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LEGISLATIVE COUNCIL
Economy and Infrastructure Committee

Inquiry into the increase in Victoria's road toll

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Legislative Council Economy and Infrastructure Committee

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About the Committee

Functions

The Legislative Council Economy and Infrastructure Committee's functions are to inquire into and report on any proposal, matter or thing concerned with agriculture, commerce, infrastructure, industry, major projects, public sector finances, transport and education.

As a Standing Committee, it may inquire into, hold public hearings, consider and report on any Bills or draft Bills, annual reports, estimates of expenditure or other documents laid before the Legislative Council in accordance with an Act, provided these are relevant to its functions.

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This report is available on the Committee's website.

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Terms of reference

Inquiry into the increase in Victoria's road toll

On 5 June 2019, the Legislative Council agreed to the following motion:

That this House requires the Economy and Infrastructure Committee to inquire into, consider and report, no later than 1 December 2019*, on the increase in the Victorian road toll in 2019, including but not limited to, an examination of the—

1. current Victorian Towards Zero Road Safety Strategy 2016-2020 and progress towards its aim of a 20 per cent reduction in fatalities with 200 or less lives lost annually by 2020;
2. adequacy and scope of the current driver drug and alcohol testing regime;
3. adequacy of current speed enforcement measures and speed management policies;
4. adequacy of current response to smart phone use, including the use of technology to reduce the impact of smart phone use on driver distraction;
5. measures to improve the affordability of newer vehicles incorporating driver assist technologies;
6. adequacy of current road standards and the road asset maintenance regime;
7. adequacy of driver training programs and related funding structures such as the L2P program; and
8. adequacy and accuracy of road collision data collection.

* The reporting date for this inquiry was extended to 31 March 2021.

Chair's foreword

One thing that unites all Victorians is the desire to reduce the road toll. That desire led to the creation of Victoria's previous road safety strategy, *Towards Zero 2016–2020: Victoria's Road Safety Strategy & Action Plan*.

Toward Zero's target was ambitious: reduce the road roll to under 200; and reduce serious injuries by 15 per cent. The Victorian Government and its road safety partners should be commended for setting such an ambitious target. Unfortunately, the target was not met and in fact the road toll has plateaued in recent years. There is no one reason for this, equally there is no silver bullet to fix the problem. Rather it is a matter of more hard work over a wide array of policy areas.

Road safety is a combination of developing effective policy and committing to putting that policy into practice. As such, Victoria remains committed to the four pillars of the 'Safe System' approach to road safety:

- safe road users
- safe vehicles
- safe roads
- safe speeds.

These four pillars provide an overarching guide to addressing the main road trauma risks in Victoria. While speeding and impairment have long been recognised as targets by road safety experts, attention is increasingly also being paid to driver distraction and fatigue, including a recognition that, for many Victorians, the road is their workplace.

The Safe System has been a pivotal component of Victoria's road safety policy for several years and the Committee was reassured to see it remain in the new *Victorian Road Safety Strategy 2021–2030*, released at the end of 2020. Equally important, though, is a commitment to transparency. Increased transparency and sharing of information leads to better policy development and improved decision making. The Committee would like to see a greater commitment to transparency from Victoria's road safety partners and a willingness to engage more with other road safety experts in the fight to reduce road trauma.

A shared responsibility

Throughout this Inquiry, it became increasingly clear just how much individual attitudes influence road safety. Basic driving skills—steering, changing gears etc—are taught in cars or, increasingly, using driving simulators and virtual reality technology. A personal commitment to safety, though, is learnt from parents, relatives and friends, as well as

through wider society. That's why Victoria's road safety partners remain committed to delivering education campaigns, both public campaigns and programs educating young drivers about the importance of safety before they hop into a car for the first time.

This approach is evidence of how, in Victoria, road safety has long been a shared responsibility between government and the community. The dramatic drop in the road toll since Victorians first began working together on the problem in the mid-1970s has been the envy of other States in Australia and many countries throughout the world. Tellingly, many countries have also seen their road toll plateau in recent years, wondering what the next step is.

Towards Zero was not as successful as we had hoped. Now the aim of the *Victorian Road Safety Strategy 2021–2030* is to achieve a road toll of zero. With hard work and a commitment to implementing the improvements recommended in this Report, I believe Victoria can reach that target.

On behalf of the Committee let me thank everyone who participated in this Inquiry. The Committee received 151 submissions and heard from around 70 witnesses across six public hearings. The evidence came from road safety experts from Australia and Europe, industry groups and transport professionals, and Victoria's road safety partners.

I would like to acknowledge the work of my fellow committee members throughout this inquiry. Thank you also to our secretariat staff, Justine Donohue, Rachel Pineda-Lyon, Maeve Bannister, Cat Smith, Meagan Murphy, Anique Owen, Viv Bannan and Patrick O'Brien. Their advice to the Committee on the broad range of specialist subjects in this Inquiry was incredibly important.

I commend this report to the Parliament.

Enver Erdogan
Chair

Executive summary

Chapter 1—Introduction: The *Towards Zero* strategy and Victoria's approach to road safety

The first aim of this Inquiry was to examine Victoria's previous road safety Strategy—*Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan*. The Strategy aimed, among other things, to reduce the road toll to fewer than 200 and reduce serious injuries by 15% by 2020. Despite neither of these targets being met, the Victorian Government should be congratulated for setting an ambitious target. Trying to understand why those targets were not met is the focus of this Report.

The Committee learnt that when Victoria's road toll plateaued in the mid-1990s Victoria's policy makers began to take a different approach. They looked to Sweden's Vision Zero model in creating *Towards Zero*, which was based on the 'four pillars' of a Safe System:

- safe road users
- safe vehicles
- safe roads
- safe speeds.

The Strategy did not explain how progress would be evaluated and no information was provided by the Victorian Government on how individual countermeasures are evaluated. The Committee identified this as a major impediment to Victoria achieving its road safety targets. It recommends that a review of *Towards Zero* be published alongside targets for *Victorian Road Safety Strategy 2021–2030* that was released in December 2019. The Committee also recommends publishing the studies that informed Victoria's approach to reducing serious injuries.

In July 2019, VicRoads and Public Transport Victoria were merged and absorbed into the Department of Transport, which has overall responsibility to plan, deliver and operate Victoria's transport system. The Committee believes that this is a good opportunity for the Victorian Government to embed Safe System principles in all road transport decision making.

Chapter 2—Governance in Victoria's road safety system

The Committee considered road network governance in Australia. It looked generally at how road management responsibilities are split between federal, state and local governments and specifically at Victoria's road network governance and regulatory

arrangements. In Victoria, the *Transport Integration Act 2010* (Vic) is the principal legislation encompassing the Victorian transport portfolio. Other relevant acts include the *Road Management Act 2004* (Vic), the *Road Safety Act 1986* (Vic) and the *Transport Accident Act 1986* (Vic).

The Departments and agencies with primary responsibility for road safety policy are collectively referred to as 'Victoria's road safety partners'. The leading agency, the Department of Transport, encompasses: Transport for Victoria; VicRoads; Road Safety Victoria; Regional Roads Victoria; Major Transport Infrastructure Authority; and Major Roads Projects Victoria.

The other road safety partners are: the Transport Accident Commission (TAC); Victoria Police; the Department of Justice and Community Safety; and the Department of Health and Human Services (prior to February 2021 when the Department was split into two Departments). Other key agencies include: the Monash University Accident Research Centre (MUARC); the Victorian State Trauma Outcomes Registry Monitoring Group (VSTORM); WorkSafe Victoria; and the Road Safety Camera Commissioner.

While the Victorian Government acknowledges the principle of shared responsibility when it comes to road safety, the Committee heard concerns that the road safety partners are not working collaboratively and that there has been a loss of road safety expertise over recent years. The Committee recommends a review of the skill base of managers in the Department of Transport.

An ongoing criticism of Victoria's road safety partners is a lack of transparency and cooperation with anyone outside of their closed shop. As an example, the Committee sent four requests for information to the Department of Transport dating back to March 2020. The Department provided the Committee with answers to several, but not all, requests in February 2021, too late to be fully considered in this Report. Victoria's road safety partners must commit to a new culture of cooperation, transparency and an acceptance of the benefits of independent scrutiny of their work.

Chapter 3—Road standards: design and maintenance

In Australia, the Austroads Guidelines and Australian Standards are the primary technical standards and guidelines for roads. Different jurisdictions adapt these guidelines to suit their own conditions. Victoria has done this through VicRoads Supplements, which have precedence over the national guidelines. VicRoads has also developed a Safe System Assessment Framework that provides guidance for planners and designers to ensure that all projects consider road safety outcomes.

There is general agreement on what the safest roads look like: for example, straight with dual divided carriageways, good line marking and sealed shoulders. A star safety rating for roads exists, with 1-star being the least safe and 5-star being the safest. Research suggests that fatalities and serious injuries are halved for each incremental improvement to a road's condition. The Federal Government's *National Road Safety*

Action Plan 2018–2020 committed to improving the star ratings across the national road network to achieve 3-star ratings, or better, for 80% of travel on state roads and a minimum of 90% of travel on national highways

Regarding maintenance, the Department of Transport has five categories of asset expenditure. Road surfaces are monitored by responsible agencies, who prepare a yearly maintenance program. The Department and Regional Roads Victoria prioritise roads in accordance with their importance alongside the urgency of the works needed. The Committee recommends that the Victorian Government publish an annual report, including star ratings, on road standards. The Committee also recommends the Government undertake research to determine the cost and timeframe of ensuring all highways, arterial roads and other roads of significance in Victoria are a minimum 3-star rating.

During the Inquiry, the Committee was presented with evidence of five main challenges regarding road safety infrastructure in Victoria:

- road planning
- maintenance schedules
- vulnerable road user infrastructure
- roadside vegetation
- flexible wire rope barriers.

The Committee recommends that the Victorian Government report on the predicted star rating for all road projects and review its current road maintenance priorities. Regarding wire rope barriers, the Committee recommends improving community engagement and consultation, along with improved record keeping.

Chapter 4—Speed and road safety

Speed is one of the most significant contributing factors to road trauma, with both the severity of a crash, and the likelihood of crashing, increasing as speed increases. 'Safe' is defined as speeds that are appropriate for the conditions, including: traffic volume and type; road standards; roadside conditions; and nearby land use.

In Victoria, speed limits are predominantly dictated by road design, including factors such as corners and barriers. As well, variable speed limits respond to operational and/or environmental conditions on certain sections of a road. The Committee recommends that the Victorian Government consider wider deployment of variable speed limits and undertake research into vehicle-specific speed limits.

Speed and road standards must be considered simultaneously. Higher speed limits can be maintained by improving infrastructure; where infrastructure cannot not be upgraded, lower speed limits can improve road safety. Several stakeholders in this Inquiry argued that in many parts of Victoria speed limits are not safely aligned with conditions.

With urban speed limits, concerns centred around low speed crashes in areas with high numbers of vulnerable road users. Local councils involved in this Inquiry informed the Committee that the application process to lower speed limits in specific areas is extremely difficult to navigate.

Regarding high speed rural roads, there is a strong link between fatalities and remoteness, with one national study showing that rural and regional areas account for two-thirds of all road fatalities. Of particular note was the fact that the default maximum speed limit on rural and regional roads in Victoria applies equally to sealed and unsealed roads. The Committee recommends that the Victorian Government review speed limits on all rural and regional roads as a matter of priority.

Speed enforcement in Victoria involves both direct police enforcement and automated enforcement using cameras. Penalties for speeding offences form another important part of speed management, particularly as a deterrent measure. Victoria Police's major speed enforcement measures are the State Highway Patrol and regional highway patrol units, while the most effective automated methods are mobile speed cameras and point-to-point (P2P) cameras. The Committee recommends that the Victorian Government investigate expanding the use of mobile speed and P2P cameras across the road network.

Attitudes around the perceived safety of low-level speeding have been a consistent road safety challenge in Victoria. Drivers are more accepting of reduced speed limits once the Safe Systems concept is explained. The TAC's 'Wipe off 5' campaign in the early 2000s is an example of how education campaigns can improve driver attitudes and behaviour. Community awareness is also one of the best ways of challenging the myth that speeding fines are 'revenue raising'. In Victoria, all speeding fines fund improvements to the road network. The Committee recommends that the Victorian Government develop a strategy to improve public confidence in the speed camera system.

Chapter 5—Data

When a road accident occurs in Victoria, datasets are collected by different government and non-government agencies, in particular VicRoads, the TAC, Victoria Police and the Department of Health and Human Services (prior to February 2021 when the Department was split into two Departments).

The Committee was informed that there are extensive delays in the integration of health data due to privacy agreements and internal workflow structures. While there may be some reasonable circumstances where data integration between agencies is delayed, the outcomes of the *Victorian Road Safety Strategy 2021–2030* may not be based on accurate and up-to-date data. The Committee recommends that the Victorian Government publish the datasets that underpin targets in the new Strategy.

Other problems have been caused by policy changes in relation to the type of data captured by the agencies. For example, TAC claimants no longer must have reported an accident to Victoria Police. However, Victoria's road safety partners are working to improve road safety data collection and integration. The Committee believes that one agency should have oversight of data integration. It recommends the Victorian Government enable a central body, such as the Victorian Centre for Data Insights, to oversee the integration of road safety datasets from all road safety partners.

In addition, there is a strong need for greater transparency to enable independent evaluations of strategies. While some data is made publicly available in a timely manner, the ability to identify trends remains difficult. To address this, the Committee recommends that the TAC work with the Office of the Victorian Information Commissioner and the Victorian Centre for Data Insights to make all traffic accident datasets publicly available.

The Committee also makes recommendations in three areas where capturing road safety data should be improved:

- serious injury data
- non-injury data
- toxicology data.

Chapter 6—Driver training and licensing

Driver training is part of the principle of shared responsibility in the Safe System. Individuals are responsible for learning how to drive, government and other agencies provide an effective training system.

In Victoria, the Graduated Licensing Scheme (GLS)—which increases privileges in line with experience—has helped reduce road trauma among young drivers. Ongoing evaluation is necessary for this to remain the case. The Committee recommends that the Victorian Government review whether the age limit for learner drivers to complete a compulsory minimum of 120 hours of driving should be increased to 25 years old.

Other issues around driver training discussed include how parents (and supervisors) affect the quality of learner driver training and whether periodic licence retesting would improve road safety.

There are a number of programs designed to support learner drivers in Victoria. The largest, L2P, is a community-based mentor program that provides supervised driving experience to learner drivers aged under 21 years. Other programs include: the Road Smart program; Fit to Drive; mylearners app; and the Drive Smart program. These programs help create a positive culture around road safety in young drivers, especially when used from an early age.

Driving simulators are a safe way for learners to experience a wide variety of challenging experiences before they drive on the road. While some research has shown short-term benefits from driving simulators, less is known about the long-term impacts. The Committee recommends that the Victorian Government conduct research into this technology through a pilot program.

Older drivers are also at an increased risk of death as a result of road trauma, a longstanding issue that was recognised in *Towards Zero*. There is no maximum age limit on driving in Victoria, rather people must be medically safe to drive, a system that primarily relies on drivers self-reporting. Several submissions called for regular testing of older drivers, while others cautioned against generalising about people over the age of 60. The Committee recommends that the Victorian Government conduct research on drivers aged over 60 years to determine: the specific risks posed and faced by older drivers; and targeted policies to negate these risks.

Riding a motorcycle carries a higher risk of crash and injury compared to driving due to the relative instability of a motorcycle (compared to vehicles with four wheels). Further, because riders are essentially unprotected, they are at greater risk of serious injuries from crashes. Like driving, graduated licensing applies to motorcycle licensing in Victoria. Online education and information resources provided by the TAC also inform motorcyclists about how to ride safely. It is unclear what, if any, evaluation of these measures has been undertaken by Victoria's road safety partners.

There is a clear link between rider skills and safety. Stakeholders also argued that more should be done to increase awareness of motorcyclists in non-riding road user groups. The Committee sought further information from the Department of Transport regarding recommendations from the former Road Safety Committee's 2012 *Inquiry into Motorcycle Safety* but had not received a response at the time of writing this Report.

The Committee investigated ways of improving the regulation of professional driver trainers. These include: minimum age and licence requirements; and a potential, mandatory Code of Practice. The Committee recommends that the Victorian Government work with the professional driver training sector to review professional driver trainer requirements with a view to identifying areas for improvement.

Work-related drivers are a significant cohort represented in road trauma statistics. Under the *Occupational Health and Safety Act 2004* (Vic) employers are obliged to ensure employees are able to do their work safely. This should comprise driver training and providing safe vehicles. This may include workers in the 'gig economy', although there is still debate around whether those workers are considered employees or not.

In the heavy vehicle sector, there is a concern around the current heavy vehicle driver licencing system. Licensing in Victoria is delivered in line with the National Heavy Vehicle Driver Competency Framework, which states that drivers who want to operate the most complex heavy vehicle types must first be trained and assessed and gain experience in driving less complex heavy vehicles. The Committee recommends that the Victorian Government work with the heavy vehicle sector to review the minimum training requirements for heavy vehicle licences.

An increase in fatalities among food delivery workers towards the end of 2020 attracted media and government attention. While these accidents occurred on the road—the 'workplace' of the riders and drivers—SafeWork Australia and WorkSafe Victoria only recently reclassified rider accidents and deaths from road accidents as 'workplace accidents'.

Chapter 7—Driver behaviour

The most common contributors to fatalities and serious injuries in Victoria are driving under the influence of alcohol and drugs, driver distraction, and speeding. (Speeding is covered in Chapter 4.)

Victoria Police is responsible for alcohol and other drugs testing on Victoria's roads. Its main operational approaches include presence and visibility and offence detection (roadside tests). In Victoria, drivers on a full licence must not have a blood alcohol concentration (BAC) above 0.05. For all other licence types, the legal limit is zero. The main penalties are fines and loss of licence.

Offenders may also be required to participate in a Behavioural Change Program, which uses psychological and therapeutic approaches that include cognitive behavioural and motivational techniques. The Committee recommends that the Victorian Government continue to invest in the Behavioural Change Program for drink- and drug-driving offenders.

