part of the national uniform heavy vehicle charges. The cost to New South Wales local government for the adoption of uniform heavy vehicle charges alone



is approximately \$10 million. At the same time, councils in New South Wales are subject to rate pegging, constraining their ability to increase their revenue.

7.24 STAYSAFE took up the issue of the funding of the infrastructure necessary to support a 50 km/h general urban speed limit directly with the Roads and Traffic Authority:

**Mr HARRISON (STAYSAFE):** “Many councils, including those who have expressed support for the proposal, have indicated that they expect the State to meet many of the costs associated with implementation. What does the Roads and Traffic Authority consider to be the appropriate means of meeting such costs?”

**Mr FORD:** “The likely cost will be incurred in the identification of routes which should remain at 60 km/h, signposting those routes, publicity, advertising, public education regarding any changes and, initially, raising the level of enhanced enforcement on certain sensitive routes. If the 50 km/h proposal were to be endorsed by the Government, it would be an essential element of a major policy initiative area to the Roads and Traffic Authority and, consequently, the Roads and Traffic Authority would meet the initial costs of implementing such proposals. In the longer term, costs such as those associated with signposting would be shared between the Roads and Traffic Authority and councils as is the present policy position.”

**Mr HARRISON (STAYSAFE):** “Would that be on a 50-50 basis?”

**Mr FORD:** “That is correct—well, it depends on the proposal. It would be at least on a 50-50 basis. The Roads and Traffic Authority does fund above the 50-50 level, depending on the application. We can fund up to 100%, provided that there is a clearly demonstrated road safety outcome. We start with a minimum of 50-50 and work up from that.”

**Mr HARRISON (STAYSAFE):** “Have you made an assessment of the likely cost to the Government?”

**Mr FORD:** “Yes, we have. In our ... [Submission USL 22] we indicated a figure of the order of about \$5 million. A bit of guesswork is involved, of course.”

**Mr HARRISON (STAYSAFE):** “I would think that is a conservative estimate.”

**Mr FORD:** “That is over and above our current level of funding for councils for initiatives on local roads. That amount of money is really quite substantial. The \$5 million is additional funding, over and above the amount of money which we currently fund for local government.”

**Mr HARRISON (STAYSAFE):** “The money that is currently allocated is fully expended, so effectively the cost would be \$5 million.”

**Mr FORD:** “I am saying that the additional cost over and above that would be \$5

million. We currently fund a number of what we call local area traffic management initiatives or lower speed initiatives on local roads.”

**Mr HARRISON (STAYSAFE):** “My understanding is that that money is fully expended every year. Is that so?”

**Mr FORD:** “Yes, it is. That is correct.”

**Mr HARRISON (STAYSAFE):** “Effectively, you would have \$5 million to work with, is that so?”

**Mr FORD:** “Over and above that, yes.”

**Mr HARRISON (STAYSAFE):** “Unless you were to divert money from somewhere else.”

**Mr FORD:** “If the Government elected to run this initiative and we had to divert money from somewhere else, we would. It would become a government policy position and the funds would be made available.” (Minutes of Evidence, 19 August 1996, pp.9-10)

7.25 STAYSAFE notes the Roads and Traffic Authority’s financial commitment to the introduction of the 50 km/h speed limit on residential streets, and considers it proper that the State Government bear the bulk of the cost of a scheme which would necessitate the cooperation of local governments in order to ensure its successful implementation. That is, the Government should ensure that adequate funding is made available to local councils for road markings, signage and associated works to support the implementation of a 50 km/h general urban speed limit

7.26 Further, STAYSAFE believes that the Government should provide a public assurance to local councils that such funding will be available for road markings, signage and associated works to support the implementation of a 50 km/h general urban speed limit.

**RECOMMENDATION 15: The Minister for Roads:**

- (i) ensure that adequate funding is made available to local councils for road markings, signage and associated works to support the implementation of a 50 km/h general urban speed limit; and**
- (ii) provide a public assurance to local councils that such funding will be available for road markings, signage and associated works to support the implementation of a 50 km/h general urban speed limit.**

7.27 Officials of the Local Government and Shires Associations told STAYSAFE that, prior to the adoption of a new 50 km/h general urban speed limit, trials should be conducted in

areas of significantly different geographic, traffic and population characteristics to the outer suburbs of Sydney and regional New South Wales, so as to compare the results with those from the Mosman/North Sydney trial. STAYSAFE believes, however, that the potential safety benefits of a lower general urban speed limit are so well documented as to obviate the need for any further trials of the 50 km/h speed limit in residential streets.

## **Implications for traffic planning and residential planning**

7.28 Abraham (1996) argues that the separation of land uses, street and road design which focus on managing car travel rather than encouraging walking, cycling and public transport, and planning policies which neglect the influence of urban form on travel behaviour, have all contributed to car reliance and the reduction of transport choice. Planning and development practice New South Wales has tended to:

- promote higher density residential development in dispersed locations
- consider the likely traffic generation of a proposed development and what measures can be used to accommodate, rather than moderate, that traffic. This usually takes the form of a traffic study, not an integrated transport and land use plan
- segregate land uses to minimise amenity conflicts but maximise trip lengths
- provide a hierarchy of roads with limited penetration for bus services and minimal provision for pedestrians (e.g., footpaths), cyclists and public transport users (e.g., bus stops). Where provision is made for pedestrians and cyclists, they are segregated from car traffic as much as possible in the name of road safety
- provide road systems with capacity for peak daily traffic flows
- provide public transport services only when warranted by demand, primarily focused on school and work trips
- fund road improvements through developer contributions, but not public transport facilities
- provide infrastructure (particularly road) without considering the complementary management measures need to ensure that it does not have unwanted side effects and that it achieves its objectives.

7.29 Abraham (1996) contends that such practices do not encourage transport choice, and that, in particular, more attention needs to be given to the requirements of pedestrians, cyclists and public transport users than in the past; as much as has been given to the requirements of cars and commercial vehicles. Clearly, the car has been afforded the status of king of the road.

7.30 In its submission, the Roads and Traffic Authority stated that:  
“A well-defined hierarchy of road types is the basis of road and traffic planning in local government areas. The new speed limit is an integral part of better matching the speed management system to the road function hierarchy. Introducing the new limit will assist in reviewing road classes, both in planning new areas and managing or adapting older areas.

A lower speed urban environment is a central feature of emerging practice in residential area planning and design. The relevant national code (AMCORD) and the

Roads and Traffic Authority guidelines on traffic generating developments emphasise the benefits of low-speed design features, such as narrow and short streets, for both safety and amenity, and recommend their adoption. Introduction of a new lower speed limit will assist and encourage this practice.” (Submission USL 22, p. viii )

7.31 STAYSAFE again comments that the road hierarchy which the Roads and Traffic Authority alludes to is conceptual only, and has yet to be formalised. STAYSAFE also notes that the value of a road hierarchy has been questioned. For example, Abraham (1996) commented:

“It can be argued that conventional road hierarchies based on traffic volumes are insufficiently dynamic or multi-modal to support transport choice. Indeed, New Urbanists argue that they are obsolete and that connectivity should be encouraged.

New models are required which are multi-dimensional and which enable transport planners to make trade-offs between traffic flow, walkability, permeability for public transport and activity. Streets and roads and their environments need to be considered together. AMCORD 95 defines streets as local traffic routes where the residential environment is dominant and roads as corridors where the movement function is dominant. Is such a classification sufficiently dynamic to cope with the increasing mix of uses and housing types?” (pp. 6-7).

7.32 STAYSAFE also notes Brindle’s (1979/1996) comments:

“... unfortunately children do not have the same tidy view of what belongs where in the street as do their elders, nor do they act reliably in traffic (Sandels, 1968). This thought led the author to conclude (Brindle, 1978) that conventional attitudes towards street design and use are based on a fundamental misunderstanding of the nature of children and the purpose and needs of their play. What children actually do in the street, rather than what adults believe they should do (or not do), must influence the way we manage traffic there. Churchman (1976) poses the question: Can street play be accommodated? ‘The unequivocal answer is that it must be,’ she concludes.” (p.37)

## **Suburban amenity**

7.33 The notion of suburban amenity should be an important consideration in the management of traffic in residential areas. While STAYSAFE has noted the pre-eminence of safety issues in its consideration of the 50 km/h urban speed limit, STAYSAFE nevertheless expresses its support for greater residential amenity for the people of New South Wales.

7.34 Suburban amenity means different things to different people, and its definition depends largely on the perspective of the residents of a particular area. In general terms, suburban amenity could refer to such features as the proximity to and quality of facilities such as transport, shops, schools, parks and the like. These are the kinds of facilities which people value in their neighbourhood, which give them a sense of being connected to the rest of the larger area in which they live. In a city as geographically large as Sydney, the older, established areas tend to have better access to these facilities, in particular to non-private transport.

7.35 Suburban amenity can also be thought of in terms of the characteristics of traffic in a particular area. Residents may judge this amenity on the basis of the volume of through traffic, the extent of the speeding problem, noise levels (including that generated by speed humps etc.) and the extent to which residents feel that cars pose a threat to them as pedestrians and cyclists. Indeed, suburban amenity in traffic terms might properly be described as residents' *perceptions* about these issues — and in particular about road safety — rather than the situation as reflected in statistical analysis.

7.36 At the public hearings, STAYSAFE was interested to explore the issue of urban amenity or suburban amenity. Mr Moran, representing the Roads and Traffic Authority, stated:

**Mr MORAN:** “I will try and define [urban amenity] in as simple terms as I possibly can. Unfortunately there is no universal definition, so I will answer this particular question in terms of how urban amenity relates to traffic engineering. Put simply, urban amenity results from strategies and actions designed to reduce the impact of through traffic on suburban streets, and improving the road environment for pedestrian activity. This largely involves restoring a human scale to the roads currently dominated by traffic, without compromising the need for vehicular movement to an unacceptable level. Focussed in this regard, it is obviously on the streets in which we live, work and shop. The principal objectives, as I see them, of urban amenity, is to reduce traffic speeds, relocate space to non-traffic activities and enhance the street environment. The primary contribution to urban amenity is through what is known as traffic calming or environmental traffic management, which at a local area or route level, means as a result of actions to restrain traffic speeds and lessen the impact of traffic, compatible with the function of the network or the route. Quality of the road environment for non-traffic activities is the essential underlying theme and within this framework the application of a 50 kilometre local street speed limit is an important tool in achieving that end.” (Minutes of Evidence, 20 May 1996, p.2)

7.37 As has been noted, the safety benefits associated with a reduced general urban speed limit may escape people, but they are very likely to perceive and appreciate even small improvements in the amenity of their streets and neighbourhoods, a valuable marketing tool in the selling of the 50 km/h speed limit.

## **Planning for safety on residential streets**

7.38 Brindle (1989/1996) has also pointed to the failure of planners to come to grips with the proper function of the local road network:

“Pressure for traffic management on local distributors is a symptom of a deeper problem. Many traffic problems in residential areas result from the nature of the local network—both of its structure and the functions allocated to elements in it. The structure of the network is irretrievably set at the estate planning stage. Two problems are evident:

- (a) Insufficient care is given to avoid future operational conflicts when the road

network is planned: the commonly-stated objectives related to amenity, security, pedestrian orientation and so on are often not met by the plan that results.

- (b) The road framework within which the development sits is often too coarse to allow the roads within it to serve a truly local function. Authorities faced with diminishing road funds are not anxious to assume greater responsibility for additions to the primary road system. As a result, the developer is often under pressure to provide de facto supplements to the traffic network which he, quite naturally, wants to treat as part of the local network. This is a recipe for future difficulties.

