



PARLIAMENT

OF VICTORIA

PEDESTRIAN SAFETY

IN CAR PARKS



ROAD SAFETY COMMITTEE

INQUIRY INTO PEDESTRIAN SAFETY IN CAR PARKS

MAY 2010



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Road Safety Committee

Inquiry into Pedestrian Safety in Car Parks

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Inquiry into Pedestrian Safety in Car Parks

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the Inquiry into Pedestrian Safety in Car
Parks

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Committee Members

This Inquiry was conducted during the term of the 56th Parliament.

Committee Members

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Mr David Koch, MLC	Deputy Chair
Mr Craig Langdon, MP	
Mr Shaun Leane, MLC	
Mr Bill Tilley, MP	From 4 June 2009
Mr Ian Trezise, MP	
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Ms Alexandra Douglas	Executive Officer
Mr Jason Boulter	Principal Research Officer
Mr Nathan Bunt	Research Officer
Ms Kate Woodland	Office Manager until 24 October 2009
Ms Christianne Castro	Office Manager from 10 February 2010

The Road Safety Committee

The Victorian Road Safety Committee is constituted under the *Parliamentary Committees Act 2003*, as amended.

The Committee comprises seven Members of Parliament drawn from both houses and all parties. The Chair is elected by Members of the Committee.

Section 15 of the *Parliamentary Committees Act 2003*, describes the functions of the Committee as:

The functions of the Road Safety Committee are, if so required or permitted under this Act, to inquire into, consider and report to the Parliament on any proposal, matter or thing concerned with –

- (a) road trauma;
- (b) safety on roads and related matters.

Committee Address

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Terms of Reference

Pedestrian Safety in Car Parks

Referred by the Legislative Assembly, 4th December 2008 -

To the Road Safety Committee for inquiry consideration and report no later than 31 May 2010 on the current rules and standards that apply to pedestrian safety in car parks and the Committee is to recommend potential measures that relevant authorities should consider to improve safety for pedestrians.

Chair's Foreword

How important are car parks in our day to day lives, more importantly, is there a real and present danger to us or our loved one's safety in car parks?

At first thought, most people assume nothing much happens in car parks, yet when prompted to actually consider it, most of us can recall either seeing or being involved in a car park bingle. Similarly, there does not appear to be much risk for pedestrians within a car park, but the available statistics tell us that some people do get seriously injured from being hit by vehicles in car parks, and there are fatalities.

From the little data we have, this appears to be a regular occurrence and it seems that the greatest risk of both involvement in a crash, and serious injury from such a crash, is to our more vulnerable pedestrians, especially the very young and the elderly. This is of concern to the Committee, especially in the light of Victoria's growing elderly population.

My experience and that of many of my Committee colleagues is that many of our constituents' concerns would be related to fears of 'dangerous' car parks, namely the risk posed by the close interaction of pedestrian and motor vehicles.

Given the inequitable nature of any collision between a motor vehicle and a pedestrian, even at a slow speed, serious injury can occur. Even one death occurring in a car park is one too many, and it is vital that the developers and owners of car parks are encouraged to make them as safe as reasonably possible.

Therefore, when car parks are designed or redeveloped they should be done so at the highest levels of safety. Given the fallibility of human behaviour, both as drivers and pedestrians, the Committee urges the use of engineering measures to incorporate more forgiving design into car parks. Our local municipalities need to have the highest standards and best practice examples to point to when assessing new plans for car parks.

Finally, in the face of a lack of focus on pedestrian safety in car parks and unclear government agency responsibility, we need a lead agency to ensure that all stakeholders involved in car parks are reminded of their duties and obligations in relation to pedestrian safety, including the safe design and operation of car parks, comprehensive monitoring and investigation of pedestrian injuries and encouraging the incorporation of effective countermeasures. The Committee recommends that WorkSafe Victoria is the most appropriate agency to do this, in close collaboration with VicRoads,

Victoria Police, the Department of Planning and Community Development and the Transport Accident Commission.

I am pleased to present this report on an under-recognised area of road safety and on behalf of the Committee, I would like to thank all the organisations and individuals who contributed to the Inquiry in the form of submissions, evidence provided at public hearings and briefings, along with the site visits.

Finally I would like to thank the members of the Road Safety Committee for their time and deliberations throughout this Inquiry. Similarly, my appreciation is extended to the Committee staff, our Executive Officer Ms Alexandra Douglas, Principle Research Officer Jason Boulter, Research Officer Nathan Bunt, and Administrative Officers Ms Kate Woodland and Ms Christianne Castro.

John Eren, MLA

Chair

Executive Summary

Car parks are a ubiquitous presence in our community. Throughout Victoria, nearly every building and facility has an area set aside for car parking. Off-street car parks range from a few parking spaces adjacent to a building to nearly 10,000 spaces surrounding a large shopping centre. Car parks are essential to the transport network, servicing the interchange between our cars and the destinations we travel to and from.

Most crashes within car parks involve only minor property damage, either as a vehicle-to-vehicle or vehicle-to-structure crash, which many people may have experienced as a low speed parking 'bingle'. The number of reported incidents is low, consequently there is a perception that car parks are reasonably safe places for pedestrians. This perception is false as the Committee found that pedestrian incidents in car parks are under-reported.

There is also little research on pedestrian safety in car parks. There are issues too, with the collection of car park related injury data, in terms of what is captured and how it is subsequently monitored and reported on. There is little information available on the precise circumstances of pedestrian crashes in car parks. Also of concern is the fact that no single agency is monitoring whether pedestrian injuries are increasing and what countermeasures could be effective.

The Committee is concerned about the currently reported injuries as they involve/reflect our vulnerable pedestrians who are most likely to be involved in a car park crash, and also more likely to consequently suffer serious injuries. These vulnerable pedestrians are the very young and the elderly.

The Victorian Planning Provisions which shape local council parking provisions place an emphasis on providing maximum parking spaces and do not necessarily focus on the quality of parking, particularly in terms of pedestrian risk. Also, there are technical standards and guidelines for the design and construction of new car parks, which include the Australian Standards and Austroads Guides. However, the Committee considers that both the planning regulatory framework and the technical standards can be improved to provide increased pedestrian safety. More guidance can be provided to assist car park developers, designers and planners to factor in the safety of pedestrians when planning and assessing new car parks.

Best practice in car park design and operation includes: appropriate sightlines; lighting; controlling speed through engineering measures and the separation of pedestrians from vehicles and separating

loading zones. In addition, declaring small and medium sized car parks as Shared Zones would formalise a standard 10 km/h speed limit and ensure pedestrians have the right of way. Circulation roads in larger car parks could have higher speed limits in place where there were fewer pedestrians present.

The use of pedestrian safety audits on new or upgrading of car park applications, along with the development of a Checklist for Safe Design, would ensure more adequate consideration and inclusion of pedestrian safety and amenity. Consideration also needs to be extended to the day-to-day operation of new and existing car parks with operators and owners required to manage and supervise the safety of their facility.

The Committee considers that responsibility for pedestrian safety in car parks lies with WorkSafe Victoria. WorkSafe is well positioned to act as a lead agency in the enforcement of car parks as safe work places, not just for employees but for customers and the general public.

In addition, the Transport Accident Commission, Victoria Police and WorkSafe all need to improve their data capturing and reporting systems in order to better monitor trends in car park incidents and devise appropriate countermeasures.

Similar to Victoria's collaborative road safety approach, WorkSafe should work with other agencies to take a Safe Systems approach to car parks. These partners could include the Transport Accident Commission, VicRoads, Victoria Police, the Department of Planning and Community Development and Victoria's municipalities.

In summary, the Committee believes that there has been a lack of focus on pedestrian safety in car parks and considers that the State Government through its various agencies, particularly, the Department of Planning and Community Development, WorkSafe Victoria, VicRoads and the Transport Accident Commission, must do more in recognising and encouraging best practice in providing for pedestrian safety in Victoria's car parks.

Recommendations

Chapter Two – Car Park Pedestrian Injuries and Fatalities

1. That the Department of Justice inform and remind drivers of their obligation to report to Victoria Police pedestrian crashes that occur in car parks.
2. That WorkSafe Victoria informs and reminds the owners and operators of car parks of their obligation to report incidents where pedestrian crashes occur.
3. That Victoria Police, the Transport Accident Commission and WorkSafe Victoria ensure they capture appropriate information concerning pedestrian crashes in car parks and amend their data systems to allow accurate reporting.
4. That VicRoads amend their CrashStats website to ensure that car park related data be publicly available to municipalities and developers, so they can assess the relevant data on car parks and areas for proposed car park development or redevelopment in their jurisdiction.

Chapter Three – Current Standards and Rules

5. That the Department of Planning and Community Development should amend the Victorian Planning Provisions to encourage improved pedestrian safety within car parks, by:
 - a) Taking into account the recommendations from this Inquiry prior to the release of their response to the review of Clause 52.06 in *Review of Parking Provisions in the Victorian Planning Provisions*.
 - b) Placing greater emphasis on pedestrian safety and include measures to improve such safety, in both the revisions to Clause 52.06 and to its related design guides under Clause 19.03.
6. That the Department of Planning and Community Development amend the Victorian Planning Provisions to allow Councils to provide concessions to developers who provide a car park with fewer parking spaces but incorporates pedestrian-friendly measures. That any monies received by Councils under the cash-in-lieu schemes from those car park developments that do not

provide pedestrian friendly features should be invested in retro fitting pedestrian safety improvements to older Council car parks.

7. That the Department of Planning and Community Development lobby Standards Australia and Austroads to have greater emphasis placed on pedestrian safety included in the next versions of the relevant Australian Standards for Off-Street Parking and Austroads guide to parking.
8. That the Department of Planning and Community Development incorporate new guidelines and recommendations in the Victorian Planning Provisions to promote the following measures in the design of new or upgraded car parks:
 - a) Safe design layouts including appropriate sightlines, parking spaces and safe integration with the surrounding road and pedestrian path network;
 - b) Separation of loading bays from car parking and pedestrian areas;
 - c) Separation of pedestrians and vehicles where possible, especially at entrances and exits with bollards and other devices;
 - d) Car parks to be designated Shared Zones where appropriate;
 - e) Controlling speed through engineering design;
 - f) Signage and surface markings consistent with the broader road network and subject to VicRoads consent, and
 - g) Providing adequate lighting.
9. That VicRoads together with WorkSafe Victoria run a publicity campaign on Shared Zones in car parks.
10. That the Department of Planning and Community Development review the upcoming guidance on loading bay areas from WorkSafe Victoria and if required, lobby for increased emphasis on the separation of car parking facilities from loading areas in the Australian Standard, *Parking Facilities – Part 2: Off-Street Commercial Vehicle Facilities*.
11. That the Department of Planning and Community Development liaise with VicRoads, Victoria Police, the

Transport Accident Commission, WorkSafe Victoria, the Municipal Association of Victoria, municipalities and relevant developer bodies, to produce a Checklist for Safe Design for pedestrian safe car parks. Such a Checklist should represent best practice in the safe management of pedestrians and set out the key basic principles for designing a safe car park.

12. That the Department of Planning and Community Development require a safety audit incorporating pedestrian safety, to be conducted for all car parking planning applications to municipalities to ensure adequate pedestrian safety.
13. That WorkSafe Victoria investigates the adoption and expansion of the Melbourne Car Park Accreditation Scheme state-wide.
14. That WorkSafe Victoria act as the lead agency in relation to ensuring increased pedestrian safety in car parks, liaising with relevant partners to create a safe environment in car parks.
15. That WorkSafe Victoria develop a Safe System approach to car parks and pedestrian safety in collaboration with VicRoads, the Transport Accident Commission, Victoria Police, the Department of Planning and Community Development, and all municipalities along with the operators, owners and developers of car parks.
16. That WorkSafe Victoria, through policy guides and other education efforts, continue to encourage and remind the owners and operators of car parks of their responsibilities in providing a safe environment for pedestrians. This would include the safe design of car parks along with efforts to adequately supervise and proactively assess risks in car parks.

Chapter Four – Other Measures to Improve Pedestrian Safety

17. That WorkSafe Victoria, through its policy guides and other education efforts, encourage employers to include specific guidance on safe driving within car parks to their employees.
18. That the Department of Treasury and Finance should promote driving safely within car parks in its *Whole-of-Government Standard Motor Vehicle Policy*.
19. That VicRoads investigate the incidence of older drivers involved in car park crashes in order to provide

appropriate guidance in their older driver licensing and education efforts.

Abbreviations and Definitions

4WD	Four-Wheel Drive Vehicle
ABS	Australian Bureau of Statistics
ANCAP	Australasian New Car Assessment Program
DPCD	Department of Planning and Community Development, Victoria
HSE	Health and Safety Executive, United Kingdom
MAV	Municipal Association of Victoria
MUARC	Monash University Accident Research Centre, Victoria
NCIS	National Coroners Information System, Australia
NHTSA	National Highway Traffic Safety Administration, United States of America
NRMA	National Roads and Motorists' Association
RACV	Royal Automobile Club of Victoria (RACV) Ltd
RTA	Roads and Traffic Authority of New South Wales
SUV	Sports Utility Vehicle
TAC	Transport Accident Commission
UCSR	Used Car Safety Ratings, Australia and New Zealand
VCAT	Victorian Civil and Administrative Tribunal
VISU	Victorian Injury Surveillance Unit
VPP	Victorian Planning Provisions

Committee Definition of Car Park Sizes

Small	Under 100 Parking Spaces
Medium	100 to 500 Parking Spaces
Large	Over 500 Parking Spaces

Defining Car Parks

Introduction

Car parks are essential to our transport system, providing a point of interchange between the car and all other modes of travel, including walking. Well designed car parks allow for the safe and efficient transfer of people between the road network and destinations such as workplaces, retail and service areas, transportation hubs and homes.

Car parks impact on our community, in terms of their land use, urban design and influence on our travel patterns. At a basic level, car parks are required to accommodate vehicles for approximately 95 per cent of the time they are 'at rest' or not in use.¹ The logistics of car storage greatly impacts on an area's geography, not just the roads required for car travel.²

Car parks vary in their physical layout, purpose, users and ownership. For pedestrians, off-street parking is generally considered safer than on-street parking and also for drivers and vehicles.³

The Inquiry

In a 1994 article that appeared in *Hazard* magazine, published by the Victorian Injury Surveillance System and Monash University Accident Research Centre, 'Injuries and Vehicle Damage in Off-Street Parking Areas', the authors found that the perception of crashes in car parks being a rare occurrence may not be correct. The article stated that:

Unlike major road crashes, most drivers have either seen or been involved in a collision in a parking area. These collisions are accepted as a part of daily life. The general perception is that most collisions are very minor and that very few injuries occur. The small amount of research that has been conducted suggests that this perception may not be accurate.⁴

Despite such concerns, the Committee found little research or evidence of active monitoring of incidences in car parks.⁵

In order to examine what is occurring within car parks, the Committee has examined the available literature and research, reviewed legislation, laws, standards, guidelines and policies, conducted inspections and sought input from the relevant stakeholders and experts. The Committee also considered aspects of driver and pedestrian behaviour, along with developments in vehicle technology in relation to pedestrian safety in car parks.

Terms of Reference

On 4th December 2008, the Road Safety Committee was issued with a reference by the Legislative Assembly to inquire into the current rules and standards that apply to pedestrian safety in car parks and to recommend potential measures that relevant authorities should consider to improve safety for pedestrians.

The Committee interpreted the Terms of Reference to refer to off-street car parking facilities rather than on-street parking. The Committee has focused on car parks accessible to the public such as those servicing shopping centres, transport networks and areas used for parking surrounding sporting and cultural facilities. Considered beyond the scope of this Inquiry were:

- residential driveways, garages and yards;
- industrial yards;
- loading docks (unless integrated into a car park), and
- caravan parks.

Submissions and Hearings

On 23 April and 12 May 2009, the Committee wrote and invited submissions from relevant government departments, commercial car park operators, all Victorian municipalities, and relevant research and transport organisations.

Advertisements were placed in *The Age*, the *Herald Sun* and nine major regional newspapers on 2 May 2009, seeking submissions from those who had either been struck or nearly struck as a pedestrian in a car park or been the driver who had struck or nearly struck a pedestrian.

Fifty-two submissions were received from Government departments, statutory authorities, car park operators and owners, road safety organisations, research bodies and members of the public. Three of these submissions were received from pedestrians with a personal account of being struck by a car in a car park. See Appendix A for a list of all submissions received.

Further evidence was sought through public hearings and briefings conducted between July and September 2009, held in Melbourne, Sydney and Wellington, New Zealand. The Committee heard evidence from representatives of relevant government departments, statutory authorities, municipalities, car park owners and operators, road safety organisations and researchers along with pedestrian and residents groups. See Appendix B for a full list of public hearings and briefings.

Inspections

In November 2009, the Committee conducted a site visit to the Westfield Doncaster shopping centre to meet with Westfield's National Car Park Business Manager to view the car park facilities and the central control room. This facility, with over 5,000 parking bays, represents one of the largest car parks in Victoria and following significant redevelopment in 2008, incorporates some of the latest approaches to car park design and management.

The Committee also visited the Melbourne headquarters and control room of Wilson Parking Australia in February 2010, with its ParkWatch facility that remotely monitors and controls 41 parking facilities throughout Victoria and 76 nationally.

Car Parks

The level of risk to pedestrians in car parks is impacted upon by factors such as usage patterns and clientele and also the standard of the design and operation of the car park.

Car parks provide both long or short term parking, ranging from a few minutes for parking in off-road school drop-off and pick-up areas, several hours in a shopping centre or cinema car park, through to a whole day for a workplace or railway station car park or even longer, such as in a long term airport car park. The duration of parking time relates to the frequency of car and pedestrian movement, therefore the overall level of risk will be higher in car parks with a rapid turnover of short term parking spaces. Some parking facilities are used only during the day, while others are 24 hour operations requiring additional facilities such as lighting.

The car park can feature uncontrolled or controlled access via devices such as boom gates which is usually related to whether parking is provided free or not. Paid parking typically has a higher level of operator supervision to ensure compliance with payment schemes.

Most parking in Victoria is based on a self parking model, where the driver parks their own vehicle, however valet parking also exists. This ensures that pedestrians do not enter the car park, leaving

keys with the valet staff that are familiar with its conditions and layout, lowering the overall level of pedestrian risk.

Similarly, machine or robot based parking, where the driver leaves their car on a platform that then takes the vehicle and 'parks' or stores it automatically, also removes drivers and pedestrians from the car park.

The level of risk will also be affected by the degree of familiarity that pedestrians and drivers have with the car park. Staff and commuter car parks are tidal in nature, used mainly during peak hours and tend to be used by regulars who are familiar with the layout, therefore require less forgiving design elements compared to car parks with a high turn over with many unfamiliar users. For example, the parking bays will tend to be narrower in a staff car park than they would be in a shopping centre car park. Furthermore, if the car park is to be used extensively by parents with children at a kindergarten or school, people with disabilities at a health care facility or people with shopping trolleys around a supermarket, a higher standard of design would be expected.

Lastly, some car parks cater for other types of vehicles, such as buses, trucks, trailers and caravans, which also impact on the risks to pedestrians, particularly in terms of disruption to sightlines.

Types of Car Parks

There are two distinct types of off-street car parks: at grade to the road network and the multi-storey car park.

There are four main models of ownership of publicly accessible car parks in Victoria. These include;

- privately owned and operated;
- privately owned, managed by Local Government;
- local Government owned and privately operated, and
- local Government owned and operated.

Car parks service a range of businesses and organisations, including retailing areas, government organisations, educational institutions, hospitals and transport interchanges such as railway stations and airports.

Some car parks are used very occasionally on a temporary basis, such as those used around parklands associated with sporting and cultural events. There are also informal parking areas, often found around the edge of these formal car parks, such as drivers parking on grass verges around railway station car parks.

The Committee also notes that car parks are frequently used for more than just car parking and that these occasions generate significant numbers of pedestrians. Car parks provide the location for many festivals, weekend markets, open-air cinemas, Rotary Car Boot sales, car shows, farmers markets, ad hoc sporting activities and indeed the tradition of the car park picnic at the races.

Car Park Sizes

Car parks can range considerably in size from one or two car parking spaces up to expansive areas for thousands of cars. There does not appear to be a classification of car parks by their size in the traffic engineering literature. Neither the current Australian Standards for Off-Street Parking nor the Austroads Guides provide a classification system based on size, with the Standards providing only a few references to car park size in relation to various technical specifications. For example, in a section on circulation roads, the Standards refer to 'small' car parks as having less than 50 spaces.⁶ The Standards also state that 'large' car parks operate most efficiently when designed to consist of areas of up to 500 car spaces.⁷

Mr Greg Briscoe-Hough, Luxmoore Parking Consulting, suggested a personal rule of thumb based on industry experience that car parks could be classified as: micro with 50 spaces or less; small consisting of 50 to 200 spaces; medium with 200 to 500 spaces; large having 500 to 1,500 spaces; and very large car parks as those with more than 1,500 spaces.⁸

For the purposes of this Inquiry, the Committee has defined a small car park as one with fewer than 100 spaces, a medium sized car park as having between 100 to 500 spaces and a large car park as one with more than 500 car parking spaces.

Car Park Layouts

The most common car park layout in Victoria is 90 degree or right angle parking, followed by 60 degree angle parking and occasionally parallel parking.