In Victoria, drug testing looks for traces of drugs using samples of blood, urine, breath or saliva. The prescribed drugs are THC, methamphetamine and MDMA (ecstasy). There is currently no test for impairment. The Committee recommends research into drug testing that identifies impairment in drivers and expansion of the drug testing regime to include testing for cocaine.

It is also illegal to drive, attempt to drive or supervise a learner while affected by medication whether prescribed by a doctor or bought 'over-the-counter'. A study in 2016 identified benzodiazepines as a risk to road safety, however a lack of available research left the Committee concerned that prescription medication may be under-reported in road trauma statistics. The Committee recommends that the Victorian Government undertake research into the prevalence of driving under the influence of prescription medication and collaborate with medical practitioners and pharmacists to establish effective messaging around the dangers of driving while impaired.

Mobile phone use is the greatest driver distraction risk. In July 2020, the Victorian Government commenced a three-month distracted driver camera trial program using two transportable trailers. To tackle driver distraction, legislation needs to be 'technology neutral'. This means that instead of proscribing specific technology, such as mobile phones, legislation should address unsafe actions or behaviour.

Every jurisdiction in Australia is responsible for setting its own policy regarding fatigue and road safety. As there is limited data measuring fatigue, the Committee recommends that the Victorian Government determine the extent of fatigue as a contributing factor in road accidents and develop policies to reduce its impact. It also recommends that the Victorian Government work with industry and regulators to align fatigue management legislation where appropriate across the heavy vehicle and commercial passenger vehicle sectors.

The Committee took evidence regarding international tourists driving in Victoria. Overseas visitors can drive in Victoria if they hold a valid overseas licence for the vehicle type they want to drive. Department of Transport data does not indicate that international tourists are over-represented in crash statistics. Accidents involving tourists were more likely due to fatigue issues as opposed to high-risk behaviours such as speeding or drink-driving. The Committee recommends Victoria's road safety partners address this issue, in particular around the Great Ocean Road.

Chapter 8—Vehicle safety: standards and technology

'Safe Vehicles' was one of the pillars of *Towards Zero* and is a key component of the Safe System approach. The age of a vehicle is one of the most telling factors in determining its safety performance, especially vehicles over 10 years old.

In Australia, vehicle safety is mostly determined nationally though Australian Design Rules and programs such as the Australasian New Car Assessment Program (ANCAP) and Used Car Safety Ratings (UCSR). Victoria also has initiatives such as the 'How Safe is Your Car?' website. Many safe cars are affordable, with the Committee observing that many ANCAP and UCSR 5-star rated vehicles can be bought for under $20,000.

Aside from such programs, state governments have relatively little influence on encouraging the update of safe vehicles. The most effective option is upgrading government fleets with safer vehicles. Approved Vehicle List requirements also encourage vehicle manufacturers to include more safety features in cars purchased for government fleets. Some stakeholders also identified duties and taxes as barriers between the community and the most modern safety technology. The Committee recommends that the Victorian Government advocate for the Federal Government's Luxury Car Tax to be abolished.

Work-related accidents comprise a large component of road trauma in Australia, with some studies estimating that work-related road crashes in Australia account for about half of all occupational fatalities and 15% of national road deaths. The heavy vehicle and commercial passenger vehicle sectors are particularly at risk through issues such as fatigue, speeding and drug-driving. As employers are responsible for providing a safe workplace, WorkSafe Victoria has an important oversight role regarding work-related road safety. The Committee recommends that the Victorian Government consider expanding WorkSafe Victoria's road safety role.

A *Towards Zero* action relating to safe vehicles was trialling smart road infrastructure to support connected and automated/autonomous vehicles, sometimes simply known as 'driverless cars'. Although fully autonomous vehicles are some years away, the infrastructure and support systems needed to support future implementation of this technology are essential.

The Committee received a small amount of evidence on safety technology supporting motorcycles. Incentivising anti-lock braking system (ABS) uptake on motorcycles was another action under *Towards Zero* and it has been mandatory for ABS to be fitted on all motorcycles and scooters sold in Australia since November 2019. Although much more attention was paid to car safety under *Towards Zero* than to motorcycles and other vulnerable road users, the *Victorian Road Safety Strategy 2021–2030* takes a more balanced approach.

Findings and recommendations

1 Introduction: The *Towards Zero* strategy and Victoria's approach to road safety

FINDING 1: The Victorian Government remains committed to the shared responsibility tenet of the Safe System approach to road safety. 6

FINDING 2: Without transparent key performance indicators, good measurement and reporting methods, there is no clear way to evaluate success or otherwise in achieving goals. There is a perceived of lack of transparency and accountability among Victoria's road safety partners, which may be harming Victoria's aims of further reducing its road toll. 9

RECOMMENDATION 1: That the Victorian Government review the effectiveness of *Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan* and publish the results on the Department of Transport website. 9

RATIONALE: Transparency and knowledge allows the wider road safety community in Victoria to contribute to reducing the road toll. The *Victorian Road Safety Strategy 2021–2030* was published without any acknowledgement of where and why *Towards Zero* failed to reach its targets. 9

RECOMMENDATION 2: That the Victorian Government in its current road safety strategy set targets and define how success meeting the targets will be evaluated. This information should be published annually on the Department of Transport's website. 9

RATIONALE: Clear, measurable targets are vital to ensure Victoria's road safety partners have tangible goals and are held accountable for those goals. This will ensure the *Victorian Road Safety Strategy 2021–2030* has the greatest chance of succeeding. 9

FINDING 3: More transparency around the modelling used for *Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan* may have improved the Strategy's impact on Victoria's road toll. 10

RATIONALE: The Department should not outsource any policy development or major project work without the internal expertise to ensure that the work delivered is of the highest quality. 36

FINDING 8: Victoria's road safety partners must commit to a new culture of cooperation, transparency and an acceptance of the benefits of independent scrutiny of their work. A lack of transparency among Victoria's road safety partners prevents thorough independent analysis of strategies and internal skillsets. Such analysis is needed to ensure constant progress and improvement in road safety. 37

3 Road standards: design and maintenance

FINDING 9: There is no legislative obligation for roads to be built or maintained to a certain standard to increase safety for road users. 48

RECOMMENDATION 6: That the Victorian Government publish an annual report on road standards that states the star rating for highways, arterial roads and other roads of significance, such as urban roads with high pedestrian and cyclist activity, in Victoria. 49

RATIONALE: By publishing an annual report, Victorians can monitor where and when stretches of road have been maintained and where the greatest risks remain. 49

RECOMMENDATION 7: That the Victorian Government undertake and publish research to determine the cost and timeframe of ensuring all highways, arterial roads and other roads of significance in Victoria are a minimum 3-star rating. 49

RATIONALE: Decisions about road funding cannot be made without information on what the desired acceptable minimum standard is and what is required—funding and time—to meet that standard. Further, the Victorian public should be better informed about the link between road standards and speed limits. Publishing research with this information would help that understanding. 49

RECOMMENDATION 8: That the Victorian Government report on the predicted road standard rating for all road projects, including the expected lifespan and projections. Projections should take into account population growth and ensure roads meet the needs of all road users. 51

RATIONALE: By reporting in advance of a project commencing, Victorians are provided with information as to how effectively funding is being spent, what planning aspects have been considered and what impact these provisions will have on road safety. Poor road design and network planning cannot be blamed on an increasing population. 51

RECOMMENDATION 9: That the Victorian Government review its current road maintenance priorities to ensure standards such as line marking, safe shoulders and resurfacing are adequately maintained on high-speed minor roads. 53

RATIONALE: All roads in Victoria must be designed and maintained so that they are safe and fit-for-purpose for all Victorians. 53

FINDING 10: Pedestrians are the most vulnerable road user. 54

FINDING 11: While flexible wire rope barriers improve road safety for all road users, authorities should continue to reduce any risk they do pose to motorcyclists. 59

RECOMMENDATION 10: That the Victorian Government improve its standard of community engagement and consultation relating to the planning, positioning and implementation of flexible wire rope barriers in Victoria by undertaking site visits, publishing design guidelines and plans for specified stretches of road, and addressing logistical concerns with land owners and emergency services. 60

RATIONALE: Improved consultation and engagement regarding the installation of flexible wire rope barriers, including undertaking in-person site visits and publishing design guidelines and plans for a specific stretch of road, would better meet the needs of rural and regional communities. 60

RECOMMENDATION 11: That the Victorian Government, in line with the Victorian Auditor-General's report, *Safety on Victoria's Roads—Regional Road Barriers*, ensure the Department of Transport improves record keeping in relation to future installation of flexible wire rope barriers, including accurately recording the:

- location of barriers
- installation date
- state of repair
- cost of routine maintenance and monitoring. 61

RATIONALE: The Victorian Auditor-General's report was clear in its findings that the Department of Transport's inadequate record keeping in relation to construction dates, barrier locations, state of repair and types of flexible wire rope barrier installed hindered its ability to plan, evaluate and maintain the barriers. 61

4 Speed and road safety

RECOMMENDATION 12: That the Victorian Government consider wider deployment of variable speed limits across appropriate sections of the road network. 70

RATIONALE: Variable speed limits are an important road safety tool. They should be applied on every part of the road network where appropriate. 70

RECOMMENDATION 13: That the Victorian Government undertake research into whether vehicle-specific speed limits would be an effective speed management option in Victoria. 70

RATIONALE: There may be merit in applying different speed limits to difference classes of vehicles, however more research needs to be done to provide evidence to Victoria's road safety partners. 70

FINDING 12: Safe speed limits are those that match the properties of the roads they apply to. This means that road standards and speed limits are inextricably linked. 72

FINDING 13: Local councils involved in this Inquiry have found the application process to change speed limits in specific areas to be extremely difficult to navigate. They believe the application process should be streamlined. 76

FINDING 14: The Safe System approach to road safety provides the overarching principle that guides the setting of speed limits in Victoria. Despite many of the programs, funding commitments and other initiatives implemented under Towards Zero, the fundamental principle of how 'safe speed' works in the Safe System has not consistently driven Victoria's approach to speed management policy. 79

RECOMMENDATION 14: That the Victorian Government review speed limits on all rural and regional roads as a matter of priority to:

- Identify unsafe roads with low traffic volumes where speed limits should be reduced and reduce them accordingly.
- Identify unsafe roads with high traffic volumes where spending should be prioritised and develop a spending and construction program based the review outcomes. 82

RATIONALE: Relying on upgrades for unsafe low traffic roads is currently not a feasible, nor an economically possible solution. Default speed limits on such roads should be lowered to safer levels. 82

FINDING 15: Public confidence in the broader road safety strategy is affected by the perceived efficacy of speed enforcement programs. 84

FINDING 16: Mobile speed cameras improve road safety. This is particularly true in rural and regional areas where they can have a wide effect. 86

FINDING 17: Penalties for speeding offences form an important part of the overall approach to speed management, particularly as a deterrent measure. 87

FINDING 18: The success of Wipe off 5 is an example of how well implemented, evidence-based education campaigns can improve driver attitudes and behaviour around low-level speeding. Evidence shows that attitudes around low-level speeding are an ongoing road safety challenge in Victoria and the TAC should be congratulated for adapting its messaging style in line with new ways the community consumes media. 90

FINDING 19: Community awareness is one of the simplest and most effective ways of challenging the myth that fines for speeding are simply 'revenue raising'. 92

RECOMMENDATION 15: That the Victorian Government develop a strategy to improve public confidence in the speed camera system, including increasing public awareness of the Cameras Save Lives website and where money raised by fines is invested. 93

RATIONALE: Research shows that acceptance of and compliance with speed limits improves in line with public education campaigns on the link between speeding and road safety. 93

5 Data

RECOMMENDATION 18: That the Transport Accident Commission work with the Office of the Victorian Information Commissioner and the Victorian Centre for Data Insights to make all traffic accident datasets publicly available in a way that:

- enables simple and reliable independent analysis
- upholds privacy principles.

These should continue to be published quarterly. 107

RATIONALE: The Transport Accident Commission maintains extensive road safety datasets. However, a large portion of this information is not made publicly available or does not correlate with other datasets. Publishing reliable datasets quarterly increases and enhances independent evaluation. 107

RECOMMENDATION 19: That the Victorian Government review the recommendations made in the 2014 Road Safety Committee *Inquiry into Serious Injury* with the intention of implementing improved mechanisms for capturing serious injury data. 109

RATIONALE: The recommendations of the 2014 *Inquiry into Serious Injury* have not been adopted by the Victorian Government. This is despite serious injuries increasing on Victoria's roads. 109

RECOMMENDATION 20: That Victoria Police recommence capturing non-injury crash data. 110

RATIONALE: The more data relating to collisions that is captured, irrespective of severity, provides a greater insight into road safety and helps develop evidence-based targets. 110

RECOMMENDATION 21: That the Victorian Government expand its alcohol and other drugs testing regime to require all persons, other than passengers, who attend a hospital as a result of a road accident to undergo a BAC test. 111

RATIONALE: Expanding the testing regime to capture any person who presents to an emergency department as a result of a road accident will provide a greater understanding of prevalence of alcohol and other drugs on Victorian roads. Currently, toxicology reports are only completed on an ad hoc basis. 111

6 Driver training and licensing

FINDING 27: Driver training programs should be evidence-based and subject to thorough evaluation to determine their effectiveness in both preventing and responding to dangerous situations. 129

RECOMMENDATION 25: That the Victorian Government conduct research on road trauma involving drivers aged over 60 years. The research should determine:

- the specific risks posed and faced by older drivers
- targeted road safety policies to negate these risks. 131

RATIONALE: Not all older drivers pose a risk to road safety. Policies should be based on the specific risks posed and faced by individual drivers and their capacity to drive safely. 131

FINDING 28: It is unclear what, if any, evaluation of motorcycle licensing and related education and training measures have been undertaken by Victoria's road safety partners since implementation of the current framework in 2014. 133

RECOMMENDATION 26: That the Victorian Government work with the professional driver training sector to review professional driver trainer requirements with a view to identifying areas for improvement, including consideration of minimum age and other eligibility criteria, and developing of a Code of Practice. 138

RATIONALE: Professional driver trainers have an obvious influence on road safety. The Government and the sector should work together to improve the quality of training provided to learner drivers. 138

FINDING 29: Employer occupational health and safety strategies should include driver training and providing safe vehicles. 139

RECOMMENDATION 27: That the Victorian Government work with the heavy vehicle sector to review the minimum training requirements needed to obtain a heavy vehicle licence. 140

RATIONALE: Representatives from the heavy vehicle sector have expressed concern that the current requirements for obtaining a heavy vehicle licence are inadequate. This includes lack of on-road experience. 140

7 Driver behaviour

FINDING 33: In Victoria, ex-government fleet vehicles are a small part of the second-hand market. However, Approved Vehicle List requirements encourage vehicle manufacturers to include more safety features in cars purchased for the government fleet. 173

RECOMMENDATION 35: That the Victorian Government advocate for the Federal Government's Luxury Car Tax to be abolished. 174

RATIONALE: The Luxury Car Tax was introduced to protect the domestic car manufacturing industry. As this industry no longer exists the tax is an anomaly and its removal will make some safer cars more affordable. 174

RECOMMENDATION 36: That the Victorian Government consider expanding WorkSafe Victoria's role in relation to road safety, including:

- making WorkSafe Victoria a road safety partner
- amending the *Occupational Health and Safety Act 2004* (Vic) (and other relevant legislation and regulations) in relation to WorkSafe's role in workplace road safety
- increased collaboration between WorkSafe and current road safety partners to better address safety issues and improve outcomes in the context of workplace road safety. 177

RATIONALE: Employers have a legal responsibility to provide a safe workplace, which includes ensuring employees are safe when they are driving. WorkSafe Victoria has an important oversight role regarding work-related road safety. 177

FINDING 34: Although there is debate around the exact evolution of connected and autonomous vehicles, the Victorian Government should continue to support this technology in improving road safety. 180

Acronyms and terms

ABS	Antilock Braking System
ACV2	Advanced Connected Vehicles Victoria
ADAS	Advance Driver Assistance Systems
ADTAV	Australian Driver Trainers Association (Victoria)
AGRD	Austroads Guide to Road Design
ANCAP	Australasian New Car Assessment Program
AusRAP	Australian Road Assessment Program
AVL	Approved Vehicle List
BAC	Blood Alcohol Concentration
CAV	Connected and Automated/Autonomous Vehicle
CBD	Central Business District
C-ITS	Co-operative Intelligent Transport Systems
COTA	Council of the Ageing Victoria
CPV	Commercial Passenger Vehicle
C-V2X communication	A new cellular technology for direct vehicle-to-everything (C-V2X) communications
DHHS	Department of Health and Human Services
DIVRS	Darebin Information, Volunteer and Resource Service
DJCS	Department of Justice and Community Safety
DoT	Department of Transport
ESC	Electronic Stability Control
Euro NCAP	European New Car Assessment Programme
GLS	Graduated Licensing Scheme
iRAP	International Roads Assessment Program
LCT	Luxury Car Tax
LRRCS	Law Reform, Road and Community Safety Committee
MDMA	3,4-Methylenedioxymethamphetamine
MDP	Migrant Driver Program
Meth	Methamphetamine
M-GLS	Motorcycle Graduated Licensing Scheme
MRPV	Major Roads Projects Victoria
MSCs	Mobile Speed Cameras
MTIA	Major Transport Infrastructure Authority
MUARC	Monash University Accident Research Centre
OECD	Organisation for Economic Co-operation and Development

OH&S	Occupational Health and Safety
P2P	Point-to-Point
PTV	Public Transport Victoria
R&L	Registration and Licensing
RACS	Royal Australasian College of Surgeons
RACV	Royal Automobile Club of Victoria
RCIS	Road Crash Information System
RMP	Road Management Plan
RRV	Regional Roads Victoria
RSV	Road Safety Victoria
SRAS	Side Road Activated Speeds
SSA	Safe System Assessment
TAA	Transport Alliance Australia
TAC	Transport Accident Commission
TfV	Transport for Victoria
THC	Delta-9-tetrahydrocannabinol
TIC	Transport Infrastructure Council
TIS	Traffic Incident System
Towards Zero	Victorian Government Road Safety Strategy 2016–2020
UCSR	Used Car Safety Rating
UN	United Nations
VACC	Victorian Automobile Chamber of Commerce
VAGO	Victorian Auditor-General's Office
VCAL	Victorian Certificate of Applied Learning
VCDI	Victorian Centre for Data Insights
VFF	Victorian Farmers Federation
VMC	Victorian Motorcycle Council
VSL	Variable Speed Limit
VSTORM	Victorian State Trauma Outcomes Registry Monitoring Group
VTA	Victorian Transport Association
WRB	Wire Rope Barrier

What happens next?