The solutions to these problems lie partly in different planning approaches and partly in a realistic sharing of the responsibility for additions to the district-level road system ....

The network origins of the problems of the local distributor are obvious (Brindle, 1986). Central to the problem is the ambiguity of many of the roads of this type; while they are usually not attractive to through traffic system in a given direction. Recently there has been much talk of the 'permeability' of networks which has, in part, generated mischievous theories about the ideal structure of local networks.

'Permeability' is nothing more than the old concept of 'connectivity' made respectable. The greater danger, in network terms, of making local networks more permeable (i.e., easing of movement in any direction through the local network) is that, in combination with existing coarse, unstructured outer-urban road patterns, they will create highly connective local streets served by poorly-connected primary roads. This is a result to be avoided at all costs, as post-war development around Australian cities amply demonstrates.

The irony is that if the connectivity of a permeable local network were to be reduced by increasing the connectiveness of the primary network (i.e., add new traffic routes in advance of development), the development cells would be smaller and the issue of local permeability would not be so pressing." (pp.132-133)

7.39 On the other hand, there is a view that the lack of connectivity between local streets in new residential developments partly accounts for the often inadequate and inefficient bus services in those areas. Fleming and Pund (1994) analysed bus operations in the western Sydney centres of Blacktown, Mt Druitt and Campbelltown. While these centres share similar demographic and socio-economic characteristics, patronage was well down in Campbelltown, where services were about half as frequent as the other centres. It was noted that "the directness of a bus route is an important consideration in gauging its attractiveness. The more direct a route and the less time required to service a given area the less time the passenger spends on the bus and the greater potential for the operation to provide higher frequencies". Campbelltown's lack of radial routes, narrow urban form and its "island" suburbs, too small to support their own bus routes and with limited access points, lead to convoluted routes with no connectivity to adjoining suburbs, making bus travel unattractive and ineffective. Further, the main railway station was 600 metres from the town centre, and separated by an arterial road, exacerbating bus servicing problems. Fleming and Pund concluded that:

"Planning philosophy for new residential areas seeks to create self-contained precincts which, while providing roads which minimise traffic speeds and volumes, has the

effect of reducing bus service accessibility and cost effectiveness. The consequential lower frequencies and contorted and indirect bus routes makes for unattractive service with lesser numbers of people prepared to use buses.

There is a need to consider the requirements of cost effective bus routes in the planning stages for urban developments. Based on current experience this will require a major shift in the thinking of planners and engineers.

There is a need for innovation in the design of bus access facilities so as to allow buses to penetrate and service residential areas while at the same time maintaining an environment of safety and high urban amenity.” (p.281)

7.40 Ms Ludmilla Hawley, of Geoplan Urban and Traffic Planning, told STAYSAFE that the planning and construction of roads in new residential developments did not properly address the issue of how to make roads less conducive to speeding and more encouraging of pedestrian activity:

**The Hon. J. S. TINGLE:** “I was going to ask what effect you believe a lower residential speed limit would have on residential planning, street design and engineering. You have probably answered my question. If this lower residential speed limit is adopted will it make much difference to street engineering and design?”

**Ms HAWLEY:** “Local councils are still not quite sure how to handle this. They could possibly put the onus more on the developers, particularly large developers such as government departments like Landcom, to prove how they will address speed in their new area subdivisions. Often this is left for councils to pick up. The residential subdivision will have quite a lot of amenity in terms of street lighting, footpaths and so on. All those areas off the road have development conditions attached to them, but the roadway itself and the concept of road safety is still not dealt with very well. I have been involved in looking through the Parklea residential area subdivision, some seven suburbs, and going through it on a school-by-school basis to ascertain whether children will be able to walk to school safely. In many cases they will have to cross main roads carrying 20,000 vehicles a day, where no facilities exist at all. If those facilities had gone in at the same time as the roads were being built, it would be cheaper all round. It is much more expensive to put in pedestrian refuges or building underpasses or overpasses. We still have not reached the stage where this is automatically fed into the design layout of the new suburbs. That is where we have to head, with all these things designed and paid for at the beginning, so from day one children can walk to school instead of being driven to school. Once the habit of driving kids to school is established, it is much harder to break than if there are facilities to allow them to walk to school safely.” (Minutes of Evidence, 19 August 1996, pp.18-19)

7.41 STAYSAFE notes that the Department of Transport is working with the Environment Protection Authority on ways to encourage children to return to walking, cycling and catching buses to school where possible. As Ms Hawley noted, the driving habit dies hard, and if parents are to be persuaded to allow their children to walk or ride to school, they will need to be convinced of the safety of these healthy and environmentally friendly transport modes.

7.42 Similarly, the Federal Office of Road Safety (1992) has commented on the pre-eminence of the motorist in the minds of urban planners:

“Improving pedestrian safety in the urban traffic environment is a complex task, given that the traffic environment we have built up in our cities is largely directed at serving the needs of the motorist.

In practice, urban design is often driven by a range of economic and environmental pressures and it is important that adequate consideration be given to the goal of increased pedestrian safety at the planning stage. The use of safety audit principles in urban development projects can help ensure that this occurs.

The Federal Government recently supported a joint project with a number of Queensland authorities, investigating the feasibility of conducting an ‘alternative transport day’ in Brisbane. Projects such as this and the South East Queensland Passenger Transport Study highlight the importance of an integrated approach to urban design issues.

Large scale redesign is an expensive and time consuming task, and the lessons which can be learned from small scale demonstration projects can prove to be very valuable, provided that adequate emphasis is given to evaluation.

Experience suggests that relatively inexpensive evaluation procedures such as video recordings of pedestrian and vehicle flows before and after treatment can provide vital information on the effectiveness of these treatments.” (p.8)

7.43 The New South Wales Department of Transport’s Integrated Transport Strategy (1995) noted that a number of factors, including the pattern of urban development in recent years—especially low density fringe growth and employment decentralisation—have reduced the effectiveness of public transport and increased reliance on the private motor car. If existing trends in transport and urban development continue there are likely to be significant environmental, operational and financial implications for New South Wales governments and residents over the next 20 years.

7.44 The Integrated Transport Strategy noted:

“A transport system must meet a large hierarchy of needs ranging from moving large numbers of people over long distances, to local trips and travel between a host of regional destinations. The system will operate effectively and efficiently when the system is balanced, using the right mode for each task, and ensuring integration with the transport system.” (p.vi)

7.45 Continuing to restore balance is supported in the ITS through a proposal to establish a program of public transport infrastructure and service improvements to take prompt advantage of transport development opportunities and funding availability. Integration will be assisted by the development of a Public Transport Integration Policy covering all services and modes, assistance with effectiveness of road-based public transport, and encouragement of innovative and demand-responsive transport services.

7.46 There are numerous critiques of the suburbs created by post-war planning and engineering practice, noting their emphasis on the needs of traffic rather than the needs of



people, and encouraging mobility at the expense of environmental quality and, some argue, community cohesion. Such critiques also note the mismatch of the form of conventional suburbia, designed for the traditional family unit, with current trends of an ageing population with a minority of households with children.

7.47 These critiques are a powerful indictment of the professionalisation or specialisation of different aspects of “town making”. The separation of land uses, street and road design which focus on managing car travel rather than encouraging walking, cycling and public transport, and planning policies which neglect the influence of urban form on travel behaviour, have all contributed to car reliance and the reduction of transport choice.

### **Concluding comments**

7.48 This chapter has contrasted the enthusiasm with which metropolitan and regional councils have embraced the concept of a 50 km/h general urban speed limit with the somewhat half-hearted support from rural councils. However, STAYSAFE is heartened both by the evidence from the vice-president of the Local Government and Shires Associations of New South Wales that agreement between the two associations is imminent, and STAYSAFE’s own consultations with local councillors, transport officials and community organisations in rural areas of New South Wales. STAYSAFE would suggest that the Roads and Traffic Authority’s commitment to funding the implementation of a 50 km/h general urban speed limit will go a long way in turning around the scepticism in smaller councils. Nevertheless, the Roads and Traffic Authority will need to devote resources to influencing local councillors and traffic committees and, through them, rural populations, if New South Wales is to take full advantage of lower speeds on local roads.

7.49 While STAYSAFE cannot make any definitive statement on how a 10 km/h reduction in the general urban speed limit will affect residential planning and street design, it would seem that there is wide acceptance among road safety experts that there needs to be far more thought given to the proper function of residential streets in the planning stage of new developments, particularly in terms of vehicle speeds. STAYSAFE therefore urges local government authorities to be more diligent in requiring of development applications proposals for better integrated land use, and appropriate facilities to ensure the highest possible level of safety for residents, in particular child pedestrians and cyclists. Giving residential streets back to residents at the planning stage should also insure against the very considerable costs associated with the seemingly inevitable retrofitting of residential streets with these facilities.



# 8

## ENVIRONMENTAL IMPLICATIONS OF A 50 KM/H SPEED LIMIT

*Fuel consumption and exhaust emissions - Traffic noise - Travel times -  
Other matters to be considered - Concluding comments*

8.1 In its consideration of this head of inquiry, STAYSAFE was not concerned with establishing that lower speeds result in lower vehicle emissions. Rather, the critical issue for STAYSAFE was whether reduced speeds might have adverse effects on the environment, as this might detract from the desirability of adopting a lower general urban speed limit. STAYSAFE's own research and the evidence of expert witnesses suggests that the 50 km/h limit is unlikely to have any perceptible effect on vehicle emissions, traffic noise or travel times. Nevertheless, given the level of community concern with the quality of air in the larger cities, and particularly in Sydney, STAYSAFE considers it prudent that a number of relevant environmental indices be monitored following the introduction of a 50 km/h general urban speed limit.

### **Fuel consumption and exhaust emissions**

8.1 The Roads and Traffic Authority provided STAYSAFE with tentative estimates of the possible effects of a 50 km/h local street speed limit on amenity, casualty accidents, fuel consumption and travel times. These estimates are shown in Table 3. STAYSAFE notes that these estimates are subject to question. STAYSAFE heard from Environment Protection Authority officials that the link between vehicle speeds and air and noise pollution levels was not well understood; there was no research or conclusive evidence of which they were aware that linked a reduction in speed limits to either greater or reduced levels of air and noise pollution:

**Ms DAWSON:** "... The unresearched impression of the experts in the field of noise and air is that any environmental implications in lowering the speed limit from 60 km/h to 50 km/h in terms of air quality or noise management would be basically incidental. The benefits would be likely to be small or uncertain and they certainly

would not be able to be relied upon as a central reason for determining the matter ...”  
(Minutes of Evidence, 19 August 1996, p.75-76)

**TABLE 3: Estimates of the effect of introducing a 50 km/h general urban speed limit across a number of safety and environmental indices.**

<b>Speed Reduction Achieved</b>	<b>Amenity</b>	<b>Reductions in casualty crashes</b>	<b>Reductions in fuel consumption</b>	<b>Increases in travel time</b>
2 km/h	Some improvement	104 \$6 million	0.5% 7 million litres	5 seconds per person per day
5 km/h	More improvement	312 \$19 million	2% 27 million litres	12 seconds per person per day
7 km/h	Greatest improvement	520 \$31.2 million	3.5% 48 million litres	20 seconds per person per day

Source: Roads and Traffic Authority (Submission USL 22; see also AUSTROADS, 1996).

8.3 Environment Protection Authority officials said that while motor vehicles generated more than 80% of oxides of nitrogen in the Sydney region, the critical issue was the frequency and length of vehicle trips, rather than the speeds with which they were taken. This is unsurprising, and perfectly understandable in terms of the savings in fuel consumption and, therefore, the level of emissions resulting from that consumption.