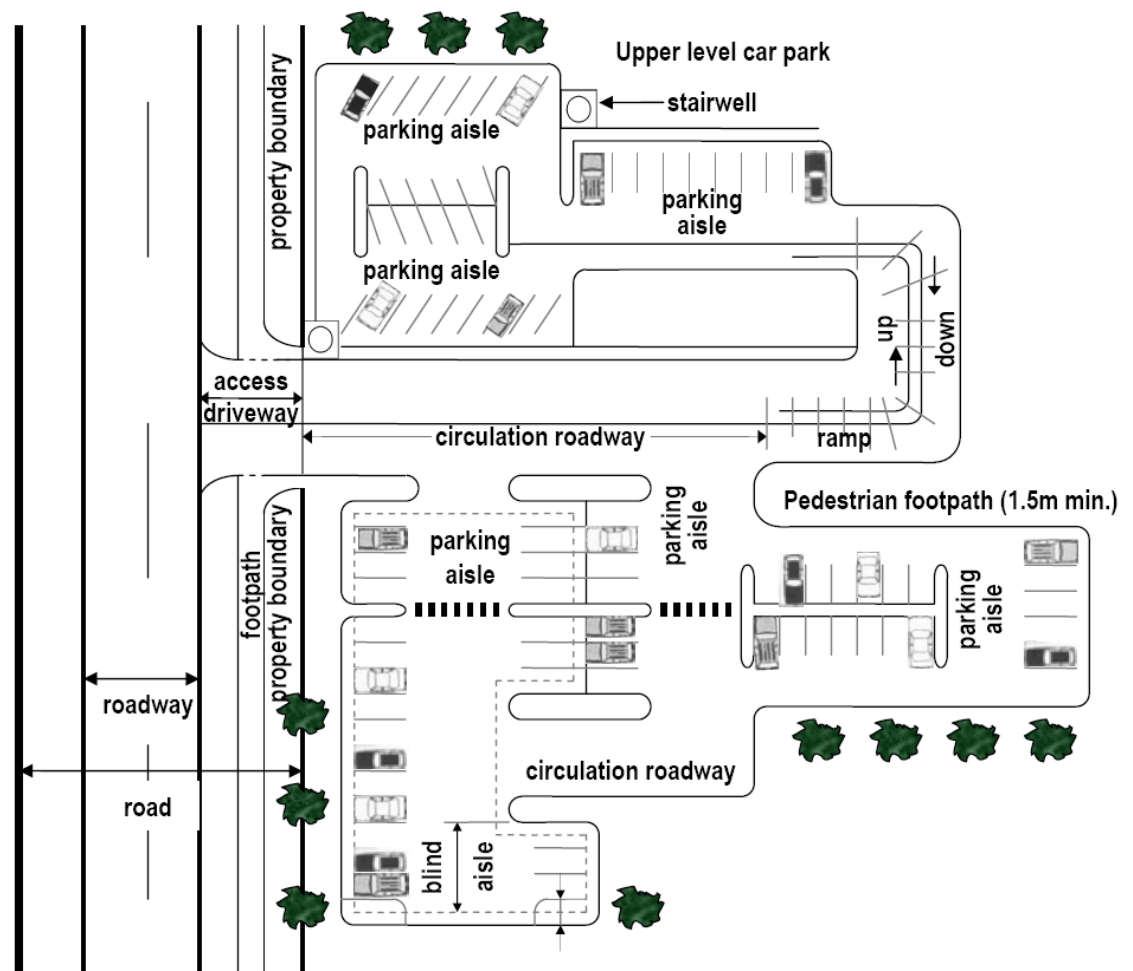
Most layouts allow drivers to either drive forwards or reverse. Reversing into angle parking may be restricted, depending on the direction of the angle and manoeuvring space provided by the aisle.

Similar to the road network, car parks can be seen as a network of components placed into a hierarchy, as set out in Figure 1.1 on the next page and consisting of:

- Circulator Roads – Roadways providing access to parking aisles from the entry and exit points of the car park.

- Circulator Aisles – Roadways providing access to aisles and also serving through traffic.
- Aisles – The immediate ‘road’ area used by cars to gain access to parking spaces.
- Parking Space or Bay – The area in which the car is parked.⁹

Figure 1.1 Car Park Layout



Source: Figure 2.1 Australian Standards AS/NZS 2890.1:2004, 2004, p.11.

Car Parks in Victoria

Victoria has 4.4 million registered vehicles and 3.5 million licensed drivers.¹⁰ The Committee was unable to locate any information on the number of car parks within Victoria. That information does not appear to be collated by any authority, therefore the amount of car parks and parking spaces in Victoria is unknown. Based on the submissions received, the Committee can only provide indicative examples, found below.

- The Melbourne City Council has nearly 50,000 off-street parking spaces located within its boundaries, consisting of

64% publicly accessible, 26% private and 10% residential spaces.¹¹

- Metlink stated that there are 236 railway station car parks in Melbourne and Regional Victoria with capacity for 36,558 cars.¹²
- The Committee identified over 90 commercial car parks open for public use across Victoria, representing approximately 70,000 spaces. As an example, Westfield directly own and operate six shopping centres in Victoria with approximately 25,000 car parking spaces that service 65 million people each year.¹³
- There are more than 2,300 car parks amongst the 28 metropolitan and rural municipalities who provided submissions to the Inquiry. These car parks provided an estimated 600,000 car parking spaces.¹⁴

Pedestrian Risk in Car Parks

Car parks present an environment where vehicles and pedestrians are in close proximity. However, traffic engineering literature typically identifies car parks as a very low level of risk to pedestrian safety.¹⁵ VicRoads, in their submission to the Inquiry, stated that pedestrian crashes in car parks are a relatively small problem, seeking to distance such incidents from crashes on the main road network by describing them as a personal safety occurrence. VicRoads commented that:

Car park injuries are part of a wider category of injury generated in off-road environments and can be characterised within the ambit of personal safety and occupational health and safety. ... The scale of the problem is very small.¹⁶

In Victoria between 2003 and 2008, VicRoads statistics show there were 530 pedestrian fatalities and injuries that occurred in car parks, representing an average of 88 pedestrians harmed each year.¹⁷

However, as will be discussed in Chapter 2, due to data limitations, these statistics are likely to be an underestimation.

Vulnerable Car Park Users

Several groups of pedestrians are the focus of this Inquiry due to their increased level of risk within car parks. At a hearing in Sydney, 5 August 2009, Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, noted that:

Serious outcomes generally involve the more vulnerable in our community – the elderly and children – car parks are inherently dangerous for children.¹⁸

In the United States, a National Highway Traffic Safety Administration (NHTSA) study found that injuries and fatalities resulting from a driver reversing, were found to more likely occur in car parks and disproportionately affected children under five years old and adults aged 70 years and older.¹⁹

Older Pedestrians

Dr Bruce Corben, Senior Research Fellow, Monash University Accident Research Centre (MUARC), at a public hearing in Melbourne, 27 July 2009, summarised the factors relating to the increased risk of injury and fatality faced by older pedestrians in car parks. Dr Corben explained that:

... older people, 65 and over, are involved in something like 45 per cent of all the injuries. Older people have limited agility ... they cannot move as quickly to avoid situations that might result in a collision, and also their perceptual function progressively declines as they age: their ability to hear approaching vehicles; sometimes their ability to see in their peripheral vision that a vehicle is approaching or is reversing towards them. Those kinds of issues can add to risk, the likelihood of a crash happening.²⁰

Dr Corben stated further that even a slight knock to an older pedestrian could be enough to cause a fall that resulted in a severe injury such as a fractured pelvis or hip.²¹

This has also been the experience internationally, with a large American study in Florida, finding the oldest pedestrians were at the greatest risk of being involved in a crash and, once involved in a crash, were at the greatest risk of suffering injury or a fatality.²²

Child Pedestrians

Approximately ten per cent of all child pedestrian fatalities and injuries in Australia occur in the off-road environment, which includes car parks, with similar figures found in Victoria.²³ Research from the United States suggests 44% of off-road pedestrian injuries to children occur within a car park.²⁴

At the public hearing, Dr Corben described the main issue for children's risk was due to their relative size, stating that:

... the low conspicuity of children because of their smaller stature represents a problem in car parks as well, exacerbated by the presence of larger vehicles and other structural elements of the car park.²⁵

Dr Soames Job, Director, New South Wales Centre for Road Safety, Roads and Traffic Authority (RTA) at a hearing in Sydney, 5 August 2009, also pointed out that besides the difficulties in being able to see children within car parks, the type of impact was dependant on the design of the vehicle. Dr Job noted that:

... the height of the vehicle has other consequences which are not typically obvious in a higher speed crash for a pedestrian.

It is what we might call a drag effect on the tyres. If you have a bumper sitting low to the ground and you hit a five or six year old child at a low speed, they will bounce. Now that is not a very pleasant thing, but it is not nearly as unpleasant as having the vehicle so high that they connect directly with the tyre and because the tyre is moving, it just drags them straight under and that is almost always going to be a fatal outcome.

So the higher the vehicle, the more risks you have with failing to see the pedestrian and with the outcome of the crash being much more severe, even at a very low speed.²⁶

Other Pedestrians at Greater Risk in Car Parks

People in wheelchairs are also in danger of not being seen by drivers. They are often restricted in their choice of travel path due to kerbing, inclines and steps. These issues also impact on pedestrians pushing prams and trolleys. Pedestrians with disabilities may also have slower mobility. Issues of low vision and deafness can also compound the risk of not detecting approaching vehicles.

Pedestrians affected by alcohol are also at risk within car parks. The Committee has noted anecdotal accounts in the media of pedestrians affected by alcohol use and either lying or sleeping in car parks.²⁷

Several Australian studies of car park crashes raised the 'non-physical' conflict, that is, near-miss incidences and the fear often felt by pedestrians when faced with moving cars.²⁸ Apart from creating a climate of fear, such conflicts also represent an inconvenience for both pedestrians and drivers.²⁹

While the Committee acknowledges that the pedestrian risk in car parks appears to be one of low frequency and low consequence for most, it nevertheless considers that vulnerable groups of pedestrians such as small children and the elderly are at higher risk,

and have greater consequences in the event of an incident. As the Victorian population is ageing, the Committee considers that this issue needs to be reviewed and that this Inquiry is timely.

Issues Outside the Terms of Reference

During the course of its investigations the Committee found several other issues which impact on the overall safety of pedestrians in car parks. However, as they do not involve the direct interaction of vehicles and pedestrians within a car park, the Committee considers that they fall outside the Terms of Reference. Therefore, the Committee does not address the following issues in this report, but considers they are important, and that efforts to lower the level of pedestrian risk in car parks will also impact positively upon these issues. For example, many of the engineering and operational measures recommended to improve the visibility of pedestrians, such as improved lighting, may arguably reduce falls and assaults in car parks.

Pedestrian Crashes ‘Outside’ Car Parks

Car parks are significant traffic generators and there are suggestions that the roadways and footpaths adjacent to and therefore technically outside car parks are often the scene of pedestrian and other vehicle crashes, particularly around the entries and exits. However, it appears it is difficult to identify these areas specifically, given the current methods of crash data collection and reporting. Queuing vehicles waiting to enter a car park are also a perceived source of risk.

The Committee notes that VicRoads is involved in the planning process for new car parks, in relation to the safe connection of a car park with the surrounding road network.³⁰ The Committee considers that greater emphasis should also be placed on how car parks are safely integrated, with not just the road network for vehicles, but also with the pedestrian network of paths and crossings.

Pedestrian Falls, Trips and Slips

Falls due to trips and slips represent the largest proportion of injuries in car parks. They constitute approximately half of all the cases reported as requiring medical attention. Victorian car park injury data indicated that of all car park incidents, falls constituted 48% of hospital admissions and 43% of Emergency Department presentations.³¹

The Committee notes that some falls may be the result of a pedestrian trying to avoid a collision with a motor vehicle. The Committee heard anecdotal evidence of such cases, but there is a lack of consistent causal data.³² The Committee therefore considers

that this could be an underestimation of pedestrian injuries occurring within car parks.

Bicyclists

Whilst bicyclists are not considered in this Inquiry, the Committee acknowledges that bicyclists do get injured in car parks due to crashes with motor vehicles and other bicycles.

From 2000 to 2008, there have been at least 46 cases of bicyclists requiring attendance to an emergency department following a crash within a car park.³³ Given issues around reporting, this is likely to be an underestimation.

Mr Simon Pearce, Business Manager for ParkWatch, Wilson Parking, at a public hearing in Melbourne, 14 September 2009, reported that:

... we actually probably have a greater incident of bike rider injuries within car parks than we do pedestrians and that is purely because of – I would be comfortable to say that 75 per cent of those instances are where bike riders have decided to flout the systems that are in place and have either entered through the vehicle access points or have come off their bikes at sharp turns and things like that.³⁴

With the increasing provision made for bicycle parking in many car parks, the Committee considers that bicyclists should be encouraged to dismount within car parks and therefore make appropriate use of pedestrian entrances and paths.

Assaults

Assaults represent another major cause of harm in car parks. Victorian hospital admissions data indicated 10% of car park related injuries were from assaults.³⁵

The Parliament of Victoria Drug and Crime Prevention Committee 2005 final report, *Inquiry into Violence Associated with Motor Vehicle Use*, identified car parks as major sites of road violence and Victorian Police data provided to that inquiry revealed car parks as the second most frequent location of road user violence incidents after roadways and footpaths.³⁶

The Committee considers cases involving the deliberate action of driving a vehicle into a pedestrian as assault with a vehicle. Car park design, standards and other measures to improve pedestrian safety, could not be reasonably expected to deal with such incidents.

Safe Systems Approach

Victoria has a coordinated approach to road safety, with the Victoria Police, VicRoads, Transport Accident Commission (TAC) and the Department of Justice working together and focusing on a Safe System approach as part of the State Government's *Arrive Alive* strategy.³⁷

The strategy describes a safe system as the systematic review of all safety aspects of all the elements of a system, such as roads and roadsides, vehicles and the behaviour of road users.³⁸ It takes human error into account, so that while a safe system is primarily aimed at preventing crashes, it also assumes that crashes will still sometimes occur and a safe system should minimise harm.³⁹

A Safe System includes measures such as:

- designing and maintaining roads and roadsides that reduce risk to as low as reasonably practical;
- setting speed limits according to the safety of the road and roadside;
- educating and encouraging road users to comply with road rules, be unimpaired and alert, and drive according to the prevailing conditions, and
- encouraging consumers to purchase safer vehicles with primary safety features that reduce the likelihood of a crash.⁴⁰

In its submission to the Inquiry, the TAC advocated the application of a Safe System approach to understanding and reducing the frequency of pedestrian crashes in car parks.⁴¹ At a public hearing in Melbourne, 27 July 2009, Mr David Healy, then Senior Manager Road Safety TAC, stated that:

... essentially the Safe System principles really say that we are human beings and we make mistakes and we will make mistakes on the road system just as we do in the work environment, home and in sport. We will continue to make mistakes because we are fallible. ... Ultimately the plan is to devise a Safe System which incorporates a vehicle, the environment ... plus compliant behaviour, such that if you do make a mistake on the road system – and I am prepared to include car parks amongst that – that indeed as a result you will not die or be disabled for life. You might secure a small injury but the focus on the Safe System is about [reducing] very serious, life disabling injury or death.⁴²

Applying a Safe System approach to car parks would focus on providing safe car parks as infrastructure, safe users, both in terms of drivers and pedestrians and safe vehicles. A key aspect of a Safe

System is that it is designed to protect the most vulnerable users, which in this case would be pedestrians in car parks, particularly the elderly, the very young and people with disabilities.

The Committee supports the use of a Safe System approach in order to improve car park pedestrian safety. The Committee considers that in a similar manner to Victoria's *Arrive Alive* strategy for road safety, the Government and relevant stakeholders should aim at having a system which aims at overall prevention of car park pedestrian crashes and the mitigation of those that do occur.

Summary of Findings

- There is little evidence of either research into, or active monitoring of, pedestrian incidents in car parks.
- Older and younger pedestrians and pedestrians with disabilities are more vulnerable in car parks.
- Applying a coordinated Safe Systems approach to car parks, similar to the model applied to Victoria's road network, would improve pedestrian safety in car parks, particularly for vulnerable pedestrians.

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Car Park Pedestrian Injuries and Fatalities

Introduction

Given the extent of vehicle activity in car parks, they are generally safe in comparison to Victoria's road network. The Committee found that the known injury and fatality figures are small. However, the Committee considers that not all relevant data is being captured and that the true extent of pedestrian injuries occurring in car parks may be underestimated.

In its submission to the Inquiry, VicRoads stated that their available data revealed a small but consistent number of pedestrian car park injuries each year.¹ VicRoads and other relevant agencies do not hold a great deal of detailed information regarding pedestrian incidents occurring within car parks, particularly in comparison to the data captured from road crashes. VicRoads reported in its submission that:

There appears to be very limited information with respect to the frequency, severity and type of injuries sustained amongst pedestrians from collisions with vehicles in car parks.²

In its submission to the Inquiry, the Royal Automobile Club of Victoria (RACV) Ltd, also raised the issue of lack of data. The submission noted that:

It is far from clear that there is actually a problem of pedestrian safety in car parks. Data is not centrally collected about any safety incidents that do occur, as the majority of car parks are on private property.³

Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a hearing in Sydney, 5 August 2009, supported this view of under-reporting of incidents. He stated that:

The extent of pedestrian incidents in car parks is both under reported and statistically lost as it is often incorporated with other 'off-road' areas.⁴

Whilst VicRoads was able to provide some data on the number and type of pedestrian injuries occurring within car parks, they acknowledged there were gaps in their knowledge of the causes behind such injuries. Their submission stated that:

The sources of data available provide information on aspects of the injuries suffered but limited information on the contributory circumstances leading to the injury.⁵

The Transport Accident Commission (TAC) in its submission to the Inquiry commented that they were concerned about the lack of relevant research. The TAC reported they were unable to find any specific research into pedestrian crashes in car parks, noting that most research was centred on incidents on the road system, and that if any data arising from car park incidents was reported it was usually in the context of grouping such incidents with other off-road areas such as driveways and private properties.⁶

Issues Concerning Car Park Crash Statistics

Prior to reviewing the available data for pedestrian crashes in car parks, the Committee examined the issues resulting in a lack of detailed crash data, along with which measures could be taken to improve data capture and the statistics available, in order to better identify potential countermeasures. The Committee considers that the general lack and reporting of data, is due to both the under-reporting by drivers involved in car park crashes, and a failure of those agencies collecting data related to such crashes to adequately capture appropriate details relating to the circumstances of the crash.

Classifying a Car Park Pedestrian Crash

In Victoria, road statistics are collated and managed by VicRoads who obtain their information from Police reports.⁷ Crashes occurring within car parks are categorised as 'off-road'.⁸ The TAC also collects data from injury claims. Such off-road data is not counted as part of the road toll, but it is captured by all three organisations.⁹ The Coroner also investigates fatalities occurring on both roads and car parks.

In their submission, VicRoads state that they are reliant on 1987 guidelines by the Australian Bureau of Statistics (ABS) for definitions of roads and crashes. The ABS, Guidelines for Reporting and Classifying Road Vehicle Accidents, definition of off-road specifies that to be classed as a road crash, a crash needs to have occurred on a road that is devoted to public travel and is part of a surveyed (declared) road reserve. This definition excludes car

parks, including those in shopping centres, hospitals and universities as they are not part of a declared road reserve.¹⁰ At a public hearing in Melbourne, 27 July 2009, Mr George Mavroyeni, then Executive Director Road Safety and Network Access, VicRoads, confirmed that VicRoads were guided by these ABS guidelines in excluding pedestrian crashes occurring in such off-road areas as car parks, beaches, and private land, from the road toll.¹¹

Most Australian States report that they do not include car park fatalities or injuries in their official road toll figures. Only the Northern Territory and Tasmania report car park related crashes in their official tolls and South Australia include crashes occurring within public car parks in its road toll figures but not those occurring in private car parks.¹²

Despite not being counted as part of the Victorian road toll, Victoria Police confirmed that a pedestrian fatality or serious injury occurring within a car park is still recorded and retained as per the Victorian Road Crash database.¹³

The Committee notes that as a proportion of the overall road toll figures, pedestrian crashes in car parks are very small. The VicRoads submission to the Inquiry commented that if it were part of the state road toll:

... it would represent an estimate of 0.2% of fatalities and 0.3% of serious injury from motor vehicle crashes in Victoria annually, and 1.3% of pedestrian fatalities and 3.3% of pedestrian serious injuries in Victoria.¹⁴

Given such small numbers, the Committee considers the issue of pedestrian safety within car parks would be overlooked in the context of larger road safety issues that VicRoads and other agencies are currently attempting to address under the *Arrive Alive* road safety strategy. Therefore, the Committee does not consider that car park fatalities and injuries should be included under the official Victorian road toll. However, the Committee does consider that all fatalities and injuries in car parks should be appropriately reported and captured.

Sources of Car Park Pedestrian Crash Data

Victoria Police and VicRoads Crash Data

Similar to road crashes, there is an onus on the driver of the vehicle involved to report an incident occurring in a car park. At a public hearing in Melbourne, 27 July 2009, Senior Sergeant John Gibson, Victoria Police, confirmed that under the *Road Safety Act 1986*, the driver involved in a crash in which someone was injured, is obliged

to report it to the Police, regardless of where it occurred, so this would include all car parks, including privately owned and operated facilities.¹⁵

Data provided by VicRoads in their submission showed that, even when reported, 71 per cent of cases do not have any specific or relevant information regarding the circumstances of the crash captured and coded.¹⁶

At a public hearing, Mr Mavroyeni, then Executive Director Road Safety and Network Access, VicRoads confirmed that VicRoads does not have a breakdown of car park injury data by location, type of car park or information regarding the driver involved.¹⁷

The Committee notes that the lack of such descriptive data about car park crashes, including their location and any characteristics of the drivers involved in them, is an impediment to understanding the causes of such crashes and the development of effective countermeasures.

Transport Accident Commission Insurance Claim Data

In its submission to the Inquiry, the TAC confirmed it receives and pays claims arising from pedestrian crashes in car parks. Claims may be related to injuries and fatalities. However, the TAC submission stated that it was unable to interrogate its database of insurance claims for specific incidents of pedestrian crashes in car parks.¹⁸

Mr David Healy, then Senior Manager Road Safety, advised the Committee during the Melbourne hearing, 27 July 2009, that the TAC was seeking to redress this information gap. He stated that they have attempted to:

... link the police accident report data to the claims data, so to the extent now that we have been able to retrieve police accident report data dealing with car parks, that means hopefully in the future we will be able to link claims data to that which will make it easier for us to look at the claims in some depth against car parks as being a basis for selection. I am confident that can happen in the future.¹⁹

Another issue for the TAC is that for these claims to be paid, the victim must report the incident when presenting to hospital. Currently hospital staff asks each patient if their injury is a TAC claim. It is not clear if the patient is aware that an incident in a car park constitutes a TAC claim.

The Committee considers that the TAC should ensure its claims forms, associated documentation and coding procedures allow for the recording of incidents occurring within car parks, and similar to

road crashes people presenting for medical care following a car park crash should be made aware of their rights to make a claim for compensation.

The Committee considers that the TAC could provide the data to other agencies. The Committee considers that such claim information would be the best available representation of the extent and circumstances of serious pedestrian crashes occurring in car parks. This information would allow relevant agencies to make appropriate decisions and countermeasures with respect to increasing pedestrian safety in car parks.

Hospital-Based Data

The Victorian Injury Surveillance Unit (VISU) is a major project of the Monash University Accident Research Centre (MUARC) which has maintained, analysed and reported on injury data for over 20 years.²⁰ The VISU collects patient injury data from 38 Victorian public hospital emergency department admissions. This data includes the location of the injury occurrence, which allows cases of pedestrians seriously injured in car parks to be identified.²¹

WorkSafe Victoria Data

Pedestrian crashes occurring within car parks should also be reported to WorkSafe Victoria.²² Under the *Occupational Health and Safety Act 2004* and WorkSafe Victoria's regulations, the employer duty of care extends to any place employee works. Employers must report serious injuries that occur to both employees and other persons, including visitors, customers and members of the general public.²³ Mr Ross Pilkington, Director Manufacturing, Logistics and Agriculture, WorkSafe Victoria, at a public hearing in Melbourne, 14 September 2009, stated that operators of facilities such as car parks:

... have an obligation to report where they meet the criteria of the incident notification portion of the Act, which is that there was a serious injury or fatality ... or an injury that required medical treatment and a one-night stay in hospital.²⁴

Whilst WorkSafe Victoria, in both its submission and at the hearing, reported very few notifications of pedestrian incidents in car parks, it has investigated incidents arising from the inadequate separation of areas, specifically the separation of work areas such as loading docks, vehicle thoroughfares, and buildings to which the public has access, such as retail shops. These incidents involved pedestrians, including members of the public, being hit by motor vehicles and trailers used for trolley collection.²⁵

In relation to car parks, similar to the other agencies, WorkSafe Victoria stated that there were difficulties in being able to separate the data to examine car park pedestrian incidents, as well as the issue of under-reporting. Mr Pilkington informed the Committee at a hearing that:

Unfortunately we believe there is a level of under-reporting and it is not easy for us to capture the data within our system because it can be reported under a variety of other names and guises ...