There are several stages to a parliamentary inquiry.

The Committee conducts the Inquiry

This report on the Inquiry into the Increase in Victoria's Road Toll is the result of extensive research and consultation by the Legislative Council's Economy and Infrastructure Committee at the Parliament of Victoria.

We received written submissions, spoke with people at public hearings, reviewed research evidence and deliberated over a number of meetings. Experts, government representatives and individuals expressed their views directly to us as Members of Parliament.

A Parliamentary Committee is not part of the Government. Our Committee is a group of members of different political parties (including independent members). Parliament has asked us to look closely at an issue and report back. This process helps Parliament do its work by encouraging public debate and involvement in issues. We also examine government policies and the actions of the public service.

You can learn more about the Committee's work, including all of its current and past inquiries, at: https://www.parliament.vic.gov.au/eic-lc

The report is presented to Parliament

This report was presented to Parliament and can be found at: https://www.parliament.vic.gov.au/eic-lc/inquiries/article/4296

A response from the Government

The Government has six months to respond in writing to any recommendations we have made. The response is public and put on the inquiry page of Parliament's website when it is received at: https://www.parliament.vic.gov.au/eic-lc/inquiries/article/4297

In its response, the Government indicates whether it supports the Committee's recommendations. It can also outline actions it may take.

1 Introduction: The *Towards Zero* strategy and Victoria's approach to road safety

1.1 Introduction

Victoria has been a leader in road safety for many decades. It consistently performs better than other states and territories. Indeed, as at December 2019 Victoria's rate of fatalities per 100,000 population was 4.06 deaths compared to the national average of 4.68.[1] The Australian Automobile Association noted that if other jurisdictions matched the Victorian fatality rate, 169 lives could be saved across Australia.[2]

However, that does not negate the fact that progress reducing the road toll in Victoria has stalled. Victoria's previous road safety strategy, *Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan*, had a target to reduce fatalities to 200 or less by 2020. The target for serious injuries was a 15% reduction.[3] In 2019 there were 268 deaths, 55 more than the previous year of 213 deaths, and many thousands of people were hospitalised as a result of road trauma.[4] These statistics gave rise to this Inquiry.

In its submission, the Victorian Government noted that the comparatively low road toll in 2018 was due to uncharacteristic decreases in fatalities on regional roads. By its own admission fatalities are trending upwards.[5] In fact, the Committee found that for the life of the previous road safety strategy, both fatalities and serious injuries trended upwards.

In 2020, restrictions on movement in 2020 due to COVID-19 helped fatalities fall to 213, an equal low with 2018. (Serious injury data had yet to be published at the time for writing this Report.) While welcome news, the Committee considers that without the right changes this will prove to be merely a statistical aberration.

The Victorian Government should be congratulated for setting an ambitious target. Trying to understand why those targets were not met—in an effort to rectify the problem—is the focus of this Report.

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1 Australian Automobile Association, *Benchmarking the Performance for the National Road Safety Strategy Q4 2019*, February 2020, p. 15.

2 Ibid.

3 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* 2016, p. 3.

4 Transport Accident Commission, *Claims involving hospitalisation annual,* 2020, <https://www.tac.vic.gov.au/road-safety/statistics/tac-hospitalisation-reports/claims-involving-hospitalisation-annual> accessed 16 November 2020.

5 Government of Victoria, *Submission 71*, p. 13.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.6 and 1.7 of Appendix B.

1.2 A brief summary of road safety in Victoria over the past 50 years

Victoria has been a world leader in implementing measures that significantly reduced crashes and fatalities. Key examples include:

- mandatory use of seatbelts in the 1970s
- random breath testing in 1976
- speed cameras in the mid-1980s
- booze buses
- compulsory helmets for bicyclists in the early-1990s.

Also unique to Victoria was the creation of the Transport Accident Commission (TAC) in 1986. The TAC provides compensation for people injured in a transport accident, regardless of fault. Another key objective of its Act (the *Transport Accident Act 1986* (Vic)) is to reduce the incidence and cost of transport accidents. This allowed the TAC to become a key player in road safety in Victoria by financing, supporting and advocating for innovative measures. By the late-1980s, it was working closely with VicRoads and Victoria Police on road safety.[6,7]

By the mid-1990s, Victoria's road toll started to plateau and it became apparent to the policy makers that a different approach to saving lives was required. Victoria began to look at successful models overseas. In the late 1980s, countries such as the United Kingdom, Sweden and the Netherlands were changing their thinking as a result of their high fatality rates.

Road authorities and engineers have traditionally followed three principles for safe road use, what is commonly known as the 'three Es': engineering the road; educating the drivers; and enforcing road rules. These countries realised that focusing on road users alone over engineering and enforcement was not going to fix the problem. A systems-wide approach was therefore required. The United Kingdom began a 'New Approach to Appraisal', the Netherlands its 'Sustainable Safety' and Sweden began 'Vision Zero'. All three systems had similarities in that they were multi-criteria decision frameworks.

In the late-1990s, Monash University Accident Research Centre (MUARC) hired a new Director, Professor Claes Tingvall, a previous Director of Road Safety at the Swedish

6 David Anderson and Eric Howard, *Submission 45*, p. 6.

7 In 2014 the Department of Health and Human Services and the Department of Justice became road safety partners.

Road Administration and the architect behind Vision Zero. Professor Tingvall's view is that traffic safety should take the same approach to preventing deaths and serious injuries as workplace safety.[8]

VicRoads, the TAC and Victoria Police, with Professor Tingvall's assistance, began advocating for a 'Safe System' approach in Victoria (see 1.3 below). By the early-2000s, Victoria's road safety strategies were encompassing Safe System principles to reduce trauma, with the Victorian Government committing to the 'three Es'.

As an example, the *Arrive Alive 2008–2017* strategy contained traditional behavioural measures such as:

- automatic suspension for those caught drink driving with a 0.1 or above BAC[9]
- peer passenger restrictions for P-platers
- more targeted roadside drug testing.

However, also included were:

- Mandating electronic stability control in all new cars sold in Victoria (ahead of the Federal Government) and side curtain airbags.
- Introducing both those vehicle safety technologies into the government fleet over a three-year period.
- Substantially increasing the funding to the Safer Roads Improvements Program, fixing not just blackspots but also 'greyspot' areas, upgrading locations identified as potential crash sites.[10]

The result of these measures saw the road toll decrease from 303 fatalities in 2008 to 242 fatalities in 2013.[11]

Victoria's Road Safety Strategy 2013–2022 became Victoria's first strategy to be based on the Safe System approach.[12]

1.3 The Safe System approach

The Safe System is based on the Vision Zero model enacted by legislation in the Swedish Parliament in 1997. The model is built on three principles:

- crashes should not lead to serious health loss
- a safe system assumes shared responsibility

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8 Towards Zero, *Making Progress: Vision Zero and Sweden's Approach to Road Safety,* 2020, <https://www.towardszero.vic.gov.au/news/articles/vision-zero-and-swedens-approach-to-road-safety> accessed 2 November 2020.

9 Blood Alcohol Concentration

10 Transport Accident Commission, *New road safety strategy – arrive alive 2008-2017,* media release, 6 February 2008.

11 Department of Infrastructure and Regional Development, *Road Deaths Australia: 2013 Statistical Summary,* 2013, p. 2.

12 Government of Victoria, *Victoria's Road Safety Strategy 2013-2022,* 2013, p. 8.

- human capabilities and limitations must be considered.[13]

Vision Zero challenged the traditional road safety model of focusing on the individual driver. It became apparent that changing people's behaviour was not enough and focus shifted to ensuring that the road system protected people. Professor Tingvall notes that in system design human failings should always be taken into account, saying: 'There is no example in history of designing something based on the human doing the right thing.'[14]

Vision Zero required a change in thinking on two key fronts:

- Moving away from retrofitting engineering solutions after a crash to considering what an ideal safe road transport system should be and building it.
- Accepting that the state and system designers have an equal role to play as the road users.

Vision Zero states that responsibility for road safety is shared by all levels of government, including regulators, communities and individuals.[15] Government is responsible for the design, operation, use and, ultimately, safety of the road transport system. Road users are responsible for following the rules.[16]

BOX 1.1: The Safe System approach across the world

The Safe System approach is considered a best practice model worldwide. The United Nations together with the World Health Organisation held a decade of action on road safety from 2011–2020, the guiding principle of which was the Safe System. By 2012, the United Kingdom, the Netherlands and Sweden had achieved the lowest casualty crash rates in the OECD, approximately 40–50% lower than Australian rates. Further, a 2018 review of 53 countries found that those countries that had adopted a Safe System approach to road safety achieved both the lowest rates of fatalities and the largest reduction in fatalities over the preceding 20 years.

The *National Road Safety Strategy 2011–2020* saw Australia become one of the first countries (after Sweden and the Netherlands) to formally adopt the Safe System approach to road safety improvement. Today all State and Territory strategies are based on this model.

Sources: World Health Organization, *Global Plan for the Decade of Action for Road Safety 2011–2020*, 2011, p. 8; Transport Australia Society, *Road Safety*, discussion paper, Engineers Australia, October 2019, p. 7; WRI Ross Center, *Sustainable & Safe: A Vision and Guidance for Zero Road Deaths*, report prepared by Ben Welle et al., World Resources Institute, January 2018, pp. 4, 23; National Road Safety Strategy, *Road safety in Australia*, 2020, <https://www.roadsafety.gov.au/rsa> accessed 2 November 2020.

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13 C Tingvall and N Haworth, 'Vision Zero – An ethical approach to safety and mobility', paper presented to the 6th ITE International Conference Road Safety & Traffic Enforcement: Beyond 2000, Melbourne, 6–7 September 1999, p. 1.

14 Transport Accident Commission, *Making Progress: Vision Zero and Sweden's Approach to Road Safety.*

15 Government of Victoria, *Submission 71*, p. 6.

16 C Tingvall and N Haworth, *Vision Zero – An ethical approach to safety and mobility*, p. 2.

BOX 1.2: *National Road Safety Strategy 2011-2020*

In Australia, the Federal Government is responsible for regulating safety standards for new vehicles, and for allocating funding, including for safety, across national highways and local roads. State and territory governments are responsible for funding, planning, designing and operating the road network. They also manage vehicle registration, driver licensing as well as regulating and enforcing road user behaviour.

The Ministers for Transport and Infrastructure from across Australia form the Transport Infrastructure Council (TIC) together with the Australian Local Government Association. Their mandate is to deliver national reforms to improve the efficiency and productivity of Australia's infrastructure and transport system, economic growth, social connectivity and to enhance quality of life.

The *National Road Safety Strategy 2011–2020* was established co-operatively by the TIC with an agreed set of national road safety goals, objectives, actions and priorities. The ten-year plan had an aim to reduce deaths and serious injuries across Australia by at least 30%.

Sources: National Road Safety Strategy, *Road Safety in Australia*, (n.d.) <https://www.roadsafety.gov.au/rsa> accessed 12 November 2020; Transport and Infrastructure Council, *About the Council*, (n.d.), <transportinfrastructurecouncil.gov.au> accessed 1 December 2020; National Road Safety Strategy, *National Road Safety Strategy 2011–2020*, 2011, <https://www.roadsafety.gov.au/nrss> accessed 12 November 2020.

Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan (the Strategy) was based on the 'four pillars' of a Safe System:

- safe road users
- safe vehicles
- safe roads
- safe speeds.[17]

The Strategy provided an example of how an incident on a rural road might look under a Safe System:

> if a distracted parent turns their head for a split second to see why their child is crying in the back, tactile edge lines [rumble strips] or a lane departure warning device [in vehicle] may alert them in time to recover. Where there is no time to recover, a roadside barrier can prevent them from hitting another vehicle head-on or running off the road, hitting a tree and being killed.[18]

17 Sometimes also simplified to: Safe drivers, safe vehicles and safe roads.

18 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* p. 10.

1.3.1 A shared responsibility

As stated, under the Safe System where a road accident occurs, irrespective of severity, both the individual road user and the road system designers are responsible. At a public hearing, Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, spoke of how Victoria's road safety partners understand their collective responsibility for addressing road safety. She said:

> I think it is really important as a road safety partnership in Victoria to acknowledge that we are only as effective in driving down that trauma as the strength of our road safety partnership. Road Safety Victoria is the lead road safety agency in this state, but we work absolutely in partnership with the other road safety agencies, such as the TAC, the Department of Health and Human Services, Justice and Victoria Police. I think how we look to develop our road safety program collectively and ensure that we are working and tackling the challenges that we face in road safety is a fundamental part of the effectiveness now and into the future.[19]

The Committee notes that in the introduction to the *Victorian Road Safety Strategy 2021–2030* the Minister for Roads and Road Safety stated: 'The Strategy also acknowledges that road safety is complex, and that it takes a collective response across government agencies, our industry partners, and the Victorian community, to deliver safer roads.'[20]

FINDING 1: The Victorian Government remains committed to the shared responsibility tenet of the Safe System approach to road safety.

1.3.2 2018 Review of *Towards Zero*

The then Minister for Road Safety stated in the Foreword to *Towards Zero*: 'A progress review will be conducted in early 2018 to ensure we are on track to achieve our ambitious targets.'[21]

The City of Melbourne submission observed:

> It is difficult to determine how the … Strategy failed to achieve its goal for fewer than 200 road deaths by 2020. It does not appear that the plan for a mid-strategy review in 2018 took place or it was not made available to the public. Without a review it was difficult to identify potential improvements to the strategy and/or its implementation …[22]

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19 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, p. 37.

20 Government of Victoria, *Victorian Road Safety Strategy 2021–2032,* 2020, <https://www.tac.vic.gov.au/__data/assets/pdf_file/0020/502166/RoadSafetyStrategy_DEC2020.pdf> accessed 29 January 2021, p. 3.

21 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* p. 3.

22 City of Melbourne, *Submission 72*, p. 9.

In its submission to this Inquiry, the Victorian Government confirmed that a review did occur, proving the Strategy's flexibility to adjust to new circumstances. The submission provides examples of budget increases for consecutive years from 2018–19 and 2019–20 to continue infrastructure safety improvements, a 50% rise in roadside drug testing, a 75% increase in mobile camera operations, mobile point-to-point cameras and investigation of new enforcement technologies including cameras that can detect illegal phone use by drivers.[23] The submission also noted a number of additional measures that were not part of the Strategy.[24]

However, to the best of the Committee's knowledge, information from the 2018 Review was shared only with a few within the industry. For example, the Royal Automobile Club of Victoria's (RACV) submission noted a briefing it received from the Department of Transport in December 2019 highlighting statistics based on 2014–18 data covering road users, speeds, vehicles and roads.[25]

No announcements were made regarding the results of the review nor was any information published on any of the road safety partners' websites. The Committee could not find any data, information or results published to show why the above areas were targeted for extra funding, what measures, if any, were successful, or what the overall outcomes of their review was. The Committee, like the City of Melbourne, remains unaware of the details of the review.

Unfortunately, this lack of transparency is a current hallmark of the road safety partners. Other examples follow throughout this Report.

1.3.3 Measuring success

Road trauma, conservatively, costs Victorians $6 billion a year.[26] Reducing fatalities and serious injuries therefore is an aim that is both socially responsible and economically sensible. The Strategy initially committed a record $1.1 billion worth of programs. The funds were to be spent on infrastructure, a young drivers' safety package, research programs, and purpose-built drug and booze buses, among other countermeasures. The Strategy lists actions but was silent on evaluating progress.

No information was provided to the Committee by the Victorian Government, either within its submission or at a public hearing, as to whether progress on individual countermeasures is tracked and evaluated. The Committee agrees with stakeholders in this Inquiry on why this is a problem for Victoria achieving its road safety targets.

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23 Government of Victoria, *Submission 71*, p. 24.

24 Ibid., p. 25.

25 Royal Automobile Club of Victoria, *Submission 53,* p. 8.

26 Ms Samantha Cockfield, Lead Director, Road Safety, Transport Accident Commission, public hearing, Melbourne, 6 October 2020, *Transcript of evidence,* p. 38.

For example, the RACV submission notes that not having clear, quantifiable measures of what success looks like hinders Victoria's ability to achieve its targets.[27] The Royal Australasian College of Surgeons agrees with this view, stating that clear targets for trauma reduction within well-defined timeframes are essential.[28]

In a submission, Mal Peters, an engineer who reviews government-sponsored projects, considered that targets were not achieved because project objectives and strategies were not clearly defined, with poor coordination, implementation, management and reporting. Further he noted:

> it is hard to pinpoint the exact cause of the failure but it is sufficient to say that we have seen the Program fail and if that is the case then the management of the Program to allow this to happen has been less than adequate.[29]

The Victorian Government's submission referred to modelling and data collection to show it is taking an evidence-based approach to program and performance monitoring. It states:

> A robust evidence base and data collection processes is required to develop, action and monitor road safety initiatives in Victoria. Victorian Government road safety agencies collect and maintain key datasets that provide the evidence-base for road safety planning and performance monitoring in Victoria. Specifically, these datasets facilitate close monitoring of road trauma trends including fatalities and serious injuries, while playing a key role in informing road safety strategy and policy setting [including] providing pre & post-crash history on Victoria's roads to show whether a countermeasure was effective in tackling a specific road safety issue.[30]

Data is dealt with in Chapter 5 of this Report.

The Committee appreciates that road safety initiatives are largely developed on evidence-based science. However, it is unclear how current countermeasures are performing. One of the reasons for this view is the lack of clear, tangible targets. The Committee can only conclude that progress on individual countermeasures is not published because of one or a combination of all the following reasons:

- a culture of secrecy that avoids transparency
- a lack of clear, tangible targets
- no evaluation of individual or group actions.

Pre- and post-crash history is important, but whether individual countermeasures are implemented, on time and within budget are also crucial pieces of the puzzle. It is important that the public understands how public money is being spent and if targets

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27 Royal Automobile Club of Victoria, *Submission 53*, p. 5.