8.4 Environment Protection Authority officials pointed out that thorough research was required to establish whether there was a link between speed and pollution levels, and how it might be affected by a reduction in speed limits:

**Ms DAWSON:** "... the Environment Protection Authority takes noise and noise management very seriously, but to date the question of vehicle speed has not emerged as a priority approach for addressing these problems. If the Committee wished to promote speed control as a principal environmental strategy, there would need to be a substantial body of primary research undertaken by road authorities. It would be essential for detailed and scientifically robust research done on a range of issues, including issues such as the average speed at which people drive; the extent to which drivers abide by speed limits; the actual effect of speed limits on the speed at which cars move around our roads; the link between speed and travel behaviour; the way people drive under different speed limits; whether reducing speed limits encourages people to change their mode of transport, such as to switch to public transport. If there are speed differentials in the area, do people change routes and if they do, does this create more of an impact than the change of speed per se? What are the impacts of speed on fuel consumption.

I am sure there are many other questions that might be appropriate to that sort of primary research and it may well be that the Roads and Traffic Authority and organisations such as the NRMA have done or are planning to do primary research on these issues, but even if that territory is canvassed thoroughly and scientifically, in order to address the question of speed and environmental impacts, you would still need to go a step further and do a series of modules of research related to that particular question. That research would need to address questions such as whether speed significantly influences noise and/or air pollution; to what extent speed limit changes within a particular range or between a range of speeds influences noise and/or air pollution. Are the impacts on air and noise different? For example, if speed decreases, are air emissions less but noise greater? Is the impact of speed changes different depending on the sort of vehicle used, such as light or heavy vehicles, diesel versus petrol or LPG versus petrol?

Are the air emissions implications different for vehicles which have catalytic converters as opposed to those which do not? To what extent does the choice of the speed control device, such as humps versus signs, change the noise impacts? What is the impact of different gear ratios on vehicles? What is the relative noise impact of driver behaviour on non-speed parameters such as braking, gear change, horn use, music systems and so on? I could go on but I think I have possibly made the point." (Minutes of Evidence, 19 August 1996, pp.77-78)

8.5 The link between changes in speed limits (as opposed to actual speeds) and vehicle emissions would be still more difficult to establish. Both the Roads and Traffic Authority

(Submission USL 22) and the AUSTROADS (1996) report referred to a theoretical analysis by Van Every and Holmes (1992) suggesting that physical speed control devices could increase fuel consumption by 30-50% above that obtained by driving at a steady speed. They further assumed that an increase in fuel consumption results in a proportionate decrease in air quality, and therefore concluded that using physical devices rather than a speed limit to control speeds was likely to increase emissions by 30-50%.

8.6 The Roads and Traffic Authority maintained that this claim was confirmed by measurements made by Lines and Morgan (1992) using an instrumented car. They also demonstrated that on local streets, maintaining a steady speed of 50 km/h used 4.2 % less fuel than it did at 60 km/h, and at 40 km/h, 14.5 % less fuel than at 60 km/h. (Submission USL 22; see also AUSTROADS, 1996)

8.7 Basing estimates on steady vehicle speeds, however, is fraught with difficulties, as Environment Protection Authority officials pointed out:

**Mr GIBSON (CHAIRMAN):** “The AUSTROADS (1996) study indicated that 4.2 %, or 48 million litres, less fuel would be used if the speed limit was dropped from 60 km/h to 50 km/h. You are saying that if the speed limit is dropped to 50 km/h the burning of 48 million litres of fuel per year would make no difference. I find that hard to believe.”

**Mr EISER:** “It is a question of how you drop the speed limit from 60 km/h to 50 km/h. If you do it by putting in traffic calming devices so that a vehicle has to brake and accelerate, you will not get the benefits from the reduction in speed limit. When we calculate emissions we look at a drive cycle and do not merely calculate emissions at 60 km/h. We take a normal drive cycle for Sydney, which ranges from stopping to idling and all the way through to accelerating up to 100 km/h on an expressway; and from idling and stopping at traffic lights to accelerating away from those traffic lights.

When we calculate emissions from vehicles we tend to look at a real driving cycle rather than extending the 60 km/h. If you were able to keep cars at a constant speed of 60 km/h and in the same gear and then reduce the speed limit to 50 km/h, there would be an improvement in fuel consumption and a drop in emissions. However, when you have a real time situation, a real life situation, you are accelerating and decelerating and how you bring the speed down can affect fuel consumption and also affect emissions.”

**Mr GIBSON (CHAIRMAN):** “If we are burning 48 million less litres of fuel, surely that has to have an effect on the environment and the atmosphere.”

**Ms DAWSON:** “We have not seen the assumptions that the AUSTROADS study is predicated upon. There is an enormous number of complexities, depending on how you deal with the business of reducing the speed limit. If we were to test all those assumptions it may be that some of them would not apply to the real world situation, and the question of how drivers actually respond to a decreasing speed limit in the real world.” (Minutes of Evidence, 19 August 1996, p.79)

8.8 The Environment Protection Authority’s comment on the manifold issues to be

considered in relation to establishing whether a link exists between speed reductions and noise and air pollution levels underlines the rather crude assumptions which have been made about fuel consumption savings in the Roads and Traffic Authority's submission and the AUSTROADS (1996) report. These estimates are based on, first, using estimates of the total vehicle kilometres travelled in New South Wales to estimate the portion of that total travelled on local roads, and then using Lines and Morgan's (1992) fuel reduction estimates (which are themselves based on the maintenance of steady speeds at 50 km/h). STAYSAFE agrees with the view of the Environment Protection Agency that these estimates might give rise to a less-than-realistic expectation.

8.9 Despite these differences, the important point is that there is general agreement that, based on the available evidence, the effect of the adoption of a 50 km/h speed limit on air pollution levels is not likely to result in any increase in pollution levels. STAYSAFE accepts that, in fact, the effect on pollution levels is likely to be insignificant rather than a decrease.

### **Traffic noise**

8.10 A range of witnesses told STAYSAFE that undesirable traffic noise in residential streets was not generated by a stream of motor vehicles travelling steadily at 60 km/h, but by an isolated motor vehicle travelling at an excessive speed in an otherwise quiet setting. As the experience in the Mosman/North Sydney trial and in the Unley trial has been that speeds at the extreme high end drop significantly when speed limits are reduced, the introduction of a 50 km/h may reduce the very top speeds significantly, and so alleviate the noise problem. On the other hand, if the offending noise comes from motor vehicles which are travelling quickly relative to other vehicles, reducing speeds across the board may not solve the noise problem.

8.11 Despite any small contribution the 50 km/h limit might make to reducing noise levels, the noise levels around any particular dwelling will depend on prevailing traffic speed, the mix of traffic, distance from the road, and the presence of fences, walls, and other environmental features.

8.12 There also appears to be a consensus on the use of speed humps to slow traffic. While they work, they do so at the cost of increased noise from braking and acceleration, and may be a source of great annoyance to those who live adjacent to them.

### **Travel times**

8.13 Reducing the speed limit on residential streets from 60 km/h to 50 km/h would have a negligible effect on travel times: the AUSTROADS (1996) report estimates the difference in seconds. The parts of the journey when a driver is held up by other traffic, negotiating corners, or giving way at intersections are likely to be the major source of delays. In practice, these parts of the journey will be largely unaffected by a lower speed limit.

8.14 By far the greater part of the average motor vehicle trip involves travelling on major traffic routes, with travel on local streets generally restricted to the beginning and end of the journey. A 50 km/h speed limit in residential streets would therefore add very little to journey



times. In addition, traffic levels and traffic signals on major routes have a much greater influence on journey times than speed limits or actual speeds:

**Ms HAWLEY:** “Getting from A to B is not determined by the speed at which you can travel on the road; it is determined by how many traffic signals you have to go through and whether they are in your favour or not. For example, if there was not a SCATS working on the Pacific Highway and at every intersection there was a red light, it would not matter that you could speed up to 70 km/h between the lights; you would still have to stop at the lights. The travelling time is determined more by intersections in an urban area than by the speed between intersections. How often have you travelled along a road and someone has overtaken you and you have caught up with them at the traffic signals anyway? This happens all the time; it is a well known aspect of road management, particularly with major congested intersections. You are trying to just get people through in convoys at a steady speed where you do not have this big differentiation of speed.” (Minutes of Evidence, 19 August 1996, p.20)

8.15 Since motorists encounter the vast majority of delays on major traffic routes, the additional travel times under a 50 km/h general urban speed limit would be negligible and need not cause any concern to the motoring public or, for that matter, the transport industry. Indeed, the only people likely to be disadvantaged by a reduction in speeds in local streets without any compensating gain in amenity are drivers who use local streets to avoid arterial roads whenever possible, even for longer journeys. People who use these “rat-runs” cause much of the traffic problem in local streets, which in turn make expensive local area traffic management treatments necessary. Keeping out of local streets because of increased travel times might represent a cost to these individuals, but would be a benefit for the rest of the community.

## **Other matters to be considered**

### *Public transport vehicles*

8.16 The potential impact of lower speed limits on public transport vehicles must also be considered. Closely spaced bus stops and frequent corner turning in local areas will mean that only a small part of the total time that a bus spends in local streets will normally be at a speed exceeding 40 km/h or 50 km/h, so the effects of a lower limit are likely to be even smaller.

### *Delivery vehicles*

8.17 Delivery vehicles are subject to similar influences, and will only have their travel times increased in proportion to that part of their journeys spent travelling at speeds greater than 40 km/h or 50 km/h off the arterial system. This is likely to be small.

### *Emergency vehicles*

8.18 Emergency vehicles responding to calls will still be free to maximise their speed subject to safe operation, and may possibly even benefit from the lower speeds of other vehicles and from a reduction in the future installation of physical slowing treatments (Submission USL 22, pp. 21-22).

8.19 Finally, STAYSAFE notes the recent report on motor vehicle pollution reduction strategies beyond 2010 from Organisation for Economic Cooperation and Development:

“Until zero-emission vehicles become practical for general use, even the tightest end-of-pipe controls feasible will tend to be offset as the vehicle population and its kilometrage increases. For this reason, a preventive approach aimed at limiting traffic growth must be developed. While significant reductions in the demand for travel face many barriers today, progress in reducing emissions through the various approaches described above could give governments time to make the imposition of such restraints a gradual process.

There is no single measure that could have a direct and major effect on growth in motor vehicle use. Substantial limitation of vehicle use and changes to the transport modal split (i.e., the current shares of road, rail and water traffic) would require a comprehensive package of complementary traffic control measures. Such a package of measures might have to include elements that address control issues in urban areas as well as provisions for long distance transport. Furthermore, to make mass transitory and carpooling viable on a large scale, long-standing trends in residential and commercial land-use planning, particularly where low density suburban areas are rapidly growing, would have to be addressed and reversed through appropriate measures....

Because vehicle use patterns are so complex and linked to so many different activities, environmentally-oriented traffic management measures must be carefully analysed for possible side effects or interactions with other aspects of transport policy....”  
(Organisation for Economic Cooperation and Development, 1995, p.75)

8.20 Later, the statement followed:

"Other important measures include: .... *Information and education measures* to influence driver behaviour and choice of route, including route signalling for transit traffic, introduction of low-speed zones (e.g., speed limits) and pedestrian zones."  
(Organisation for Economic Cooperation and Development, 1995, p.77)

8.21 STAYSAFE is satisfied that, based on the limited research available on the subject, a modest reduction in travel speeds will have insignificant implications for vehicle emissions, traffic noise and travel times. STAYSAFE therefore finds that these issues do not warrant further consideration in the decision-making process with respect to the adoption of a 50 km/h general urban speed limit.