Further:

We get called in occasionally to incidents involving pedestrians, but normally it is only at the other end of the continuum. Somebody is injured; they are taken to hospital. We hear nothing of it, they do not report it, but suddenly when the claim comes up or something like that then we are pulled in as what we call a service request, and we go in and investigate in that regard.

Traditionally, we do not see that many injuries in car parks because they are not reported, or they do not hit the threshold for incident notification.²⁶

The Committee considers that WorkSafe Victoria needs to remind the owners and operators of car parks of their obligations to report to WorkSafe Victoria, all notifiable injuries and close incidents. This would provide a greater level of detailed information on car park pedestrian crashes and the circumstances around such incidents. WorkSafe should ensure its data collection forms and procedures are amended to allow WorkSafe to more accurately identify incidents occurring in car parks.

Increased reporting of pedestrian incidents would build a more accurate picture of the risks involved to workers and the general public who use car parks. The Committee considers that drivers need to be reminded of their responsibilities to report pedestrian crashes that result in injury, regardless of how minor, to Victoria Police. This includes crashes that occur in car parks. The Department of Justice should ensure that drivers are informed of this obligation. The Committee also considers that WorkSafe Victoria, like the TAC and Victoria Police, need to be able to identify incidents that occur in car parks, therefore, they need to amend their processes to allow for the accurate collection and reporting of pedestrian incidents occurring in car parks.

Recommendations:

- 1. That the Department of Justice inform and remind drivers of their obligation to report to Victoria Police pedestrian crashes that occur in car parks.**

2. **That WorkSafe Victoria informs and reminds the owners and operators of car parks of their obligation to report incidents where pedestrian crashes occur.**
3. **That Victoria Police, the Transport Accident Commission and WorkSafe Victoria ensure they capture appropriate information concerning pedestrian crashes in car parks and amend their data systems to allow accurate reporting.**

Providing Crash Information for Municipalities

Despite VicRoads excluding car park safety from their area of responsibility, the Committee notes that municipalities are reliant on VicRoads, to provide crash information when assessing new car park developments or redevelopment. Statistics on car park incidents are currently not included in the CrashStats database that municipalities can access, as searches can only be made by road or intersection.²⁷

VicRoads provides statistics from its Victorian Road Crash database via the CrashStats website. These statistics are based on Victoria Police data.²⁸ Municipalities reported that the website does not cover off-road areas such as car parks therefore they are unable to locate any car park related crash data.²⁹

Such crash information would allow municipalities and developers to identify any areas of concern and contribute to their expertise in evaluating car park design issues. The Committee considers it important that municipalities be able to access information regarding car park incidents within their jurisdiction in order to properly assess future car park developments or redevelopment in their area. VicRoads should, in collaboration with the agencies that collect car park pedestrian injury data, make detailed crash information from car parks available to municipalities.

Recommendation:

4. **That VicRoads amend their CrashStats website to ensure that car park related data be publicly available to municipalities and developers, so they can assess the relevant data on car parks and areas for proposed car park development or redevelopment in their jurisdiction.**

Fatalities

The Committee notes the above concerns, in particular the lack of crash description data which makes any detailed analysis and planning for countermeasures difficult. Nevertheless, the Committee considered that the available data should be reviewed to provide an

indication of the level of pedestrian risk and safety in Victorian car parks.

VicRoads, in its submission to the Inquiry, reported on four pedestrian fatalities that occurred between 2003 and 2008 in car parks.³⁰ Due to the limited amount of data available and the possibility of coding and classification differences between VicRoads, Victoria Police and the TAC, the Committee reviewed other sources of data to ascertain how many pedestrian fatalities occurred in Victorian car parks.

Coroner's Data

Data from the National Coroners Information System (NCIS) database for the period July 2000 to November 2009 identified 22 fatalities. Seven of these cases occurred in Victoria, representing under a third of all national cases.³¹ Table 2.1 provides a breakdown by year. The Coroner's office noted that due to coding issues, particularly in determining the incident location as a car park, these figures too may be an under-representation of pedestrian fatalities occurring within car parks.³²

Table 2.1: Victorian Pedestrian Fatalities in Car Parks by Year, July 2000 – November 2009

Year	Total
2000	1
2001	0
2002	1
2003	0
2004	1
2005	3
2006	1
2007	0
2008	0
2009	0
Total	7

Source: National Coroners Information System, *Unintentional Pedestrian Run Over – Related Deaths In Car Parks (National) 01/07/2000–30/11/2009*, February 2010, p. 2.

Overall, there is an average of one pedestrian fatality every one to two years within Victorian car parks. In terms of the age of pedestrian fatalities, there was one pedestrian aged under four years of age and the other six were all aged over 50 years. Of these, four were aged over 70 years. Five fatalities were female and two male.³³

Table 2.2: Age Range of Victorian Pedestrian Fatalities in Car Parks

Age Range	Total
0 – 4	1
5 – 10	0
11 – 20	0
21 – 30	0
31 – 40	0
41 – 50	0
51 – 60	2
61 – 70	0
71 – 80	3
81+	1
Total	7

Source: National Coroners Information System, *Unintentional Pedestrian Run Over – Related Deaths In Car Parks (National) 01/07/2000–30/11/2009*, February 2010, p. 2.

Using the limited incident descriptions available, the Coroner's office classified the type of pedestrian impact as set out below in Table 2.3.

Table 2.3: Type of Impact Involved in Victorian Pedestrian Fatalities in Car Parks

Type of Impact	Total
Reversing vehicle	3
Front-on collision (excluding pedestrian stepping into path)	2
Pedestrian stepping into path of approaching vehicle	1
Vehicle accelerating out of control, running into pedestrian	1
Total	7

Source: National Coroners Information System, *Unintentional Pedestrian Run Over – Related Deaths In Car Parks (National) 01/07/2000–30/11/2009*, February 2010, p. 3.

At a public hearing in Melbourne, 27 July 2009, Superintendent Kevin Casey, Victoria Police, summarised the factors behind fatal car park incidents that had been investigated. Superintendent Casey noted that generally speed was not a factor. Superintendent Casey stated that:

They are not necessarily speed related, they are actually the heavy mass of a vehicle in most of the circumstances where a person has been in the wrong

place at the wrong time and there has not been vigilance on behalf of the people who have either been killed or the operator of the vehicle.³⁴

Injuries

As with road statistics, there are more injuries than fatalities in car parks. Based on VicRoads' Victorian Road Crash data, in the six years from 2003 to 2008, there were 526 injuries to pedestrians in car parks, of which 135 were serious injuries (26%) and 391 less serious injuries (74%). Table 2.4 below, shows that on average, 22.5 pedestrians are seriously injured and 65 pedestrians are less seriously injured annually.

Table 2.4: Pedestrian Injury Crashes at Car Parks and/or Shopping Centres in Victoria, 2003 – 2008

Year	Injury Level		Total Pedestrians Injured
	Seriously Injured	Other Injury	
2003	20	85	105
2004	30	73	103
2005	30	84	114
2006	19	60	79
2007	19	37	56
2008*	17	52	69
Total	135	391	526

Source: VicRoads Submission to the Inquiry, 7 July 2009, p.13.

Note: *2008 data is incomplete (approximately 2% missing)

There is a discontinuity in the data series from 2006 onwards.

Victorian hospital admissions data was also provided to the Committee from the Victorian Injury Surveillance Unit (VISU). This data showed approximately 21 injuries presenting to hospital per year, which is consistent with the seriously injured cases reported by VicRoads.³⁵

Month of Injury Occurrence

The monthly occurrence of pedestrian injury appears relatively constant, with two peaks of injuries across July-August and November-December. The Committee considers that this pattern is consistent with higher pedestrian and traffic levels around shopping centre car parks at these times.

Table 2.5: Pedestrian Injury Crashes at Car Parks and/or Shopping Centres in Victoria, 2003 – 2008 by Month

Month	Injury Level		Total Pedestrians Injured
	Seriously Injured	Other Injury	
Jan	9	23	32
Feb	11	29	40
Mar	8	34	42
Apr	14	28	42
May	9	35	44
Jun	8	31	39
Jul	12	48	60
Aug	11	37	48
Sep	8	21	29
Oct	8	25	33
Nov	15	36	51
Dec	22	44	66
Total	135	391	526

Source: VicRoads, Submission to the Inquiry, 7 July 2009, p.14.

Day of the Week of Injury Occurrence

In parallel with the general trends of road trauma and expected levels of pedestrian activity, most injuries occurred on Thursdays, Fridays and Saturdays.

Table 2.6: Pedestrian Injury Crashes at Car Parks and/or Shopping Centres in Victoria, 2003 – 2008 by Day

Day of Week	Injury Level		Total Pedestrians Injured
	Seriously Injured	Other Injury	
Monday	12	44	56
Tuesday	13	32	45
Wednesday	13	51	64
Thursday	25	67	92
Friday	26	83	109
Saturday	29	84	113
Sunday	17	30	47
Total	135	391	526

Source: VicRoads, Submission to the Inquiry, 7 July 2009, p.14.

Time of Day and Light Conditions of Injury Occurrence

Most injuries, 84 per cent, occur between 8:00 am and 8:00 pm, with a peak in the early afternoon.

Table 2.7: Pedestrian Injury Crashes at Car Parks and/or Shopping Centres in Victoria, 2003 – 2008 by Time of Day

Time of Day	Injury Level		Total Pedestrians Injured
	Seriously Injured	Other Injury	
00:00 to 07:59 am	6	22	28
08:00 to 11:59 am	28	116	144
12:00 to 03:59 pm	48	126	174
04:00 to 07:59 pm	37	89	126
08:00 to Midnight	16	38	54
Total	135	391	526

Source: VicRoads, Submission to the Inquiry, 7 July 2009, p.15.

Consistent with the time of injury, 76 per cent of all injuries occurred during daylight hours, 19 per cent in dark conditions and five per cent during either dawn or dusk.³⁶

Characteristics of Injured Pedestrians

Age

Over the period 2003 to 2008, the age of injured pedestrians was evenly distributed, with slight peaks for 40-55 year olds and older teenagers aged 15-19 years old. Comparing age groups, the proportion of those seriously injured to those less seriously injured was greatest amongst those pedestrians aged over 80 years (49%) and those aged under 10 years (34%).³⁷

Table 2.8: Pedestrian Injury Crashes at Car Parks and/or Shopping Centres in Victoria, 2003 – 2008 by Age

Age Group	Injury Level		Total Pedestrians Injured
	Seriously Injured	Other Injury	
0-9	11	21	32
10-19	16	51	67
20-29	14	49	63
30-39	14	46	60
40-49	19	62	81
50-59	16	49	65
60-69	16	40	56
70-79	11	41	52
80+	17	18	35
Unknown	1	14	15
Total	135	391	526

Source: VicRoads, Submission to the Inquiry, 7 July 2009, p.17.

Amongst those admitted to hospital, the age of injured pedestrians tended to be older, with those aged 65 years and older accounting for 45% of the cases.³⁸ The Committee considers this is reflective of the frailty of older pedestrians.

Gender

Significantly more women than men were injured, with 58% women and 42% men injured. At a public hearing in Melbourne, Mr Mavroyeni, then Executive Director Road Safety and Network Access, VicRoads suggested this could be due to more women using shopping centre car parks.³⁹

Table 2.9: Pedestrian Injury Crashes at Car Parks and/or Shopping Centres in Victoria, 2003 – 2008 by Gender

Gender	Injury Level		Total Pedestrians Injured
	Seriously Injured	Other Injury	
Female	77	209	286
Male	57	177	234
Unknown	1	5	6
Total	135	391	526

Source: VicRoads, Submission to the Inquiry, 7 July 2009, p.16.

However, VISU data provided by MUARC in their submission, showed that women accounted for approximately two thirds of hospital admissions (63%), a bigger gender gap than the VicRoads data.⁴⁰

Injury Type

According to the VISU hospital admissions data, the major types of injury resulting in hospitalisation from car park pedestrian incidents were:

- 53% fractures;
- 10% superficial injuries (such as bruising and abrasion);
- 10% open wounds, and
- 9% internal head injury.⁴¹

The body region most frequently injured was the lower extremity (leg, foot, ankle and knee) 50%, followed by the head, face or neck 22%, the trunk (torso and pelvis) 14%, and the upper extremity (arm, hand, wrist, elbow and shoulder) 13%.⁴²

These figures suggest pedestrians struck in the legs is the major injury type, followed by falls where the head is struck on the ground or other hard surface, such as a vehicle.

Length of Hospital Stay

The length of time in hospital is a good indication of injury severity. The majority, 81% of pedestrians, were discharged within a week or less, including 39% hospitalised less than two days, leaving a small but significant group, 19% who required extended treatment beyond a week.⁴³

Underestimation of Less Serious Injuries and Minor Incidents

Whilst there is at least some data available on the numbers of pedestrian fatalities or seriously injured in car parks, the Committee considers that less serious injuries are considerably underestimated by the available data. It would be expected that larger numbers of pedestrians suffered less serious injuries requiring treatment by a General Practitioner, if at all, and an even larger group of pedestrians suffered from a minor or near-miss incident without physical harm.

VicRoads, in its submission to the Inquiry, also considers that less serious injuries and minor incidents are under-reported, stating that:

It is likely that the frequencies of both fatal and serious injury crashes is reasonably accurate because of police attendance at the former and the need for an accident report as a prerequisite for a claim on the TAC for accident compensation for the latter. The position with respect to minor injury crashes is less certain, but is likely to be an underestimate of the actual frequencies.⁴⁴

Summary of Findings

- There is a lack of reported data on pedestrian car park safety in Victoria, with little information available on the circumstances causing pedestrian crashes, the drivers involved and the precise locations at which they occur.
- Pedestrian injuries occurring within car parks should not be included in the road toll, due to their off-road nature and issues of classification consistency. Rather the data should be gathered by the Transport Accident Commission.
- From the available data, it appears that there are relatively small numbers of pedestrian fatalities and injuries occurring within car parks. There is one fatality every two years on average, 22.5 serious injuries and 65 less serious injuries annually.
- Injuries occur disproportionably to the very young and the elderly, particularly women.
- Over half of the reported pedestrian injuries involve the lower extremities. Half of pedestrian injuries are fractures.

Recommendations

1. **That the Department of Justice inform and remind drivers of their obligation to report to Victoria Police pedestrian crashes that occur in car parks.**
2. **That WorkSafe Victoria informs and reminds the owners and operators of car parks of their obligation to report incidents where pedestrian crashes occur.**
3. **That Victoria Police, the Transport Accident Commission and WorkSafe Victoria ensure they capture appropriate information concerning pedestrian crashes in car parks and amend their data systems to allow accurate reporting.**
4. **That VicRoads amend their CrashStats website to ensure that car park related data be publicly available to**

municipalities and developers, so they can assess the relevant data on car parks and areas for proposed car park development or redevelopment in their jurisdiction.

Endnotes

- ¹ VicRoads, Submission to the Inquiry, 7 July 2009, p. 7.
- ² *ibid.*, p. 13.
- ³ Royal Automobile Club of Victoria (RACV) Ltd, Submission to the Inquiry, 8 July 2009, p. 7.
- ⁴ Mr G Briscoe-Hough, Luxmoore Parking Consulting, Presentation, Sydney, 5 August 2009, Slide 3.
- ⁵ VicRoads, *op. cit.*, p. 7.
- ⁶ Transport Accident Commission, Submission to the Inquiry, 20 July 2009, p. 3.
- ⁷ Mr G Mavroyeni, VicRoads, Minutes of Evidence, Melbourne, 27 July 2009, pp. 6-7.
- ⁸ VicRoads, *op. cit.*, p. 13.
- ⁹ Ms W Kimber, Victoria Police, Minutes of Evidence, Melbourne, 27 July 2009, p. 12.
- ¹⁰ VicRoads, *op. cit.*, p. 13.; Mr B Scott, VicRoads, Email, 5 May 2010, Attachment.
- ¹¹ Mr G Mavroyeni, *op. cit.*, p. 7.
- ¹² Mr B Scott, VicRoads, Email, 25 August 2009.
- ¹³ Ms W Kimber, Victoria Police, Minutes of Evidence, Melbourne, 27 July 2009, p. 12.; Senior Constable I Whalley, Victoria Police, Minutes of Evidence, Melbourne, 27 July 2009, p. 12.
- ¹⁴ VicRoads, *op. cit.*, p. 7.
- ¹⁵ Senior Sergeant J Gibson, Victoria Police, Minutes of Evidence, Melbourne, 27 July 2009, p. 11.
- ¹⁶ VicRoads, *op. cit.*, p. 16.
- ¹⁷ Mr G Mavroyeni, *op. cit.*, pp. 3, 4, 8.
- ¹⁸ Transport Accident Commission, *op. cit.*, p. 3.
- ¹⁹ Mr D Healy, Transport Accident Commission, Minutes of Evidence, Melbourne, 27 July 2009, p. 38.
- ²⁰ Monash University Accident Research Centre, *About VISU*, viewed 8 February 2010, <http://www.monash.edu.au/muarc/VISU/about.html>.
- ²¹ *ibid.*
- ²² *Occupational Health and Safety Act 2004*, Vic, Act No. 107/2004, s. 38(1).
- ²³ WorkSafe Victoria, *Guide to Incident Notification: A Guide to Part 5 of the Occupational Health and Safety Act 2004 and Part 9 of the Equipment (Public Safety) Regulations 2007*, 3rd Edition, Melbourne, 2008, pp. 3-5.
- ²⁴ Mr R Pilkington, WorkSafe Victoria, Minutes of Evidence, Melbourne, 14 September 2009, p. 153.
- ²⁵ *ibid.*, pp. 153, 155.; WorkSafe Victoria, Submission to the Inquiry, 3 June 2009, p. 1.
- ²⁶ Mr R Pilkington, *op. cit.*, pp. 153, 155.
- ²⁷ VicRoads, *Crashstats User Guide*, 2008, viewed 5 May 2010, <http://crashstat1.roads.vic.gov.au/crashstats/uguide.pdf>, p. 12.

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- ²⁸ VicRoads, *CrashStats*, viewed 21 April 2010, <http://www.vicroads.vic.gov.au/Home/SafetyAndRules/AboutRoadSafety/StatisticsAndResearch/CrashStats.htm>.
- ²⁹ Hobsons Bay, Submission to the Inquiry, May 2009, p. 1.; Knox City Council, Submission to the Inquiry, May 2009, p. 2.; City of Stonnington, Submission to the Inquiry, June 2009, p. 1.; Bayside City Council, Submission to the Inquiry, July 2009, p. 1.
- ³⁰ VicRoads, Submission to the Inquiry, op. cit., p. 13.
- ³¹ National Coroners Information System, *Unintentional Pedestrian Run Over-Related Deaths in Car Parks (National) 01/07/2000 - 30/11/2009*, Version 2, Report Produced for the Victorian Parliamentary Road Safety Committee, Victorian Institute of Forensic Medicine, Southbank, 2010, p. 2.
- ³² *ibid.*, p. 1.
- ³³ *ibid.*, p.2.
- ³⁴ Superintendent K Casey, Victoria Police, Minutes of Evidence, Melbourne, 27 July 2009, p. 20.
- ³⁵ Monash University Accident Research Centre, Submission to the Inquiry, 14 May 2009, p. 1.
- ³⁶ VicRoads, Submission to the Inquiry, op. cit., p. 15.
- ³⁷ *ibid.*, p. 17.
- ³⁸ Monash University Accident Research Centre, Submission to the Inquiry, op. cit., p. 1.
- ³⁹ Mr G Mavroyeni, op. cit., p. 3.
- ⁴⁰ Monash University Accident Research Centre, Submission to the Inquiry, op. cit., p. 1.
- ⁴¹ *ibid.*
- ⁴² *ibid.*
- ⁴³ *ibid.*, p. 5.
- ⁴⁴ VicRoads, Submission to the Inquiry, op. cit., p. 13.

Current Standards and Rules

Introduction

The Committee reviewed the statutory framework for car parks, including national standards and guides, relevant legislation and state-based planning rules in order to assess the appropriateness of the Standards, guides and rules used by those involved in the construction, approval and operation of car parks.

Car parks are the responsibility of the property owner or operator. Aspects of the design and planning of a new car park development, or redevelopment of an existing car park, require statutory approval from the responsible authority.¹ Safety issues are currently self-regulated by the property owner or operator, though State and Local Government have legislative powers to address particular safety issues.

Government departments and agencies with an interest in the approval of new car park developments or the upgrading of existing car parks include the Department of Planning and Community Development, VicRoads and the local municipality. Once car parks are built and operational, the authorities with oversight powers of ongoing activity in car parks include WorkSafe Victoria and Victoria Police.

Planning Guidelines for the Design and Approval of Car Parks

The Committee reviewed the planning framework and processes that municipalities use to assess and approve applications for new or upgrading of car parks with a view to pedestrian safety.

Responsibility for the design of a car park rests with the developer and the municipality who approved the permit to build the car park.² New designs are also referred to VicRoads to ensure they meet VicRoads guidelines and safety requirements of the car park's external integration with the surrounding road network.³

The Committee found the planning processes for new or upgrading of an old car park development to be based on a municipality's consideration of three main references. These are the:

- Victorian Planning Provisions including the State Planning Policy Framework;
- Local Government Parking Provisions, and
- Australian Standards and related guides for car parks.

The Committee reviewed these three areas to examine their impact on producing safer car parks for pedestrians.