28 Royal Australasian College of Surgeons, *Submission 17,* p. 2.

29 Mal Peters, *Submission 137*, p. 2.

30 Government of Victoria, *Submission 71*, p. 55.

are being met. It is equally important for other stakeholders—non-government road safety experts—to be able to evaluate and contribute to improving road safety policy in Victoria.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.2 and 2.6 of Appendix B.

FINDING 2: Without transparent key performance indicators, good measurement and reporting methods, there is no clear way to evaluate success or otherwise in achieving goals. There is a perceived of lack of transparency and accountability among Victoria's road safety partners, which may be harming Victoria's aims of further reducing its road toll.

The Committee recommends that a review of the previous Strategy be conducted to enable the road safety community at large to understand where the failings occurred and to learn from these mistakes. The Department of Transport should publish the results on its website.

RECOMMENDATION 1: That the Victorian Government review the effectiveness of *Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan* and publish the results on the Department of Transport website.

RATIONALE: Transparency and knowledge allows the wider road safety community in Victoria to contribute to reducing the road toll. The *Victorian Road Safety Strategy 2021–2030* was published without any acknowledgement of where and why *Towards Zero* failed to reach its targets.

The Committee further recommends the current strategy, released in December 2020, set targets and state how success will be evaluated. This information should be published annually on the Department of Transport website.

RECOMMENDATION 2: That the Victorian Government in its current road safety strategy set targets and define how success meeting the targets will be evaluated. This information should be published annually on the Department of Transport's website.

RATIONALE: Clear, measurable targets are vital to ensure Victoria's road safety partners have tangible goals and are held accountable for those goals. This will ensure the *Victorian Road Safety Strategy 2021–2030* has the greatest chance of succeeding.

1.3.4 Modelling

Victoria's road safety partners collaborated with MUARC to model the various countermeasures in the Strategy, to assess the potential impact of each measure on reducing road trauma.[31] MUARC was formed in 1987 as a joint venture between the Victorian Government and Monash University to address the road toll. MUARC's website notes that it developed a modelling program specifically for road safety in 2005 that has been refined and used ever since, not just in Victoria but across Australia, including for the *National Road Safety Strategy 2011–2020*.[32]

In 2018, the modelling was reviewed by Deloitte Access Economics, who concluded that 'the modelling approaches are largely sound, though are only as robust as the underlying assumptions and data inputs'.[33]

Both the Department of Transport and MUARC have stated that several assumptions were wrong. They both noted that they underestimated population growth, which correlated in a higher than forecast travel demand. The Department further noted other incorrect assumptions concerning an ageing population, a changing mix of transport modes, changing patterns in drug use and other driver behaviours.[34] MUARC also suggested that the initiatives in *Towards Zero* may not have been implemented to the fullest extent or within the timeframes modelled, or their effectiveness has been less than assumed in the modelling.[35]

The Committee agrees the modelling is only as good as the assumptions entered and it seems clear that assumptions for the Strategy were wrong. Some of these assumptions should have been accounted for. Population growth has been increasing since at least 2011 and the ageing Baby Boomer population should also not have come as a surprise.[36]

The problems with the Strategy's modelling may have been avoided with better transparency, as road safety experts may have suggested using other modelling systems. For example, the Sweden Transport Administration's 'back-casting' model considers what a road system with zero deaths and serious injuries should look like and develops a plan and steps to achieve those goals.

FINDING 3: More transparency around the modelling used for *Towards Zero 2016–2020 Victoria's Road Safety Strategy & Action Plan* may have improved the Strategy's impact on Victoria's road toll.

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31 Government of Victoria, *Submission 71*, p. 15.

32 Monash University, *Modelling of the Victorian Road Safety Strategy – Using eMETS (enhanced Macro Estimates for Target Setting) countermeasure and strategy modelling tool,* 2019, <https://research.monash.edu/en/projects/modelling-of-the-victorian-road-safety-strategy-using-emets-enhan> accessed 10 November 2020.

33 Government of Victoria, *Submission 71*, p. 15.

34 Monash University Accident Research Centre, *Submission 66*, p. 14; Government of Victoria, *Submission 71,* p. 6.

35 Monash University Accident Research Centre, *Submission 66*, p. 15.

36 Parliament of Victoria, Road Safety Committee, *Inquiry into Road Safety for Older Road Users*, September 2003. Of the 41 recommendations made, 35 were supported by the Victorian Government.

1.4 Serious injuries

As mentioned, Victoria's previous road safety strategy aimed to reduce serious injuries by 15% over its five-year period.[37] That this target was not met—and in fact serious injuries have increased—is of great concern. Serious injuries take a great toll on individuals, in particular those who suffer life-long physical and psychological poor health. There is also a great economic cost to society.

Also of concern is the fact that determining the exact number of serious injuries on Victoria's roads is very difficult. The Strategy stated that approximately 5,000 people a year are seriously injured, that is, admitted to hospital. At a public hearing, Ms Samantha Cockfield, Lead Director, Road Safety at the TAC informed the Committee that:

- one person suffers a serious spinal injury every 18 days
- eight people are hospitalised every day
- two people suffer severe brain injuries every week.[38]

Eight people being hospitalised daily equals just under 3,000 serious injuries per year, which differs from the 5,000 amount in *Towards Zero*. While this suggests a decline, the *Victorian Road Safety Strategy 2021–2030* states the figure is actually 8,000 serious injuries annually. The Committee notes that this figure closely aligns with the TAC figure of 8,124 hospital claims in 2018, an increase from 6,289 in 2015.[39] Of the 2018 numbers, 928 people were in hospital for greater than 14 days, which means they had sustained some form of severe injury such as head trauma or paralysis.[40]

FINDING 4: There is a great deal of inconsistency around the number of people reported by Victoria's road safety partners as being seriously injured on Victoria's roads.

On average, serious injuries data lags about six months behind data on fatalities, which can be measured daily. The TAC website notes this is to allow claims to be lodged and processed and hospital invoices to be received and finalised. Data is revised as additional information about claims is accepted.[41] However, the Victorian Government's submission did not present data from six months previous, nor was the Committee updated at its public hearing.

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37 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan.*

38 Ms Samantha Cockfield, *Transcript of evidence*, p. 38.

39 Transport Accident Commission, *Claims involving hospitalisation annual*.

40 Transport Accident Commission, *Claims involving >14 days hospitalisation annual,* 2020, <https://www.tac.vic.gov.au/road-safety/statistics/tac-hospitalisation-reports/claims-involving-14-days-hospitalisation-annual> accessed 16 November 2020.

41 Transport Accident Commission, *TAC Claims involving hospitalisation reports,* 2020, <https://www.tac.vic.gov.au/road-safety/statistics/tac-hospitalisation-reports> accessed 30 November 2020. The TAC website has published serious injury data from claims extracted 2 October 2020. The TAC website defines a serious injury as requiring hospitalisation within seven days of a crash.

The RACV submission commented that despite the *Towards Zero* target, serious injuries continue to be overlooked and not measured well.[42] The Royal Australasian College of Surgeons made a similar point, writing:

> There has been no reduction in serious injury cases over the past decade and the lack of reporting on these cases underplays the overall impact of road trauma in Victoria and means that the "ripple effects" go unrecognised.[43]

A similar view was also expressed by the Federal Government's *Inquiry into the National Road Safety Strategy 2011–2020*, which noted:

> The nation is overly reliant on fatality crash data and therefore misses the opportunity to properly manage the serious injury burden. The characteristics associated with fatal crashes can be quite different to injury crashes, and countermeasures should not be based on fatal crash information alone.[44]

Further, as noted by the Victorian State Trauma Outcomes Registry Monitoring Group, *Towards Zero* did not define serious injury.[45] However, the Committee notes that the *Victorian Road Safety Strategy 2021–2030* defines serious injury as 'hospitalisation and MAIS[46] 3+'.

Acknowledging that not a lot is known about preventing serious injuries, the TAC funded a world-first $8 million research program for an in-depth investigation of crashes causing serious injuries. The Enhanced Crash Investigation Study, run by MUARC, was announced in 2014 and restated in the Strategy. Its aim was to inform policy makers with knowledge about prioritising investment to save lives and prevent serious injuries, such as head and spinal injuries.[47]

The study's findings were released in November 2020[48] and confirmed the need for Victoria to stay committed to the Safe System's four-pillars approach described above. It stated: 'even with a fleet comprised only of the safest vehicles, elimination of serious injury is only possible when the road infrastructure and speed limit settings accommodate the safety limits afforded by the safest vehicles'.[49]

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42 Royal Automobile Club of Victoria, *Submission 53*, p. 8.

43 Royal Australasian College of Surgeons, *Submission 17*, p. 2

44 Government of Australia, *Inquiry into National Road Safety Strategy 2011-2020,* report prepared by Jeremy Woolley, John Crozier, Lachlan McIntosh and Rob McInerney, Canberra, 2018, p. 26.

45 Victorian State Trauma Outcomes Registry Monitoring Group, *Submission 52*, p. 2. This group is funded by DHHS and TAC and sits within the School of Public Health and Preventative Medicine at Monash University.

46 The Maximum Abbreviated Injury Scale is a coding system used to classify trauma.

47 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan*, p. 26.

48 Monash University Accident Research Centre, *ECIS report released: Major study reveals factors causing serious injuries on Victoria roads,* 2020, <https://www.monash.edu/muarc/news-and-events/articles/major-study-reveals-factors-causing-serious-injuries-on-victorian-roads> accessed 8 February 2021.

49 Michael Fitzharris et al., *ECIS Report 1: Overview and analysis of crash types, injury outcomes and contributing factors*, Enhanced Crash Investigation Study (ECIS), no. 1, Monash University Accident Research Centre, Australia, 2020, p. 138.

Of particular concern is the fact that the report found: 'Significant gaps exist in the performance of the Victorian road transport system when measured against the criteria shown to eliminate serious injury.'[50]

Another project the Strategy restated was Victoria's participation in the Australian Naturalistic Driving Study (ANDS). Using multiple cameras and sensors placed in volunteers' cars the study aimed to understand people's behaviour while driving in traffic. This includes where they were looking, their speed and lane position, and how they mingled with other road users. The Strategy noted:

> The research is expected to reveal new information on the main culprits in collisions, including making mistakes, distraction, inattention, speeding and tiredness – and help shape the next wave of road safety improvements.[51]

According to the ANDS website the study appears to have ceased in 2017 and though periodic reports were published on the site, they do not appear to be available now. Learnings from that study are quoted in the Victorian Government's submission, particularly around the issue of distraction and phone use.[52]

The Committee believes that the findings of both the Enhanced Crash Investigation and the ANDS studies, even if interim reports, should be published.

RECOMMENDATION 3: That the Victorian Government publish the findings of the Australian Naturalistic Driving Study on the Department of Transport website.

RATIONALE: The Enhanced Crash Investigation Study and Australian Naturalistic Driving Study have informed the Victorian Government's approach to road safety. Both findings should be published to: help the Victorian public understand the Government's approach; and assist road safety professionals in their work.

1.5 Were the aims of *Towards Zero* even possible?

In his introduction to the Strategy the then Minister for Road Safety stated that 'nothing short of a culture change will get us *Towards Zero* … This is only the start of a road safety effort that will motivate everyone to do what can be done to save lives.'[53]

Based on what the Committee heard throughout this Inquiry, it is evident that changing the emphasis from fixing immediate problems to forming a vision of what the optimum road transport system looks like, and being guided by that vision, is difficult.

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50 Ibid., p. 143.

51 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan*, p.26.

52 Government of Victoria, *Submission 71*, pp. 10, 38, 62.

53 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* p. 3.

This is not just the case in Victoria. A report by the European Transport Safety Council reported that both the Netherlands and the United Kingdom had more road deaths in 2019 than 2010, while countries such as Sweden, Germany and France showed only modest reductions.[54]

In Australia, the Federal Government launched an inquiry into the *National Road Safety Strategy 2011–2020* in 2017, with the outcome published in September 2018. A key finding was that there is a disconnect between intentions, resourcing and road safety practice. Road trauma targets are not being met, and the Safe System approach is often not being honoured in the field.[55]

At the TIC meeting in August 2019, the Council 'strongly committed' to developing the next National Road Safety Strategy based on a target of zero fatalities and made road safety a standing item for the Council.[56] The Australian Government established an Office of Road Safety in 2019 with the aim of eliminating road trauma in Australia. The Office is the responsibility of the Deputy Prime Minister and Minister for Infrastructure, Transport and Regional Development. The 2020–21 Federal Budget saw $2 billion committed for road safety improvements across the country, including wire rope safety barriers and rumble strips. A National Road Safety Data Hub was also announced.[57]

The Inquiry concluded that road safety improvements had stalled around the whole country and none of the States or Territories were going to meet their targets. The Inquiry noted a need for dramatic change in road safety management given the human costs and the costs to the economy now and into the future.[58] Nationally, the cost of road trauma has risen to more than $30 billion per year.[59]

A subsequent review of the governance arrangements found:

- The Safe System approach has been adopted but not ingrained within government business at all levels of government.
- Road safety teams at all levels of government lack influence across the Safe System pillars and within their own organisations. For example, road safety teams lack influence over: transport infrastructure design; planning; operation; maintenance and funding teams; and road transport infrastructure investment decisions.
- Road infrastructure funding is not conditional on the inclusion of Safe System treatments in every project. Adding this condition would save lives and prevent expensive retrofitting of measures after projects are completed.[60]

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54 European Transport Safety Council, *This list of countries making the most progress on road safety in Europe might surprise you*, media release, Brussels, 17 June 2020.

55 Government of Australia, *Scaling up to save lives: Protecting current and future generations*, (n.d.), <https://www.roadsafety.gov.au/sites/default/files/2019-11/nrss_inquiry_factsheet_september_2018.pdf> accessed 17 November 2020.

56 Transport and Infrastructure Council, *Communique*, Adelaide, 2 August 2019, p. 1.

57 Australian Government Office of Road Safety, *Taking the Lead on Road Safety,* 2019, <https://www.officeofroadsafety.gov.au> accessed 12 November 2020.

58 Government of Australia, *Inquiry into National Road Safety Strategy 2011-2020*, p. 26.

59 Ibid., p. 4.

60 Department of Infrastructure, Transport, Cities and Regional Development, *Review of National Road Safety Governance Arrangements: Final Report*, Australian Government, Canberra, 2019, p. 4.

The TIC agreed with many of these findings. In August 2019, it agreed that all investments in road infrastructure planning, design and construction will require application of Safe System principles and the inclusion of safety treatments that align with these principles.[61] In essence, the aims of *Towards Zero* were possible to achieve. The problem of Victoria's road toll plateauing, in line with other jurisdictions across the world, can be overcome by a greater commitment to the Safe System approach.

The Committee was pleased to see the Victorian Government recommit to the elimination of road trauma. The release of the new strategy in December 2020 states the aims of halving deaths and serious injuries by 2030 and eliminating deaths by 2050. This is in line with the Federal Government's national strategy.

1.6 Management of road safety in Victoria—recent changes

In July 2019, VicRoads and Public Transport Victoria merged to become one under the Department of Transport. There are six divisions in the Department, each with its own Deputy Secretary. One of those divisions, Network Planning, also encompasses Road Safety Victoria. The new Department will plan, deliver and operate Victoria's transport system.[62]

The Department will also: respond faster to provide people information; respond to innovation; shift more journeys onto rail; take a holistic view of planning for the future; and partner with others to address a range of issues, from safety to reducing environmental impacts.

The Department of Transport's strategic plan for 2019–2023 does not mention safety of the network, other than a commitment to work with road safety partners to deliver the *Toward Zero* strategy. The word 'safe' is used a few times throughout the document but in a way the Committee understands is meant to imply personal safety and ease to move around on the transport system.

The Committee views this as a missed opportunity. The Department of Transport is a new organisation. It was a perfect time to deliver a strong commitment to saving lives by embedding the Safe System in everything it does. For example, the many large infrastructure projects currently occurring in Victoria should be built with Safe System principles as 'non-negotiables'. There is currently no evidence to suggest this is happening, although this may be another example of a lack of transparency as much as a lack of commitment.

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61 Government of Australia, Transport and Infrastructure Council, *Communique,* p. 2.

62 VicRoads, *Department of Transport Strategic Plan: Simple Connected Journeys 2019-2023,* 2019, <https://www.vicroads.vic.gov.au/about-vicroads/department-of-transport-strategic-plan#A1> accessed 12 November 2020.

The National Road Safety Strategy Review complimented action taken in Victoria. It stated:

> The inquiry is pleased to report however that towards the end of the current strategy, an increasing awareness of these issues has emerged and some organisations have been pursuing the required change in earnest.
>
> The TAC infrastructure funding in Victoria and renewed aspirations in the current action plan point to an increasing momentum on this issue. This must be followed through for success to occur.[63]

The Committee agrees. As a member of the TIC, the Victorian Government has committed to making the changes necessary to be able to better meet its road safety targets. If the State is to further reduce fatalities and serious injuries, it needs to be more proactive than it appears to be. The Safe System principle needs to be embedded into all road transport decision making if Victoria is to again lead the nation—and the world—in reducing the road toll.

Victoria's road safety partners are discussed in Chapter 2 of this Report.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 2.1 of Appendix B.

FINDING 5: Progress on eliminating road trauma has stalled in Victoria, nationally and across the world. A stronger commitment to embedding the Safe System approach in road safety policy is required in Victoria if we are to meet our new targets.

RECOMMENDATION 4: That the Victorian Government embed Safe System principles in all road transport decision making.

RATIONALE: Safe System principles are most effective when they form part of all decisions concerning road safety.

1.7 Comment

Victoria should be congratulated for the great gains it has made in road safety over recent decades. As noted, Victoria is not the only jurisdiction or country to have stalled in road safety improvements. The 3rd Global Ministerial Conference on Road Safety was held in February 2020 in Stockholm, Sweden. Co-hosted by the Swedish Government and the World Health Organization, a number of countries spoke about why they thought their targets were not being met. Reasons included:

63 Government of Australia, *Inquiry into National Road Safety Strategy 2011-2020*, p. 29.

- effects of existing policies unclear
- low-hanging fruit picked—new solutions are increasingly complex and there is a need for innovation
- diminishing returns
- fatigue and complacency.[64]

All of these issues apply to Victoria. The Committee returns to the fundamental principle of Vision Zero, that is, consider what an ideal safe road transport system should look like and build it. That comes down to governance. To do this takes strong political will.