8.22 However, STAYSAFE makes a cautionary note that the Roads and Traffic Authority, in consultation with the Environmental Protection Agency and other relevant agencies, should monitor a number of relevant environmental indices following the introduction of a 50 km/h general urban speed limit in order to ensure that no untoward environmental consequences arise within the road transport system that affect urban residents' amenity.

**RECOMMENDATION 16: The Roads and Traffic Authority, in consultation with the**

**Environmental Protection Agency and other relevant agencies, should monitor a number of relevant environmental indices following the introduction of a 50 km/h general urban speed limit in order to ensure that no untoward environmental consequences arise within the road transport system that affect urban residents' amenity.**

### **Concluding comments**

8.23 Reducing the general urban speed limit is likely to be perceived in some sections of the driving community as an unwarranted addition to the already considerable time constraints they face on the roads while trying to cope with an increasingly busy lifestyle, which for very many people includes ferrying children to and from school and all manner of other activities, as well as travelling to their workplaces. However, the evidence suggests that by far the greater proportion of a typical journey is spent on those roads which will retain their current speed zonings. The evidence seems straightforward, and STAYSAFE can see no reason why the perception that a 50 km/h general urban speed limit will add to travel times cannot be turned around by addressing it the communication strategy to support its introduction.

8.24 There is also likely to be objections raised in relation to the performance and fuel economy of vehicles cars travelling at 50 km/h. While unable to comment on performance, STAYSAFE has shown that there is little evidence to suggest that a 50 km/h speed limit will add to fuel consumption unless the new speed limit is coupled with the widespread installation of traffic calming devices, which STAYSAFE has ruled out as an option. Moreover, as noted, the time spent traversing local roads makes up a relatively small part of a typical journey, so the concern over performance and economy may not have much substance. Again, a well-targeted communication strategy will assist in neutralising such objections.

8.25 While STAYSAFE is satisfied that the 50 km/h speed limit poses no additional threat to air quality, it is possible that the community concern over air quality may warrant the monitoring of relevant environmental indices to reassure the public that the new speed limit is as safe as the old. STAYSAFE would suggest that this issue also be raised in the community education campaign.

# 9

## COMMUNICATION STRATEGIES TO SUPPORT A 50 KM/H SPEED LIMIT

*‘Lowering’ the speed limit - Vulnerable road users - New speed enforcement technology and methods - Local government - Environmental issues - Urban amenity - School education - Concluding comments*

9.1 It is STAYSAFE’s view that speed limits, *in general*, must be seen to be credible if motorists are to accept and comply with a lower speed limit in residential streets.

9.2 STAYSAFE 8 (1986), STAYSAFE’s first report on speed control and road safety, noted that:

“there is only one good reason for controlling the speed of traffic, and that is to improve road safety”. (p.1)

9.3 There is a general view among stakeholders that the public will simply not accept, and therefore will not comply with, a reduction in the general urban speed limit if they feel such a reduction is unlikely to result in safety benefits. Further, if it is suspected that a reduction in the general urban speed limit is calculated to raise revenue—or if statements concerning ‘revenue-raising’ are unchallenged by the Government—then acceptance and compliance will be jeopardised.

9.4 STAYSAFE was very concerned to examine the communication strategies required to support the introduction of 50 km/h local road speed limits in residential areas, including advertising, publicity, and education of drivers and the general public. Any communication strategy to support the introduction of a 50 km/h general urban speed limit will need to address the apparent lack of appreciation in the community for the role which excessive speed plays in the extent of fatalities and injuries in road crashes in urban areas. The false sense of security which people have about the dangers posed by traffic in their local streets, in particular, may be contrasted with the exaggerated concern they have over their personal safety from criminal actions. Statistically, they have a greater chance of being hurt in a crash on their local street than to be the victim of a violent crime. In both cases it is not the actual risk, but the *perceived* risk, which determines how safe people feel in their neighbourhoods.

9.5 The Roads and Traffic Authority indicated that the central thrust of its communication strategy in relation to a 50 km/h limit on local streets would be to outline clearly exactly what is proposed, and the safety and amenity benefits of the proposal (Roads and Traffic Authority, Submission USL 22). Community views as measured in surveys would be acknowledged and addressed in advertising and promotional material. A large scale multi-media campaign would be developed to support the program, with emphasis initially on ensuring community knowledge of the change and subsequently on reminding drivers it is in force. The Roads and Traffic Authority is developing a brochure setting out the safety and amenity advantages of such a new speed limit for residential streets, and addressing known community concerns.

### **‘Lowering’ the speed limit**

9.6 As discussed in Chapter 4: Traffic management strategies to support a 50 km/h speed limit, the Roads and Traffic Authority maintained that the issue involved in the introduction of a 50 km/h speed limit was one of adopting a general default speed limit for local streets, and, like AUSTRROADS (1996), suggested the adoption of a term such as ‘local street speed limit’, which more accurately reflected the limited scope of the proposed speed limit. Implementation of the new limit would be marketed in terms of “introducing a new limit” rather than “lowering” the existing limit.

9.7 STAYSAFE did not share the view that the potential for community resistance to lowering the general urban speed limit would be so pronounced as to warrant the abolition of so widely accepted a term, and argued that if the Roads and Traffic Authority is concerned that motorists will meet a change in the general urban speed limit from 60 km/h to 50 km/h with resistance, then it should address this issue as part of the communication strategy associated with a lower speed limit. STAYSAFE believes that if the communication strategy is successful in getting across the notion that the 50 km/h speed limit will be limited by-and-large to local and residential streets, it will, by extension, reassure the public that the urban arterial and sub-arterial traffic routes will retain their higher speed limits, as appropriate.

9.8 It is appropriate for the Roads and Traffic Authority to address the issue of potential resistance from the public on lowering the general urban speed limit 60 km/h to 50 km/h as part of its communication strategy.

**RECOMMENDATION 17: The Roads and Traffic Authority ensure that any communication strategy developed to support the lowering of the general urban speed limit from 60 km/h to 50 km/h addresses issues of potential resistance from the public,**

including questions concerning travel time, vehicle performance, and ‘revenue raising’.

## Vulnerable road users

9.9 KIDSAFE officials told STAYSAFE that the concept that a communication strategy was essential, and urged that the emphasis be on the vulnerability of particular groups of road users. KIDSAFE felt this would be a major selling point to the general community:

“KIDSAFE would argue ... That an extensive program of publicity and education of drivers would be an essential accompaniment to the introduction of a lower limit.

While enforcement-based deterrence might bring early results, for sustained improvement such a program would need to be directed towards achieving community understanding of the issues and acceptance of the strategy for reducing speeds as well as the need for enforcement of the new limit.

It is suggested that the communication strategy should place an emphasis on the level of road trauma currently being experienced by pedestrians, cyclists, the young, and the elderly, and the scope for improvement that a lower limit would offer in protection against the vulnerability of this group of road users”  
(Submission USL 45, p.4)

9.10 STAYSAFE accepts the argument that the marketing of the 50 km/h general urban speed limit will be best served by emphasising the potential road safety benefits for vulnerable road users, particularly children. STAYSAFE has noted the current communication strategy used in the United Kingdom to alert the community to the problems posed by speeding vehicles. The campaign is centred on alerting the community, and in particular drivers, to the dangers of excessive speed in urban environments. The campaign features advertising and publicity centred around the messages ‘Speed kills ...kill your speed’ and ‘Kill your speed, not a child’, and uses the mechanism of child pedestrian safety on urban streets to strike an emotional reaction to excessive and inappropriate speed. Thus the campaign seeks to present dual messages about speeding and about pedestrian safety issues. In most of the advertising and publicity developed for the campaign, the speeds of 20 mph (32 km/h), 30 mph (48 km/h) and 40 mph (64 km/h) are used to contrast the risk of striking of child pedestrian and to demonstrate stopping and braking distances. While most of the advertising and publicity is oriented to developing an emotional response to child injury or death, some of the materials do utilise the mechanism of shock-horror that is typical of recent Australian road safety advertising developed by the Victorian Transport Accident Commission and used in New South Wales.

9.11 STAYSAFE noted the simple messages used in the anti-speeding campaign materials

developed in the United Kingdom, including a child's voice saying:

“You're going to kill me ... because you overslept. You're going to kill me ... for an appointment. You're going to kill me ... without even thinking about it. You're going to kill me one day—unless you kill your speed”.

9.12 In another anti-speeding advertisement from the United Kingdom that was examined by STAYSAFE, a simple question is posed:

“If you can't stop in time, you're going too fast aren't you?”

9.13 STAYSAFE believes that the adoption and use of dual messages about speeding and about pedestrian safety issues is desirable in communication strategies to be developed to support the introduction of a 50 km/h general urban speed limit. This would mitigate against the ill feeling which some individuals and organisations may be expected to have towards the reduction of any speed limit, and help neutralise the inevitable accusations of revenue-raising which will come from some quarters.

**RECOMMENDATION 18: The Roads and Traffic Authority ensure that, wherever possible, advertising and publicity materials developed to support the introduction of a 50 km/h general urban speed limit utilise dual safety messages about excessive speeding and about pedestrian safety issues.**

## **New speed enforcement technology and methods**

9.14 In the light of the new technology and possible changes to the laws relating to the deployment of radar-based speed detection devices, STAYSAFE considers it desirable that the Roads and Traffic Authority's communication strategy give motorists appropriate warning of developments in speed detection. Similarly, any changes to the penalty and demerit points system for excessive speeding offences should be communicated to motorists.

9.15 STAYSAFE therefore recommends that in its communication strategy, the Roads and Traffic Authority inform the community of changes to speeding offences and penalties, and of changes to police speed enforcement technologies and operational deployment.

**RECOMMENDATION 19: The Roads and Traffic Authority ensure that a component of any communication strategy developed to support the introduction of a 50 km/h general urban speed limit is the inclusion of advertising and publicity that informs the community of:**

- (i) new offences and penalties for excessive speeding; and**
- (ii) new police speed detection technology and changes to operational deployment policies and practices for the enforcement of excessive speeding.**

## **Local government**

9.16 STAYSAFE is confident that, subject to the full consultation of the Roads and Traffic

Authority with local governments and their communities and with significant financial support from the State Government, even those who may be sceptical about the what can be gained from lower residential speed limits can be convinced of the benefits which will accrue to the communities.

9.17 STAYSAFE is particularly mindful of the need to address the concerns of those local councils who have expressed their opposition to the proposal to introduce a general urban speed limit of 50 km/h. STAYSAFE notes that rural local councils have tended to be opposed to the proposal, and any communication strategy must address any specific concerns associated with rural towns.

9.18 To this end, STAYSAFE recommends that as part of its communication strategy, the Roads and Traffic Authority specifically target local councils with an education campaign explaining the rationale for the 50 km/h general urban speed limit, and the procedures for determining which streets will be affected by the new speed limit.

**RECOMMENDATION 20: As part of its communication strategy, the Roads and Traffic Authority specifically target local councillors, traffic committees and traffic engineers with an education campaign which should address issues such as:**

- (i) the erroneous perception that speeding is not a significant issue on local roads in rural areas;**
- (ii) the need for local governments to assist in educating their communities about the road safety and amenity benefits of a lower general urban speed limit;**
- (iii) the costing and funding of implementation; and**
- (iv) the role of local government in the decision-making process.**

## **Environmental issues**

9.19 It is important that the Roads and Traffic Authority anticipate the sorts of objections which will be raised in the community regarding the introduction of a new general urban speed limit of 50 km/h. As noted in Chapter 8: Environmental implications of a 50 km/h speed limit, reducing the general urban speed limit is likely to be perceived in some sections of the driving community as having a significant effect on the journey times. STAYSAFE would suggest that this misconception be addressed by the Roads and Traffic Authority in its communication strategy.