Victorian Planning Provisions

Municipal approvals operate under State Government regulation, specifically via the Victorian Planning Provisions, where traditionally, consideration of parking design has been more focused on the quantity of parking to be provided, rather than the design safety considerations for pedestrians.⁴

The overall planning framework in Victoria is provided by the *Planning and Environment Act 1987*, which is administered by the Department of Planning and Community Development (DPCD). Under the Act, the DPCD on behalf of the Minister, must prepare a set of standard provisions for Planning Schemes.⁵ Planning Schemes are a legal instrument, consisting of a set of policies and guidelines for the use, development and protection of land. There are individual Planning Schemes for each Victorian municipality.⁶ The DPCD provides a set of provisions called the Victoria Planning Provisions (VPP) which are used as a state-wide 'template' for each municipality to create their own Planning Scheme. Thus, the Victorian Planning Provisions act as the guide for how each municipality controls planning within its jurisdiction.⁷

In a situation where a developer has breached or failed to comply with the Act or Planning Schemes, they may be guilty of having committed an offence and be liable for penalties. A responsible authority, usually the municipality, has a number of avenues to deal with such offences. These include:

- issue of a planning infringement notice;
- application for an enforcement order or interim enforcement order from the Victorian Civil and Administrative Tribunal (VCAT), and/or
- prosecution in the Magistrates Court.⁸

There are two clauses that are relevant to the development of car parks, Clause 52.06 of the Victorian Planning Provisions and Clause 19.03 of the State Planning Policy Framework, that all municipalities must consider when deciding whether or not to approve any off-street car parks.⁹

Clause 52.06 – Car Parking

The main purpose of Clause 52.06 is to determine the quantity of parking that the developers must provide on the site. In relation to pedestrians, the Clause states its purpose is to ensure that the design and location of car parking areas:

- Does not adversely affect the amenity of the locality, in particular that of pedestrians and other road users.
- Achieves a high standard of urban design.
- Creates a safe environment for patrons, particularly at night.¹⁰

This Clause also provides information regarding the minimum dimensions of car parking spaces and aisles, but rather than providing any details on how design should occur, it states that:

... a plan must be prepared to the satisfaction of the responsible authority showing all required car spaces, access lanes, driveways and associated works and landscaping.¹¹

The Clause lists a number of guidelines that the responsible authority must consider in deciding if a plan is satisfactory. Those relevant to pedestrians include:

- Whether the layout of car spaces and access lanes is consistent with Clause 52.06-5 or a variation in accordance with *Australian Standard AS2890.1 – 1993, Parking Facilities, Part 1: Off-Street Car Parking*.
- Provision for pedestrian movement within and around the parking area.
- Measures proposed to enhance the security of people using the parking area.
- Provision of parking facilities for cyclists and people with disabilities.¹²

However, the Committee found that not only does the Clause reference an outdated version of the Australian Standards, but that the Clause itself is outdated. Clause 52.06 was reviewed more than three years ago. At a public hearing in Melbourne, 14 September 2009, Mr Con Tsotsoros, Assistant Director, Planning Systems Management, Department of Planning and Community Development (DPCD), confirmed that the Department acknowledged that Clause 52.06 was out of date and currently subject to review.¹³ Mr Tsotsoros confirmed that the Clause had already been reviewed by an expert Advisory Committee which had

taken public submissions. The Advisory Committee released a discussion paper seeking input in August 2007, along with suggested revisions for a new draft Clause.¹⁴ Mr Tsotsoros stated that the new draft Clause included provisions to increase pedestrian safety and that:

... there is a need to create safe, functional and attractive parking areas. There is another reference towards the end which commences 'Access ways should' – and a couple of bullet points follow which refer to the provision for pedestrian movement within and around the parking area ...¹⁵

The Committee notes that the revised version of the Clause 52.06 has still to be released by the DPCD, more than two years after the report was provided to the Department. Mr Tsotsoros stated at the hearing that he was unable to provide a reliable timeline for its release, and at the time of writing the new Clause had yet to be released.¹⁶

Mr Tsotsoros further indicated that while new car park developments and municipalities need to consider Clause 52.06, they also have to consider Clause 19.03 of the State Planning Policy Framework, which includes reference to other design guidelines.¹⁷

Clause 19.03 – Design and Built Form

This Clause sets out State planning policy objectives and design principles that must be taken into account in the design of urban spaces and buildings, including car parks. The DPCD has developed design guidelines including *Safer Design Guidelines for Victoria*, which are the principal and overarching guidelines for designing for safety.¹⁸ The relevant section that deals with car parks is Element 7 Car Park Areas.

At the public hearing in Melbourne, 14 September 2009, Ms Lyn Harrop, Urban Designer, Department of Planning and Community Development, explained that Clause 19.03 also refers to two more guidelines: *Activity Centre Design Guidelines*; and *Guidelines for Higher Density Residential Development*. Both of these strategies have sections on car parks. Ms Harrop noted that there is also a fourth, *Interim Design Guidelines for Large Format Retail Premises*.¹⁹ The Committee notes that at the time of writing, these guidelines are still not finalised.²⁰

Ms Harrop commented on the aims of these design guidelines, stating that:

Car parks are a quasi-public environment generally, and there is a requirement to consider safety in new development to enhance personal safety and property security and make places where people feel safe. This is the overall objective that we are trying to achieve.²¹

However, Mr Tsotsoros informed the Committee at the hearing that even though it was inferred throughout, the actual term ‘pedestrian safety’ only appears once in the guidelines.²²

Mr Tsotsoros further stated that these guidelines were not prescriptive rules but rather, performance based. This means that municipalities must consider these Clauses and urban design guidelines when approving new car park planning applications, otherwise their decisions are open to review by the Victorian Civil and Administrative Tribunal (VCAT).²³

Ms Harrop explained why no enforceable prescriptive rules were set out, commenting that the performance guidelines were put forward as assistance, to open up discussion and to provide examples for developers. Ms Harrop stated that the applicants would need to:

... demonstrate that they have considered these objectives and have addressed them, building an argument for their case. That is essentially how Victorian Planning Provisions deal with guiding development rather than a prescriptive notion. At this point in time there is no prescription for pedestrian access except for disability access.²⁴

The Committee noted an absence of pedestrian safety measures that could be used as examples of good practice, such as appropriate sightlines and pedestrian pathways, which could assist developers and municipalities to make informed decisions.

The Committee also noted several criticisms of these current planning provisions by municipalities. Brimbank City Council in its submission to the Inquiry, called for the Victorian Planning Provisions to be strengthened to provide greater emphasis on pedestrian safety and facilities within car parks.²⁵ Hobsons Bay City Council in its submission stated that this lack of direct emphasis on pedestrian safety allows developers to challenge the Council’s efforts to set out local requirements based on the world’s best practice for pedestrian safety.²⁶

Mr Ian McLauchlan, Transport and Parking Manager, City of Stonnington, and member of the Advisory Committee for the review of Clause 52.06, at a public hearing in Melbourne, 14 September 2009, stated that the current planning provisions:

... are silent on design issues and they currently are silent in – we think critical – matters of safety: sightlines at entrances and exits, ramp grades, coming up, that sort of thing; that has been reviewed. There is a report in with the Minister, and those issues are being considered as part of the review but that is an issue that we concentrate on fairly heavily.²⁷

The Royal Automobile Club of Victoria (RACV), in its submission to the Inquiry, stated that it considered the existing planning provisions were not strong in providing good pedestrian design. The current planning scheme was vague and outdated with no detail on when certain pedestrian safety measures should be applied to car parks.²⁸

Local Government Parking Provisions

Municipalities develop their own parking provisions in response to the Victorian Planning Provisions. As mentioned, these provisions focus on the quantity of car parking to be provided by a new development rather than the overall design quality of a new car park, including the level of pedestrian safety it provides. The Committee heard evidence that local parking provisions can actually frustrate attempts by designers and developers to improve the quality and safety of new or upgraded car parks. Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a hearing in Sydney, 5 August 2009, described to the Committee how these local parking provisions resulted in:

- Mindsets amongst municipalities that were fixed in a 'predict and provide' model, that is, how many people will use a new development and how much parking will be needed.
- Developers seeking to maximise parking by implementing minimum standards.
- The widespread failure of municipalities to see that parking management systems substantially removed the need for larger amounts of parking.
- Pressure to provide the required number of spaces does not provide scope to improve pedestrian amenity.²⁹

Mr Briscoe-Hough considered alterations to the planning provisions to be the key area where reform could improve pedestrian safety outcomes.³⁰ He maintained that the current local parking provisions result in very stringent requirements for developers to provide a set amount of car parking but not a set level of pedestrian safety.³¹ Mr Briscoe-Hough argued the planning provisions dictated the amount of parking to be provided, effectively penalising developers who attempt to provide more pedestrian safe design practices.³² He

explained further that the current provisions allowed municipalities to reduce the amount of parking spaces required by the provisions, but that developers then had to pay the municipality a penalty per space forgone.³³ In Victoria, these are authorised under the planning provisions as cash-in-lieu schemes. The money raised by municipalities in this manner is then intended to be used for the provision of shared parking in the general area of the development.³⁴

However, Mr Briscoe-Hough stated that there were no concessions from the fees for developers willing to trade pedestrian safety improvements against the maximum parking requirements. Mr Briscoe-Hough stated that:

If I was a developer and I turned up to the council and gave them [a] best practice car park, they're still going to say to me you're 20 spaces short, and because we like your design, we'll let you off but we're going to make you pay the \$40,000 per space or whatever. So there's no incentive to do otherwise than what the industry is doing now which is basically look, there's the minimum rules, we've complied. Court can't complain, the council can't complain and they leave it at that.

Further that:

I think there should be an element in people's planning to say if you're prepared to provide state of the art and best practice pedestrian facilities, then you should also get a concession as well.³⁵

Mr Briscoe-Hough concluded that currently there is no incentive to go that extra mile in terms of pedestrian safety.³⁶

The Committee considers that the Victorian Planning Provisions should be amended to encourage improved pedestrian safety within car parks. In the context of Victorian Government urban design and health policies that encourage walking and increasing public transport use, improving safe pedestrian access in and around car parks would be seen to be an important consideration.

Additionally, the Committee notes that to decrease traffic congestion within Melbourne and to encourage further public transport use, the State Government imposes a parking levy on car parks, and the Melbourne City Council has a policy to restrict the number of parking places provided within its boundaries. The Committee considers that at a time when the Government is supporting the restriction of car parking numbers overall, it is timely to examine the worth of increasing the provision of quality parking spaces, incorporating the highest pedestrian safety practices,

ahead of the practice of providing the maximum number of parking spaces.

The Committee notes that cash-in-lieu schemes currently allow developers to reduce the amount of parking they provide on site, by paying municipalities to fund shared parking for the area outside of the site. The DPCD Advisory Committee 2007 report, *Review of Parking Provisions in the Victorian Planning Provisions*, recommended that such money be used not only for providing additional parking but also towards initiatives that reduce parking demand, such as the TravelSmart program.³⁷

This Committee considers that money raised from cash-in-lieu schemes should be put towards retro fitting safer engineering features to existing municipal car parks. The cash-in-lieu schemes should also allow for concessions to developers for providing safer pedestrian features in their car parks.

The Committee also considers that there should be a greater emphasis on pedestrian safety in the Victorian Planning Provisions. The Department should ensure appropriate measures to improve levels of pedestrian safety exist in the new Clause 52.06 and revise the Urban Design Guidelines associated with Clause 19.03.

Despite the Department of Planning and Community Development's review of Clause 52.06 is more than two years late, the Committee considers the Department should now also take into account the recommendations arising from this Committee's Inquiry prior to the release of their response to the report, *Review of Parking Provisions in the Victorian Planning Provisions*.

The Department should work with Local Government Victoria and municipalities to ensure that such an increased focus on pedestrian safety in the planning provisions are translated across into municipal Planning Provisions. Municipalities should have more flexibility in trading off the amount of car parking required by the provisions, with increasing the level of safety afforded to pedestrians.

Recommendations:

- 5. That the Department of Planning and Community Development should amend the Victorian Planning Provisions to encourage improved pedestrian safety within car parks, by:**
 - a) Taking into account the recommendations from this Inquiry prior to the release of their response to the review of Clause 52.06 in *Review of Parking Provisions in the Victorian Planning Provisions*.**

- b) **Placing greater emphasis on pedestrian safety and include measures to improve such safety, in both the revisions to Clause 52.06 and to its related design guides under Clause 19.03.**
- 6. **That the Department of Planning and Community Development amend the Victorian Planning Provisions to allow Councils to provide concessions to developers who provide a car park with fewer parking spaces but incorporates pedestrian-friendly measures. That any monies received by Councils under the cash-in-lieu schemes from those car park developments that do not provide pedestrian friendly features should be invested in retro fitting pedestrian safety improvements to older Council car parks.**

Current Standards and Guides for Car Park Development

In addition to the State and local planning provisions, municipalities use the Australian Standards and the Austroads Guides to assess planning applications for new car parks. These standards and guidelines are not mandatory, but municipalities are bound by the Victorian Planning Provisions to at least refer the Australian Standards, when considering the approval of a planning application.

The Australian Standards for Off-Street Parking are part of six Standards for parking. The three relevant Standards are Parts 1, 2, and 6.

AS/NZS 2890.1:2004 Parking Facilities – Off-Street Car Parking: Part 1

Revised in 2004, this national Standard sets out the minimum requirements for the design and layout of both public and private car parks, including residential facilities.³⁸ The Standard covers the four basic internal elements of the car park; the circulator roads, circulator aisles, aisles and parking spaces and provides guidance on technical elements of car park design criteria such as the width of parking bays, slope of ramps and provision of vehicle manoeuvring space.

The Standard classifies car parks by their typical patrons into six groups:

- 1 Long-term or all day parkers, that is employee and commuters.
- 1A Residential, domestic and employee parking.
- 2 Medium term parking, that is, sports and entertainment facilities and hotels.

3 Short-term parking, that is, parking stations, hospital and medical centres.

3A Short-term high turnover parking at shopping centres.

4 Parking for people with disabilities.³⁹

The Standard therefore provides different dimensions, depending on the general function of the car park. For example, parking spaces for short-term parking at high turnover shopping centre car parks have a larger space dimension than those to be located in an all day staff parking facility.⁴⁰

The Standard refers to Pedestrian Service and the provision of facilities for pedestrians and to general guidance for dealing with pedestrian movement in and out of a car park. It recommends the principle of separation of pedestrians from vehicles as the basic approach, with specific reference to providing separate access points for pedestrians and vehicles across all car parks.⁴¹

However, Ms Lyn Harrop, Urban Designer, Department of Planning and Community Development, at a Melbourne hearing, 14 September 2009, described the Australian Standard as being silent on specific guidance for pedestrian safety in car parks. Ms Harrop stated that:

Once one has parked one's car and moved towards the destination that you want, [the Standard] does not specifically talk about that. My investigations through the rest of the Australian Standards could not find anything that addressed that particular gap.⁴²

Mr David Shelton, then Director, Road User Safety, VicRoads, at a hearing in Melbourne, 27 July 2009, acknowledged that the Australian Standard also lacked coverage of speed as an issue, commenting that:

Other than speed limit signs, the Standard is silent on speed management.⁴³

The Australian Standards does make references to speed control, mainly in relation to aisle length, traffic management devices such as speed humps and signs.⁴⁴ The Committee notes, however, that it does not provide advice as to appropriate speeds within car parks.

Whilst the Committee considers the Australian Standards provide a good starting point for improving pedestrian safety, it considers that the Standards should provide for more direct reference to pedestrian safety. The Standards should also include greater direct reference to the issue of controlling speed in car parks, with specific

details on engineering solutions and setting speed limits. The issue of speed in car parks is considered in greater detail later in this Chapter.

AS/NZS 2890.2:2002 Parking Facilities – Off-Street Car Parking Part 2: Off-Street Commercial Vehicle Facilities

There is also a national Standard to deal with off-street parking and loading activities for commercial vehicles with regards to loading bays and docks. The only mention of pedestrian issues in this Standard is limited to a point on keeping such loading bays separated from car park and pedestrian activity areas as far as practicable.⁴⁵

Such separation is a vital component for pedestrian safety. Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a hearing in Sydney in August 2009, noted that despite the danger posed by the presence of large trucks in the middle of supermarket car parks where pedestrians were moving around, it was still an observed scenario.⁴⁶

A submission from the Bayswater North Community Renewal Paths and Parking Action Group provided the Committee with a recent illustration of how the inappropriate location of loading facilities within a car park at the Canterbury Gardens Shopping Centre led to trucks driving in and waiting within a busy car park, as the entrance to the loading dock is placed directly across pedestrian access to the Centre, resulting in poor sightlines and considerable risk.⁴⁷

The Committee notes that there has been at least one recently recorded Victorian pedestrian fatality involving a pedestrian in a loading bay.⁴⁸ The Committee considers that there is scope for increased attention to this Standard to prevent future developments being approved without sufficient separation of loading areas from car parks.

AS/NZS 2890.6.2009 Parking Facilities: Part 6: Off-Street Parking for People with Disabilities

This Standard sets out the minimum requirements for the provision of off-street parking for people with disabilities and provides references for appropriate design specifications.⁴⁹ A number of municipalities cited the need to provide parking spaces for people with disabilities as a consideration in relation to car park safety, citing either the earlier draft Standard or referring to the *Disability Discrimination Act 1992*.⁵⁰ Pedestrians with disabilities require additional space to get in and out of cars and therefore require more clearance for door opening and movement around a parked car. The Standard along with Section 23 of the *Disability Discrimination Act 1992*, provide for this, along with close proximity of parking spaces to facility entrances.⁵¹

Austroads Guides

Austroads, an association of Australian road transport and traffic authorities, provides a series of guides that serve as a national consolidation of engineering and design practice and provide source documents for guidelines and standards.⁵² Mr Shelton, then Director of Road User Safety, VicRoads, stated at a public hearing, that he views the Austroads Guides, along with the Australian Standards as the principle set of guidelines for car park design. Mr Shelton stated that:

There is quite a bit more detail in the Austroads Guides than there are in the Australian Standards where there is a high level of consistency between the two. Important features of the guides are recommending separate entrances and exits to car parks for vehicles and pedestrians; restricting pedestrian movement on circulation roads around larger car parks.⁵³

Austroads Guide to Traffic Management Part 11: Parking

In the new series of the *Austroads Guides to Traffic Management*, the previously separate volume on pedestrian infrastructure has been integrated into each of the new volumes, including Part 11: Parking. VicRoads noted in its submission to the Inquiry that this will promote consideration of pedestrian needs during the development of all infrastructure projects, including car parks.⁵⁴

The Austroads Guides provide illustrative examples incorporating design principles reflective of best practice in engineering and illustrates examples of both good and poor practice, such as the layout of car park circulation roads in relation to building entrances, (see Figure 3.1 on page 50 as an example). The Committee approves of the use of such examples which it considers makes safe design principles clearer to all stakeholders.

The Committee notes, however, that the new Parking volume lacks specific guidance on speed management within car parks, though this information is available in other volumes of the guides. For instance, information on speed control through the application of physical traffic control devices is cited in a separate Austroads Guide, Part 8: Local Area Traffic Management.⁵⁵ The Committee considers that in future revisions to the guides, explicit measures for speed control should be set out directly in Part 11: Parking.

Other Guides

The Committee was informed of other resources on car park design. These include the *VicRoads Traffic Engineering Manuals*, which do not include specific sections on car parks, but do provide

some guidance, such as controlling speed using road humps and standards for signage.⁵⁶

Ms Lyn Harrop, Urban Designer, Department of Planning and Community Development, appearing at a hearing in Melbourne, 14 September 2009, noted that the Building Code of Australia, also had no specific guidance on pedestrian safety within car parks.⁵⁷

The Committee noted that specific car park design software such as ParkCAD was in use amongst car park designers, which allows the incorporation of the current Australian Standards into car park plans.⁵⁸

Overview of the Current Standards and Guides

The Committee found that these current standards and guides include many key principles which, when applied, would limit risk of injury to pedestrians. However, there are some areas that the Committee considers could be improved upon in promoting pedestrian safety.

The RACV, in their submission to the Inquiry, stated that amongst these commonly used standards and guides, pedestrian safety is not covered in great detail.⁵⁹ Mr Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a public hearing in Sydney, found that pedestrian safety is not a high priority.⁶⁰ The Committee considers that, as there is no specific focus on pedestrian safety in these documents, it may be too easy for designers and those assessing the resulting applications, to under-value pedestrian safety.

In order to promote greater recognition of pedestrian safety in car parks, the Committee considers that like the changes to the Victorian Planning Provisions discussed earlier in this Chapter, there needs to be stronger emphasis of the principle of providing a safe environment for pedestrians, along with more detailed suggestions and examples on how to achieve this.

The Department of Planning and Community Development should lobby for such changes. They should lobby both the relevant Australian Standards Committee, Committee CE-001: Parking facilities, and Austroads through VicRoads which is a member organisation. The Department should also reference the Austroads Guides in the Victorian Planning Provisions, to provide more information to developers and municipalities.

Recommendation:

- 7. That the Department of Planning and Community Development lobby Standards Australia and Austroads to have greater emphasis placed on pedestrian safety**

included in the next versions of the relevant Australian Standards for Off-Street Parking and Austroads guide to parking.

There were several other areas the Committee does not consider were adequately covered in the current Standards and guidelines in terms of pedestrian safety. The Committee considers these areas to be 'best practice' in car park design.

Best Practice in Car Park Design and Operation

The Committee considered best practice measures from a pedestrian safety point of view. In summary, these are:

- Adequate sightlines for both pedestrians and drivers.
- Adequately sized parking spaces and aisles, along with appropriate layout.
- Separation of loading areas and truck paths from car park pedestrian areas.
- Separation of pedestrians and vehicles where possible, particularly at entries and exits, including the use of dedicated pedestrian paths.
- Where separation is not possible, car parks should be treated as Shared Zones to protect pedestrians.
- Control of vehicle speed and flow through engineering design, especially at pedestrian crossing points and entries and exits and other areas of concentrated pedestrian traffic.
- Consistent use of standard signs and road markings across all car parks.
- Use of design or wayfinding principles to direct pedestrians and drivers safely through car parks.
- Increased visibility through adequate lighting if car park is undercover or used at night.
- Effective monitoring of car parks by operators.

Most of these measures are based on sound engineering and design practices, which the Committee considers to be key principles in producing safe car parks for pedestrians. Ms Anne Morphet, Senior Policy Advisor, Road Safety, National Roads and Motorists' Association Limited (NRMA) Motoring and Services, at a Sydney hearing, 5 August 2009, agreed that engineering measures should be used as a primary approach, stating that:

It's actually much more difficult to change human behaviour than it is to do an engineering piece of work. Human behaviour is my area of expertise. It's much harder than when I'm working with engineers and say if you put two rows of tape on here, someone's less likely to fall over it, [than] try to tell people to avoid this.⁶¹

The Committee considers that each of these measures should be reflected in the current standards and rules that guide the design and approval of new car parks and are discussed in detail below.

Sightlines

Clear and adequate sightlines that are not blocked by physical structures, vegetation or other parked cars, allow pedestrians to see approaching vehicles and drivers to see pedestrians. The increased presence of larger vehicles, such as 4WDs and Sports Utility Vehicles (SUVs) in the Victorian fleet is an area of concern to the Committee.