Notwithstanding the cumulation of good work undertaken during the life of the previous strategy, key targets were not met. The Committee is concerned that despite the best of intentions the *Victorian Road Safety Strategy 2021–2030* may repeat the mistakes of the past. It urges the Victorian Government to accept the recommendations contained in this Report.

64 Marianne Dwarshuis, 'Improving Road Safety: a continuous challenge' PowerPoint presentation to 3rd Global Ministerial Conference on Road Safety, Stockholm, February 2020, <https://www.trafikverket.se/contentassets/82aa1db752b341cc8645603a27a2b9f9/marianne-dwarshius-improving-road-safety.pdf>; Matts-Åke Belin, PowerPoint presentation to 3rd Global Ministerial Conference on Road Safety, Stockholm, February 2020, <https://www.trafikverket.se/contentassets/82aa1db752b341cc8645603a27a2b9f9/matts-ake-belinthe-plateau-effect.pdf>.

2 Governance in Victoria's road safety system

2.1 Introduction

This Chapter begins with an overview of road network governance in Australian jurisdictions. It then lists legislation in Victoria and the roles of the State's road safety partners and how they are funded. The Chapter ends with a comment on cultural and structural challenges, including noting a long-standing lack of transparency in Victoria's road safety partners.

2.2 National overview

The Australian road network covers in excess of 877,000 kilometres[1] with varying responsibilities across federal, state and territory, and local levels of government. The Commonwealth does not own or manage any part of the national road network. Rather, its primary role is the provision of funding to state, territory and local governments, which are responsible for the management of the road network and delivery of road safety projects. Roads are generally classed as arterial roads (managed by state and territory governments) and local roads (managed by local governments).[2]

Broadly speaking, the jurisdictional responsibilities are:

- Commonwealth: regulation of new vehicle safety standards; and infrastructure resource allocation across the national highway and local road networks (including administration of the National Black Spot Program and other road funding programs, and national road safety data management).
- State and territory governments: funding, planning, design and operation of the road network; management of vehicle registration and driver licensing; and regulation and enforcement of road user behaviour.
- Local governments: funding, planning, design and operation of local road networks within municipal boundaries.[3]

An exception to public road funding mechanisms is privately operated freeways, such as EastLink and CityLink in Victoria. These are funded through public-private partnerships.

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1 Statistica, *Total length of roads in Australia in 2018, by state*, 2019, <https://www.statista.com/statistics/1030909/australia-length-of-roads-by-state> accessed 30 October 2020.

2 Productivity Commission, Funding and Investment for Better Roads, Shifting the Dial: 5 Year Productivity Review, Supporting Paper No. 9, Australian Government, Canberra, 2017, p. 7.

3 Department of Infrastructure, *Road Safety in Australia*, 2019, <https://www.infrastructure.gov.au/roads/safety/index.aspx> accessed 30 October 2020.

Funding for road management and road safety is further discussed in Section 2.5 below.

2.3 Victoria's road legislation and regulatory framework

2.3.1 *Transport Integration Act 2010* (Vic)

The *Transport Integration Act 2010* (Vic) (the Transport Integration Act) is the principal piece of legislation encompassing the Victorian transport portfolio. The Act sets out the framework for the provision of an integrated and sustainable transport system.[4] It establishes the position of Head, Transport for Victoria (TfV) as the entity responsible for the management of the Victorian transport system, including the public transport system and infrastructure, transport and roads systems and infrastructure, rail infrastructure, and passenger services.[5]

2.3.2 *Road Management Act 2004* (Vic)

The *Road Management Act 2004* (Vic) (the Road Management Act) provides the legislative framework for the management of the Victorian road network. The primary object of the Act is: 'to establish a coordinated management system that will promote a road network at State and local levels that operates as part of an integrated and sustainable transport system consistent with the transport system objectives under the Transport Integration Act and the responsible use of road reserves for other legitimate purposes'.[6]

In accordance with s 49 of the Road Management Act, the Department of Transport (DoT) is responsible for the development of a Road Management Plan (RMP). The RMP outlines the:

- relevant standards or policies in relation to the discharge of duties in the performance of road management functions
- details of the management system that a road authority proposes to implement in the discharge of its duty to inspect, maintain and repair public roads
- relevant policies and priorities adopted by the road authority
- matters that a relevant Code of Practice specifies should be included in a road management plan.[7]

All road assets are classified into group types and ordered into a hierarchy to ensure all assets are accounted for and prioritised by the Department. The below figure provides an overview of the asset hierarchy in Victoria.

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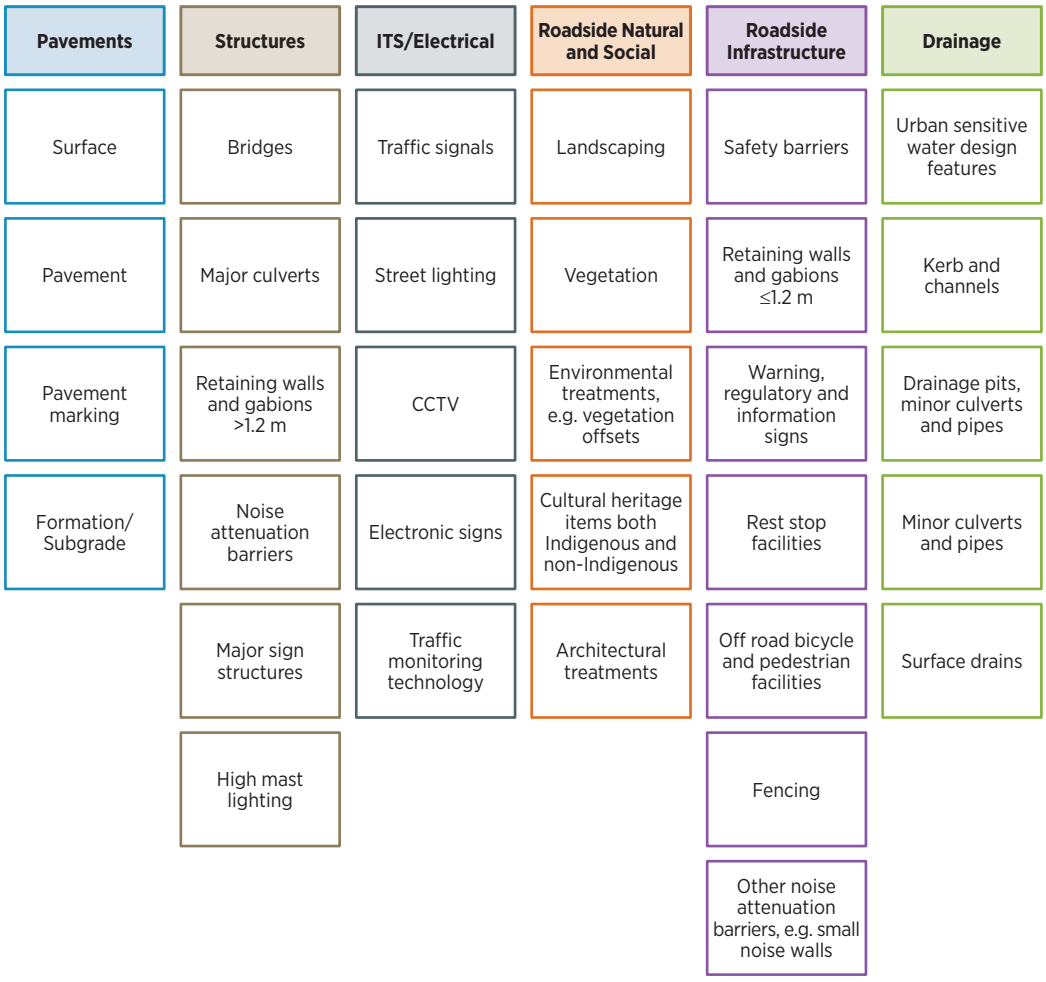
4 *Transport Integration Act 2010* (Vic), s 1.

5 Ibid., pt 4A.

6 *Road Management Act 2004* (Vic), s 4.

7 Ibid., section 52.

Figure 2.1 Road infrastructure hierarchy in Victoria



Source: VicRoads, *Pavement Management Strategic Plan*, 2017, <https://www.vicroads.vic.gov.au/-/media/files/documents/utilities/about-vr/strategy/pavement-management-strategic-plan--final-web-version.ashx> accessed 20 January 2021, p. 7.

2.3.3 *Road Safety Act 1986* (Vic) and Victorian Road Rules

The *Road Safety Act 1986* (Vic) provides the legislative framework for road users and road user behaviour, as well as vehicle registration and driver licensing. The Victorian Road Rules are made under this Act through Regulations.

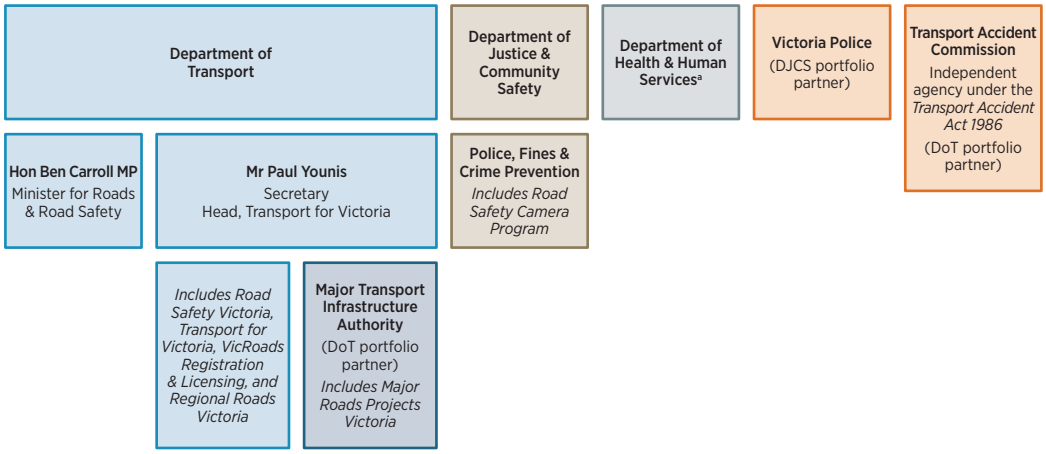
2.3.4 *Transport Accident Act 1986* (Vic)

The *Transport Accident Act 1986* (Vic) establishes and provides for the compensation and insurance scheme, administered by the Transport Accident Commission (TAC), that covers anyone injured as a result of a traffic accident in Victoria. The TAC is also established under this Act.

2.4 Victorian road safety partners and other authorities

The departments and agencies with primary responsibility for road safety policy are collectively referred to as 'Victoria's road safety partners', shown in Figure 2.2 below.

Figure 2.2 Victoria's road safety partners



a. In February 2021 the Department of Health and Human Services was split into two Departments.

Source: Legislative Council Economy and Infrastructure Committee using information from Department of Transport, *Annual Report 2019-20*; Department of Transport, *Governance*, (n.d.), <https://transport.vic.gov.au/about/governance> accessed 21 January 2021; Department of Justice and Community Safety, *Organisational Structure*, (n.d.), <https://www.justice.vic.gov.au/organisational-structure> accessed 21 January 2021; Government of Victoria, *Submission 71*.

2.4.1 Department of Transport

The Department of Transport (DoT) is the lead road safety and road management agency in Victoria and the State's primary road authority under the Act. All road management functions and responsibilities for the operation, management and maintenance of the Victorian road system are vested in the Secretary.[8] DoT's road management and road safety functions include responsibility for the road network, driver education and safety, and traffic management. The duties and road management responsibilities are outlined in the Transport Integration Act and the Road Management Act.[9] The Road Management Act ascribes DoT responsibility for approximately:

- 23,000 kilometres of arterial roads
- 7,000 sets of traffic signals and other road lighting
- 6,000 bridges and other structures
- 80,000 hectares of roadsides.[10]

DoT manages its responsibilities under its RMP and Managing Pavements in Poor Conditions policy. The RMP contains the Department's Road Infrastructure Management

8 Department of Transport, *Governance*, (n.d.), <https://transport.vic.gov.au/about/governance#:~:text=Paul%20Younis%20was%20appointed%20Secretary,Transport%20on%2026%20March%202019.> accessed 29 October 2020.

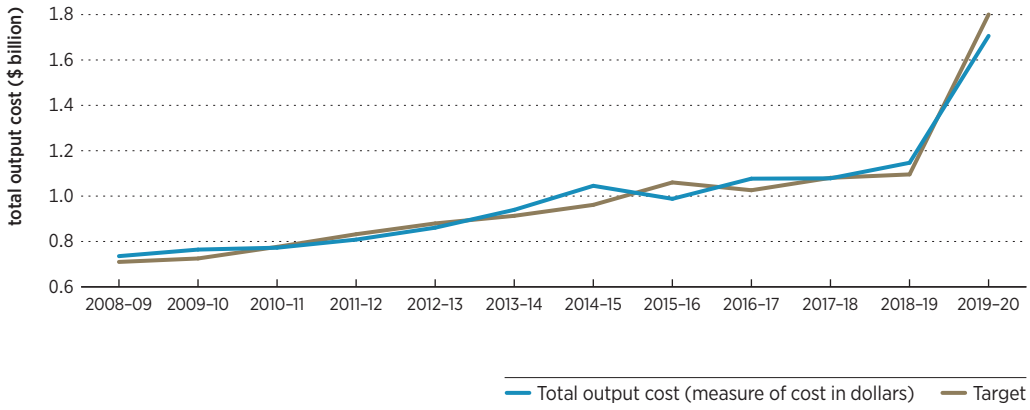
9 *Transport Integration Act 2010* (Vic), s 64C; *Road Management Act 2004* (Vic), s 4(2).

10 Government of Victoria, *Submission 71*, p. 46.

System and Road Maintenance Standards, which prioritise maintenance based on the Road Maintenance Category system.[11] The Managing Pavements in Poor Conditions policy covers areas such as safety inspections, hazard management, asset preservation works and road rehabilitation works.[12] Road maintenance and asset management is covered in detail in Chapter 3.

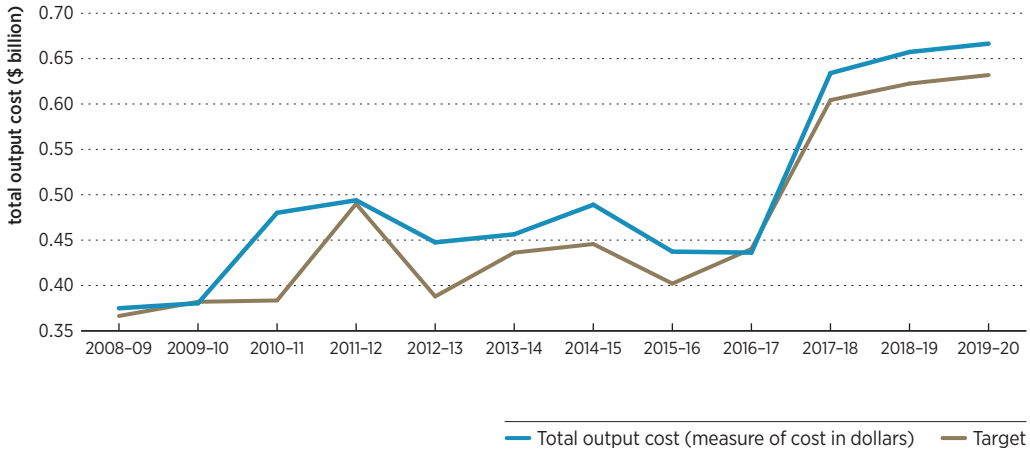
DoT is responsible for administering road asset management and road safety revenue on behalf of the state. Figures 2.3 and 2.4 show the output performance measures of road operations and road asset management from 2008–09 to 2019–20. (These figures have not been adjusted for inflation.)

Figure 2.3 Road operations, 2008–09 to 2019–20



Source: Victorian Auditor General's Office, *Data dashboard*, <https://www.audit.vic.gov.au/report/measuring-and-reporting-service-delivery> accessed 20 January 2021.

Figure 2.4 Road asset management, 2008–09 to 2019–20



Source: Victorian Auditor General's Office, *Data dashboard*, <https://www.audit.vic.gov.au/report/measuring-and-reporting-service-delivery> accessed 20 January 2021.

11 Road maintenance categories (RMCs) are assigned to all roads and are determined according to an assessment of risk that takes into account factors such as road classification, road type, and traffic type and volume. RMCs are used to prioritise road maintenance as routine, periodic or rehabilitation.

12 Government of Victoria, *Submission 71*, pp. 46–7.

DoT is comprised of the following divisions in relation to its road safety and road management functions:

Transport for Victoria

In 2016, the Victorian Government announced the formation of a new central transport agency to coordinate the State's growing transport system and plan for its future. TfV was to bring together the planning, coordination and operation of Victoria's transport system and its agencies, including VicRoads and Public Transport Victoria (PTV).[13]

The Head, TfV, is a statutory office, established under s 64A of the Transport Integration Act, set up to administer Victoria's train, tram, bus and road networks. The primary object of the Head, TfV is to coordinate, provide, operate and maintain the public transport system and road system consistent with the vision statement and transport system objectives in the Act.[14] From 1 January 2020, the Head, TfV was reconstituted as a body corporate with PTV's public transport functions and powers and the road management functions of VicRoads reallocated to it under the Act.

Somewhat confusingly, the term 'Head, TfV' also applies to the top office holder of TfV, which is held by the Secretary of DoT.[15]

VicRoads (Registration and Licensing)

VicRoads was formed as an independent statutory authority in 1989 when the Road Traffic Authority and Road Construction Authority were merged to create the Victorian Roads Corporation (VicRoads) as the road authority for Victoria.[16] It was re-established under the Transport Integration Act with responsibility to provide, operate and maintain the Victorian road system.[17]

VicRoads ceased to exist as an independent entity on 1 July 2019 when it was absorbed into DoT and its road management function was conferred on the Head, TfV.[18] Corporate functions and most employees of VicRoads were transferred to DoT and its heavy vehicle regulatory service was transitioned to the Federal Government in late 2019. In January 2020, VicRoads' Registration and Licensing (R&L) function was transferred to DoT with R&L employees remaining within VicRoads. VicRoads remains in existence

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13 Premier of Victoria, *Major Step Toward A More Coordinated Transport System*, media release, 12 October 2016, <https://www.premier.vic.gov.au/major-step-toward-more-coordinated-transport-system> accessed 17 November 2020; Jaclyn Symes, *A Simpler, More Coordinated Transport System For Victoria*, media release, 27 June 2016, <http://www.jaclynsymes.com.au/media-releases/a-simpler-more-coordinated-transport-system-for-victoria> accessed 17 November 2020.