9.20 STAYSAFE has also anticipated objections raised in Chapter 8: Environmental implications of a 50 km/h speed limit in relation to the performance and fuel economy of vehicles cars travelling at 50 km/h, and suggested in the legitimacy of these concerns be clarified in the Roads and Traffic Authority's communication strategy.

## **Urban amenity**



9.21 While the primacy of the issue of road safety in the determination of speed limits is imperative to the successful marketing of the 50 km/h law, should it be introduced, STAYSAFE is aware also that greater amenity for residents in their neighbourhoods will be an important by-product of a reduction in residential street speed limits. Advertising and publicity developed to support the introduction of a 50 km/h general urban speed limit should, where possible, indicate the improved amenity for road users in streets subject to the new speed limit and particularly emphasise improved amenity for residents on residential streets.

### **School education**

9.22 An important aspect of communicating the issues associated with such a major change to the driving environment as the introduction of a 50 km/h general urban speed limit is to ensure that relevant, timely information is available to support school-based educational programs. The Roads and Traffic Authority and the New South Wales Police Service are active in providing resource materials to support the road safety curricula used in New South Wales schools.

9.23 An important component of the road safety education strategy of the Roads and Traffic Authority is the RoadWhys program developed by the Roads and Traffic Authority, the New South Wales Police Service and the Motor Accidents Authority in partnership with the Department of School Education, the Catholic Education Commission, and the Association of Independent Schools. Police are responsible for the delivery of RoadWhys within schools—in line with the New South Wales Police Service’s policy for community-based policing that emphasises prevention of crime and injury.

9.24 STAYSAFE believes that it is appropriate for the RoadWhys program to be revised in line with the introduction of a new general urban speed limit of 50 km/h, and the new speed enforcement technologies and operational methods used by police. Accordingly, STAYSAFE recommends that the Roads and Traffic Authority should ensure that its curricular and other road safety educational materials relating to speeding are revised to include material relevant to the new general urban speed limit of 50 km/h, and the new speed enforcement technologies and operational methods used by police.

**RECOMMENDATION 21: The Roads and Traffic Authority revise curricular and other road safety educational materials relating to speeding to incorporate the new general urban speed limit of 50 km/h, and the new speed enforcement technologies and operational methods used by police.**

## **Concluding comments**

9.25 STAYSAFE has proposed a comprehensive communications strategy to support the introduction of a 50 km/h general urban speed limit. STAYSAFE recognises that there is a major Australian literature dealing with mass road safety advertising and publicity campaigns which will provide a strong basis for the development of an appropriate communications strategy. In particular, STAYSAFE notes Job's (1988,1990) comments regarding the psychological aspects of health and road safety campaigns, and believes that it would be appropriate for the issues identified by Job to be given serious consideration in the creation of any advertising regarding the introduction of the 50 km/h general urban speed limit.

9.26 The communications strategy to support the introduction of a 50 km/h general urban speed limit should address not only the information and notification requirements of the introduction of the new speed limit, but also present information regarding speed enforcement technology and police operational deployments, address issues of environmental and urban amenity, and provide for the education of the local council representatives and officials and the general community.



# 10

## FINAL COMMENTS

*Schedule for introduction of a 50 km/h general urban speed limit - Monitoring and evaluation - Future directions in speed management*

10.1 This report has confirmed that excessive and inappropriate speeding behaviour by motorists remains the largest single factor in the occurrence of road trauma that is yet to receive intensive, consistent and integrated countermeasure development and implementation of the type employed for reducing drink-driving, or ensuring compliance with seat belt and other occupant restraint laws.

10.2 In part, the reasons for this difficulty in communicating effective messages about speeding behaviour may lie in the voluntary nature of speeding—the choice of the speed of a motor vehicle is a continuous series of discrete transitory behaviours, able to be varied and reviewed according to the driver's perception of the road and its other users.

10.3 If the initiatives on drink-driving and compulsory seat belts have been the most important developments in reducing the road toll, then the adoption of a lower general urban speed limit can be seen as another significant piece in the road toll puzzle. Indeed, there is a good argument for proclaiming a 50 km/h general urban speed limit as the single most important factor in the attempt to reduce the road toll by a significant margin over the next few years.

10.4 That is not to say this is an easy task. It would be a most unusual driver who has never exceeded a speed limit. Perhaps this is why speeding, except at extreme levels, is not regarded by motorists as particularly dangerous, and why motorists typically drive at a speed in excess of the speed limit but within a perceived tolerance or margin where police speed enforcement will not occur. On the other hand, it can be imagined that people are more complacent about motor vehicles being driven at an excessive speed when they themselves are behind a wheel, than when they are pedestrians or cyclists about the roadway.

10.5 The community's perception of the speeding problem is therefore a crucial target for supporters of a lower general urban speed limit: a person's attitude to speeding should be the same whether walking down their own street or driving through a residential street hundred of miles away. There is no quick-fix here. As the Roads and Traffic Authority has pointed out, a more appropriate speed limit in urban areas is but one step—albeit the most important—in a long- term process which will hopefully build a level of public disapprobation of speeding to rival that attached to drink-driving.

10.6 STAYSAFE has argued that Australia's general urban speed limit of 60 km/h is at odds with overseas practice, is inappropriate for local roads in residential areas, and is the result of an historical anomaly in need of a prompt overhaul. This view is consistent with the evidence presented by all the major stakeholders in road safety who have written submissions or given evidence to this inquiry.

10.7 STAYSAFE has reviewed much of the best-known literature on the relationship between speed and pedestrian injuries and has found a uniformly consistent argument that reducing initial speeds, even by seemingly modest degrees, can have markedly disproportionate benefits for pedestrians struck by motor vehicles. Crashes on residential streets have been shown to account for significant numbers of pedestrian injuries and deaths, particularly among children, and especially among those aged 0-5 years of age, who demonstrate a markedly higher rate of injury on residential streets than on arterial roads.

10.8 STAYSAFE has therefore taken the view that the most important message about a lower general urban speed limit is that small reductions in initial speeds on local roads can save lives, particularly young lives, both by giving drivers more time to react to an emergency, and by reducing the impact where crashes with pedestrians are not avoided. STAYSAFE has noted the British television advertising campaign which links speeding on urban roads with the premature deaths of child pedestrians.

### **Schedule for introduction of a 50 km/h general urban speed limit**

10.9 It is important that the introduction of a 50 km/h general urban speed limit be timed such that all the various strands which will contribute to public awareness, understanding and acceptance of a 50 km/h speed limit—an acceptance which may be the single most important factor in achieving satisfactory levels of compliance—are in place.

10.10 The Roads and Traffic Authority (Submission USL 22) asserted that preparation for the introduction of a new 50 km/h general urban speed limit would need to include:

- consultation between the Roads and Traffic Authority and local governments
- consultation between local governments and their communities
- the identification and subsequent signing of roads which would retain their current speed limits
- the appropriate treatment of roads which would be affected by the new 50 km/h general urban speed limit
- a well targeted public education and media advertising campaign.

10.11 The Roads and Traffic Authority noted that time would be required to explain and promote the new speed limit, and to prepare further advertising material for its introduction. It would also take some time to identify those road sections for which a higher speed zone would be appropriate, and for the signposting of those sections. All such zoning would need to be complete before the new limit was brought into effect. The Roads and Traffic Authority

estimated that these tasks will take in the order of 6 to 9 months to complete.

10.12 STAYSAFE notes that the Roads and Traffic Authority's preferred option is for an implementation strategy that would see only those roads zoned above 50 km/h being signposted, thereby minimising cost. As was noted in Chapter 4: Traffic management issues associated with 50 km/h speed limits, Roads and Traffic Authority officials told STAYSAFE that signage would be provided only at strategic points if deemed necessary and only as an initial reminder of the change in the law. Under this scenario, the erection of signage and other appropriate treatment of affected roads may not be an issue. As has been explained, STAYSAFE is of the view that appropriate road markings should be strategically placed at the junction of all 60 km/h and 50 km/h so as to aid compliance with the new law. Based on the Roads and Traffic Authority's evidence, it would seem that the Roads and Traffic Authority's estimated 6-9 month lead-time does not take into account such road marking and, where appropriate, the building of traffic calming devices. Moreover, STAYSAFE's recommendation that maps depicting road hierarchies be produced and that collector roads be signed at 50 km/h unless a higher speed is more appropriate, may further delay the process.

10.13 While various organisations have stated that implementation could take place over a 6-9 month period, those estimates are based on the minimalist approach taken by the Roads and Traffic Authority. Given STAYSAFE's preference for a comprehensive package of measures to support the 50 km/h general urban speed limit—including close consultation with local government, the aforementioned road markings and production of maps defining the road hierarchy for each local government area, and changes to the penalty and demerit points system—STAYSAFE would be surprised if, indeed, a 6-9 month period would be sufficient. The North Sydney/Mosman trial, which involved a small-scale implementation program in comparison to the one foreshadowed here, was delayed by three or four months because it necessitated negotiations between three separate government bodies as well decisions on the signage and line markings which had to be installed.

10.14 In any event, STAYSAFE would expect the 50 km/h general urban speed limit to commence — with all the attendant measures recommended and suggested in this report — by early 1998.

10.15 The Roads and Traffic Authority stated that while developments in adjacent States should be considered, the unpreparedness of another State to act should not inhibit a New South Wales initiative (Roads and Traffic Authority, Submission USL 22). STAYSAFE concurs with this view, but stresses the desirability of reducing the general urban speed limit throughout Australia to 50 km/h.

### **Monitoring and evaluation**

10.16 The Roads and Traffic Authority stated that it would be necessary to assess the overall impact of the new general urban speed limit, and some details of its implementation, in order to determine how best to refine its operation for the future. Relevant measurements will be required of speeds, community acceptance and accident experience—both before, and at several points after, introduction of the new speed limit:

**Mr SMITH (STAYSAFE):** “One of the most important aspects of the implementation of the 50 km/h speed limit is its effectiveness once implemented. What are the processes and procedures required to monitor and evaluate the effectiveness of a 50 km/h local road speed limit in promoting road safety?”

**Mr CROFT:** “Three things have to be measured. They are the speeds of the vehicles on the streets, the attitudes of the community to the new speed limit, and the crash effects. Those three things have to be measured before any change is introduced, so that we continue our base line data and make sure we have got covered everything that we need to have covered, and they need to be measured at several points after the implementation or after any further change, so that we can identify those effects and improve or refine and, to include all options, to change.

So there is the need for a development of a proper monitoring and evaluation program that covers all those matters. Discussion has already taken place in research circles as to how that will be done, both within one jurisdiction, like New South Wales, or whether it goes more broadly throughout the nation. So a series of measurements would have been done and the results of those measures would be fed back to the community along with appropriate information and educational material, so that the public is aware of it and could assess and address the concerns of the community about those measurements.”

**Mr TAYLOR:** “It may be useful to add one point to that. That is that New South Wales is well placed with respect to an existing collection of data in those three years and is, from my experience, far better placed than almost any other State in that regard. So a lot of it has already been done.” (Minutes of Evidence, 4 December 1995, p.20-21)

10.17 Results from the monitoring and evaluation activities would be used to promote the new limit as part of the overall speed management program for road safety. Such information would also form the basis of regular feedback bulletins to the community on the progress of the initiative and its success (Roads and Traffic Authority, USL 22).