Increasing sightlines can be achieved through the use of 'end' or 'kerbed islands' at the ends of parking rows. These islands open up sightlines, limit the encroachment of vehicles onto paths, aisles, and circulation roads.⁶²

Size and Layout of Parking Spaces and Aisles

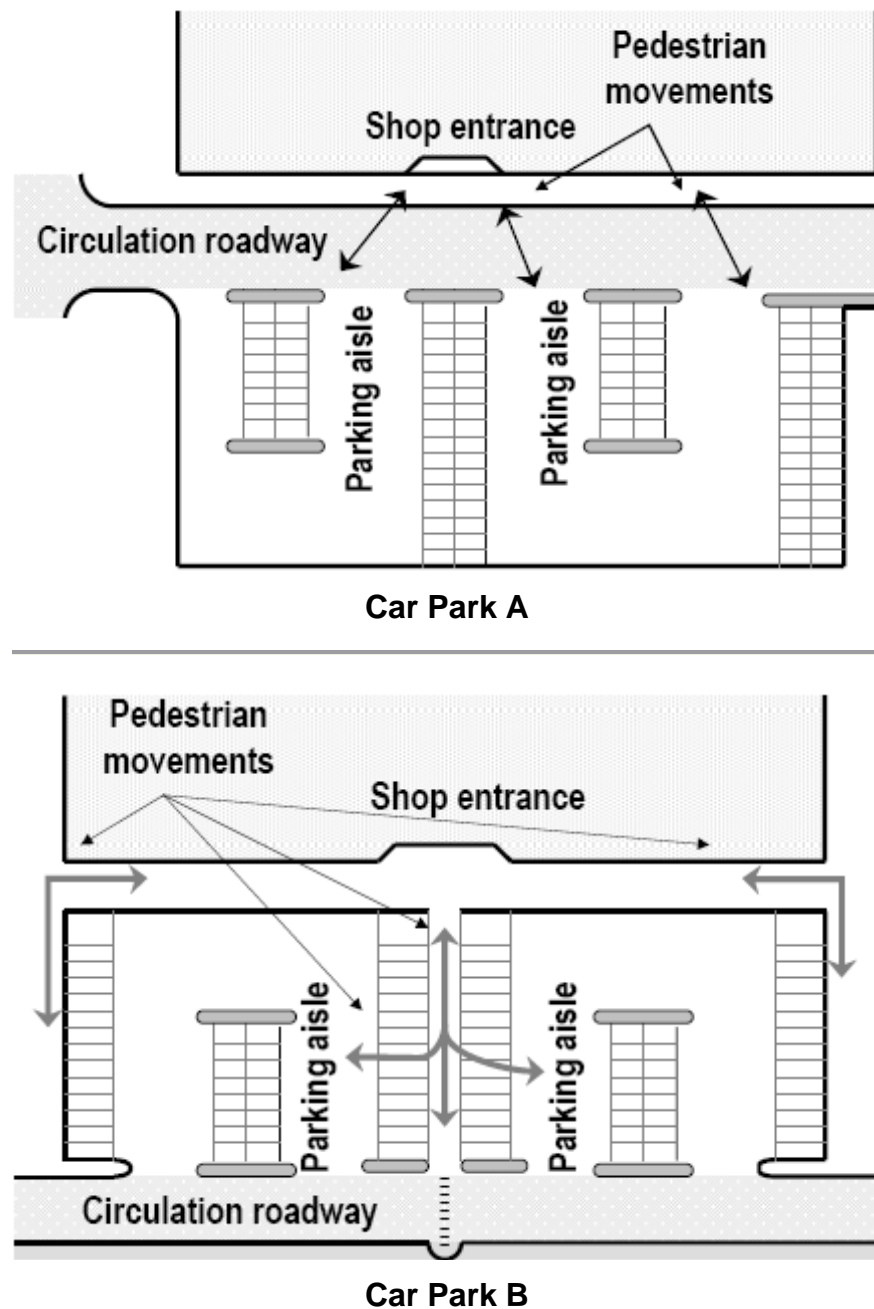
In a submission to the Inquiry, Mr Trevor Bergman, an individual, suggested that larger sized parking spaces and aisles provide increased sightlines for vehicles moving in and around them and also provide greater visibility of vacant bays.⁶³ Parking aisles are safer for pedestrians if they run parallel to the desired pedestrian route, such as towards building entrances, so that pedestrians are walking along aisles rather than across them.⁶⁴

Best practice design of car parks involves wide aisles for pedestrians and vehicles and placing circulation roads away from pedestrian traffic (see Figure 3.1, next page). In Victoria, shopping centre car parks developed in the 1980s have been reported as having poor layout issues.⁶⁵ The most common of these design failures is the placement of vehicle circulation roads immediately at the main pedestrian entrance of the building served by the car park.⁶⁶ This has been a long identified issue, as can be seen by a 1987 article by Dr William Young, 'Parking Principles: Some Thoughts on the Design of Parking Lots', reported in *Australian Road Research*. Dr Young was critical of the design of many large car parks around Melbourne shopping centres, stating that:

It is the practice of placing major parking circulator roads outside the entrance to adjacent land uses. This is an area where there are likely to be major pedestrian flows and short term parking. This practice creates unsafe circumstances, and increases driver frustration and pollution.⁶⁷

This scenario is illustrated in Car Park A in Figure 3.1 below. Locating the circulation road away from the building entrance as in Car Park B, removes the conflict between pedestrian and vehicle traffic.

Figure 3.1 Alternative Car Park Circulation Road Layouts



Source: Figure 6.2 Austroads, 'Guide to Traffic Management Part 11: Parking', *AGTM Set 2009- Austroads Guide to Traffic Management Set*, 2008 p.26.

Unfortunately, badly designed car parks are still being submitted for approval and subsequently built. At a hearing in Sydney, Mr G. Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, provided a recent example of a new shopping centre development, submitted for approval in New South Wales. Opening in December 2009, the main circulation road into and out of the car park was sited directly in front of the building's main entrance. Mr Briscoe-Hough stated that:

... you could not plan a disaster like this, but it is too common, In any number of shopping centres, as you know from your own experiences, you drive in and the first thing you do is drive past the main door ...⁶⁸

Mr Briscoe-Hough concluded that it is poor pedestrian planning and poor planning for the drivers.⁶⁹

Good guidance on this matter is set out in the Austroads Guides and the Committee considers that reference to these guides should be incorporated into the Victorian Planning Provisions as part of their design guidelines.⁷⁰ This should lend weight for consideration of layout issues by municipalities when assessing new car park developments.

Separation of Loading Areas

The Committee considers areas used for the loading and parking of trucks and other large vehicles as unsafe for pedestrians and they should be separated from car parks.

Following a recent pedestrian fatality in a loading bay, WorkSafe was considering producing safety guidelines for loading bays.⁷¹ The Committee would encourage WorkSafe to produce the guidelines and, when available, these guidelines should be reviewed by the Department of Planning and Community Development, who should, if appropriate, incorporate prescriptive guidelines in the Victorian Planning Provisions and lobby Standards Australia to strengthen the Standard in terms of pedestrian safety.

Separation of Pedestrians from Vehicles

Separating pedestrians from vehicle traffic was consistently raised in many of the submissions, including those of WorkSafe, VicRoads, the Transport Accident Commission and Monash University Accident Research Centre (MUARC).⁷² Dr Bruce Corben, Senior Research Fellow, MUARC, at a public hearing in Melbourne, 27 July 2009, described the ideal degree of physical separation. Dr Corben stated that:

... once pedestrians exit their vehicle or come to their vehicle they can do it via a separate path. In some cases it might be possible to provide vertical separation which means some elevated walkways. In some of the big car parks in the big shopping centres, for example, that people can get to and from with very minimal need to walk on the roadways.⁷³

Separation is particularly required for areas of high pedestrian activity, such as at the entrance of shops or around ticket payment machines. This is especially important when vehicle traffic is travelling directly towards pedestrian activity, requiring the vehicle to turn or stop before entering that area. Several engineering measures, that the Committee considers appropriate, are set out below.

Pedestrian Bollards and Other Physical Measures

The installation of 'isolation devices' to separate pedestrians from vehicles can include the use of kerbs, wheel stops, vehicle guard rails and vertical bollards. Bollards are being increasingly used in areas of high risk, such as a convenience store with a high turn over of parking along its front entrance, a walk-up parking pay station within a car park, or the entrance to escalators into a shopping centre.⁷⁴

Wheel stops, low concrete barriers to prevent vehicle tyres moving, are used to prevent the ends of cars encroaching onto pedestrian paths, however, they are discouraged by the Institute of Transportation Engineers and some municipalities such as Brimbank, due to the tripping hazard they present to pedestrians.⁷⁵ It is suggested that extended raised walkways and kerbs protect pedestrians better without creating a hazard.⁷⁶

Dedicated Pedestrian Paths

Evidence suggests that pedestrian footpaths are a highly effective countermeasure in protecting pedestrians within the road network,⁷⁷ suggesting that their use within and around car parks is prudent.

The Committee considers that, in larger car parks, pedestrians should be provided with a dedicated entry from the street footpath into the car park, so that they do not have to share an entrance with vehicles, particularly in car parks with an increased number of vulnerable patrons, such as childcare centres or hospital car parks.

British car park designers have noted the trend to provide painted paths, separated only by painted lines running along the side of parking aisles, which may be potentially dangerous, as they encourage pedestrians to walk close to the back of parked cars. This also removes pedestrians from the centre of the aisle where they are more visible.⁷⁸

The Committee heard that pedestrians tend to take individual routes from their vehicle to their point of interest, therefore it would be difficult to provide 'direct' pathways to match the many options.⁷⁹

In its submission the Inquiry, ALDI Stores cited this as a reason for not providing formalised pedestrian walkways through their car parks as a matter of course.⁸⁰ The Committee acknowledges this issue, but still considers that where there is a natural central path leading directly to an entrance, it should be given the protection and visibility of a formalised dedicated pedestrian pathway.

Road Safe Westgate Community, in their submission to the Inquiry, suggested that for multi-level car parks, there should be separate pedestrian ramps or stairs and lifts provided so pedestrians are not forced to use vehicle ramps to move between levels.⁸¹

Shared Zones

Whilst the Committee approves of the installation of pedestrian crossings across circulation roads in larger car parks, many other car parks do not have sufficient and safe room to install pedestrian crossings with adequate sightlines, signage and markings. Mr Harold Scruby, Chairman of the Pedestrian Council of Australia, at a hearing in Sydney, 5 August 2009, argued that rather than trying to provide safe pedestrian crossings in car parks, the whole car park area should be treated as one large crossing area. Mr Scruby stated that:

The problem I see is these ridiculous little pedestrian crossings that emerge between two parked cars which are angle parked. ... but in the car park there is no line of sight and people are coming out between them with strollers. That is absurd. We do not need pedestrian crossings in car parks, we need full time pedestrian crossings in every section of the car park because that is where people are walking, they are on the road, they are in the face of the motor vehicle all the time. It is quite an unusual situation.⁸²

In the case of car park areas where physical separation is either impractical or impossible, the Committee considers that making the whole car park a pedestrian priority area, similar to a crossing, would be provided for by designating the car park a 'Shared Zone'.

A Shared Zone is defined under the Victorian *Road Safety Road Rules 2009*, as a road or road-related area that is to be shared by both vehicles and pedestrians, with pedestrians having priority or right of way at all times. This is consistent with the Australian Road Rules. In Victoria, Shared Zones typically have a 10 km/h speed limit.⁸³

Mr Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a hearing, noted that car parks were already effectively 'shared zones' with the balance of favour currently skewed towards cars instead of pedestrians.⁸⁴ He stated that:

Most sensible drivers effectively treat them as shared zones where the pedestrian would get priority. However, that is not necessarily the legal position or the way car parks are sign posted.⁸⁵

Mr Briscoe-Hough suggested that the public needed to be reminded of the definition of Shared Zones, concluding that:

I think one of the things that we can all do in terms of being road safety professionals is to enforce in the community's mind what a 10 km shared zone is all about. It is not just that pedestrians and cars are using it, it is to say that pedestrians have got right of way and I think most people are not aware of that.⁸⁶

Dr Soames Job, Director, New South Wales Centre for Road Safety, Roads and Traffic Authority (RTA), at a hearing in Sydney, 5 August 2009, supported the concept of car parks as Shared Zones, considering them appropriate. He stated that:

... I think the principle of emphasising the Shared Zone and emphasising that pedestrians have right of way and have a very low speed limit is one of the key values and one of the key ways to address the problem.⁸⁷

Many of the submissions received by the Committee supported making car parks Shared Zones, including municipalities, road safety groups and a local community group, the Peninsula Advisory Committee for Elders.⁸⁸ The RACV in its submission to the Inquiry commented that:

A car park is clearly a shared area, and the sharing of the area by pedestrians and vehicles should be appropriate in many cases.⁸⁹

The City of Yarra in its submission to the Inquiry stated:

... car parks operating as 'shared zones' also have safety merit.⁹⁰

A report prepared for the South Australian Department of Transport in 1988, by Mr Barry Hagan, *Standards for Traffic Control Devices in Off-Street Areas*, suggested making car parks Shared Zones

rather than using specifically located pedestrian crossing facilities and that this would be likely to increase observance by all patrons and be of greater benefit in improving pedestrian safety.⁹¹

At a public hearing in Melbourne, 27 July 2009, Mr George Mavroyeni, then Executive Director Road Safety and Network Access, VicRoads, commented that 'a lot' of car parks in Victoria were already designated as Shared Zones.⁹² Mr Mavroyeni explained that VicRoads guidelines on speed management had references to Shared Zones and they recommended a 10 km/h limit as a guideline not a mandatory requirement.⁹³ Mr David Shelton, then Director Road User Safety, VicRoads, at the same hearing stated that, rather than rely solely on a posted speed limit, the use of physical constraints to control speed in car parks was recommended.⁹⁴

Dr Job, Director, New South Wales Centre for Road Safety, RTA concurred with this view that Shared Zones required appropriate engineering design where possible. Dr Job stated that:

... for a Shared Zone to work effectively you need to engineer it so it's got what we call a self enforcing speed limit.

That means you need speed humps and chicanes and whatever it is to get people to look at that road and say well, that's about a 10 K road, I should be driving at 10 K, and in fact I'll damage my car if I drive much faster.⁹⁵

Dr Job also pointed out that in some cases, a default speed limit of 10 km/h could be too high and that they had some Shared Zones that displayed 5 km/h limits due to poor visibility.⁹⁶

The Committee considers that treating car parks as Shared Zones should be encouraged by the Department of Planning and Community Development through its Victorian Planning Provisions and that such treatment of car parks should be incorporated into the Australian Standards and Austroads Guides. The Committee considers that it should be standard for all small to medium sized car parks to be treated as Shared Zones. The Committee considers that developers and municipalities should be able to declare their car parks as Shared Zones following approval for the correct signage from VicRoads.

However, Mr Harold Scruby, Chairman, Pedestrian Council of Australia, at a hearing in Sydney, 5 August 2009, raised concerns regarding the use of the term Shared Zone. Mr Scruby discussed a national telephone survey of the public's understanding of the term and on who has the right of way.⁹⁷

Mr Scruby stated that 44 per cent of the people surveyed were aware of the term Shared Zone, though those aged 65 plus had a

lower awareness. He further stated that a greater concern was that only 37 per cent of those who were aware of the term correctly interpreted it as meaning pedestrians have right of way.⁹⁸

Mr Scruby concluded that:

The intent and wording of the rule is excellent. It's simply that the word 'shared', by the way these are our views, is confusing, misleading and widely misunderstood and that is potentially very dangerous.⁹⁹

However, Mr Scruby but did not identify a preferred term.¹⁰⁰

The Committee also notes that the 2009 New South Wales Parliament Staysafe Committee, *Report on Pedestrian Safety*, recommended that Shared Zones in that State be renamed Pedestrian Zones.¹⁰¹

However the Committee disagrees with these concerns as Shared Zones have been operating without controversy in Victoria under the name Shared Zone and the term is also covered in current State and National road legislation as described earlier. Thus, using the term Shared Zone would not require any legislative changes. The Committee also considers that an appropriate publicity and education campaign would improve the public's understanding of the term Shared Zones and their consequent behaviour.

Controlling Speed

The Committee considers that for circulation roads in larger car parks, Shared Zones may not be appropriate.

Speed limits in car parks vary across the State. In Victoria, there is no current blanket speed limit set for car parks.¹⁰² Some car parks are regulated as Shared Zones and as such, have a set speed limit of 10 km/h, whilst the Committee observed other car parks signposted by their operators at various limits ranging from 5 km/h through to 40 km/h.

A series of studies in Melbourne in the late 1980s across a variety of regional and local shopping centre car parks studied the actual vehicle speeds observed within car parks. Average speeds ranging between 14 and 30 km/h were detected, however the Committee notes with concern that speeds of up to 60 km/h were also found.¹⁰³

The Committee considered the proposal from several municipalities and safety organisations that setting a standard state-wide blanket speed limit would provide a clear and consistent message to drivers about a safe speed within car parks. At a public hearing in

Melbourne, 27 July 2009, Mr David Healy, then Senior Manager Road Safety, Transport Accident Commission, stated that:

It's arguable that it should be very clear in those car parks that speeds in excess of 10 to 15 kilometres are inappropriate in such environments.¹⁰⁴

In their submission to the Inquiry, the City of Stonnington suggested that drivers should be encouraged to drive at 5 km/h as it matched the walking speed of pedestrians in car parks.¹⁰⁵ The submissions from RoadSafe Westgate Community Road Safety Council, Moreland City Council and the City of Boroondara, also suggested that setting a standard 10km/h speed limit in car parks would improve pedestrian safety.¹⁰⁶ The City of Monash supports 30 km/h speed limits as suggested by the *VicRoads Traffic Engineering Manual*.¹⁰⁷

At a public hearing in Melbourne, 14 September 2009, Mr Jim Hondrakis, Team Leader, Transport Management, City of Boroondara, explained further that:

... we think some kind of speed limit – regulatory or advisory – would be of benefit in terms of reinforcing the need for caution and a reduced speed in an environment wherein, in all honesty, a lot is going on – lots of turning movements, pedestrians, young kids, parents with prams, and people in wheelchairs. We think that is a good thing.¹⁰⁸

However, the Committee notes that other than municipalities, there have been no calls from car park operators for change in this area. The Shopping Centre Council of Australia and shopping centre developers and owners, Colonial First State, and QIC Limited, in their submissions to the Inquiry called for car parks to be treated individually, on a case by case basis.¹⁰⁹

Setting a Speed Limit for Car Parks

The Committee found it difficult to determine one appropriate blanket speed limit due to the variation in sizes and layout of car parks and lack of research. Whilst in terms of serious injury prevention, any speed below 30 km/h would be preferred, in many car park environments, even 30 km/h could be considered unsafe, such as in an area where pedestrians are walking along a parking aisle or on a ramp.

As discussed, the Committee considers the Shared Zone speed limit of 10km/h for car parks to be the most appropriate and realistic to use for small to medium sized car parks and the aisle zones of larger car parks. As noted in Chapter 1, the Committee considers a large car park to be one with over 500 parking spaces.

In some circumstances, even lower limits would be more appropriate, such as 5 km/h for underground car parks with sharp corners. The Committee considers that there should be flexibility for car park owners to use such lower limits when required.

However, the Committee acknowledges that for larger car parks with major circulation roads without significant pedestrian traffic, speeds of up to 30 km/h may be appropriate on the circulation roads of larger regional shopping centres, airports and university campuses. This view was supported by Dr Bruce Corben, Senior Research Fellow at the Monash University Accident Research Centre (MUARC). At a public hearing in Melbourne, 27 July 2009, Dr Corben stated that:

It depends on the nature and scale of the car park but some of the larger car parks – and I would even look at Monash University ... there are huge expanses of car parking there and a ring road that circulates around and allows vehicles to access car parks around a circuit. Speeds of maybe 30 km/h on those roads, the likes of Chadstone or some of the regional shopping centres are reasonable because you do not have a high mix of pedestrians with vehicles.¹¹⁰

The Committee also notes that there is a tendency for drivers to drive to the speed limit, not the prevailing conditions, an issue raised by Victoria Police. Superintendent Kevin Casey, Manager, Road Safety Strategic Support Division, Victoria Police, at a hearing in Melbourne, 27 July 2009, noted that most drivers will drive to the threshold of the posted sign limit, no matter what the actual driving conditions were. Visibility and stopping conditions could be affected by rain, poor light or smoke and people would still drive to the limit.¹¹¹ Due to this tendency, the Committee again considers that a Shared Zone with a speed limit of 10 km/h is an appropriate starting point for a safer speed limit in car parks.

Controlling Speed in Car Parks

The Committee considers that only using speed limit signs to control speed in car parks is not optimal for several reasons. While regulatory signs must be obeyed in car parks, the Committee was informed that any enforcement of such limits would be unlikely. Victoria Police reported that they could not enforce speed limits within car parks based on technical and procedural issues. At the public hearing Superintendent Casey explained that their own policy requires the vehicle to travel at least 100 metres beyond a speed sign before any enforcement can be undertaken and many car parks did not have that space.¹¹²

Mr Harold Scruby, Chairman of the Pedestrian Council of Australia, reported at the Sydney hearing that similar issues exist in New South Wales, noting that:

Police advise us that their hand held Lidar [laser] speed guns are also incapable of enforcing the speed limit under 20kms and also that most car parks do not have the adequate sightlines for reliable readings ...¹¹³

The Committee notes that the enforcement of speed limits on the circulation roads of larger car parks would not be affected by these issues.

Senior Sergeant John Gibson, Victoria Police, at the Melbourne hearing, further explained that:

... vehicle safety or car park engineering would probably have a greater impact on these issues than what any sort of innovative enforcement technology would have...¹¹⁴

The Committee found this was a common theme amongst many of the submissions to the Inquiry – that engineering solutions would be preferable than speed limit signs in car parks to control speed. Mr David Shelton, then Director Road User Safety, VicRoads at a Melbourne hearing, 27 July 2009, stated that current guidelines:

... would be encouraging as little reliance as possible on the speed limit itself. It is really about creating the environment that you feel you must travel slowly and not rely on the speed sign.¹¹⁵

Mr Ian McLauchlan, Transport and Parking Manager, City of Stonnington, at a Melbourne hearing, 14 September 2009, agreed with this view that they would rather the physical car park design addressed speed issues rather than a speed limit. Mr McLauchlan stated that:

... I would like to see the physical design encourage that rather than requiring signage that needs to be enforced. I suppose if you need the signage and you need enforcement, then you would probably argue that the design of the car park is not achieving its job. If you speak to the police, I am sure they would say that it is not a prime area that they would concentrate their enforcement resources on – enforcing speed limits in car parks – when it could be fixed with appropriate design.¹¹⁶

The Committee considers that controlling speed in car parks should be undertaken by physical control devices that slow and calm vehicle speeds. The Committee notes that there are several traffic calming treatments that can be applied to car parks to encourage slower vehicle speeds. These include speed humps, raised crossing points and paths, rumble strips, curved and funnelled driveways,

small turning radii on roads, and landscaping. These design elements are aimed at providing cues to drivers to slow down and that they no longer have priority for the right of way over pedestrians.¹¹⁷

The Committee acknowledges a preference for controlling speed in a car park using design and engineering treatments of the physical environment. However, there is still a case for sign posting speed limits, particularly in existing car parks, designed under earlier standards, which lack suitable physical controls. The provision of 10 km/h Shared Zone signage may at least be a partial quick fix for reducing pedestrian risk in older small and medium sized car parks. For larger car parks, allowing higher speeds of up to 30 km/h on the circulation roads would be appropriate.

Making these low speed limits explicit through signage, removes any excuse for drivers that the speed limits in a car park are the same as those on the immediate adjacent road network, usually posted at a minimum of 50 or 60 km/h. The Committee acknowledges that whilst these limits may be difficult to enforce, it nevertheless considers that most drivers would be likely to comply. Such lower limits would therefore contribute to creating a safer environment within car parks.