14 Department of Transport, *Annual Report 2019-20*, p. 37.

15 Department of Transport, *Governance*, (n.d.), <https://transport.vic.gov.au/about/governance> accessed 17 November 2020.

16 VicRoads, *History of VicRoads*, (n.d.), <https://web.archive.org/web/20060910001442/http://www.vicroads.vic.gov.au/vrne/vrne5nav.nsf/childdocs/-BB50F530937BB3C9CA256FD300241C84-72F00738926865AFCA256FE100428355?open> accessed 25 November 2020.

17 *Transport Integration Act 2010* (Vic), version 001 as at 1 July 2010, s 86.

18 Victoria, *Victorian Government Gazette*, No. S 258, 26 June 2019, pp. 1–2.

with R&L staff and operates with limited functions under the Transport Integration Act to assist DoT with providing R&L functions.[19]

Road Safety Victoria

Road Safety Victoria (RSV) was established on 1 August 2019 incorporating the road safety functions of VicRoads and DoT. RSV is a dedicated team within DoT's Network Planning Division, which brings together the functions and work formerly undertaken by previous Departmental and VicRoads' teams. RSV works closely with other road safety partners to develop strategies and programs to reduce Victoria's road toll.[20]

Regional Roads Victoria

Regional Roads Victoria (RRV) was established in 2018, originally as a division of VicRoads. It brought together VicRoads' five regional offices and the Safe System Road Infrastructure Program, to provide a coordinated, state-wide approach to improving the safety and quality of rural and regional roads and to identify critical network improvements.[21]

With the absorption of VicRoads into DoT, RRV continues as a division of DoT with responsibility for $900 million in road upgrades and the Fixing Country Roads Program,[22] which was created to provide grants to rural and regional councils to undertake local road projects beyond regular maintenance.[23]

RRV is responsible for managing over 19,000 kilometres of major roads and more than 4,000 bridges across the regional road network, including regional freeways, arterial roads and a limited number of non-arterial roads.[24]

Major Transport Infrastructure Authority

The Major Transport Infrastructure Authority (MTIA) was established on 1 January 2019 to oversee major transport projects in planning and construction, such as the Level Crossing Removal Project. MTIA is an administrative office of DoT, replacing the former independent administrative offices governing various infrastructure projects.

Major Roads Projects Victoria

Major Roads Projects Victoria (MRPV) is a dedicated government body charged with planning and delivering major road projects for Victoria. Established on 1 January 2019, the body forms part of the MTIA. It has responsibility for all major road projects

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19 Department of Transport, *Annual Report 2018-19*, pp. 11, 37.

20 Department of Transport, *Annual Report 2019-20*, pp. 10, 36.

21 VicRoads, *Annual Report 2018-19*, pp. 7, 9, 12.

22 Department of Transport, *Annual Report 2019-20*, p. 5.

23 Regional Roads Victoria, *Fixing Country Roads Program*, (n.d.), <https://regionalroads.vic.gov.au/about-us/fixing-country-roads-program> accessed 29 October 2020.

24 Regional Roads Victoria, *Maintenance*, (n.d.), < https://regionalroads.vic.gov.au/about-us/maintenance> accessed 29 October 2020.

transferred from VicRoads. MRPV oversees the delivery of major road projects around metropolitan Melbourne and regional Victoria, including new roads, road widenings, new bridges and major freeway upgrades.[25]

2.4.2 Transport Accident Commission (TAC)

The TAC is an independent statutory authority established under the Transport Accident Act 1986. It is funded through the TAC charge, which is a component of the annual vehicle registration fee paid by motorists. The TAC has two main roles: to promote road safety in collaboration with other road safety agencies; and to support people injured on Victoria's roads.

Road safety

The TAC collects data on road-related trauma in the course of fulfilling its responsibilities. The data is used to assist the development of its road safety awareness and education campaigns and to inform initiatives for reducing road trauma. TAC also funds research and invests in community partnerships with organisations across Victoria, to promote and support its road safety objectives.

TAC is responsible for the majority of road safety advertising in Victoria and it provides a significant amount of funding towards road infrastructure and road safety treatments carried-out by DoT. Road safety funding provided by TAC in 2019–20 was:

- $91,739,000[26] on marketing and road safety education/engagement campaigns and initiatives
- $235,898,000 on road infrastructure.[27]

More detailed coverage of road safety awareness and education campaigns, including those run by the TAC, is included in Chapter 7.

Road injury insurance scheme

The TAC operates a no-fault scheme, which covers the cost of medical benefits and support services to any person injured in an accident regardless of who caused the crash. Supports may include income support during recovery and payment of a lump sum for serious and permanent injury.

The TAC maintains a client claims database, which tracks cases that meet the minimum threshold for an insurance claim to be recorded. Additionally, the TAC records data obtained from surveys and injury data provided to it by health providers and the Department of Health and Human Services (DHHS)[28].

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25 Major Road Projects Victoria, *About*, (n.d.), <https://roadprojects.vic.gov.au/about> accessed 29 October 2020.

26 Including a depreciation charge of $1.791 million in relation to the Road to Zero Exhibition at Melbourne Museum.

27 Transport Accident Commission, *Annual Report 2019-20*, p. 72.

28 Prior to February 2021 when the Department of Health and Human Services was split into two Departments.

Detailed discussion on data collection and management, including that overseen by the TAC, is located in Chapter 5.

2.4.3 Victoria Police

Victoria Police's main road safety roles are to:

- collect statistics on road trauma
- encourage safer road use through highly visible enforcement, deterrence and community engagement activities.[29]

All frontline police have responsibility for road safety as part of their day-to-day tasks, while the Victoria Police Operations Committee oversees the organisational approach to road safety and its alignment to Victorian Government policy objectives. The *Victoria Police Road Policing Strategy 2019-20* focused enforcement on areas aligned with the *Towards Zero* goals, particularly directed toward offences that are major contributors to road trauma (i.e. speed, impaired driving, driver distraction, not using seatbelts/ restraints, unauthorised driving).[30]

Victoria's approach to enforcement is covered in Chapter 7.

2.4.4 Department of Justice and Community Safety

The Department of Justice and Community Safety's (DJCS) primary road safety functions are responsibility for the operation of the road safety camera system, both fixed and mobile, and the traffic infringements system.[31] This includes contributing road traffic infringement-based data towards Victoria's road safety data collection systems[32] (covered in Chapter 5). DJCS is also responsible for assessment and delivery of a camera enforcement program for the detection of illegal mobile phone use.[33]

2.4.5 Department of Health and Human Services[34]

Involving DHHS as a road safety partner recognises that road safety is a public health issue, not just one of road management or engineering. Its road safety functions are primarily in the health space, including provision of health data and input on alcohol and other drug measures. In relation to road safety data collection systems, DHHS manages admissions and emergency department datasets, complementing dedicated road

29 Victoria Police, *Victoria Police Road Policing Strategy Towards Zero 2019-2020*, p. 3.

30 Ibid., pp. 1, 4.

31 Ms Corri McKenzie, Deputy Secretary, Police, Fines and Crime Prevention, Department of Justice and Community Safety, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 48.

32 Government of Victoria, *Submission 71*, p. 12.

33 Ibid., pp. 40

34 In February 2021 the Department of Health and Human Services was split into two Departments

trauma datasets[35] (road safety data collection and management is covered in detail in Chapter 5).

Prior to April 2018, DHHS was also responsible for accrediting providers of the 8-hour driver education program for re-licensing of drink- and/or drug-driving offenders. This program has since been replaced with the Behaviour Change Program[36] (impaired driving is covered in Chapter 7).

Notwithstanding the above functions, and despite research conducted over the course of this Inquiry, the Committee was unable to determine exactly how DHHS contributes towards Victoria's road strategy as a road safety partner, aside from data collection. The Committee notes:

- There is no mention of road safety-related activities on the DHHS website nor in its three most recent Annual Reports.
- There was scant detail about its road safety role in the Victorian Government's submission to this Inquiry—indeed the most detailed information in the submission was in relation to the now superseded driver education program.[37]
- The 2020–21 Victorian Budget contained no specific road safety-related projects for DHHS.

FINDING 6: Aside from data collection, it is not clear what public health road safety role the Department of Health and Human Services plays in Victoria.

2.4.6 Other key agencies and organisations

Monash University Accident Research Centre

The Monash University Accident Research Centre (MUARC) was founded in 1987 as a joint venture between the Victorian Government and Monash University with an initial mandate to undertake research into issues relevant to Victoria's road safety policy formulation.[38]

MUARC undertakes interdisciplinary research addressing injury prevention needs across three main settings of home and community safety, workplace safety, and transport safety.[39] Its core research program is the 'Baseline Research Program', which concentrates on key problem areas identified in Victoria's crash data and addressed in

35 Government of Victoria, *Submission 71*, p. 12.

36 Ibid., p. 30.

37 Ibid., p. 30.

38 Monash University, *The MUARC Baseline Research Program*, (n.d.), <https://www.monash.edu/muarc/partnerships/baseline-research-program> accessed 29 October 2020.

39 Monash University Accident Research Centre, *Annual Report 2018*, p. 2.

the road safety strategy. Results from the research feed into the road safety strategy and linked action plans.[40]

Towards Zero was developed in partnership with, and draws much of its evidence-base from, research undertaken by MUARC. For more on MUARC's role see Chapter 1.

Victorian State Trauma Outcomes Registry Monitoring Group

The Victorian State Trauma Outcomes Registry Monitoring Group (VSTORM) sits within the School of Public Health and Preventive Medicine at Monash University. It coordinates and houses the Victorian State Trauma Registry (VSTR).

Funded by DHHS and the TAC, the VSTR is a population-based registry of major trauma, collecting patient information for all 138 trauma-receiving health services in the State. It includes the follow-up of major trauma patients who survive to hospital discharge. The VSTR has monitored the Victorian State Trauma System since 2001, with the aim of reducing preventable deaths and permanent disability from major trauma.[41]

Road Safety Camera Commissioner

Established in 2012 under the *Road Safety Camera Commissioner Act 2011* (Vic), the Road Safety Camera Commissioner has independent oversight of Victoria's road camera system, including fixed and mobile cameras.[42] The Commissioner's functions, set out in s 10 of the Act, are to ensure an accurate and fair camera system through:

- the review and assessment of the accuracy of camera operations
- the conduct of investigations and reviews (both at the Minister's request and at own discretion)
- provision of a complaints process
- community engagement.[43]

Driver distraction, including mobile phone use, is covered in Chapter 7.

WorkSafe Victoria

WorkSafe Victoria is the workplace health and safety regulator and workers compensation scheme manager in Victoria. WorkSafe's responsibilities are set out in legislation, most notably, the *Occupational Health & Safety Act 2004* (Vic) (the OH&S Act), which provides for the bulk of its oversight of health, safety and welfare in the workplace.

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40 Monash University, *The MUARC Baseline Research Program*.

41 Victorian State Trauma Outcomes Registry Monitoring Group, *Submission 52*, p. 1.

42 Road Safety Camera Commissioner, (n.d.), <https://cameracommissioner.vic.gov.au> accessed 19 November 2020.

43 Mr Stephen Leane, Road Safety Camera Commissioner, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 25.

Under the OH&S Act employers must:

- So far as is reasonably practicable, provide and maintain a working environment that is safe and without risks to the health of employees.[44]
- So far as is reasonably practicable, provide or maintain plant (including work vehicles) or systems of work that are safe and without risks to health.
- Provide employees with the necessary information, instruction, training or supervision to enable them to do their work in a way that is safe and without risks to health.
- Ensure, so far as is reasonably practicable, that people other than employees are not exposed to risks to their health or safety arising from the employer's conduct.
- If a self-employed person, so far as is reasonably practicable, ensure that persons are not exposed to risks to their health and safety arising from the conduct of the undertaking of the self-employed person.[45]

These responsibilities include identifying risks to health or safety in relation to the use of vehicles and eliminating or reducing those risks, so far as is reasonably practicable. If an employee uses a vehicle to perform work, that vehicle is a workplace. Consequently, employers are legally required to ensure that the vehicle is safe and without risks to health. This duty extends to any use of the vehicle for a work purpose.[46]

Employees also have a duty under the OH&S Act to cooperate with measures developed by an employer to eliminate or reduce risks.[47] For example, this might include:

- holding a current, valid driver's licence
- abiding by road rules
- not driving while impaired (e.g. due to fatigue or medication)
- reporting any incidents as required
- conducting routine vehicle checks.[48]

WorkSafe provides guidance and information for employers on how to plan for the health and safety of employees who perform work-related driving,[49] and how to manage the hazards and risks to employees associated with work-related driving.[50]

WorkSafe is discussed further in section 8.4 of this Report.

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44 The term 'employees' may include independent contractors.

45 *Occupational Health and Safety Act 2004* (Vic), ss 21–24.

46 WorkSafe Victoria, *Managing risk factors on the road*, (n.d.), <https://www.worksafe.vic.gov.au/managing-risk-factors-road> accessed 8 February 2021.

47 *Occupational Health and Safety Act 2004* (Vic), s 25.

48 Transport Accident Commission and WorkSafe Victoria, *A handbook for workplaces – Guide to safe work related driving,* Ed 1, 2008, p. 5.

49 WorkSafe Victoria, *Planning for safe work-related driving*, (n.d.), <https://www.worksafe.vic.gov.au/planning-safe-work-related-driving> accessed 8 February 2021.

50 WorkSafe Victoria, *Managing risk factors on the road*, (n.d.), <https://www.worksafe.vic.gov.au/managing-risk-factors-road> accessed 8 February 2021.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.1 and 2.5 of Appendix B.

2.4.7 Role and responsibilities of local government

There are 79 local councils in Victoria, each of which is a road authority under the Road Management Act for their respective municipal areas. Local roads maintained by local governments make-up approximately 85% of Victoria's road network.[51] Under the Act, councils in Victoria are responsible for the planning, construction and maintenance of all municipal roads (including ancillary areas to those roads) listed in the Register of Public Roads in their respective municipal areas. Generally, this includes monitoring the road standard and undertaking repairs when required as well as some management and restrictions on the use of local roads.[52]

In addition, councils are also the responsible road authority for some aspects of arterial roads, such as median strips and pathways.[53] Councils are also largely responsible for the provision and maintenance of much of Victoria's pedestrian and cyclist infrastructure.[54]

A common issue raised by local government stakeholders in this Inquiry was the need for councils to have greater power over speed limits, which currently requires state government approval. This issue is covered in Chapter 4.

2.5 Overview of funding allocation

This section provides an overview of the road safety funding arrangements and structures that apply for the main road safety partners: DoT; the TAC; and Victoria Police. Specific reference to programs and funding related to the various aspects of road safety are covered in relevant sections of this Report.

2.5.1 Department of Transport

DoT receives funding appropriations allocated in the State Budget. The funding decisions are informed by the framework in the Road Management Act, which takes into account:

- the needs and expectations of the relevant communities
- national, state/territory and local government transport and other policies

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51 Municipal Association of Victoria, *Roads & Transport*, (n.d.), <https://www.viccouncils.asn.au/what-councils-do/council-services/roads-and-transport> accessed 8 December 2020.

52 *Road Management Act 2004* (Vic), s 37.

53 Ibid.

54 See for example Hobsons Bay City Council, *Submission 20*, p. 1.

- the available funding within the context of the whole range of responsibilities of road authorities.[55]

In addition, DoT receives special appropriations as outlined in the relevant Acts that legislate major projects and initiatives, such as the *Regional Development Victoria Amendment (Jobs and Infrastructure) Act 2015* (Vic). These funds are allocated on the discretion of the Treasurer and decided by priorities determined by Cabinet. DoT also receives payments from Victoria Police for licensing and regulation services and registration and records checks conducted.[56]

The Commonwealth provides funding for other projects, including:

- black spot projects
- Bridges Renewal Programme
- heavy vehicle safety and productivity
- interstate road transport
- nation building—road projects
- road maintenance.[57]

As well, federal government 'on-passing' grants for local roads are passed on to local councils by DoT.[58]

The Department is responsible for administering the bulk of road management and road safety revenue on behalf of the State in 2020–21, including collecting road and public transport regulatory fees and fines revenues. The funding consolidates DoT, Major Projects Victoria, Linking Melbourne Authority, PTV, VicRoads and the Head, TfV.[59]

2.5.2 Transport Accident Commission

The TAC's funding is predominantly from premiums received through the TAC charge. The charge is determined by the type and class of the vehicle, and the postcode where the vehicle is usually kept. In 2019–20, the TAC received a total of $2,165,289,000 in premiums.[60]

2.5.3 Victoria Police

Victoria Police controls the Traffic Accident Info System Trust Account, to record transactions relating to the operations of the traffic accident information system. This

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55 *Road Management Act 2004* (Vic), s 4.