### **Future directions for urban speed management**

10.18 The future of urban speed management must be predicated on improving the safety of all road users. This report has noted a lack of concern in the community about the incidence of excessive speeding, notably excessive speeds in urban areas. It has also been demonstrated that this complacency is unfounded: urban roads account for a large majority of vehicle crashes and local roads in urban areas are a major source of injury for vulnerable road users.

10.19 The 50 km/h speed limit, which will principally affect speeds on local roads, will improve the safety of pedestrians, who have until now borne the brunt of the consequences of having an urban speed limit 10 km/h higher than that of most of the world’s developed countries. Residents will have safer and, hopefully, quieter, streets for their children to walk, cycle and play.

10.20 As STAYSAFE has noted, more work needs to be done to dovetail what should be the pre-eminent rights of pedestrians into the planning of new residential developments, so that roads are not mere traffic conveyors, but places which also work as what Brindle has called non-traffic spaces. The reduction in travel speeds which will follow the introduction of a 50 km/h general urban speed limit will foster a more pedestrian-friendly environment in which motor vehicles are less intrusive on—and certainly less dangerous to—residents of urban New South Wales.

10.21 The question of whether the speed limits on urban traffic routes (arterials, freeways etc.) should be subject to a review is one that has been put enthusiastically by some advocates, notably NRMA Ltd, and it can be anticipated that this view will emanate from some sections of the community in the lead-up to the implementation of the 50 km/h speed limit. Calls for a 120 km/h speed limit on the best freeways are bound to be advocated. While STAYSAFE accepts that the quality of roads with identical speed zones can vary, STAYSAFE inclines to the view that the emphasis should be on reducing the speed limits on those roads considered inferior to others, rather than increasing speed limits on our best roads.

10.22 In a preceding chapter (Chapter 3: What is needed to implement a 50 km/h general urban speed limit?), STAYSAFE speculated that reference to the process of the introduction of random breath testing could provide a useful a lesson from history. STAYSAFE drew an explicit analogy with the situation appertaining to the road safety and road trauma problem posed by drink-driving prior to the early 1980s. Following recommendations made in STAYSAFE 1 (1982), the New South Wales Government introduced a comprehensive and coherent package of drink-drive countermeasures centred around a new method of police operational deployment: random breath testing; but including new offences and penalties for excessive blood alcohol, increased conspicuousness of police operations relating to drink-driving enforcement, including highly visible breath testing; the introduction and use of modern screening and evidentiary equipment; public education about the road safety and road trauma problems posed by drink-driving and extensive media publicity regarding new drink-driving offences and penalties, new police drink-driving enforcement technologies, and new methods of police operational deployment to target drink-driving.

10.23 In this report, STAYSAFE has made recommendations for a comprehensive and coherent package of countermeasures to excessive and inappropriate speeding centred around a new general urban speed limit of 50 km/h and new speed detection technologies and methods of police operational deployment.

10.24 The recommendations made by STAYSAFE call for more than just the introduction of a 50 km/h general urban speed limit in New South Wales. STAYSAFE has called for a substantial package of countermeasures:

- for new offences and penalties for excessive speeding
- for increased conspicuousness of police operations relating to enforcement against excessive speeding
- for the introduction and use of new speed detection technology



- for public education about the road safety and road trauma problems posed by excessive and inappropriate speeding
- for the need to monitor and evaluate the introduction and implementation of the new countermeasures to excessive speeding
- for extensive media publicity regarding new excessive speeding offences and penalties, new police speed enforcement technologies, and new methods of police operational deployment to target excessive speeding.

10.25 A significant reduction in alcohol-related road trauma did not occur until the development of a robust, comprehensive set of drink-drive countermeasures, and a coherent publicity and advertising campaign that alerted the community to the wide-ranging changes that were being implemented and emphasised the high probability of detection for driving while impaired by alcohol. As a result, unlike their parents, today's young people have grown up in a society where drink-driving is socially unacceptable.

10.26 The STAYSAFE Committee believes that the development and implementation of a comprehensive and coherent program of urban speeding countermeasures, including new speeding laws, new speed enforcement technologies, new operational policing methods, and a coherent publicity and advertising campaign that aims to alert the community to the wide-ranging changes that are being implemented and emphasises the high probability of detection for speeding, will go a long way towards fostering an attitude among young people today that speeding too is socially unacceptable.

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## APPENDIX A: GLOSSARY OF TERMS

In order to clarify debate over the issue of urban speeds, STAYSAFE has adopted a number of definitions from the earlier work of the Social Development Committee (1991), which inquired into speed limits in Victoria, and the European Transport Safety Council (1995), which reviewed countermeasures to excessive and inappropriate speed recently.

**Free speed** is the speed at which motorists travel when they are unimpeded by other traffic or road features.

The **85th percentile speed** is the speed at or below which 85% of motorists travel. If the 85th percentile speed of a section of road is close to the mean or average speed of traffic on that road, then the **speed differential** between vehicles on the road is likely to be small. Small speed differentials are associated with a low incidence of road crashes, while large speed differentials are associated with an increased incidence of road crashes.

A **speed limit** is the maximum speed at which a motorist is legally permitted to travel on a particular section of road.

**General speed limits** are applied by regulation throughout an area or areas of similar traffic environment, e.g. built-up areas. The need for extensive signing is avoided where these limits apply. There are two types of general speed limits used in Australia commonly: a **general urban speed limit** of 60 km/h, and a **general rural speed limit** of 100 km/h. It can be argued that a third type of general speed limit is emerging, namely a general freeway or motorway speed limit of 110 km/h.

**Speed zoning** is the designation of a speed limit for a particular length of road and traffic conditions, and the speed zoning is delineated by signs and road markings. Signed speed zones take precedence over general speed limits.

The **road hierarchy** is a system of organising the catalogue of roads within an area according to the predominant function(s) served by each road. **Arterial roads** are those roads which form the principal avenue of communications for regional traffic movements. These roads are of major state or metropolitan significance and cater for high volume and/or long distance travel. **Sub-arterial roads**, sometimes called secondary roads, are roads of lesser importance than arterial roads, which still cater for relatively high volume and/or long distance travel. **Collector roads** provide a link to the local road system from arterial and sub-arterial roads. They serve both through traffic and local traffic. Collector roads are sometimes referred to as **distributor roads**. **Local roads** cater for local, short distance travel and access to adjacent properties.

**Excessive speed** is exceeding the speed limit. **Inappropriate speed** is driving too fast for the prevailing conditions.



**Tolerance levels** refer to the margin of speed above the speed limit that is allowed before police enforcement action is taken. Tolerances are unofficial in nature. The occurrence of tolerances is widely understood within the community, and can, upon occasion, be discussed openly (e.g., the announcement by the then Premier of an initial tolerance of 17 km/h on speed camera enforcement at the time speed cameras were introduced).

# APPENDIX B: A BRIEF REVIEW OF SPEED MANAGEMENT IN NEW SOUTH WALES

*The 1980s—The speed pact - Into the 1990s—the speed review - Road Safety 2000 - Urban speed management in Australia—the AUSTROADS report*

B.1 This appendix provides a brief review of some of the major activities undertaken in New South Wales to address the problem of excessive or inappropriate speed.

B.2 STAYSAFE has inquired into speed management in New South Wales previously, issuing several reports that examined general speed management (STAYSAFE 8, 1986), speed on rural roads (STAYSAFE 11, 1987), and the specific issue of radar detectors and jammers (STAYSAFE 10, 1986).

B.3 STAYSAFE also released a discussion paper on speed management (STAYSAFE 9, 1986), which led to a public seminar on speed management issues. The proceedings of this public seminar were not published, although a collation of papers presented at the seminar received limited distribution at the time. This collation has been edited by STAYSAFE recently, and copies of the proceedings are available on request.

B.4 STAYSAFE 8 (1986) argued that the relationship between the appropriate management of the speed of motor vehicles and road safety was of primary importance:

“1.1.1 As far as this Committee is concerned, there is only one good reason for controlling the speed of traffic, and that is to improve road safety.

1.1.2 Other reasons for limiting speed may be advanced, as happened in the 1973 fuel crisis in the U.S.A, where an absolute speed limit of 55 m.p.h. (88.5 km/h) was imposed nationally in order to reduce fuel consumption. But generally, speed limits which do not have clear road safety benefits are not justified.” (p.1)

## **The 1980s—the speed pact**

B.5 Croft (1990) reported that a major survey in 1985 gave support to the view that speeding was a “deeply entrenched and socially condoned aspect of driver behaviour — just as drink-driving had been.” It was therefore considered that a long-term commitment was

required to break down this attitude.

B.6 In mid-1986, therefore, the New South Wales Government launched the first phase of a program to reduce excessive speeding. Its stated central objective was to decrease the number of crash casualties in which excessive and inappropriate speed are contributing factors. According to Croft (1990), it was the first long-term, appropriately funded speeding program to be implemented in Australia. The launch was preceded by changes to the penalty and demerit points system, and an initial trial of police aerial surveillance for speed enforcement purposes. This phase sought to raise community awareness of the speeding problem, to make drivers aware of increased penalties, and to build a platform for a strong deterrence-based approach.

B.7 A publicity campaign with the message 'Take It Easy' was established and was the basis for various specific initiatives to be introduced in subsequent years. Recognising the importance of having enforcement and publicity measures running simultaneously, the second phase of the publicity campaign concentrated on enforcement issues. Aerial speed surveillance was introduced in 1987, along with new radar speed detection technology, a reduction in enforcement tolerances, and publicity surrounding the use of accident blackspot information as a basis for speed radar patrols.

B.8 One of the positive actions to come out of this process was the commencement in 1987 of a review of speed zoning, which attempted to address anomalies in speed control measures such as speed limits, speed zoning, advisory speed zoning and enforcement practices, on both urban and rural roads. This review led to a more flexible speed zoning system, including the introduction of 70 km/h, 80 km/h, and 90 km/h speed zones in urban areas, and the 110 km/h speed zones on rural roads. It was envisaged that the reassessment of the speed zoning system would introduce revised procedures for speed zoning which placed more emphasis on accident experience and road features and enabled greater flexibility in achieving consistent and acceptable speed limits.

B.9 In 1988, the speed reduction campaign was varied, and the concept of a "speed pact" between the Government and motorists was introduced. This pact was based on the notion that all parties involved in the speeding problem should agree to take action:

- the Traffic Authority agreed to reassess the speed zoning system, and
- the motorist agreed to comply with the revised speed limits, while
- the police agreed to monitor vehicle speeds and enforce the speed limits.

B.9 STAYSAFE notes that there has been a six-year lag between the Roads and Traffic Authority's foreshadowing of a reduction in the general urban speed limit and the proposal currently before STAYSAFE:

"While major traffic routes are typically speed zoned above the general limit, and

local area precincts are increasingly being introduced with lower areal speed limits, the vast majority of the urban road network is subject to the general limit of 60 km/h. This majority of the network nevertheless covers a wide range of road types and functions, on some of which the motoring public sees the application of the general urban speed limit as inappropriate.

It is proposed, therefore, to include a review of the general urban limit in the development of an urban speed management strategy. Not only is the general applicability of the limit across a wide variety of road types to be questioned, but in view of practices and experience overseas, the level at which the general limit is set needs close examination." (Croft, 1990)

### **Into the 1990s—The speed review**

B.10 In the early 1990s, the Roads and Traffic Authority and the Federal Office of Road Safety commissioned the Monash University Accident Research Centre to review the relationship between travel speed and road safety. The project's fundamental aim was to describe the state of knowledge in a number of speed related areas with a view to outlining directions for further research in speed management.