The Committee considers that the Department of Planning and Community Development should reference the importance of physical controls on speed in the Victorian Planning Provisions, along with providing appropriate measures. The Department should also lobby to have the Australian Standards improved in relation to speed in car parks. The Committee considers that car park speeds, like Shared Zones, should generally be recommended at 10km/h or lower as local conditions within the car park permit. Likewise, slightly higher limits would be appropriate on circulation roads without significant pedestrian presence.

Consistency in Signage and Line Markings

Both Hobsons Bay City Council and the RoadSafe Westgate Community Road Safety Council, in their submissions to the Inquiry, suggested making it a statutory requirement for car parks open to the public to comply with the relevant Australian Standards for signage and line marking.¹¹⁸ The RACV, in its submission, recommended that any Major Traffic Control Item installed in car parks, such as pedestrian crossings, signs and traffic signals, actually meet VicRoads requirements.¹¹⁹

Mr I. McLauchlan, Transport and Parking Manager, City of Stonnington, at the public hearing, described to the Committee how the Council saw a need for greater VicRoads involvement, especially in terms of ensuring a consistent road environment for both drivers and pedestrians. Mr McLauchlan provided the recent

example of their approval of the Chadstone Shopping Centre re-development in which Council had:

... made it a requirement – a planning permit condition – that any major traffic control item needed the approval of VicRoads. ... The motorist coming off the street does not see the difference between a residential street to the side coming into a major circulation road within the car park.

A pedestrian crossing in the car park should appear the same as a pedestrian crossing on the road, to have consistency in our transport system. ... we wanted to have a consistent approach so that when the motorist is trying to circulate for a parking space, a roundabout would appear the same as it would on the road. The signage would all be exactly the same, approval would be the same. For pedestrian crossings the sightlines would be correct, the signage would be as they would normally expect on the road system¹²⁰

The Committee notes that currently, car park owners require a memorandum of consent from VicRoads prior to installing any official traffic control device including signs and road markings.¹²¹ The Committee considers it a necessary element to pedestrian safety in car parks to provide a consistent environment for both pedestrians and drivers. Therefore, car park developers should be encouraged to gain the approval by VicRoads for such signage. The Committee considers that VicRoads should work with municipalities and developers to ensure this are carried out in a streamlined manner. This could also be reinforced by the inclusion of signage and line marking principles within the Victorian Planning Provisions and guidelines.

Wayfinding

A 2001 architectural guide for designing car parks, *Parking Structures: Planning, Design, Construction, Maintenance and Repair*, by Anthony Chrest, Mary Smith, Sam Bhuyan, Mohammad Iqbal and Donald Monahan describe wayfinding as:

... the ability to understand where you are and where you want to go in a building and then find the path of travel to get there. ... Wayfinding design involves the total planning of the functional design to enhance this ability. It is much more than signage or graphics. In fact, if signage is critical to wayfinding, a parking facility, in particular, is in trouble.¹²²

The Committee acknowledges the importance of wayfinding in ensuring both motorists and pedestrians move within car parks in a safe manner, going directly to their points of interest without either, driving about looking for a car park, or wandering around trying to locate the exit or their car.

At a site visit in November 2009, the Committee observed an example of how wayfinding can improve pedestrian safety in the form of the car parking guidance system in place at Westfield Doncaster car park. Electronic signs and lighting, alert drivers to the availability of spare parking spots within the car park. Mr Peter Huddle, National Car Park Business Manager, Westfield Group, at a public hearing in Sydney, 5 August 2009, stated that such a guidance system:

... is really trying to improve safety in the car parks. It's also trying to improve access into car parking spaces.

So instead of people continually circulating through car parks to try and find available spaces, the Park Assist Technology actually is a series of digital signs that guide people to the nearest vacant car park.¹²³

Lighting

Providing adequate lighting to public roadways decreases pedestrian crashes at night time.¹²⁴

Whilst there are Australian Standards for lighting in car parks there is an issue for both pedestrians, and particularly drivers, having difficulty in adjusting their vision from darker to lighter environments and vice versa. For enclosed car parks, especially those located underground, there is a need to provide graduated lighting at entrances and exits. This was raised by the NRMA at a hearing in Sydney, August 2009 and further elaborated on by Dr Corben, Senior Research Fellow at MUARC, at a public hearing in Melbourne, July 2009.¹²⁵ Dr Corben explained that:

... the visibility within car parks, for indoor car parks, moving from bright light into artificial lighting can also be a bit of a challenge. Some people take longer for their eyes to adjust to the changing light from the glare, either going into or coming out of the glazed surroundings. I know that in some of the industrial settings that is a problem where large vehicles are moving into buildings and out of buildings and efforts are made particularly to try and have some graduated lighting as well to lessen the effect of quite strong changes in light intensity.¹²⁶

The Committee views that consideration of adequate, and appropriate, lighting should be included in the planning for, or evaluation of, any lighting provision for car parks.

Summary of Best Practice Measures

Having reviewed in detail the best practice approaches for planning new car parks, the Committee considers that the Department of

Planning and Community Development through the Victorian Planning Provisions could do considerably more in promoting these practices to improve pedestrian safety in car parks. By directly referencing pedestrian safety and providing measures to deal with specific pedestrian safety concerns, the Victorian Planning Provisions can provide positive guidance to municipalities in the development of their own local parking provisions and considerations of new planning applications.

The Department should ensure that separation of loading bays from car parks and pedestrians from vehicle paths are included in the Provisions. In the case where pedestrians are unable to be physically separated from vehicles, the Provisions should recommend those car parks be treated as Shared Zones and that physical engineering controls should limit the driver from travelling faster than 10 km/h. The Provisions should also directly encourage appropriate sightlines, layouts and lighting, along with consistent signage and line marking across all car parks.

In addition to ensuring the Victorian Planning Provisions reflect the above practices, the Committee also considers that the Department of Planning and Community Development is the best agency to lobby for improvements in the Australian Standards and other guides used to inform the development and approval of new car parks.

The Committee notes that the Department of Planning and Community Development should collaborate with WorkSafe Victoria, whose role in monitoring the safe operation of existing car parks will be discussed later in this Chapter, in pushing for improvements in these standards and guidelines.

The Department should also work with VicRoads to encourage municipalities' and car park operators' use of consistent signage and line marking in car parks. VicRoads and WorkSafe Victoria should also promote the rules associated with Shared Zones in car parks to the public.

Recommendations:

- 8. That the Department of Planning and Community Development incorporate new guidelines and recommendations in the Victorian Planning Provisions to promote the following measures in the design of new or upgraded car parks:**
 - a) Safe design layouts including appropriate sightlines, parking spaces and safe integration with the surrounding road and pedestrian path network;**

- b) Separation of loading bays from car parking and pedestrian areas;
 - c) Separation of pedestrians and vehicles where possible, especially at entrances and exits with bollards and other devices;
 - d) Car parks to be designated Shared Zones where appropriate;
 - e) Controlling speed through engineering design;
 - f) Signage and surface markings consistent with the broader road network and subject to VicRoads consent, and
 - g) Providing adequate lighting.
9. That VicRoads together with WorkSafe Victoria run a publicity campaign on Shared Zones in car parks.
10. That the Department of Planning and Community Development review the upcoming guidance on loading bay areas from WorkSafe Victoria and if required, lobby for increased emphasis on the separation of car parking facilities from loading areas in the Australian Standard, *Parking Facilities – Part 2: Off-Street Commercial Vehicle Facilities*.

Highlighting Pedestrian Safety in the Approval and Operation of Car Parks

The Committee notes that development is a complex process. Car parks are usually just one component of a larger building development. As such, the Committee considers that pedestrian safety may be overlooked or at least not given adequate emphasis during planning. The Committee explored several ideas to address this, along with noting that once built, pedestrian safety also needs to be considered in the day-to-day operation of car parks.

A Checklist for Safe Design of Car Parks

The Committee heard evidence from several organisations that suggested providing a simplified summary of the current best practice for pedestrian safety in car parks. Such a checklist could then be used as a prompt in both designing a new car park and for the consideration of planning applications. A Checklist for Safe Design could draw together the most important safety features to consider and reference the most appropriate standards and guides.

In its submission to the Inquiry, the City of Boroondara, suggests that:

... the preparation of a document (in the form of a Code of Practice or Ethics), with respect to the design and construction of new car parks or modification to existing, would assist with incorporating consistent design features (such as line marking and parking bay locations) within car parking facilities.¹²⁷

Mr Jim Hondrakis, Team Leader Transport Management, City of Boroondara at a Melbourne hearing, 14 September 2009, explained that:

So what we are talking about here is coming up with a consistent sort of design document rather than having the three or four standards that effectively interplay at this point in time. I think that would be good. And also it highlights best practice. This is what we should be looking at.¹²⁸

Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a hearing in Sydney, 5 August 2009, summed up the need for a straightforward document that could guide developers and municipalities in producing best practice car parks. Mr Briscoe-Hough stated that the current guidelines are too technical and that:

What we probably need is a more general guideline which is 'Ten things you should know about a car park'. It would be a focus for developers, for councils, for whoever is in that consent stage to say ten things you should consider when you're building a car park. That kind of way we get just the one pager and you know, you can reference it back to the technical documents and back to some more general reading.¹²⁹

Mr Briscoe-Hough further stated that the State government should be responsible for providing such a Checklist:

I think it can come from the State level in terms of providing a guideline for local Councils and then let them adopt that. It gives them something to work from and also too it opens it up, as a State Government document, it also means that the development community, the local people in the street, everyone knows where it is coming from and that there is a good chance of it being applied equally over the whole process, whether it is in one municipality or another.¹³⁰

At a public hearing in Melbourne, 27 July 2009, Mr Owen Harvey-Beavis, Manager, Economic Data and Policy Development, Municipal Association of Victoria (MAV), indicated the MAV would be happy to support, promote and assist the dissemination of such a Checklist.¹³¹

The Committee considers that producing a Checklist for Safe Design would result in a greater level of consistency across all car

parks. The Checklist should place an emphasis on considering pedestrian and vehicle safety as one of the major factors in the design, approval and operation of off-street car parking facilities.

Elements that the Committee considers should be included in a Checklist for Safe Design would be:

- Safe design layouts including safe integration with the surrounding road and pedestrian path network.
- Promotion of Shared Zone engineering and signage treatments.
- Control of speed and vehicle movements through engineering design.
- Separation of pedestrians and vehicles where possible, especially at entrances and exits.
- Separation of commercial loading facilities from car parking and pedestrian areas.
- Consistent signage and surface markings with the broader road network.
- Providing adequate lighting.

The Committee considers that the Department of Planning and Community Development is well placed to be the lead agency in producing such a Checklist in collaboration with VicRoads, Victoria Police, the Transport Accident Commission, WorkSafe Victoria, municipalities and other stakeholders.

Such a Checklist could be a driving force in the development, design and construction of new car parks, ensuring that best practice principles are followed in providing a safe pedestrian car park.

Recommendation:

- 11. That the Department of Planning and Community Development liaise with VicRoads, Victoria Police, the Transport Accident Commission, WorkSafe Victoria, the Municipal Association of Victoria, municipalities and relevant developer bodies, to produce a Checklist for Safe Design for pedestrian safe car parks. Such a Checklist should represent best practice in the safe management of pedestrians and set out the key basic principles for designing a safe car park.**

Audits for Car Park Planning Applications

The Committee considers that the municipal planning approval process can be an opportunity to encourage higher standards of pedestrian safety in car parks. However, currently the planning approval process can involve considerable negotiation by developers and municipalities. Mr Ian McLauchlan, Transport and Parking Manager, City of Stonnington, at a Melbourne hearing, 14 September 2009, stated that:

You have a limited amount of space certainly in a private building; it is constantly a balance between trying to get the most out of the space in terms of parking provision and balancing that with the need to design for pedestrian safety, vehicle safety and so on, and that is really the nub of what you are looking at in terms of car park design.¹³²

Mr McLauchlan also stated that like Victoria's road safety strategy, *Arrive Alive*, greater effort should go into reviewing the design of a car park from a Safe Systems approach:

In terms of improving safety, one of the first things would be the review of the current planning scheme parking provisions. We have a road safety policy which adopts a vision-zero approach for any sort of traffic management works on the road system or any major road construction. We always seek an independent road safety audit of the design. Perhaps one way forward might be to do that for proposals for larger [car park] sites. It is not applicable for many sites that we come across, but perhaps for the larger sites where you have high numbers of vehicles and high pedestrian activity. It may be an appropriate way to go. There are expert auditors out there who have VicRoads accreditation to do that sort of work.¹³³

The Transport Accident Commission, in its submission to the Inquiry, suggested specialist car park design and engineering reports focussed on safety, as part of municipal approval process.¹³⁴ From a developer's perspective, shopping centre developer QIC Limited, in its submission to the Inquiry, suggested that specialist qualified third party approvers could be engaged to assess car park designs.¹³⁵

An article that appeared in a 1994 edition of *Hazard* magazine, 'Injuries and Vehicle Damage in Off-Street Parking Areas' published by the Victorian Injury Surveillance System and Monash University Accident Research Centre, proposed such a safety audit approach during the design phase for a car park. The report found that:

The use of a 'Safety Audit' during the design process may be a useful tool to detect flaws in the design of a parking system. It may include considerations of obstruction of sight distance by parked vehicles, the impact of parking controls, turnover of parking, etc.¹³⁶

Car park safety audits are currently undertaken at existing car parks on an ad hoc basis, using public safety and risk assessments. Such assessments can help operators of existing car parks prioritise areas in need of improvement. Apart from physical assessments, they can also include an evaluation of perceptions of safety for the car park patrons. A 2005 article 'Car Park Safety Assessment', in the journal, *Road and Transport Research*, by Mr Philip Moore of ARRB, stated the utilisation of a car park and the destination that it serves will be affected by the safety and security provided and the perceptions of safety.¹³⁷

The Committee considers that the use of a safety audit including pedestrian safety, should be conducted on the plans for any new or upgraded car park, and be part of the planning approval process. The audit could be based around the earlier proposed Checklist for Safer Design and focus on the safe movement of pedestrians in and around car parks.

The Department of Planning and Community Development should include such a safety audit as part of the requirement for planning applications for car parks. Municipalities could then make an assessment during the planning applications process that pedestrian safety is being adequately considered and planned for.

Recommendation:

- 12. That the Department of Planning and Community Development require a safety audit incorporating pedestrian safety, to be conducted for all car parking planning applications to municipalities to ensure adequate pedestrian safety.**

Car Park Accreditation Schemes

The Melbourne City Council with Victoria Police, have formed a car park accreditation scheme for existing car parks, known as the Melbourne Car Park Accreditation Scheme. The scheme began in 1999 and aims to raise the standard of safety in car parks and recognise and reward car park managers for best practise and improvements in safety and security. Car parks are given a star rating to reflect their level of safety and security which are then publicised to potential customers.¹³⁸

Whilst the Committee notes that these car park accreditation schemes grew mainly out of concerns for security and theft, many of the accreditation requirements are based on improving pedestrian safety or overlap with those aims, such as ensuring a high standard of lighting, clear sightlines and active monitoring by car park staff.¹³⁹

Ms Colleen Lazenby, Manager Community Safety and Wellbeing, Melbourne City Council, at a hearing in Melbourne, 14 September 2009, described the scheme to the Committee and noted that whilst it was a voluntary scheme, almost without exception, every commercial car park in the city had signed up to the scheme.¹⁴⁰

The Committee was also briefed on a similar scheme, Carpark+, in New Zealand, which was aimed at providing Councils with clear safety guidelines who could then provide them to developers of new car parks to improve safety.¹⁴¹ Participating car parks considered that their involvement in the accreditation scheme provided them with a competitive edge in the market place.¹⁴²

With a prospect of improving the lighting, staff monitoring and presence in car parks, the Committee notes the potential for accreditation schemes to improve the level of pedestrian safety within existing car parks. The Committee considers that such schemes do encourage car park owners to improve their overall safety standards and that these include measures to improve pedestrian safety. As such, the Committee considers that the Melbourne City Council scheme should be expanded into other municipal areas. The Committee would also encourage WorkSafe Victoria to consider supporting the expansion of such schemes like the Melbourne Car Park Accreditation Scheme into car parks around Victoria, working with Victoria Police, other municipalities and car park operators to adopt the model established by the Melbourne City Council.

Recommendation:

- 13. That WorkSafe Victoria investigates the adoption and expansion of the Melbourne Car Park Accreditation Scheme state-wide.**

Car Park Maintenance

Once car parks are operational, regular maintenance of car parks is essential for pedestrian safety. In particular, the Committee considers that car parks should have in place procedures to periodically assess, monitor and respond to maintenance issues within the car park environment, such as blown lights, oil spills, and other broken equipment.

The Royal Automobile Club of Victoria (RACV), in its submission to the Inquiry, recommended that car park operators and owners must adhere to more rigorous maintenance practices of their facilities.¹⁴³ Many of the submissions received from Local Councils included maintenance procedures as part of car park pedestrian safety measures that they undertook for their car parks.¹⁴⁴ Mr Jim Hondrakis, Team Leader, Transport Management, City of Boroondara, at a Melbourne hearing, 14 September 2009, explained their practices including that:

... every year we do a risk audit of all our car parks and if there are any specific issues requiring immediate attention, they are addressed within a very short time frame. We also do a condition rating of all our car parks. Twenty per cent are done each year. They tend to focus on the bigger scale sorts of improvements – it could be resheeting, it could be redoing all the lighting, all the landscaping, all the footpaths, all the kerbs and channels. So we have an ongoing program to upgrade our car parks. When we do upgrade them we do not generally replace like for like. There are a lot of car parks that are fairly old and the standards were very different 20 years ago, so it is an opportunity to bring them up to the current standards. We look at that as well.¹⁴⁵

The Committee received a submission from Mr D Ross Mentiplay, an individual, in relation to the Holmesglen railway station car park and his campaign, since 2006, to improve the safety of the station's car park and surrounding areas. It is clear from the submission that there is often some confusion over responsibilities for maintenance and traffic control of such car parks.¹⁴⁶ The Committee considers that periodic inspections by the operators are important in keeping car parks safe.

Establishing Responsibility for Safety in Car Parks

The Committee found that currently no one government agency has a lead role in pedestrian car park safety. The Committee considers that car park pedestrian crashes can be better monitored and that is more likely to occur if there is an authority with responsibility for pedestrian safety within car parks.

The Committee considers that WorkSafe Victoria already has the current legislative framework that allows it to effectively regulate car parks, as part of its broader responsibility towards employee and public safety. WorkSafe Victoria has the capacity to enforce regulations for all workplaces on both private and public property, including car parks, and with public and private organisations.¹⁴⁷

On its website, WorkSafe states it collaborates with employers, emergency services and government agencies to deliver public safety programs. WorkSafe's focus on public safety includes:

Public Safety Prevention Programs targeting emerging issues or areas of public concern, generally in response to incidents or identified areas of public risk

...

WorkSafe focuses on developing and delivering public safety programs targeting:

- highest public safety risk activities (e.g. high potential for injuring members of the public),
- issues that affect more vulnerable members of the community (e.g. children or the elderly), and
- community requests and expectations to act (e.g. in response to coronial recommendation or strategic government direction).¹⁴⁸

Under the *Occupational Health and Safety Act 2004* there are clear duties of care that can be regulated and enforced by WorkSafe Victoria over all workplaces including car parks. Section 2 of the Act, outlines the objects of the Act, including:

- a) to secure the health, safety and welfare of employees and other persons at work; and
- b) to eliminate, at the source, risks to the health, safety or welfare of employees and other persons at work; and
- c) to ensure that the health and safety of members of the public is not placed at risk by the conduct of undertakings by employers and self-employed persons ...¹⁴⁹

Section 4, lists as one of the principles of health and safety protection as:

- (1) The importance of health and safety requires that employees, other persons at work and members of the public be given the highest level of protection against risks to their health and safety that is reasonably practicable in the circumstances.¹⁵⁰

WorkSafe Victoria, in its submission to the Inquiry, confirmed that it considered car parks under its scope of responsibilities. Its submission stated that:

... WorkSafe administers the *Occupational Health and Safety Act 2004* ... The general duties of care under the Act require employers, persons who have the management or control of premises and designers to ensure the safety of employees and the general public in Victorian workplaces. The general duties

apply to car parks in Victoria and cover the work carried out in car parks, car park design and the implementation of appropriate risk control measures in car parks.¹⁵¹

Data from the Victorian Injury Surveillance Unit (VISU) based at the Monash Accident Research Centre (MUARC) indicated that 21 per cent of transport-related injuries that occurred within car parks (including motorists, bicyclists and pedestrians) were to employees at work in that location.¹⁵²

The Committee notes that in addition to the primary duty of care towards employees, there is also a general duty of care towards members of the public, including visitors and customers. This is stated by WorkSafe Victoria as a duty towards public safety and is set out under Section 23 of the Act as:

- (1) An employer must ensure, so far as is reasonably practicable, that persons other than employees of the employer are not exposed to risks to their health or safety arising from the conduct of the undertaking of the employer.¹⁵³

The Committee notes that WorkSafe also state on their website, under a section on public safety, that:

WorkSafe ensures that Victorian employers protect the health and safety of members of the public as well as anyone else who could be affected by their businesses.¹⁵⁴

This includes customers, suppliers, visitors and volunteers, in addition to all employees and applies to car park owners and operators as part of their duty. The duty is described under Section 26 of the Act as:

- (1) A person who (whether as an owner or otherwise) has, to any extent, the management or control of a workplace must ensure so far as is reasonably practicable that the workplace and the means of entering and leaving it are safe and without risks to health.¹⁵⁵

Based on this, the Committee concludes that WorkSafe should include the safety of pedestrians in car parks.

Mr Ross Pilkington, Director Manufacturing, Logistics and Agriculture, WorkSafe Victoria, reported at a hearing in Melbourne, 14 September 2009, that he considered that the owners and operators of car parks were required to provide a safe place of work for employees and patrons of the site, along with a systematic

approach to eliminate or reduce any hazards.¹⁵⁶ When asked by the Committee if he thought WorkSafe should play a bigger role in preventing pedestrian crashes occurring in car parks, for all pedestrians including members of the public, Mr Pilkington, stated that:

It is like everything in life, we have a limited resource. If it meets the criteria for incident notification we would go and work in that regard, do an investigation, make a determination on control measures and work through that process. But if you look at the overall statistics to see if there was a case for us working there at any great level then probably not.

When you consider that last year we had a record low of injuries in Victoria – 27 000 injuries in Victoria ..., and the vast majority of those were manual handling or musculoskeletal disorders, and of the ones that you look on the other side of it we are probably talking a very, very small percentage related to car parks, although tragically a person died in one of them.¹⁵⁷

Whilst the Committee acknowledges that WorkSafe Victoria has finite resources to regulate and enforce safe workplaces across Victoria, it still considers that even one fatality is too many and some focused effort is due to this area of pedestrian safety.