56 Victoria Police, *Annual Report 2019-20*, p. 146.

57 Department of Transport, *Annual Report 2019-20*, p. 42.

58 Department of Treasury and Finance, 'Budget Paper No. 4: Statement of Finances', *Victorian Budget 2020-21*, p. 169.

59 Department of Transport, *Annual Report 2019-20*, p. 35.

60 Transport Accident Commission, *Annual Report 2019-20*, p. 70.

was established to coordinate the distribution of accident data to agencies responsible for road traffic.[61]

2.6 Current structural and cultural challenges

The Victorian Government's submission to this Inquiry acknowledges that the fundamental principle underpinning the Safe System is: 'road safety is a shared responsibility across all levels of government, regulators, communities and individuals.'[62]

The Committee heard evidence on the strength of the collaborative approach taken by Victoria's road safety partners. Ms Corri McKenzie, Deputy Secretary, Police, Fines and Crime Prevention at DJCS told the Committee:

> What I do think the partnership does bring, which is very helpful, is levers and experience across different components and different systems that need to go together in order to have the greatest impact on road safety and in order to make the roads as safe as we possibly can.[63]

Libby Murphy, Assistant Commissioner, Road Policing Command, Victoria Police stated: 'We are a collective, and as a road safety executive group I think we allow ourselves to challenge each other and understand what is an important focus at any given time. I think there is a certain concomitancy in that, and that allows good and proper management.'[64]

However, in their submission to this Inquiry, transport engineering and road safety experts David Anderson (a former CEO of VicRoads) and Eric Howard (a former General Manager of Road Safety at VicRoads) identified what they see as a need for structural improvement among Victoria's road safety partners. They wrote:

> Management is one of the pillars of the Safe Systems approach and it needs strengthening. Victoria has traditionally operated powerfully effective road safety management and governance arrangements that have been recognised worldwide for many years. It is critical that this effectiveness of management be continued or re-established, given recent substantial organisational changes. The road safety governance arrangements between the Departments and between relevant ministers and effective consultation arrangements with other stakeholders are critical to supporting Victoria's performance.[65]

Appendix 2 of their submission contains a summary of events around 1990, when VicRoads, the TAC and Victoria Police worked together to develop a single road safety policy with a consistent message coming from each agency. This was followed by the

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61 Victoria Police, *Annual Report 2019-20*, p. 117.

62 Government of Victoria, *Submission 71*, p. 5.

63 Ms Corri McKenzie, *Transcript of evidence*, p. 52.

64 Assistant Commissioner Libby Murphy, Road Policing Command, Victoria Police, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 53.

65 David Anderson and Eric Howard, *Submission 45*, p. 2.

three Ministers responsible for each agency forming a Ministerial Council for Road Safety. (The Committee could not clarify if the Ministerial Council remains operational or has been replaced by a different structure.) Mr Anderson and Mr Howard credit these developments with a near halving of Victoria's road toll in the following three years.[66]

Yet Mr Anderson and Mr Howard argued that the changes in recent years within Victoria's road safety agencies have seen coordination decline. They submitted: 'We have no sense of a coherent state-wide operational focus involving effective organisational partnerships between government entities nor with key community groups, private or public.'[67]

FINDING 7: There is concern among some experts about whether Victoria's road safety partners are working in a fully collaborative manner.

At a public hearing, Mr Anderson spoke further to this, noting the need for management to have the necessary operational experience for the agencies to function effectively. He said:

> Our feelings are that the management structures, while they may be in place, just on the feedback that we are getting from some of the participants do not appear to be as dynamic, as operational, as hands-on, as sleeves rolled up as we think they should be from the very highest level. Clearly the relevant ministers have to work together … you would be able to knock this road toll down to almost single figures if we had a very effective management structure.[68]
>
> […]
>
> I was in Sweden recently. They are talking about a road toll of 30 for a 9 million population. We cannot emphasise that enough. It has got to involve the key partners; they have got to be operational people, not people who are just very good at writing briefing notes, to be blunt.[69]

Loss of knowledge and technical expertise from the current governance structures was identified by a number of Inquiry stakeholders. For example, at a public hearing Mr Robert Morgan, a road safety and traffic engineer who has previously helped developed state and national guidelines, went into some history to support his claim of a 'knowledge vacuum' in respect of key technical expertise. He said:

> Now, just to illustrate the issue of skills and experience, consider the past 60 or 70 years … in the 1950s and 60s we had the prescientific notions of road safety: 'If only everybody was careful, the road toll would go down'. Slowly there were gains in technical understanding through trials, tests and studies, and so finally governments accepted their role in applying the knowledge, spending money and doing that effectively. This

66 Ibid., pp. 6–8.

67 Ibid., p. 2.

68 Mr David Anderson, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, pp. 1–2.

69 Ibid., pp. 1–2.

> included stopping blaming the driver. And so by the 1980s the road toll was brought out under control … unfortunately by the late 1980s neoliberalism was taking hold. We saw in 1989 the amalgamation of the RTA and the RCA into VicRoads, and unfortunately, in cultural terms, the road builders took over the road safety people and the traffic people. We then saw, with that amalgamation, downsizing, and that has happened again and again, which has led to loss of skills and a knowledge vacuum.[70]

Another engineer who spoke to the Committee, Mr Andrew O'Brien, also believed the current approach to governance has caused a loss of skills among road safety authorities. He told the Committee: 'Unfortunately, the Departmental structure as it stands does not suit getting the best advice and the deskilling of the authorities who are responsible for road safety has contributed greatly to this problem. It has been happening since the mid-1990s.'[71]

Mr O'Brien elaborated on this issue with his own experience:

> In the administrative sense, the organisational one is that senior management down to a reasonable level need to have some idea about what the industry is, because we have content-free management. I have clients still occasionally in VicRoads, they do not know even who to go to to get advice—and these are at a fairly junior level—because people above them now no longer know who the people are with expertise in the field.[72]

Essentially, these expert stakeholders have four main concerns:

- Outsourcing instead of maintaining control of projects in-house.
- Downsizing and consolidation of key agencies has led to loss of experience, skills and corporate memory.
- A culture focused on large project delivery that favours generalists over specialists has led to an undervaluation of specialist traffic and road safety skills.
- Individuals being appointed to key roles because of managerial skills instead of road safety knowledge.[73]

RECOMMENDATION 5: That the Victorian Government review the skill base of managers in the Department of Transport. Required skills include, but are not limited to:

- engineering and infrastructure
- road safety policy
- vehicle safety technology.

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70 Mr Robert Morgan, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 19.

71 Mr Andrew O'Brien, public hearing, Melbourne, 8 September 2020, *Transcript of evidence*, p. 31.

72 Ibid., p. 33.

73 Robert Morgan, Inquiry into the Increase in Victoria's Road Toll, responses to questions on notice and supplementary information received 28 August 2020; Mr Robert Morgan, *Transcript of evidence*, p. 19; Mr Andrew O'Brien, *Transcript of evidence*, pp. 31, 33.

RATIONALE: The Department should not outsource any policy development or major project work without the internal expertise to ensure that the work delivered is of the highest quality.

The Committee has noted concerns across various sections in this Report regarding a lack of transparency among Victoria's road safety partners, particularly in relation to how data and evidence-driven outcomes informed the development and implementation of *Towards Zero*.

The importance of transparency in respect of the Victorian Government's new road safety strategy can be seen in comments made by the Road Safety Camera Commissioner, Mr Stephen Leane. Mr Leane emphasised the need for a clear understanding of a strategy's aims and transparency around how they will be achieved. He told the Committee:

> The first thing is governance: be really clear about what we are trying to achieve from the very high level and then work through the road safety partners as they deliver their business, including in my sphere that I am interested in. These need to be published … so people can see them and read them and academics can fight over them and argue about what is right and what is wrong.[74]

Whether the Victoria's Government's approach to road safety management is as effective as it claims relies on setting clear targets and providing publicly available information on benchmarking against those targets.

Confidence in the governance surrounding Victoria's approach to road safety, and the effectiveness of *Towards Zero* and future road safety strategies, relies on a foundation of robust knowledge and transparency. Informed community and stakeholder engagement is vital to support independent evaluation of the success (or otherwise) of the approach.

A clear example of the need for cultural change in Victoria's road safety partners arose during this Inquiry. The Committee requested information from DoT and the TAC on four occasions:

- 10 March 2020
- 20 October 2020
- 23 November 2020
- 9 December 2020.

The Committee received answers to the questions sent on 10 March and 20 October in mid-February 2021, as it was completing this Report. This is despite numerous assurances from both organisations that the information would be provided earlier than

74 Mr Stephen Leane, *Transcript of evidence*, p. 27.

this date. As this was too late to be of use in this Inquiry, the Committee has included the response as Appendix B and noted places in the Report where the information applies.

There are two serious problems with this lack of cooperation.

Firstly, it is the job of the Parliament, through its committee system, to hold the government of the day to account. The Parliament cannot do this important scrutiny if government departments impede the work of committees by refusing to provide information.

Secondly, this lack of cooperation has long been endemic in Victoria's road safety partners, particularly VicRoads in its previous form. The refusal to cooperate with the Parliament would not come as a surprise to road safety experts in Victoria, who have struggled with a similar lack of cooperation. This 'closed shop' approach that rejects transparency and independent evaluation has hindered Victoria's progress in reducing the road toll.

The Committee urges the Victorian Government to commit to a culture change in Victoria's road safety partners. The arrogant refusal to cooperate with those outside of the agencies' inner circle must stop.

FINDING 8: Victoria's road safety partners must commit to a new culture of cooperation, transparency and an acceptance of the benefits of independent scrutiny of their work. A lack of transparency among Victoria's road safety partners prevents thorough independent analysis of strategies and internal skillsets. Such analysis is needed to ensure constant progress and improvement in road safety.

3 Road standards: design and maintenance

3.1 Introduction

This Chapter examines the link between road standards—how they are designed and maintained—and road safety. It begins by explaining the way in which different jurisdictions adapt Australian design guidelines to suit their own conditions. Victoria has done this through VicRoads[1] Supplements, which have precedence over the national guidelines. It then explains the 'star rating' system used for safe road design.

The Chapter examines road maintenance through giving examples of poor road conditions and Victoria's road surface maintenance regime, which includes how hazards are identified and fixed. The Chapter concludes by addressing four main road safety infrastructure challenges raised during this Inquiry:

- road planning
- maintenance schedules
- vulnerable road user infrastructure
- flexible wire rope barriers.

3.2 Road design

In Australia, the Austroads Guidelines and Australian Standards are the primary technical standards and guidelines for roads nationwide.[2] The Department of Transport (DoT) informed the Committee that it uses these documents as a reference point. It then prepares supplements that provide jurisdictional specific design information and procedures for works financed in whole, or in part, by the Department beyond those outlined in the Austroads Guide to Road Design.

It is important to note that where there are conflicting directions, the DoT supplement takes precedence over the Austroads Guide. As such, DoT is ultimately responsible for all aspects of road design in Victoria.

The Committee notes that parts of the VicRoads Supplement to the Austroads *Guide to Road Design* technical documents published on the VicRoads website are versions as at December 2012.[3] While the Government informed the Committee that guidelines are

1 At the time of completing this Inquiry, all resources were still published on the VicRoads website and referred to 'VicRoads' as the authorised agency. Any reference to VicRoads should be taken to mean Department of Transport.

2 Government of Victoria, *Submission 71*, p 11.

3 Parts 3, 4C and 6 were produced in 2017, 2019 and 2020 respectively.

continually evolving,[4] it is not clear whether these documents have been superseded to reflect the changes made to the Austroads Guides and Standards since 2016. This is another example of the Government demonstrating a lack of transparency in its processes towards road maintenance and road safety more generally.

Further to the Guides and Standards, VicRoads has also developed a Safe System Assessment Framework that provides guidance for planners and designers to ensure that all road improvement projects consider road safety outcomes.

A Safe System Assessment (SSA) evaluates a project's alignment with the Safe System principles and suggests ways to improve the alignment and minimise fatal and serious injuries. Corporate requirements dictate that a project that has an estimated cost of over $5 million must conduct a full SSA, while it is desirable for an SSA to be undertaken for projects costing between $2 million to $5 million. An SSA is optional for all projects below $2 million.[5]

An SSA's suggestions do not have to be accepted. However, project managers cannot reject suggestions for reasons such as the suggestions being too expensive or because the project managers simply don't agree with them.[6]

3.2.1 Design guidelines and standards

Road design projects range from minor improvements to small sections of existing roads, through restoration projects that improve the road standards, to major redesign of arterial roads as part of a significant regional or interregional development.

The Austroads Guide to Road Design (AGRD) lists three critical aspects of road design:

1. the design objectives that apply to a project
2. context-sensitive design
3. the factors that influence road design, including road design in the context of the Safe System philosophy.

The AGRD gives road designers the flexibility to exercise their own engineering judgement by choosing design values outside of normally acceptable limits where there are prevailing constraints and strong evidence to support doing so. For example, the AGRD provides timing constraints for planning processes. However, the VicRoads 'Supplement to AGRD Part 1 – Introduction to Road Design' states that each project will have its own challenges and timeframes that need to be addressed separately and may be beyond the guiding limits.[7] As mentioned above, the VicRoads Supplement takes precedence over the national guidelines.

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4 Government of Victoria, *Submission 71*, p 61.

5 VicRoads, *Safe System Assessment Guidelines*, Version 1.0, July 2018.

6 Ibid.

7 VicRoads, *VicRoads Supplement to the Austroads Guide to Road Design: Part 1 – Introduction to Road Design*, 2012, p. 5.

The Supplement adds that 'road design guidelines are developed with consideration of the need to achieve a balance between sometimes competing demands or operational requirements, safety, cost and social and environmental impacts'.[8]

Key road design objectives, as supported by VicRoads, include:

- strategic fit
- nature and magnitude of transport demand
- safety
- community expectations
- reduced travel time and costs
- reduced freight costs
- improved public transport
- provision for cyclists and pedestrians.[9]

As part of *Towards Zero*, the following infrastructure and design elements were installed and upgraded across some Victorian road networks:

- flexible safety barriers
- overtaking lanes
- rumble strips
- line marking
- sealing road shoulders
- improved signage
- curve road improvements
- intersection upgrades
- pedestrian and cyclist infrastructure improvements.[10]

3.3 Links between road design and road safety

The Victorian Government's submission to this Inquiry states: 'A very small percentage of road trauma can be attributed directly to poor road conditions.'[11] Other stakeholders disagreed with this. For example, the Victorian Farmers Federation links road conditions

8 Ibid.

9 Ibid.

10 VicRoads, *Safety – working towards* zero, (n.d.) <https://www.vicroads.vic.gov.au/about-vicroads/our-strategy/road-safety-strategy> accessed 20 January 2021.

11 Government of Victoria, *Submission 71*, p 11.

with both the number of accidents and severity of injuries, referring to a 2017 Victorian Auditor-General's report which found that roads in 'very poor condition' are a public health risk.[12]

Further, a principal finding of Monash University Accident Research Centre's (MUARC) recently published study of serious injuries was that road standards are in fact directly relevant to road crashes. It stated: 'Compliant drivers were largely unsupported by the poor safety performance of their vehicle and the road environment – including absent safety infrastructure …'.[13]

The Committee was informed that the safest roads are generally considered to be those that are straight with dual divided carriageways, good line marking, wide lanes, sealed shoulders, safety barriers (centre and edge) and few, if any, intersections.[14]

DoT determines a road to be a 'safe road' where safety features built in through design elements reduce:

- the likelihood of a crash occurring
- the severity of a crash when one does occur.

The Royal Automobile Club of Victoria (RACV) argued that a mechanism should be in place to prevent funding going to roads that do not have a minimum star rating (see below) as part of their design. It told the Committee:

> This ensures new or upgraded projects are being built with safety in mind and a minimum star rating target achieved rather than it being an afterthought or an add-on at the end with a road safety audit. Under this mechanism, an unsafe road design would not receive funding. This further ensures that road safety becomes 'business as usual' rather than needing to be funded separately to road projects.[15]

The Department agrees that safety of a road needs to be built into the road through the inclusion of design elements.[16] The Committee support this view and believe the Government needs to review its approach to ensure all future road developments have Safe System features built into design plans, including maintenance and upgrade works.

3.3.1 Star ratings

The Australian Road Assessment Program (AusRAP) road rankings provide a safety rating for roads, with 1-star being the least safe roads and 5-star being the safest. There are star ratings for pedestrians, cyclists, motorcyclists and vehicle occupants.[17]

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12 Victorian Farmers Federation, *Submission 70*, p. 1.

13 Michael Fitzharris et al., *ECIS Report 1: Overview and analysis of crash types, injury outcomes and contributing factors*, Enhanced Crash Investigation Study (ECIS), no. 1, Monash University Accident Research Centre, Australia, 2020, p. xvi.

14 Government of Victoria, *Submission 71*, p 46.

15 Royal Automobile Club of Victoria, *Submission 53*, p. 31.

16 Government of Victoria, *Submission 71*, p 45.

17 AusRAP, *Rating Australia's National Network for Risk*, (n.d.), <http://ausrap.aaa.asn.au> accessed 20 January 2021.

Mr Rob McInerney, CEO of AusRAP, told the Committee that each increase in star rating equates to a halving of fatalities and injuries for a road. He said that 'by the time you get to 4- and 5-star, you are approaching Vision Zero in terms of performance in road trauma reduction'.[18]

Road safety experts Mr Eric Howard and Mr David Anderson conducted research based on International Road Assessment Program (iRAP)[19] surveys and analyses that assessed crash risk based on roads' inherent physical characteristics and conditions. Their research similarly suggests that fatalities and serious injuries are halved for each incremental improvement to a road's condition. The Committee notes that DoT does not have a list of safe road features separate to those used by AusRAP.

Australia has adopted the UN endorsed sustainable development goals to improve global road safety standards. The Federal Government's *National Road Safety Action Plan 2018–2020* committed to improving the star ratings across the national road network to achieve 3-star AusRAP ratings, or better, for 80% of travel on state roads and a minimum of 90% travel on national highways. The Plan is silent on how this commitment would be funded or what timeline it should be achieved by, simply stating: 'The Commonwealth, States and Territories, and local governments will work together to develop and deliver regional road safety initiatives within infrastructure investment frameworks.'[20]

The Committee was informed that 30–35% of Victorian roads are rated a 1- or 2-star, high risk category. Further, 85% of roads assessed by AusRAP in 2015 still have dangerous roadsides with over 80% of those being on high-speed, undivided roads.[21]

Despite the Federal Government's 3-star commitment, the Committee recognises that the least safe roads in Victoria are found in rural and regional areas and that most deaths and serious injuries occur on these roads. Further, there has been no review of road safety ratings since AusRAP's last report in 2015, it is unclear whether standards have improved or continued to deteriorate on rural roads.

Mr McInerney spoke of the link between unsafe rural roads and fatalities at a public hearing, he said:

> The majority of the deaths will be on rural roads, where Victorians, the majority of them, are travelling on these 1- and 2-star roads as vehicle occupants. The majority of the injuries are happening in the urban areas, intersections and where pedestrians and cyclists are still on 1- or 2-star roads—so again great opportunity for improvements.[22]

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18 Mr Rob McInerney, Chief Executive Officer, AusRAP, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 13.

19 iRAP is the umbrella program for Road Assessment Programs (RAPs) worldwide, and see <https://www.irap.org>.