B.11 Fildes and Lee (1993a, 1993b), reviewed the literature on speed, held a workshop for 45 Australian road safety experts at which Dr Goran Nilsson of the Swedish Road and Traffic Research Institute was the keynote speaker, and published their findings in two volumes. Fildes and Lee looked at speed and four specific speed-related topics: the relationship between speed and crashes; the role of speed limits on travel speed; the effects of speed enforcement on travel speed and driver behaviour; and the influence of the environment on speeding. Urgent topics for further investigation in the bid to improve knowledge and reduce the number and severity of speed related crashes in Australia included:

- speed zoning and the credibility of these speed limits among motorists
- the relationship between road design and travel speed
- understanding the relationship between crash involvement and travel speed and the behavioural explanations for speeding
- the effectiveness of Local Area Traffic Management devices in reducing travel speed and crashes
- the consequences of enforcement tolerances above the speed limit on travel speed behaviour
- confirmation of overseas findings regarding the safety consequences of changes in the posted speed limit.

B.12 The Review also identified action programs to reduce speed related trauma, including:

- the development of public education programs to promote a widespread change in community attitudes to speeding, similar to that experienced with drink-driving
- the development of an Australia-wide system for determining appropriate speed limits based on existing expert systems
- greater attention to repeater signing of speed limits within zones to ensure

motorists are aware of these speed limits

- the more widespread use of available and effective speed enforcement technologies in all States and Territories.

## **Road Safety 2000**

B.13 Road Safety 2000 (Roads and Traffic Authority, 1995b) is the road safety strategic plan for New South Wales for the 1990s. It was first released in 1991, and extensively reviewed in 1994: the revised plan is for the period 1995-2000. Road Safety 2000 has identified six strategic issues designed to achieve the plan's goal "to make NSW roads the safest in the world":

- community involvement
- transport and land use planning and management
- safer people
- safer roads
- safer vehicles and equipment
- strategy co-ordination.

B.14 The speed management program specifically addresses Road Safety 2000 objectives and strategies, including:

To reduce road crashes and casualties by improving road user behaviour

- ensure that the speed travelled by road users are appropriate for the prevailing conditions and in accord with posted speed limits
- improve the safety of pedestrians
- support the use of enforcement aimed at gaining compliance with traffic regulations through deterrence strategies, and by focusing on high-risk behaviours

To reduce crashes and casualties by improving road engineering, road environment and the management of traffic

- develop and implement an acceptable system of speed management, including speed limits, which takes into account road and traffic conditions.

B.15 The speed management program's stated goal is to reduce the incidence and consequences arising directly from speeding. Its stated strategies for dealing with the issue of speeds limits and speed zoning are to:

- develop an acceptable system of speed limits, taking account of road conditions
  - incorporate speed zoning component into safety audit guidelines
  - establish national consensus on general urban speed limit
  - implement trial of higher speed limits on selected rural freeways
- ensure signposting of speed limits provides adequate information to drivers
  - revise policy and guidelines on signposting of speed limits

- monitor and report on trial of speed limit reminders.

### **Urban speed management in Australia—The AUSTROADS report**

B.16 AUSTROADS is the national association of road transport and traffic authorities in Australasia. It is governed by a council consisting of the chief executive (or an alternative senior executive officer) of each of its eleven member organisations, which are the relevant authorities in each of the States and Territories, the Commonwealth Department of Transport and Regional Development, the Australian Local Government Association and Transit New Zealand.

B.17 AUSTROADS's stated essential purpose is:

“to promote national uniformity and harmony, to avoid unnecessary duplication, and to support identification and application of world best practice in the management of Australasia's roads” (AUSTROADS, 1996).

B.18 The urban speed management project was established to assist Australian governments to develop a nationally harmonious urban speed management policy. AUSTROADS (1996) states that its approach was to:

- review and consolidate existing practices and available documentation relating to urban speed management and enforcement of speed limits;
- consider emerging issues of concern; and
- review the lessons learned from experience with changes in urban speed limits both in Australia and overseas.

The study concentrated on the local street network, as most States and Territories had recently developed speed limit hierarchies for arterial roads.

B.19 AUSTROADS (1996) report advocates:

- the application of a 50 km/h speed limit only to local streets
- the adoption of a term such as 'local street speed limit' to describe the new speed limit
- the signing of only those streets which would retain their current 60 km/h speed limit.

In fact, the AUSTROADS report does not differ in any substantive way from the Roads and Traffic Authority's submission to the current inquiry (Submission USL 22).

B.20 The AUSTROADS report also seeks to confine the definition of roads to either 'traffic routes' or 'local streets', claiming this will save confusion in the development of an urban speed management strategy by avoiding using terms such as 'arterial', 'collector', and 'distributor', the latter two of which are sometimes used interchangeably. The authors also point out that many roads have their origins in administrative or funding arrangements rather than their proper place in the road hierarchy. There is merit in this argument, but it also has the potential to leave collectors out of the 50 km/h equation on the basis that they are traffic routes. Others argue that collectors are at the top of the local street system, rather than at the bottom of the traffic route system, and should be treated in the same way as other local streets.







## **SUBMISSIONS RECEIVED BY THE STAYSAFE COMMITTEE**

- USL 1 Dr R. F. Cameron
- USL 2 Mr K. Holziel
- USL 3 Mr N.E. Pearson
- USL 4 Mr B. Taylor
- USL 5 Mr C. Dimech
- USL 6 Mr A.W. Tatham
- USL 7 Mr C.M. McCormac
- USL 8 Save Our Residential Environment (SORE) Action Group - Mr G. Short
- USL 9 Mr B. Webb and Mrs L. Webb
- USL 10 Mr A. O'Donaghoe
- USL 11 Mr B.L. Rubens
- USL 12 Mr S.R. Ruedlinger
- USL 13 Mr A. Graham
- USL 14 Mr P. H. Phillips JP
- USL 15 Mr G. Glasson
- USL 16 Mr M. Innes
- USL 17 Mr R. B. Frenkel
- USL 18 Mr T. Gaster
- USL 19 Mr W. J. Martin
- USL 20 Mr J. G. Westland
- USL 21 NRMA Ltd. - Mr A. Mackay
- USL 22 Roads and Traffic Authority - Mr
- USL 23 Mr R.J. Saunder
- USL 24 Mr G.A.H. Swan
- USL 25 Mr J. Gately
- USL 26 Combined Pensioners and Superannuants' Association of  
NSW—Yagoona Branch - Mrs L. Thurgood
- USL 27 Mr B. Corbett
- USL 28 Kings Langley Traffic Action Group - Mr S. Pye
- USL 29 Mr B. Douglas
- USL 30 Mr John Mills MP, Member for Wallsend, forwarding correspondence  
from Lake Macquarie City Traffic Facilities Committee
- USL 31 P. Miles
- USL 32 Lambton Senior Citizens and Community Group - Ms R. Gray
- USL 33 Vehicle Design and Research Pty Limited - Mr M. Paine
- USL 34 Mr P.K. Seccombe
- USL 35 Neighbourhood Watch Area BK10 - Mr C. Baileville
- USL 36 Mr John Mills MP, Member for Wallsend, forwarding correspondence  
from Cr K. Winning, Lake Macquarie City Council
- USL 37 Mr John Mills MP, Member for Wallsend, forwarding correspondence

- from Mr E. Purins
- USL 38 Mr J.R. Gailey OAM
- USL 39 Mr R. Ridout
- USL 40 Ms Jill Hall MP, Member for Swansea, forwarding correspondence  
from Mr Ross Hedley
- USL 41 Mr S.L. Glasson
- USL 42 Mr S. Stanfield
- USL 43 CAMWEST - Mr Geoff Holland
- USL 44 Mr G.W. Law
- USL 45 Child Accident Prevention Foundation of Australia (KIDSAFE), New  
South Wales Division - Ms C. Gowdie
- USL 46 Wingecarribee Family Support Service (Inc) - Ms A. Stower
- USL 47 Mr W. Maschke
- USL 48 Gunnedah Shire Council - T. Muldoon
- USL 49 The Council Shire of Walgett - Ms J. Goodwin
- USL 50 The Council of the Shire of Young - Mr S. Prakash
- USL 51 Queanbeyan City Council - Mr H.A. Percy
- USL 52 Mr Bruce Jeffery MP, Member for Oxley, forwarding correspondence  
from the South West Rocks branch of the National Party
- USL 53 Ashfield Council - Dr D. Niven
- USL 54 Mr V. Mamo
- USL 55 Baulkham Hills Shire Council - Mr A. King
- USL 56 Maclean Shire Council - Mr S. Tyler
- USL 57 Gundagai Shire Council - Mr G. A. J. Tickner
- USL 58 Manly Council - Mr M. C. Woodward
- USL 59 Ryde City Council - Mrs G. Brus
- USL 60 Wellington Council - Mr G. Brooks
- USL 61 Nundle Shire Council - C. J. Ball
- USL 62 Guyra Shire Council - Mr R. Robertson
- USL 63 The Council of the Shire of Cobar - D.H. Ramsland
- USL 64 Rylstone Shire Council - Mr A. Knoke
- USL 65 City of Goulburn - I. Aldridge
- USL 66 Narromine Shire Council - Mr John Kauter
- USL 67 Council of the Shire of Yallaroi - J. J. Gossage
- USL 68 Deniliquin Council - Mr Terry O'Connor
- USL 69 Bellingen Shire Council - Mr P. J. Doyle
- USL 70 Hurstville City Council - Mr Chris Little
- USL 71 Murrumbidgee Shire Council - Mr P. J. Goodsall
- USL 72 Drummoyne Council - Mr R.J. Lloyd
- USL 73 Strathfield Municipal Council - Mr V. Hudson
- USL 74 New South Wales Police Service -
- USL 75 Mosman Municipal Council - Mr D. Baker
- USL 76 Warren Shire Council - Mr D. McLoskey
- USL 77 Parkes Shire Council - Mr Alan McCormack
- USL 78 Lane Cove Council - Mr Ross Selleck
- USL 79 Tumut Shire Council - Mr J.G. Lawson

- USL 80 Hones and Ledingham - Mr N.D. Ledingham
- USL 81 Mr G.M. Cameron
- USL 82 The Council of the Shire of Central Darling - Mr P. Hee
- USL 83 Quirindi Shire Council - Mr P. A. Campbell
- USL 84 Hay Shire Council - Mr R. R. Mooney
- USL 85 The Council of the Shire of Parry - Mr G. Inglis
- USL 86 The City of Orange - C. Hannus
- USL 87 Gloucester Shire Council - Mr N. S. McLeod
- USL 88 River Shire Council - Mr P. T. Muldoon
- USL 89 Albury City - B. J. McLennan
- USL 90 Hastings Council - Mr A. T. Nash
- USL 91 Moree Plains Shire Council - Mr M. J. O'Reilly
- USL 92 Auburn Council - Mr M. Burt
- USL 93 Council of the Municipality of Kiama - Mr N. Edgell
- USL 94 Bathurst City Council - Mr C. Pitkin
- USL 95 Shire of Tumbarumba - Mr R. M. Lloyd
- USL 96 Tamworth City Council - K. Wijewardene
- USL 97 Evans Shire Council - Mr D. Gorringe
- USL 98 Lismore City Council - W. J. Moorehouse
- USL 99 Illawarra Road Safety Group - Ms D. Taylor
- USL 100 City of Blue Mountains - Mr R.K. Greenwood
- USL 101 Marrickville Council - C. R. Mills
- USL 102 The Council of Casino - Mr R. V. Schipp
- USL 103 Forbes Shire Council - Mr G.J. Haley
- USL 104 Ms E. MacLean
- USL 105 Mr M.L.A. Williams
- USL 106 Scone Shire Council - Mr J.A. Gaudry
- USL 107 Mr G. Oliver
- USL 108 Mr N. Paine
- USL 109 Warringah Council - R. Dowsett
- USL 110 Wollongong City Council - Mr J. Bultitude
- USL 111 Institute of Municipal Engineering New England - Mr W. Cone
- USL 112 Gosford City Council - Mr P. Wilson
- USL 113 Narrabri Shire Council - I.M. Tucker
- USL 114 Bicycle NSW - Ms E. Gerencer
- USL 115 Glen Innes Municipal Council - Mr R.J. Stoeckeler
- USL 116 Tallaganda Shire Council - Mr R. White
- USL 117 Mr R. Marr
- USL 118 Singleton Council - Mr J.J. Cavanagh
- USL 119 The Council of the Shire of Culcairn - Mr A. Crakanthorp
- USL 120 The Council of the Shire of Eurobodalla - S. Jones
- USL 121 Wyong Shire Council - T.D. Gibbs
- USL 122 Murrurundi Shire Council - Mr G.C. Turnbull
- USL 123 The Council of the City of Willoughby - Mr J.C. Owen
- USL 124 Woollahra Municipal Council - Mr P. Hanning
- USL 125 Bland Shire Council - S. R. Dunstall