Car Park Design

WorkSafe have powers to enforce and guide on the safe design of buildings and structures to be used as workplaces, which includes car parks. Section 28 of the Act, notes that:

- (1) A person who designs a building or structure or part of a building or structure who knows, or ought reasonably to know, that the building or structure or the part of the building or structure is to be used as a workplace must ensure, so far as is reasonably practicable, that it is designed to be safe and without risks to the health of persons using it as a workplace for a purpose for which it was designed.¹⁵⁸

This applies to any design commenced after July 2006 and sets out the responsibilities of designers, and those commissioning their work, along with recommendations on taking a risk management approach in the design processes for workplace buildings and structures. For car parks designed prior to July 2006, WorkSafe is still able to enforce improvements to ensure a safe car park where required, but it would have no recourse to the original designers, only the current operators.¹⁵⁹

The Committee notes that WorkSafe has commenced consultations with designers in Victoria and has developed a guide, *Designing Safer Buildings and Structures*, to explain the responsibilities of designers under the Act.¹⁶⁰ The guide states that the existing

legislation and regulatory provisions and standards should be adhered to.¹⁶¹ These would include the Victorian Planning Provisions, Local Government Parking Provisions and Standards described earlier. The Committee notes that the Department of Planning and Community Development is the lead agency in Victoria for planning regulations and as such, the Committee considers that WorkSafe should liaise with the Department of Planning and Community Development to ensure Victoria's planning regulations and the national standards encourage best practice in pedestrian safety.

In addition to these provisions and standards, designers must also follow the *Occupational Health and Safety Act* and approach the design process with an aim to increase safety and minimise risk to those using the facility. This could include conducting a preliminary hazard analysis with the collaboration of the client and then applying a systematic risk management procedure throughout the design process.¹⁶² The Committee considers that safety audits with planning applications discussed earlier would be an integral part of such a safe design process.

WorkSafe provide a current case study on their website which includes the example of a workplace's consideration of car parking and pedestrians in the design of its new premises.¹⁶³

The Committee considers that WorkSafe therefore has an important role in ensuring safe design approaches are adapted in car parks, using the available standards and guidelines plus specific consideration of the safe interaction of people with the car park structure or building.

Car Park Supervision

At a public hearing, Mr Ross Pilkington, Director Manufacturing, Logistics and Agriculture, WorkSafe Victoria, confirmed that car park operators have to be able to monitor their facilities and provide a point of contact for patrons. This could be done completely off-site via intercoms and cameras or by on-site staff. Mr Pilkington stated that:

They have to have a system that allows them to respond to incidents and to provide a safe place of work. ... Our legislation is not prescriptive to say you have to have a person on the site if they can provide a safe system of work within the bounds that are reasonable practicable.

They have to be able to demonstrate to us that they have somebody who can turn out in a reasonable time frame ...¹⁶⁴

Whilst the committee acknowledges there is considerable merit for having car park attendants and other staff on site who take care of the car park and its patrons, car parking facilities that are monitored remotely, such as those viewed by the Committee at the Wilson Parking ParkWatch facility, meet the same standards.¹⁶⁵

The Committee considers that WorkSafe Victoria through its responsibilities to both enforce and proactively work with employers to promote a safer working environment, for both employees and the public, could include reference to pedestrian safety within car parks. The Committee could not currently find any detailed references or guidance to safe car park management within WorkSafe Victoria's literature and at the hearing, Mr Pilkington confirmed that was currently the case.¹⁶⁶

WorkSafe do already investigate and work with car park owners to provide guidance on the safer operation of car parks. For example, WorkSafe issued an Alert in May 2009 to shopping centres and operators of shopping trolley collection vehicles, following a fatality involving a pedestrian being hit by a trailer at a shopping centre.¹⁶⁷

However the Committee notes that the equivalent organisation in the United Kingdom, the Health and Safety Executive has issued a document, 'Workplace Transport Site Safety Information Sheet', covering the assessment of car parks for pedestrian safety, common problems that occur and how to deal with them and associated references.¹⁶⁸ The Committee considers that this type of document could provide a starting point for WorkSafe Victoria to make similar material available to Victorian employers.

Summary of WorkSafe Victoria's Role in Car Parks

The Committee considers that due to WorkSafe Victoria's responsibility for both workers' and the public's safety under the *Occupational Health & Safety Act 2004*, and its expertise in promoting safe environments, WorkSafe Victoria is the most appropriate agency to undertake ultimate responsibility for overseeing car park pedestrian safety.

In maintaining continuity, the Committee considers that WorkSafe Victoria would not only oversee car park operational management, including supervision, but also be able to act in the event of unsafe design or structural faults in car parks.

The Committee notes that under the Safe System approach to road safety in Victoria, several agencies combined to reduce the incidence and impact of road-related trauma. Working in collaboration to improve road safety, the Transport Accident Commission deal with injury insurance claims arising from crashes, the Department of Justice and Victoria Police deal with the implementation of road safety laws and their enforcement and

VicRoads provides policy and traffic engineering advice for ensuring safe travel on the road network along with road crash data for analysis and evaluation.

Similar to this collaborative approach to road safety, the Committee considers that WorkSafe Victoria should collaborate with relevant parties in both the monitoring and prevention of incidents in car parks. Such activity should draw upon the Safe Systems approach as outlined in Chapter 1.

Relevant stakeholders include the Transport Accident Commission and VicRoads from a road and vehicle safety viewpoint, Victoria Police for enforcement, the Department of Planning and Community Development for the formulation of Victoria's planning regulations, and all municipalities, along with car park operators, owners and developers.

The Committee has noted Victoria's ageing population along with overall population growth and considers that with increased numbers of vulnerable pedestrians, increased oversight by WorkSafe Victoria together with its collaborative partners, on pedestrian safety in car parks is warranted.

Recommendations:

- 14. That WorkSafe Victoria act as the lead agency in relation to ensuring increased pedestrian safety in car parks, liaising with relevant partners to create a safe environment in car parks.**
- 15. That WorkSafe Victoria develop a Safe System approach to car parks and pedestrian safety in collaboration with VicRoads, the Transport Accident Commission, Victoria Police, the Department of Planning and Community Development, and all municipalities along with the operators, owners and developers of car parks.**
- 16. That WorkSafe Victoria, through policy guides and other education efforts, continue to encourage and remind the owners and operators of car parks of their responsibilities in providing a safe environment for pedestrians. This would include the safe design of car parks along with efforts to adequately supervise and proactively assess risks in car parks.**

Summary of Findings

- New car park development in Victoria is guided by three main provisions and guides, the Victorian Planning Provisions, municipal parking provisions and the current Australian Standards and related guides.

- The Committee considers that provision for pedestrian safety in car parks should be improved in all three of these above guides, specifically in the Victorian Planning Provisions.
- Best practice in car park design and operations includes the following features in relation to pedestrian safety:
 - sightlines;
 - size and layout of parking spaces and aisles;
 - separation of pedestrians from loading zones;
 - separation of pedestrians from vehicles;
 - Shared Zones;
 - physical control of speed;
 - consistent signage and line marking, and
 - lighting.
- The Committee has recommended a Checklist of Safe Design based on the above features to guide the development and planning application of new car parks.
- Pedestrian safety audits of car park design applications offer an opportunity to improve pedestrian safety of new car parks.
- Car park accreditation schemes offer a similar opportunity to improve pedestrian safety in existing car parks.
- Safe management of car parks includes their initial design along with providing for adequate risk assessment, supervision and operation.

Recommendations

5. **That the Department of Planning and Community Development should amend the Victorian Planning Provisions to encourage improved pedestrian safety within car parks, by:**
 - a) **Taking into account the recommendations from this Inquiry prior to the release of their response to the review of Clause 52.06 in *Review of Parking Provisions in the Victorian Planning Provisions*.**

- b) Placing greater emphasis on pedestrian safety and include measures to improve such safety, in both the revisions to Clause 52.06 and to its related design guides under Clause 19.03.**
- 6. That the Department of Planning and Community Development amend the Victorian Planning Provisions to allow Councils to provide concessions to developers who provide a car park with fewer parking spaces but incorporates pedestrian-friendly measures. That any monies received by Councils under the cash-in-lieu schemes from those car park developments that do not provide pedestrian friendly features should be invested in retro fitting pedestrian safety improvements to older Council car parks.**
- 7. That the Department of Planning and Community Development lobby Standards Australia and Austroads to have greater emphasis placed on pedestrian safety included in the next versions of the relevant Australian Standards for Off-Street Parking and Austroads guide to parking.**
- 8. That the Department of Planning and Community Development incorporate new guidelines and recommendations in the Victorian Planning Provisions to promote the following measures in the design of new or upgraded car parks:**
 - a) Safe design layouts including appropriate sightlines, parking spaces and safe integration with the surrounding road and pedestrian path network;**
 - b) Separation of loading bays from car parking and pedestrian areas;**
 - c) Separation of pedestrians and vehicles where possible, especially at entrances and exits with bollards and other devices;**
 - d) Car parks to be designated Shared Zones where appropriate;**
 - e) Controlling speed through engineering design;**
 - f) Signage and surface markings consistent with the broader road network and subject to VicRoads consent, and**
 - g) Providing adequate lighting.**

9. That VicRoads together with WorkSafe Victoria run a publicity campaign on Shared Zones in car parks.
10. That the Department of Planning and Community Development review the upcoming guidance on loading bay areas from WorkSafe Victoria and if required, lobby for increased emphasis on the separation of car parking facilities from loading areas in the Australian Standard, *Parking Facilities – Part 2: Off-Street Commercial Vehicle Facilities*.
11. That the Department of Planning and Community Development liaise with VicRoads, Victoria Police, the Transport Accident Commission, WorkSafe Victoria, the Municipal Association of Victoria, municipalities and relevant developer bodies, to produce a Checklist for Safe Design for pedestrian safe car parks. Such a Checklist should represent best practice in the safe management of pedestrians and set out the key basic principles for designing a safe car park.
12. That the Department of Planning and Community Development require a safety audit incorporating pedestrian safety, to be conducted for all car parking planning applications to municipalities to ensure adequate pedestrian safety.
13. That WorkSafe Victoria investigates the adoption and expansion of the Melbourne Car Park Accreditation Scheme state-wide.
14. That WorkSafe Victoria act as the lead agency in relation to ensuring increased pedestrian safety in car parks, liaising with relevant partners to create a safe environment in car parks.
15. That WorkSafe Victoria develop a Safe System approach to car parks and pedestrian safety in collaboration with VicRoads, the Transport Accident Commission, Victoria Police, the Department of Planning and Community Development, and all municipalities along with the operators, owners and developers of car parks.
16. That WorkSafe Victoria, through policy guides and other education efforts, continue to encourage and remind the owners and operators of car parks of their responsibilities in providing a safe environment for pedestrians. This would include the safe design of car parks along with efforts to adequately supervise and proactively assess risks in car parks.

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Other Measures to Improve Pedestrian Safety

Introduction

As part of considering a Safe Systems approach to pedestrian safety in car parks, the Committee examined several other areas in which there are measures that could improve pedestrian safety within car parks in addition to those considered under standards and guidelines. These largely include countermeasures for drivers and vehicles.

Driver-Based Measures

The Committee considers that the current measures undertaken by the Government and its agencies to promote safer driving, particularly the emphasis on speed and staying alert to the driving task, to be also applicable to car park driving.

The Committee is also mindful that car parks fall under a broader framework of a transport and road network and as such, need to be considered under the accompanying laws and regulations that apply to drivers operating within that network. The Committee therefore also reviewed the current legislation in regards to the behaviour of drivers in car parks.

Relevant Victorian Legislation for Drivers in Car Parks

The current *Australian Road Rules (2009)*, include car parks under its definition of road-related areas as:

- (d) an area that is not a road and that is open to or used by the public for driving, riding or parking motor vehicles.¹

Therefore the Road Rules generally apply to such road-related areas in the same way as they apply to roads.² The Victorian *Road Safety Act 1986*, reflects this and also defines car parks as road-related areas.³

VicRoads and the Gazettal Process

The *Road Safety Act 1986* provides for municipalities to enter into an agreement with car park owners to regulate and enforce parking controls.⁴ The Minister for Roads and Ports, through notices in the Government Gazette, may require compliance with the Standards.⁵

The Minister delegates this power to VicRoads to approve these agreements which then enable the Road Rules to be applied to otherwise private land.⁶ This allows Local Councils to enforce parking regulations on behalf of the owners of the car park. For example the owners of a shopping centre enter into an agreement with Local Council who then install parking signs and markings according to the Road Rules and Australian Standards, after which, the Council can issue parking fines.⁷

At a public hearing in Melbourne, 27 July 2009, Mr George Mavroyeni, then Executive Director, Road Safety and Network Access, VicRoads, confirmed that if a car park was gazetted in this way, the car park was clearly available for public use, and therefore the Road Rules would apply. Mr Mavroyeni stated that:

I understand the developers have the opportunity to take the grey out of it by gazetting a car park for public road use. That is my understanding. That is one way of making it very clear whether a car park does or does not apply under the Road Safety Act through the process of gazettal. In that process of gazettal, then it is a public roadway and the regulatory signs that are utilised in those car parks would apply.⁸

Police Powers and Enforcement

At a public hearing in Melbourne, 27 July 2009, Superintendent Kevin Casey, Victoria Police, advised of the road laws that Victoria Police use and apply in car parks. This included reference to car parks as road-related areas as per the Road Rules, the *Road Safety Act*, and the *Crimes Act 1958*, regarding motor vehicles.⁹ Superintendent Casey stated that car parks are enforceable by Victoria Police.¹⁰

In car parks the types of offences include:

- using a mobile telephone while driving;
- speeding or driving in a dangerous manner/careless driving;
- failing to indicate;
- exceeding the Prescribed Concentration of Alcohol;

- causing loss of traction (wheel spinning, burn outs), and
- reversing when unsafe.¹¹

Senior Sergeant John Gibson observed at the same hearing, that some of these offences could be quite broad in their interpretation, noting that:

The wording in the Road Rules is, 'The driver of a vehicle must not reverse the vehicle unless the driver can do so safely.' It is that broad and again that comes down to a consideration of the particular circumstances ... Similarly it ties in with driving at a speed or in a manner that is dangerous to the public, or careless driving. [There] can be a question of degree about culpability and dangerousness, carelessness. Again they are all subjective things that need to be put before the court.¹²

Superintendent Casey commented that Police enforcement of pedestrian safety in car parks is largely reactive, that is, the offence comes to light after an incident. Superintendent Casey explained that:

... if someone was injured and we were called to a scene or someone reported a collision to the police station, the details would be taken. If there is some culpability apportioned because of the behaviour of the pedestrian or the motorist that is then when process could be issued.¹³

Superintendent Casey confirmed that:

... the incidence of serious injuries and fatal collisions in car parks is of such a low magnitude that I would not expect that police would be tasked across the state.¹⁴

He concluded that:

... very rarely do you see police do enforcement around car parks and that is probably commensurate with the level of risks that we have.¹⁵

Victoria Police confirmed that under 'hoon' legislative amendments to the *Road Safety Act*, in 2006, they could further enforce on errant driver behaviour within car parks.¹⁶ Superintendent Casey provided a recent example, stating that:

... I seized a vehicle in Hungry Jack's car park at Werribee when I went out for a patrol with a sergeant one day. We were in a marked four-wheel drive

Territory and we were right behind him and he dropped the wheels and the thing spun for about 20 metres. He lost his car for an initial period.¹⁷

Most policing that takes place in car parks is for anti-crime, anti-social and public order issues along with patrols targeted at preventing theft from and of vehicles and detecting unregistered vehicles.¹⁸ Superintendent Casey advised that, although it was not specifically aimed at pedestrian safety, such a presence has a flow-on effect which would impact on driver and pedestrian behaviour in general.¹⁹

Senior Sergeant Gibson added at the hearing that:

I have never had members raise any particular issues with lack of powers or suggestions for how, particularly car park safety, could be improved. ... there is really nothing that I am aware of that inhibits our ability to take appropriate action in the circumstances.²⁰

In summary, Victoria Police believe they currently hold adequate powers in relation to dealing with drivers within car parks and therefore the Committee is satisfied with the current arrangements for regulating driver behaviour in that context.

Reversing Into or Out of a Parking Space

Reversing is a more complicated manoeuvre for drivers than driving forward, where the driver reversing, either entering into or leaving a parking space needs to be aware of pedestrians and other cars moving across their path, lamp posts and other fixed objects, and parked cars either side of the parking space.

With the exception of some parallel and centre 'island' parking bays that allow a vehicle to both enter and drive out forwards, a reversing action usually has to be done either upon entering or leaving a parking space. In his submission to the Inquiry, Mr Trevor Bergman, an individual, as well as several media articles, suggested that it was safer to initially reverse into a car parking space and then drive forwards out of it.²¹

Whilst there were opinions favouring either reversing into or out of a parking space, the Committee found no study indicating either method is any safer for pedestrians. The Committee was unable to find evidence to support either theory, and witnesses did not provide any evidence either.

Nonetheless, the Committee still considers that if either method could be proved to be safer for pedestrians within a car park, this would represent a practice to be encouraged by drivers, either through education, or legislation if warranted. The Committee

considers that VicRoads with expertise in evaluating safe driving practises would be well positioned to oversee research on this issue.

Driver Distraction

For both drivers and pedestrians, distraction within car parks is a high possibility. Both a driver's initial focus on finding a parking space and a pedestrian's focus on heading to their destination or in finding their car upon return can distract them from the wider environment around them.

Dr Bruce Corben, Senior Research Fellow, Monash University Accident Research Centre (MUARC), at a public hearing in Melbourne, 27 July 2009, outlined his views on driver distraction within car parks. Dr Corben noted the attention-sharing and distraction that is experienced by drivers while they are searching for a car parking space. He stated that:

Often in car parks it is a very elusive car park that remains and people are very distracted and often quite competitive in looking for those car spaces. That is not particularly helpful in terms of the safety consequences for pedestrians who might be in the vicinity. The setting too, in the busy car parks, is often quite a complex setting with lots of vehicles circulating and quite a lot of manoeuvring of vehicles both in and out of car parking spaces and down aisle ways and so on. That also makes for some added challenges for drivers being aware of pedestrians in the surrounding space and being able to respond to any risks that arise.²²

Ms Anne Morphett, Senior Policy Advisor, Road Safety, National Roads and Motorists' Association Limited (NRMA) Motoring and Services, at a hearing in Sydney, 5 August 2009, also noted her concern about driver distraction in car parks. Ms Morphett stated that:

One of the areas that we're involved in is trying to get drivers to understand distracted driving is as dangerous as driving drunk or driving fatigue[d].

It's currently one of the hard nuts to crack because ... particularly in shopping centres and the commuter car parks, people are focused on getting a car spot so they're looking elsewhere, they're not looking out for pedestrians. They're in a hurry to go shopping and thinking about their shopping list or racing for their train or tram or bus. They're not focusing on that there are very vulnerable road users sharing that space ...²³

At the Sydney hearing, Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, stated his view that there was a need to educate motorists that they too were pedestrians.²⁴ This could be

done through the use of signage, warning lights, alarms and even public address announcements, all reinforcing the message to drivers that they should pay attention and watch out for pedestrians.

As noted earlier in Chapter 3, the Committee supports efforts to improve the provision of signage and wayfinding within car parks for both drivers and pedestrians and the Committee notes here that such measures will help decrease the distraction caused by unguided searching.

The Committee also noted that there was potential for increased distraction of drivers by advertising within car parks, including advertising on billboards, video screens and even on boom gates at entries and exits. The Westgate RoadSafe Community Road Safety Council, noted in its submission to the Inquiry, that the placement of advertising within or near car parks is clearly designed to attract the driver's attention away from the road and towards the advertising.²⁵

The Committee considers that the visual competition from advertising may distract drivers from observing pedestrians and relevant directional and safety signage. In the light of the often distracting environment of the car park, the Committee considers that efforts should be made by car park operators to keep advertising to a minimum, especially in areas of high pedestrian traffic, such as within the car park and building entrances and near pedestrian pathways.

The Committee considers that as car park operators bear responsibility for the operation of a safe work place, including pedestrian safety, the onus should be on them to assess and ensure any advertising does not cause distraction to drivers within their facilities. Providing drivers with as few distractions as possible should improve their attention to driving safely in car parks. The Committee considers that WorkSafe Victoria should include guidance on this matter in its education efforts with car park operators and owners.

Workplace Policy for Drivers

A 2005 MUARC report by Dr Mark Symmons and Dr Narelle Haworth, *Safety Attitudes and Behaviours in Work-Related Driving*, found that fleet cars were more likely to be involved in crashes, including pedestrian crashes, than non-fleet cars.²⁶ It seems to the Committee that such a finding would apply to the car park environment.

Under WorkSafe Victoria guidelines, there is an onus by employers to ensure their drivers are trained in safe driving.²⁷ Employees, whose work is related to driving, are often held accountable to workplace policies and rules concerning safe driving. In a joint collaboration, the Transport Accident Commission and WorkSafe

Victoria, published a handbook in 2008, *Guide to Safe Work Related Driving*. The handbook sets out that:

Both employers and employees have duties to each other and to others who might be affected by the work they undertake. In the case of work related driving, this includes other road users, passengers and people at locations where the driver stops to carry out work.²⁸

The Transport Accident Commission has its own internal safe driving policy for its staff, which includes a specific reference to driving safely in its own car park, reminding drivers that visibility may be poor and the level of pedestrian activity high.²⁹ In contrast, the Committee notes that the 2009, Victorian Government, *Whole-of-Government Standard Motor Vehicle Policy*, has no reference to driving safely within car parks.³⁰

WorkSafe Victoria in order to both enforce and proactively work with employers to promote a safer working environment, for both employees and the general public, should include specific reference for drivers to give greater consideration of pedestrian safety within car parks in its *Guide to Safe Work Related Driving*. The Committee considers that this, along with other education efforts such as the inclusion of car parks in WorkSafe's onsite safety audits, would encourage Victorian employers to give similar thought to including direction on safe practices in car parks for their drivers.

Recommendations:

- 17. That WorkSafe Victoria, through its policy guides and other education efforts, encourage employers to include specific guidance on safe driving within car parks to their employees.**
- 18. That the Department of Treasury and Finance should promote driving safely within car parks in its *Whole-of-Government Standard Motor Vehicle Policy*.**

Temporary Event-Based Parking

The Committee notes that there is regular parking on a temporary basis around public sporting and cultural facilities in Victoria and that these have a unique model of operation, compared to regular car parks. The largest example of temporary event parking that the Committee found was the parking provided for approximately 4,000 cars in Yarra Park around the Melbourne Cricket Ground but there are other smaller and regional examples including the annual Philip Island Grand Prix and various festivals.³¹ Many events however, provide only limited parking or do not provide onsite parking at all, encouraging patrons to use public transport or park off-site.³²

The Committee notes that if event organisers provide public parking, it is usually on a fee-based basis, therefore there are parking staff on site to collect fees, direct patrons into parking spaces and generally monitor the parking area.