- USL 126 Coolamon Shire Council - T. Kiss
- USL 127 Leichhardt Municipal Council - Mr T. Jennings
- USL 128 Bega Valley Shire Council - Mr D.P. Mein
- USL 129 Hume Shire Council - Mr D.J. Pollard
- USL 130 Weddin Shire Council - Mr T.V. Lobb
- USL 131 Tenterfield Shire Council - M. Brady
- USL 132 Narrandera Shire Council - K.M. Murphy
- USL 133 Boorowa Council - H.E.A. Dunk
- USL 134 Hawkesbury City Council - Mr C. Daley
- USL 135 Lachlan Shire Council - Mr. R.G. Plante
- USL 136 Cootamundra Shire Council - M.E. Whitteron
- USL 137 Muswellbrook Shire Council - Mr B.W. Macfarlane
- USL 138 Lockhart Shire Council - Mr G.J. Murphy
- USL 139 Coffs Harbour City Council - Mr G. Stulle
- USL 140 The Council of the City of Grafton - C.J. Harbidge
- USL 141 Coonabarabran Shire Council - R.J. Geraghty
- USL 142 Port Stephens Council - Mr P. Buchan
- USL 143 Randwick City Council - Ms F. Howat
- USL 144 Maitland City Council - Ms R. Bignell
- USL 145 Coonamble Shire Council - A.G. Hanrahan
- USL 146 Council of the Shire of Wentworth - D.J. McMillan
- USL 147 Cabonne Council - G.L.P. Fleming
- USL 148 Council of the City of Greater Lithgow - Mr I. Stewart
- USL 149 Jerilderie Shire Council - Ms S. Hunter
- USL 150 Blacktown City Council - Mr D.G. Johnson
- USL 151 Greater Taree City Council - Mr D. Valentine
- USL 152 Yarrowlumla Shire Council - W.P. Ellison
- USL 153 Bingara Shire Council - Mr P.R. Harvey
- USL 154 The City of Newcastle - Mr P. Sylvester
- USL 155 Ulmarra Shire Council - Mr T. Jenkins
- USL 156 Cooma-Monaro Shire Council - Mr D. Byrne
- USL 157 Mulwaree Shire Council - Mr R. F. Mowle
- USL 158 North Sydney Council - Mr T. Lehmann
- USL 159 Mr Grant McBride, Parliamentary Secretary for Roads, forwarding correspondence from Mr A Clarke, Summer Hill
- USL 160 Byron Shire Council - Mr M. Eastcott
- USL 161 Broken Hill City Council - Mr S. Walsh
- USL 162 Mudgee Shire Council - Mr C. Devitt
- USL 163 Inverell Shire Council - Mr G. Bendeich
- USL 164 South Sydney City Council - C. Bagley
- USL 165 Parramatta City Council - M. De Santi

- USL 166 Leeton Shire Council - A. Supramaniam
- USL 167 Shoalhaven City Council - G.A. Napper
- USL 168 Harden Shire Council - P. Campbell
- USL 169 The Oberon Council - Mr B. Fitzpatrick
- USL 170 Cessnock City Council - A.B. Bowditch
- USL 171 Ku-ring-gai Municipal Council - B.D. Tucker
- USL 172 Shire of Brewarrina - D. Banda
- USL 173 Kempsey Shire Council - W.J. Davidson
- USL 174 The Council of the City of Armidale - M. King
- USL 175 Pittwater Council - Mr J. Zappavigna
- USL 176 Dubbo City Council - Mr J.M. Etcell
- USL 177 Mr D. O'Keefe
- USL 178 Mrs J.A. Stone
- USL 179 Dumaresq Shire Council - D. Tydd
- USL 180 Canterbury City Council - Mr J. Montague
- USL 181 Mr D. Alexander
- USL 182 Local Government and Shires Associations of New South Wales - Ms Rhonda Neuhold
- USL 183 Snowy River Shire Council - Mr. V. N. W. Straw
- USL 184 G. L. Hughes
- USL 185 Mr N. Stumbles
- USL 186 Sydney City Council - The Right Hon. The Lord Mayor, Cr Frank Sartor
- USL 187 Griffith City Council - Mr D. Tull
- USL188 Copmanhurst Shire Council - Mr D.K. Andres
- USL 189 The Council of the City of Wagga Wagga - Mr B.L. Andrews
- USL 190 City of Botany Bay - Mr W. Marsh
- USL 191 Penrith City Council - Mr C. Ross
- USL 192 Mr J. Hodgson
- USL 193 WSROC Traffic Subcommittee, Western Sydney Regional Organisation of Councils - Mr K. Varga
- USL 194 Bicycle User Research Group - Mr M. Yeates
- USL 195 Tweed Shire Council - Mr I. Munro
- USL 196 Mr T. Hummelstad
- USL 197 Bathurst City Council - Mr P. Perram
- USL 198 Mr R. Doyle
- USL 199 Mr C.D.G. Shaw
- USL 200 Mr F. Bates OAM
- USL 201 Mr A. Walch

# LIST OF WITNESSES

*4 December 1995*

**Mr CHRISTOPHER PATRICK FORD**, Director, Road Traffic and Traffic Management, Roads and Traffic Authority

**Mr GARY LEONARD STAPLETON**, Suburban Amenity Manager, Sydney Region, Roads and Traffic Authority

**Mr RAYMOND DAVID TAYLOR**, General Manager, Road Safety, Roads and Traffic Authority

**Mr PETER GRAEME CROFT**, Manager, Road Environment Safety, Roads and Traffic Authority

**Mr ANDREW RICHARD MACKY**, Manager, Traffic Engineering, NRMA Limited

**Mr NIGEL CHARLES McDONALD**, Project Officer, NRMA Limited

**Inspector TERENCE EARLE LESTER**, Acting Commander, Traffic Services Branch, New South Wales Police Service

*20 May 1996*

**Mr CRAIG JOHN MORAN**, Manager, Pedestrian and Urban Amenity, Roads and Traffic Authority

**Mr DONALD HERBERT SHEFFIELD**, Executive Director, Institute of Municipal Engineering, Australia

**Mr PETER NORMAN ULLMAN**, Director, Engineering and Technical Services, Manilla Shire Council

**Mr CHRISTOPHER JOHN LITTLE**, Divisional Manager Engineering, Hurstville City Council

**Mr GEOFFREY ALEXANDER MORRIS**, Manager, Traffic and Transportation, Hurstville City Council

**Mr WARREN ROSS SALOMON**, Executive Director, Bicycle New South Wales  
**Ms EVA GERENCER**: Campaigns and Advocacy Manager, Bicycle New South Wales

**Ms CHRISTINE BOWES GOWDIE**, Executive Officer, Child Accident Prevention Foundation of Australia (KIDSAFE), New South Wales Division

**Mr HARRY LEONARD CAMKIN**, Vice-Chair, Child Accident Prevention Foundation of Australia (KIDSAFE), New South Wales Division

*19 August 1996*

**Cr GENIA McCAFFERY**, Mayor, North Sydney Council

**Mr ANTHONY PAUL LEHMANN**, Traffic Engineer, North Sydney Council

**Ms PETA HELEN ANDERSSON**, Community Road Safety Officer, North Sydney Council

**Ms LUDMILLA HAWLEY**, Principal, Geoplan Urban and Traffic Planning

**Mr WILLIAM BAWDEN BOTT**, Vice President, Local Government and Shires Associations of New South Wales

**Mr DAVID RONALD ALLEN**, Senior Policy Officer, Local Government and Shires Associations of New South Wales

**Ms RHONDA JOYCE NEUHOLD**, Road Safety Policy Officer, Local Government and Shires Associations of New South Wales

**Cr JULIANNA WALTON**, Councillor, Sydney City Council

**Mr LEONARD PAUL THOMAS WOODMAN**, Road Safety Officer, Sydney City Council

**Mr HAROLD CHARLES WOLFE SCRUBY**, Company Director, Chief Executive Officer and Acting Chair, Pedestrian Council of Australia Limited

**Cr VIRGINIA ERICA HOWARD**, Mayor, Mosman Municipal Council

**Mr SCOTT RONALD TURNER**, Manager, Infrastructure and Development, Mosman Municipal Council

**Professor MICHAEL ANTHONY PETER TAYLOR**, Professor of Transport Planning, University of South Australia

**Ms DEBORAH DONALD**, Senior Research Engineer, ARRB Transport Research

**Mr LEIGH GRANT PALMER**, President, Australian College of Road Safety

**Dr JOHN MICHAEL HENDERSON**, Road Safety Consultant, Australian College of Road Safety

**Ms SUSAN ELIZABETH DAWSON**, Director, Environment Protection Authority

**Mr GEOFFREY JOHN MELLOR**, Manager, Noise Policy, Environment Protection Authority

**Mr CHRISTOPHER RAY EISER**, Acting Manager, Air Policy, Environment Protection Authority

**Senior Sergeant RAYMOND KEITH SMITH**, Senior Sergeant of Police, New South Wales Police Service

**Senior Sergeant JOHN WALTER LOVATT**, Senior Sergeant of Police, New South Wales Police Service

**Inspector TERENCE EARLE LESTER**, Acting Commander, Traffic Services Branch, New South Wales Police Service

**Inspector KERRY WILLIAM GRAINGER**, Commander, Traffic Technology Section, New South Wales Police Service

**Mr ANDREW RICHARD MACKY**, Manager, Traffic Engineering, NRMA Limited

**Mr NIGEL CHARLES McDONALD**, Project Officer, NRMA Limited

**Mr STEPHEN JAMES GRAY**, Road Safety Educator, NRMA Limited



**Mr CHRISTOPHER PATRICK FORD**, Director, Road Safety and Traffic Management, Roads and Traffic Authority

**Mr RAYMOND DAVID TAYLOR**, General Manager, Road Safety, Roads and Traffic Authority

**Mr PETER GRAEME CROFT**, Manager, Road Environment Safety, Roads and Traffic Authority

**Mr CRAIG JOHN MORAN**, Manager, Pedestrian and Urban Amenity, Roads and Traffic Authority

*2 September 1996*

**Ms MARGARET JANE ABRAHAM**, Manager, Urban Structure, Department of Transport