At the conclusion of the event however, whilst Victoria Police may be involved with directing traffic out from car park exits onto the road network, the internal flow of traffic is not directed by any parking staff. Added to this, there are large numbers of pedestrians leaving the event, either returning to their parked cars or mostly travelling through these temporary parking areas.

The Committee considers that parking event operators have a responsibility to effectively monitor these areas at the completion of events, to ensure a safe pedestrian environment. Given the ability to raise revenue through parking fees, the Committee does not consider the costs of keeping staff on site to be unreasonable. Where possible, the Committee also considers that the layout of such temporary parking areas should allow for centralised pedestrian paths to allow those not using the car park to pass around or through them safely.

Older Drivers

The Committee considers that there may be an increased risk of crashes in car parks by elderly drivers. Whilst elderly drivers tend to have fewer crashes overall, they have been found to have both a higher incidence of crashes per kilometre driven than all but the youngest drivers, and a higher risk of injury, hospitalisation and fatality, due to crashes.³³ Research involving drivers over 72 years of age found them to have poorer visual attention in parking manoeuvres and less safe glancing behaviour when reversing, being more likely to rely on mirrors than looking over the shoulder.³⁴

Whilst there have been individual Australian media reports of car park pedestrian crashes involving older drivers, given the data problems discussed earlier, the Committee is unable to determine if there is actually a greater incidence of older drivers involved in pedestrian crashes in car parks compared to other age groups.³⁵ The Committee considers that this should be investigated as part of VicRoads overall strategy in dealing with older drivers to provide guidance to both the licensing and education efforts for older drivers.

Recommendation:

- 19. That VicRoads investigate the incidence of older drivers involved in car park crashes in order to provide appropriate guidance in their older driver licensing and education efforts.**

Vehicle-Based Measures

In keeping with a safe systems approach, the Committee considers that there are several design measures and emerging technologies for vehicles that could improve pedestrian safety in car parks. Dr Corben, Senior Research Fellow, MUARC, at a hearing, identified the potential role for vehicle-based technology in raising the level of pedestrian safety generally. Dr Corben outlined how vehicle technology could improve the ability of a driver to better detect pedestrians, avoid subsequent crashes and in the event of a crash, mitigate the damage inflicted on pedestrians.³⁶ The Committee reviewed existing and emerging vehicle-based measures in these areas.

Vehicle Crashworthiness and Pedestrians

Vehicles can be designed to better accommodate a pedestrian impact in the event of a crash and to reduce its subsequent severity for the pedestrian. VicRoads, in its submission to the Inquiry, identified the promotion of more forgiving vehicle design measures, including the removal of frontal protrusions such as bull bars and the provision of pedestrian friendly bonnet structures designed to cushion the impact of head strike.³⁷ There are also smart bumper bars designed to reduce the chance of pedestrian leg injuries and to direct an impacted pedestrian over the car rather than under it.³⁸ As discussed in Chapter 1, with vehicles with a high ground clearance, such as 4WDs, there is a risk, even at very low speed, that a child would be run over by the vehicle rather than under, a more dangerous situation.³⁹

In its submission to the Inquiry, VicRoads found that other than the discouragement of bull bars in pedestrian environments, there was little that can be done retrospectively to vehicles currently on the road. However, as the vehicle fleet is renewed, and with an increasing proportion of vehicles being fitted with pedestrian friendly features, it will aid a reduction in the severity of pedestrian injury.⁴⁰

The Transport Accident Commission noted the provision of pedestrian crashworthiness or ‘aggressivity’ ratings of vehicles by the Australasian New Car Assessment Program (ANCAP) and the Used Car Safety Ratings (UCSR) program and their role in promoting more pedestrian friendly cars.⁴¹

Whilst many car park pedestrian crashes may be low speed incidents, the Committee considers there are still benefits to be gained from improvements in less aggressive vehicle design overall. The Committee considers there should be greater awareness amongst car purchasers about vehicle aggressivity ratings.

The Committee considers there should be stronger emphasis on pedestrian protection in relation to vehicle crashworthiness in the information made available to purchasers of new and used vehicles. Whilst pedestrian ratings for tested cars are available on ANCAP's website, greater information on a vehicle's pedestrian crashworthiness, should be included in consumer vehicle safety websites such as the Transport Accident Commission's, 'howsafeisyourcar' website, which has been heavily promoted as a reference site for car buyers in Victoria.⁴²

The Committee notes the Victorian Government's 2009, *Whole-of-Government Standard Motor Vehicle Policy*, incorporates some vehicle safety features into the permissible options when purchasing Government vehicles. The Policy also includes the recommendation of acquiring vehicles with rear parking sensors and Daytime Running Lamps.⁴³ The Committee views that consideration of a vehicle's pedestrian crashworthiness should be included with these other features. Similar to the Victorian Government mandating side and curtain airbag fitment to new government vehicles, it would also set a good example to encourage vehicle manufacturers to supply vehicles with pedestrian friendly features and ultimately provide a safer used-car fleet to Victorian drivers.⁴⁴ The Transport Accident Commission, in its own vehicle purchasing policy, makes specific reference to pedestrian protection as a highly desirable feature in the vehicles it purchases, along with Daytime Running Lamps as a mandatory requirement.⁴⁵

Vehicle Conspicuity for Pedestrians

The ability of a pedestrian in a car park to see or hear an approaching vehicle greatly improves their level of safety. Apart from the provision of adequate sightlines and lighting within parking structures discussed in Chapter 3, the Committee reviewed some vehicle-based devices that seek to improve pedestrian awareness of approaching vehicles.

Daytime Running Lamps

If vehicles were to have their lights on, their visibility would be increased. The Committee considers that Daytime Running Lamps installed in vehicles would be an effective measure in improving conspicuity, particularly for pedestrians in car parks. Such lights are not dependent on the driver to switch them on.

The Committee recommended in its 2008 report, *Inquiry into Vehicle Safety*, that VicRoads investigate all the issues associated with the possible safety benefits of Daytime Running Lamps. The Government Response, 3 February 2009, supported the recommendation.⁴⁶ The Committee encourages VicRoads to complete this investigation and if found to be effective, mandate such provision in Victoria.

‘Quiet’ Hybrid Cars

The Committee notes that hybrid cars with quieter engine noise may pose a threat to pedestrians, particularly in car parks. A study by the United States National Highway Traffic Safety Administration (NHTSA) last year, found that hybrid electric vehicles had a higher incidence rate of pedestrian and bicycle crashes compared to vehicles with traditional internal combustion engines, particularly when a vehicle was slowing or stopping, reversing, entering or leaving a parking space.⁴⁷ The Committee considers all these manoeuvres are common in car parks.

Hybrid cars were found to be 50% more likely to collide with pedestrians during slow speed manoeuvres such as reversing into and out of parking spaces.⁴⁸ Vulnerable pedestrians with impaired hearing and vision are at an even higher level of risk. Mr George Mavroyeni, then Executive Director Road Safety and Network Access, VicRoads, noted at a public hearing in Melbourne, 27 July 2009, that this issue had been already been raised with VicRoads and with vehicle manufacturers. He acknowledged that work needed to be done to protect pedestrians and that the industry was considering the issue.⁴⁹

Reducing Vehicle Blind Spots and Improving Pedestrian Detection

The Committee notes that the reduction of driver blind spots, would allow for the greater chance of pedestrian detection by drivers, particularly within car parks.

Car Design

Reviewing line of sight from the driver’s position has led to evaluations of car frame and window design, and the promotion of ‘blind spot’ and ‘reversing visibility’ rating systems to identify car models with good and poor levels of each. The Royal Automobile Club of Victoria (RACV) has listed such ratings on its website as a service for car purchasers.⁵⁰

Additional Devices and Technology

The Committee notes that several devices have been suggested for improving a driver’s detection of nearby pedestrians but none have yet been found to be fully effective in terms of preventing crashes, and many have yet to be comprehensively evaluated. These devices include:

- rear mounted external mirrors to improve the driver’s rearward vision;

- proximity sensors using radar and other mechanisms to detect and alert the driver to nearby objects;
- rear view video cameras, and
- combined detection systems of both cameras and proximity sensors.⁵¹

The Committee acknowledges that these devices are dependent on the driver taking action to avoid a crash once a pedestrian is detected.

Pedestrian Crash Avoidance Systems

The Committee notes that there are emerging systems that use increasingly sophisticated sensor technology combined with assisted braking systems that detect a pedestrian in the pathway of a vehicle and warn the driver. If required, the vehicle will automatically brake to stop a vehicle travelling at low speeds or at least reduce the speed of a faster travelling vehicle. Volvo has introduced such pedestrian crash avoidance technology, which they term Collision Warning with Full Auto Brake and Pedestrian Detection into the Australian market earlier this year in some of its models.⁵²

The value of such systems, over combined camera and sensor technology alone, is that they are not dependent on the driver observing a warning and acting in time to avoid a crash.⁵³ The Committee notes the potential of these systems in reducing pedestrian crashes on both the road network and also in car parks.

Pedestrian-Based Measures

The Committee found little scope with regard to pedestrian-based measures to improve safety within car parks. Given the vulnerability of a pedestrian if struck by a vehicle, the Committee considers that priority should be given to the infrastructure measures and improvements recommended earlier in Chapter 3.

As noted with drivers, pedestrians may be distracted by the search for their car, conversations, children and other matters. However car park-based reminders using signage, warning lights and audible alerts could assist pedestrians in focussing on their own safety. Mr Greg Briscoe-Hough, Senior Consultant, Luxmoore Parking Consulting, at a hearing in Sydney, 5 August 2009, suggested to the Committee that pedestrians could be protected in part from their own actions by greater prompting of their own safety. Mr Briscoe-Hough gave the example of placing pedestrian prohibition signs on vehicle ramps in order to discourage people from walking on them. He stated that the value of these prompts was:

... just to remind people that they are doing something stupid or at least make them have a second thought.⁵⁴

The Committee considers that where appropriate, pedestrians should be reminded of high risk situations in car parks, such as the placement of 'No Pedestrian Access' signs at the entrance to vehicle only ramps. However, the Committee acknowledges the limitations of signs and warning graphics in the control of pedestrian behaviour and indeed, the potential for such signs to further distract drivers. The Committee regards efforts to structurally reduce pedestrian risk, particularly those focussed on the control of vehicles to have greater potential for increasing pedestrian safety in car parks

Regulating Pedestrian Behaviour

Victoria Police view pedestrian movement within car parks as fairly unregulated. Superintendent Casey, Victoria Police, appearing at a hearing in Melbourne, 27 July 2009, pointed out how pedestrians within car parks, tended to lack awareness of any applicable pedestrian rules, stating that:

... drivers are generally well regulated in the road laws across Victoria; pedestrians are not. ... when it comes to car parks themselves there are very few familiar offences that people readily come to mind as to the type of offences they might be committing in car parks and as such those offences are either unfamiliar or they do not understand what laws do apply for them.⁵⁵

Superintendent Casey went on to illustrate that this general ignorance of pedestrian rules was part of a broader issue across the road network, where pedestrians were generally unaware of their responsibilities in relation to the road rules, let alone what they were within a car park.⁵⁶

Senior Sergeant John Gibson, at the same hearing, described how there were pedestrian related rules that applied within car parks as road-related areas and those that did not. He stated that Rule 236 of the *Road Safety Rules 2009*, dealing with pedestrians creating a hazard by coming into the path of a vehicle applied in car parks, but that Rule 230, that a pedestrian must take the shortest safe route when crossing a road did not. Senior Sergeant Gibson surmised that:

If we are looking at a car park with the aisles between and it is not a road, then there is no law that prevents pedestrians walking in this sort of fashion. They

are allowed to walk along the road and when they are walking across they do not have to take the shortest route.⁵⁷

Misunderstanding of right of way rules may also cause some confusion, with recent Australian research indicating that many pedestrians incorrectly thought that stepping out from pedestrian refuges, islands and paving gave them the right of way.⁵⁸ The City of Ballarat, in their submission to the Inquiry, presented a similar example of pedestrian confusion over the right of way within car parks.⁵⁹ Whilst Rule 236 noted above indicates that pedestrians may not create a hazard by stepping into the path of a oncoming vehicle, the Committee considers that car parks provide an increased level of complexity in terms of attempting to interpret right of way scenarios between pedestrians and vehicles operating in close proximity, and when reversing.

Given the lack of regulatory control of pedestrians and again noting the vulnerability of a pedestrian in the event of a crash, the Committee considers that the use of Shared Zones, as set out in Chapter 3, provides a clear universal right of way for all pedestrians in car parks. The Committee notes that such a right of way should be promoted widely within the community to ensure all drivers and pedestrians understand the requirements of a Shared Zone. Additionally, the Committee notes its preference here for countermeasures that provide physical protection for pedestrians covered in Chapter 3.

Further Research

The Committee has already noted the overall lack of specific research into pedestrian car park safety. A lack of systematic monitoring of off-road incidents, including those occurring in car parks, has resulted in a grey area around the determination of the true extent of pedestrian safety.

In its submission to the Inquiry, the Transport Accident Commission identified specific areas of interest in terms of research. These included: the need to assess the relative contributions of drivers and pedestrians to car park crashes; the causal factors that lead drivers or pedestrians to act unsafely; and the potential influence of distractions when parking and navigating around a car park.⁶⁰

The Committee considers that research focussed on measuring the overall quality or level of service provided by car parks with a particular emphasis on pedestrian safety, would be worthwhile. The Committee also suggests that the earlier 1993 Victorian-based research, to develop design simulation models of car park conflict, could be combined with the more contemporary computer design tools to contribute to more accurate safety assessments of existing and planned car parks.⁶¹

The Committee considers that VicRoads could lead a partnership with WorkSafe Victoria, the Transport Accident Commission, Victoria Police and the Department of Planning and Community Development to shape and commission such research and then act on the resulting findings to improve pedestrian safety in car parks.

Summary of Findings

- Victoria Police consider their powers to enforce safe driving within car parks adequate.
- Driver distraction could be an issue in car park pedestrian crashes and should be minimised.
- Workplace driving policies could encourage safer driving in car parks.
- Vehicle-based measures, including vehicle pedestrian crashworthiness, vehicle conspicuity and emerging technology around pedestrian crash avoidance show promise in improving overall pedestrian safety including for those in car parks.
- Pedestrian behaviour is difficult to control and given their vulnerability, countermeasures to improve pedestrian safety should be focussed on the car park environment and vehicles.

Recommendations

- 17. That WorkSafe Victoria, through its policy guides and other education efforts, encourage employers to include specific guidance on safe driving within car parks to their employees.**
- 18. That the Department of Treasury and Finance should promote driving safely within car parks in its *Whole-of-Government Standard Motor Vehicle Policy*.**
- 19. That VicRoads investigate the incidence of older drivers involved in car park crashes in order to provide appropriate guidance in their older driver licensing and education efforts.**

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List of Submissions

Local Government

Ballarat City Council
Banyule City Council
Bayside City Council
Boroondara City Council
Brimbank City Council
Casey City Council
East Gippsland Shire Council
Gannawarra Shire Council
Glen Eira City Council
Greater Dandenong City Council
Greater Geelong City Council
Hobsons Bay City Council
Knox City Council
Latrobe City Council
Manningham City Council
Maribyrnong City Council
Melbourne City Council
Monash City Council
Moreland City Council
Mount Alexander Shire Council
Moyne Shire Council
Stonnington City Council
Surf Coast Shire Council
Wangaratta Rural City Council
Warrnambool City Council
Wellington Shire Council
Yarra City Council
Yarra Ranges Shire Council

State Government

Department of Planning and Community Development
Queensland Transport
Transport Accident Commission
VicRoads
WorkSafe Victoria

Non-Government

Bayswater North Community Renewal, Paths and Parking Action Group
Colonial First State – Global Asset Management
Insurance Council of Australia
Monash University Accident Research Centre
O'Brien Traffic/ALDI Stores
Pedestrian Council of Australia
Peninsula Advisory Committee for Elders
QIC Limited
RoadSafe Westgate – Community Road Safety Councils of Victoria
Royal Automobile Club of Victoria (RACV) Ltd
Shopping Centre Council of Australia Limited
Westfield Shopping Centre Management Co Pty Ltd

Individual Submissions

Mr	T	Bergman	Noble Park
Mr	GE	Beulke	Morwell
Ms	SP	Edis	Mornington
Mr	D	Gardner	Hampton Park
Mr	DR	Mentiplay	Malvern East
Mr	D	Shepherd	Mornington
Ms	ME	Watkins	Kilmore East

Appendix B

List of Witnesses

Public Hearings

Melbourne, 27 July 2009

Mr George Mavroyeni	Executive Director, Road Safety and Network Access
Mr David Shelton	Director, Road User Safety VicRoads
Superintendent Kevin Casey	Manager, Road Safety Strategic Report Division
Senior Sergeant John Gibson	Supervisor, Road Safety Legislation and Policy Advisory Unit
Senior Constable Ian Whalley	Leading Senior Constable, Road Safety Awareness and Information Unit
Ms Wendy Kimber	Manager Traffic Incidence Support Unit Victoria Police
Dr Bruce Corben	Senior Research Fellow Monash University Accident Research Centre
Ms Kaye Owen	Director Research and Policy
Mr Owen Harvey-Beavis	Manager Economic Data and Policy Development Municipal Association of Victoria
Mr David Healy	Senior Manager Road Safety
Mr John Bolitho	Senior Manager Legal Policy Transport Accident Commission

Melbourne, 14 September 2009

Ms Anne Malloch	Team Leader City Issues
Ms Colleen Lazenby	Manager Community Safety and Wellbeing
Mr Shiran Wickramasinghe	Manager Planning and Building Melbourne City Council

Mr Ian McLauchlan Mr Peter Kyrkylis Mr Damir Agic	Transport and Parking Manager Transport and Parking Coordinator Senior Transport Engineer Stonnington City Council
Mr Jim Hondrakis	Team Leader Transport Management Projects and Strategy Boroondara City Council
Mr Chris Payne Mr Robyn Williams Ms Sue Nugent Ms Janette Heenan	Team Leader Project Officer Resident, Kilsyth South Resident, Canterbury Gardens Bayswater North Renewal – Paths and Parking Action Group
Mr Steven O'Brien Mr Andrew Taylor	Team Leader Traffic and Projects Manager Engineering and Infrastructure Maroondah City Council
Mr Con Tsotsoros Ms Lyn Harrop	Assistant Director, Planning Systems Management Urban Design Unit Department of Planning and Community Development
Mr Simon Pearce	Business Manager ParkWatch Wilson Parking Australia
Mr Ross Pilkington	Director Manufacturing, Logistics and Agriculture WorkSafe Victoria

Interstate Hearings

Sydney, 5 August 2009

Mr Harold Scruby	Chairman and Chief Executive Officer Pedestrian Council of Australia
Mr Peter Huddle	Asset General Manager Westfield Group
Mr Greg Briscoe-Hough	Senior Consultant, Parking Luxmoore Parking Consulting, ARRB Group Ltd

Ms Anne Morphet	Senior Policy Advisor, Road Safety National Roads and Motorists' Association Limited (NRMA) Motoring and Services
Mr Chris Raywood	Group Property Operations Manager – South
Mr Julian Concato	Assistant Development Manager Woolworths Limited
Dr Soames Job	Director, New South Wales Centre for Road Safety Roads and Traffic Authority of New South Wales

Overseas Briefings

Wellington, New Zealand, 3 August 2009

Mr Stephen Brecht	Manager, Community Relations and Operations
Ms Lyndsey Jacobs	Senior Advisor, Community Relations and Operations Ministry of Justice, Crime Prevention and Criminal Justice
Mr Colin Waite	Chairman New Zealand Parking Association
Ms Colleen Thessman	Manager, Parking Services Wellington City Council
Mr Mark Jameson	New Zealand Manager Tenix Solutions New Zealand Ltd

Site Visits

Westfield Doncaster, 9 November 2009

Mr Brad Newton	National Car Park Business Manager Westfield Doncaster
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Wilson Parking, 1 February 2010

Mr Simon Pearce	Business Manager ParkWatch Wilson Parking Australia
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Minority Report

Inquiry into Pedestrian Safety in Car Parks Minority Report

A minority of Road Safety Committee members wish to place on record its dismay at the reference before the Committee which has resulted in this report.

These Members, despite strongly criticising this reference, wish to express their gratitude for the professionalism and hard work of Committee staff and their dedication to task during the evidence gathering and production of this report. Their integrity, diligence and hard work is not in question.

Further, these members in considering their report reflect upon the fact that, at the time of drafting, the road toll in Victoria is ahead of the same period of 2009, showing no sign of abating. Those Members lodging this report also reflect upon the fact that reductions in Victoria's road toll have stagnated in the medium term.

Victoria, through the work of the Joint Select Committee on Road Safety, and its successors, was a driving force in road safety policy development during the second half of the 20th Century. Many significant changes to the culture surrounding safety on our roads are due to this Committee's endeavours and diligence with past references from the Parliament. Such achievements include;

- **Seat Belts in Motor Vehicles.** Victoria is recognised as the world leader for the compulsory use of seat belts. The compulsory use of seat belts in passenger vehicles has singularly been credited with preventing road deaths and trauma. It was the Committee's predecessor in 1969 through its investigatory report which sparked and lead policy debate in this area that lead to legislative change.
- **Responsible Driving.** Victoria's demerit point system was recommended by the Committee's predecessor in 1968 and legislated for in 1969.
- **Drink Driving.** The Committee has previously led the way in tackling the scourge of alcohol related accidents. The Committee through its reports in 1970, *Inquiry into Alcohol and Road Safety*, and 1975, *Inquiry into the Identification of Motor Vehicle Drivers with Blood Alcohol Levels in Excess of .05 per cent*, recommended that Victoria Police members conduct Random Breath Tests and also recommended the disqualification of licenses for those caught drink driving. Owing to the recommendations of the Committee, Victoria

became the first State in Australia to introduce Random Breath Testing in 1976 and lives have been saved.

- **Better Vehicle Safety.** The Committee in its 2009 report on Australian Design Rules recommended the mandatory inclusion of electronic stability control and side curtain airbags for all new vehicles eligible for registration in Victoria. Owing to the recommendations of the Committee legislative change followed and such regulations will be enacted in coming years.

Despite these facts, it is the view of this minority of Members that vital Committee resources and time have been wasted and misused by a reference which for all intents and purposes will not lead or spark debate, nor provide a guiding framework for both legislative and community action to significantly reduce Victoria's road death and trauma levels.

During Committee hearings regarding this reference both VicRoads and the Transport Accident Commission told the Committee that data as to loss of life and injury in car parks is not kept as it was not seen as a significant road safety issue. The Members in the minority consider this a further indictment upon this reference.

The minority Members are of the strong view that the Committee should be investigating ongoing important steps in making our roads safer to save lives.

The minority Members view this reference as a waste of resources and one which has been imposed upon this committee to satisfy the political machinations of the Executive.

The Road Safety Committee has a proud heritage of being at the forefront of the road safety debate and it is the clear view of this minority of Members that it should remain that way.

The Honourable David Koch MLC, Deputy Chair

Mr Bill Tilley MP

Mr Paul Weller MP



SAFETY

PEDESTRIAN

IN CAR PARKS