20 National Road Safety Strategy, *2. Target infrastructure funding towards safety-focused initiative to reduce trauma on regional roads,* (n.d.), <https://www.roadsafety.gov.au/action-plan/2018-2020/priority_action_2> accessed 20 January 2021.

21 Mr Rob McInerney, *Transcript of evidence*, p. 18.

22 Ibid., p. 14.

Mr David Anderson also raised this connection at a public hearing. Mr Anderson told the Committee that there needs to be greater consideration in the way roads are designed that take into consideration the function and purpose of the stretch of road. He explained:

> It comes down to the way we design roads and what we design the roads for. So if we were designing the roads at the lowest level of cost, to the lowest level of use, yet we get the heaviest vehicles travelling along on a regular basis, we then get greater deterioration—and of course that is what we have had. We have not understood the actual nature of the road itself in terms of the usage by the people that need to use it.[23]

3.4 Road maintenance

As shown in Table 3.1, DoT has five categories of expenditure in relation to the maintenance of road assets.

Table 3.1 Department of Transport road asset expenditure categories

Expenditure	Type	Description
Operations	Recurrent in nature	Provides services such as cleaning, grass cutting, hazard assessments, condition assessments, fault monitoring and network condition assessments.
Maintenance	Recurrent in nature	Provides works such as pothole patching, minor and major patching, edge break repair, shoulder grading, tree trimming, tensioning or asset elements and replacement of guideposts or light globes.
Renewal	Periodic in nature	Provides works such as resurfacing, rehabilitation and asset replacement works. Benefits are expected to last in excess of 12 months.
Upgrade	Discretionary in nature	Provided to improve service levels, extend network capacity and create new assets. Often referred to as major projects or development works.
Expansion	Discretionary in nature	Provided to extend the capacity of an existing asset or create a new asset. Often referred to as major projects or development works.

Source: VicRoads, *Pavement Management Strategic Plan*, (n.d.), <https://www.vicroads.vic.gov.au/about-vicroads/our-strategy/pavement-management-strategic-plan> accessed 20 January 2021, pp. 5–6.

3.4.1 Poor road conditions

The physical characteristics that define poor road condition are:

- roughness
- rutting (when grooves form in roads)
- cracking

23 Mr David Anderson, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 21.

- extent of patching
- texture loss
- loss of aggregate (the small stones that make up the road surface).

The following images, taken from VicRoads' website, provide examples of poor road conditions.

Figure 3.1 Examples of poor road conditions and required remediation

a. Road segment with high roughness, rutting and maintenance patching. Rehabilitation required.

b. Road segment with texture loss which reduces safety. Resurfacing required.

c. Road segment with high roughness, rutting and maintenance patching. Rehabilitation required, including shoulder repair.

d. Road segment with extensive cracking, loss of texture and rutting. Resurfacing required.

Source: VicRoads, *Pavement Management Strategic Plan*, (n.d.), <https://www.vicroads.vic.gov.au/about-vicroads/our-strategy/pavement-management-strategic-plan> accessed 20 January 2021.

3.4.2 Road surface maintenance regime

Road surfaces in Victoria are monitored by either DoT or Regional Roads Victoria (RRV), depending on their location.[24] These agencies prepare a yearly maintenance program for routine, periodic and rehabilitation maintenance works.

Table 3.2 below provides an outline of the three types of maintenance works conducted throughout the lifecycle of a road surface.

24 VicRoads, *Pavement Management Strategic Plan*, (n.d.), <https://www.vicroads.vic.gov.au/about-vicroads/our-strategy/pavement-management-strategic-plan> accessed 20 January 2021.

Table 3.2 Road surface maintenance works

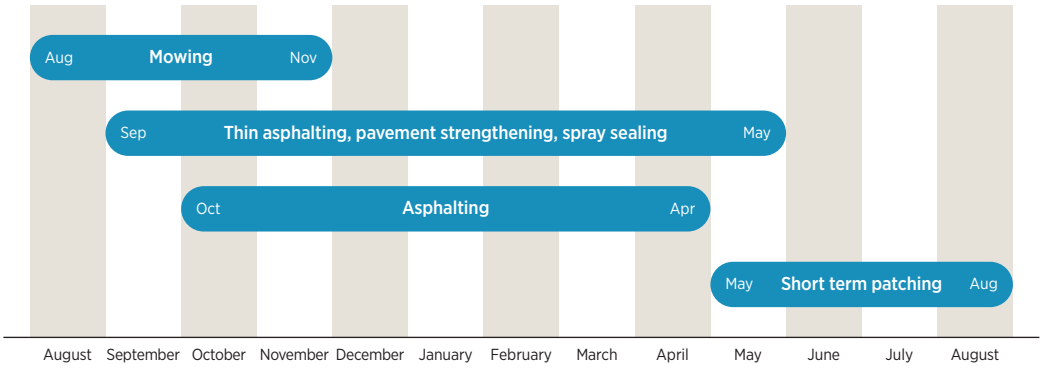
Routine maintenance	These works fix minor defects before they become significant problems. These include repairing potholes, cleaning gutters and drains, repairing damaged signs and clearing litter.
Periodic maintenance	Periodic maintenance assist in preserving a road surface to avoid rehabilitation works. These works include road resurfacing, resealing and corrosion protection for bridges.
Rehabilitation	When the road pavement layer of a road is damaged, rehabilitation works restore the road to its original standards. Rehabilitation works involve replacing both the pavement and road surface layers.

Sources: Regional Roads Victoria, *Maintenance*, (n.d.), <https://regionalroads.vic.gov.au/about-us/maintenance> accessed 20 January 2021; VicRoads, *Pavement Management Strategic Plan*, (n.d.), <https://www.vicroads.vic.gov.au/about-vicroads/our-strategy/pavement-management-strategic-plan> accessed 20 January 2021.

DoT and RRV prioritise roads in accordance with the strategic importance of the road (known as a Road Maintenance Category) alongside the urgency of the works needed. A Road Maintenance Category (RMC or Road Class[25]) evaluates traffic volumes, connectivity, access and uses of the road. They categories range from 1 (Metropolitan Freeway) to 5 (Rural Arterial carrying low/very low traffic).

RRV states that maintenance is seasonal and poorer road conditions are expected in areas of high rainfall, such as south-west Victoria.[26] The below figure provides an overview of when standard maintenance works are undertaken.

Figure 3.2 Victorian road maintenance timeline



Source: Regional Roads Victoria, *Maintenance*, (n.d.), <https://regionalroads.vic.gov.au/about-us/maintenance> accessed 20 January 2021.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.5, 1.11, 1.12 and 2.3 of Appendix B.

25 Road Class and RMC refer to the same types of road.

26 Regional Roads Victoria, *Maintenance*, (n.d.), <https://regionalroads.vic.gov.au/about-us/maintenance> accessed 20 January 2021.

3.4.3 Hazard identification and rectification

Arterial road networks are routinely monitored for risks. However, VicRoads and RRV also rely on the community to report hazards and defects. Urgent hazards that present immediate danger should be reported by telephoning the agencies on a direct line, while other road issues that do not pose an immediate danger (such as faded line marking, small potholes or fallen signage) can be reported through either agency's website.

Where hazards cannot be immediately fixed, signs are erected marking the hazard and reducing speed limits until maintenance can be carried out.[27]

Inspections of hazards

The Road Management Plan outlines the categorisation of hazards and the relevant response times for inspection and rectification. The process for risk management with hazards is outlined in Table 3.3 below.

Table 3.3 Inspection frequencies for road types in Victoria

Road Management Category	Frequency of daytime inspection	Frequency of night-time inspection
1	Each weekday	<6 months
2	<4 days	<6 months
3	<9 days	<6 months
4.1	<17 days	<12 months
4.2	<17 days	<12 months
5.1	<6 months	<12 months
5.2	<6 months	<12 months

Source: Legislative Council Economy and Infrastructure Committee using information from VicRoads, *Road Management Plan*, 2014, < https://www.vicroads.vic.gov.au/-/media/files/technical-documents-new/road-management/road-management-plan.ashx> accessed 20 January 2021, p. 9.

Further to this, hazards are given a response code that determines the response time by road authorities.

27 Ibid.

Table 3.4 VicRoads response codes and associated response times

Response code	Response time
A	Within four hours of inspection or notification
B	Within 24 hours of inspection or notification
C	Within one week of inspection or notification
D	Within one month of inspection or notification
E	Within three months of inspection or notification
F	Within six months of inspection or notification
G[a]	Within eight hours of inspection or notification
H[a]	Within 12 hours of inspection or notification
I[a]	Within two weeks of inspection or notification
J[a]	Within three weeks of inspection or notification

a. Only relates to traffic signal related hazards.

Source: Legislative Council Economy and Infrastructure Committee using information from VicRoads, *Road Management Plan*, 2014, < https://www.vicroads.vic.gov.au/-/media/files/technical-documents-new/road-management/road-management-plan.ashx> accessed 20 January 2021, p. 9.

As an example, where a hazard relating to a pothole in a traffic lane on a Category 1 road is reported, the relevant road authority is required to action a response within four hours of receiving a notification or conducting an inspection.

3.4.4 Public awareness of road standards

Section 40(1) of the *Road Management Act 2004* (Vic) states that a road authority (DoT) has a statutory duty to 'inspect, maintain and repair a public road to the standard specified in the road management plan for that public road or a specified class of public roads which includes that public road; or to the standard specified in a policy in respect of that public road'.

However, s 40(2) of the Act states that there is no duty to 'upgrade a road or maintain a road to a higher standard than the standard to which the road is constructed'. Further to this, the relevant road authority can dictate the standards to which they will 'construct, inspect, maintain and repair roadways, pathways, road infrastructure and road related infrastructure'. This includes the standard and regularity with which maintenance should be performed.

The Committee believes that the Victorian Government should do more to inform the public about road standards in Victoria. This should be done by publishing an annual report on the state of major roads across Victoria.

FINDING 9: There is no legislative obligation for roads to be built or maintained to a certain standard to increase safety for road users.

RECOMMENDATION 6: That the Victorian Government publish an annual report on road standards that states the star rating for highways, arterial roads and other roads of significance, such as urban roads with high pedestrian and cyclist activity, in Victoria.

RATIONALE: By publishing an annual report, Victorians can monitor where and when stretches of road have been maintained and where the greatest risks remain.

The Committee is also aware that there will always be demand for more funding for Victoria's roads, no matter what the budget provides. (The Committee was informed that to upgrade a 1-star road to a 2-star or 3-star road could cost up to $10 million a kilometre.[28]) What needs to be determined is what exact level of funding is required for roads to be built and maintained at a determined level (using the star rating system).

The Committee believes that the Victorian Government should do more to inform the public about the funding required to upgrade major roads in Victoria to a minimum 3-star rating and how long such a project would take. Here the Committee notes evidence from the RACV included in Chapter 4 of this Report estimating that upgrading 100 km/h roads in Victoria to a 3-star safety standard would take around 1,000 years at the current level of funding.

RECOMMENDATION 7: That the Victorian Government undertake and publish research to determine the cost and timeframe of ensuring all highways, arterial roads and other roads of significance in Victoria are a minimum 3-star rating.

RATIONALE: Decisions about road funding cannot be made without information on what the desired acceptable minimum standard is and what is required—funding and time—to meet that standard. Further, the Victorian public should be better informed about the link between road standards and speed limits. Publishing research with this information would help that understanding.

3.5 Challenges

During the Inquiry, the Committee was presented with evidence of five main challenges regarding road safety infrastructure in Victoria. They are:

- road planning
- maintenance schedules
- vulnerable road user infrastructure

28 Mr Eric Howard, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 3.

- roadside vegetation
- flexible wire rope barriers.

3.5.1 Road planning

Concerns were raised by stakeholders regarding the planning of road projects in Victoria. As outlined above, there are a number of frameworks and corporate requirements that need to be met in order for a project to proceed.

The design life of a road pavement is 60 years, with bridges being 90 years.[29] The Committee was told that the design life is based on assumptions made regarding traffic demand, environmental and weather conditions, quality of materials and performed maintenance. However, some Victorian assets need renewal earlier than planned.[30]

The Victorian Government has stated that recent population growth was responsible for the early renewal of assets and was a key challenge for road planning and design. In its submission, the Government provided evidence of a 13% increase in road network demand since 2013 with a 15% increase in heavy vehicle registrations. Further to this, vehicle kilometres travelled had increased by 19.4% since 2009.[31]

The Committee believes that although the increase in heavy vehicle registrations can be partly attributed to an increase in online shopping, population growth has been government policy for many years. The Committee heard from some submitters that it is not solely the increased population but poor planning and design standards that lead to assets requiring renewal and upgrades earlier than planned.

At a public hearing Mr McInerney addressed the issue of poor forward planning and the impact it has on the road toll. He said that as rural road networks become urban road systems, relying on retrofitting increases the risk of fatalities and serious injuries in these areas. Mr McInerney explained:

> To put it simply, you will have a high-speed undivided road with a 100-kilometre-an-hour limit. You will then have urban areas building along it, so suddenly all of your intersections are a lot busier than they have ever been before. But you wait until it becomes a blackspot before it is upgraded, as opposed to, 'We know that development's happening; we will put in the roundabouts and those safer intersection designs before the build-up'—not waiting for the body count to mount up before you are willing to act. It is actually very predictable, the level of death and injury you will have on those roads. But likewise you will also have the vulnerable road user problems. You want your community members to be able to live life, to be out as pedestrians and cyclists … But these rural roads had no facilities for these vulnerable road users, and once again we retrofit them too late for many people who have lost their lives, who have been injured. But it is all part of planning, so if you were to plan that as part of the expansion in your

29 Government of Victoria, *Submission 71*, p. 49.

30 Ibid.

31 Ibid., p. 11.

areas you are making sure all of the new roads are 3-, 4- and 5-star for pedestrians, cyclists, motorcyclists and vehicle occupants, you will keep pace ahead of the growth and you will stop that burden and death and injury on your community members.[32]

RECOMMENDATION 8: That the Victorian Government report on the predicted road standard rating for all road projects, including the expected lifespan and projections. Projections should take into account population growth and ensure roads meet the needs of all road users.

RATIONALE: By reporting in advance of a project commencing, Victorians are provided with information as to how effectively funding is being spent, what planning aspects have been considered and what impact these provisions will have on road safety. Poor road design and network planning cannot be blamed on an increasing population.

3.5.2 Maintenance schedules

A number of submitters identified a strong need to increase investment in road maintenance and infrastructure across Victoria.[33] Further, some submitters called for a greater focus on improving rural and regional roads.[34] This is not the first time this issue has been raised to a Parliamentary Committee. In 2018, the Law Reform, Road and Community Safety (LRRCS) Committee carried out an *Inquiry into VicRoads' Management of Country Roads*. The Committee reported widespread dissatisfaction in rural and regional Victoria with 'the poor quality of maintenance work, and the competency of contractors hired by VicRoads to carry out such works'.[35]

(The LRRCS Committee was only able to table an Interim Report prior to the 2018 Victorian State Election and the dissolution of that Committee. It recommended the Victorian Government refer that Inquiry to an appropriate Committee in the current Parliamentary term. To date, the Government has not referred that Inquiry to another Committee.)

The Committee recognises that there are budgetary constraints when it comes to funding asset maintenance, projects and upgrades, including the competing priorities of growing arterial networks with increased activity and regional roads that continue to deteriorate. However, it views these two priorities as one and the same.

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32 Mr Rob McInerney, *Transcript of evidence*, pp. 14–15.

33 See for example Gillian Williamson, *Submission 7*; Gary Rykers, *Submission 10*; Charles Todd, *Submission 14*; Jade Kennedy, *Submission 32;* David Anderson and Eric Howard, *Submission 45*; Brian Duggan, *Submission 46*; Juliet Beatty, *Submission 110;* Paul Cole, *Submission 112;* Paul McBride, *Submission 123;* John Doward, *Submission 124;* Lynda Rodgers, *Submission 134;* Tania Maxwell, *Submission 138*.

34 See for example Nicola Muxworthy, *Submission 132;* Tania Maxwell, *Submission 138;* Cate Hughes, *Submission 140;* Victorian Automobile Chamber of Commerce, *Submission 74*.

35 Parliament of Victoria, Law Reform, Road and Community Safety Committee, *Inquiry into VicRoads' Management of Country Roads*, July 2018, p. 26

Further, the Victorian Auditor-General's (VAGO) report *Safety on Victoria's Roads — Regional Rope Barriers* found that the Government does not have clear evidence to show that roads with high volumes of traffic are riskier. Statistics can be misleading. VAGO observed that most serious casualty crashes occur on low-volume roads that carry fewer than 3,000 vehicles per day. However, the rate of crashes per 100 kilometres is lower on these roads because there are more kilometres of low-volume roads in Victoria than high-volume roads.

At a minimum, all high-speed roads in Victoria should have the following basic road safety features:

- line marking
- signage
- sealed shoulders and edges.

During this Inquiry, the Committee received evidence that rural and regional roads in particular are inadequately maintained. Examples include:

- poor road shoulders and line marking[36]
- main arterial roads remain unsafe[37]
- roads meant to be resurfaced at a rate of 10% each year with only 2–4% being done.[38]

Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria at DoT, told the Committee that rural and regional roads can be challenging to maintain due to the varying volume of traffic and large number of heavy vehicles that use the networks, however the Government continues to invest in the maintenance of these roads. She said:

> First, just for the record, we have a very large volume of high-speed roads in regional Victoria, and in terms of the investment in those roads and ensuring that they are safe for the community to travel on, since 2016 there has been a really significant uplift in investment in the maintenance of Victorian roads. There has been a particularly high increase in investment in the south-west region where, because of both the geological environment in the south-west plus the high rainfalls, it is particularly challenging to keep the roads maintained given the volume of traffic and the large number of trucks and other forms of traffic that are using those roads. So maintenance is an ongoing task and an ongoing challenge, but we have seen a really significant increase in the maintenance budget and maintenance work happening on our roads and we are seeing improvements in the quality of those roads in regional Victoria …[39]

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36 Mr Rob McInerney, *Transcript of evidence*, p. 16.

37 Mr Eric Howard, *Transcript of evidence*, p. 8.

38 Mr David Anderson, *Transcript of evidence*, p. 2.

39 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, pp. 40–1.

Major high-speed roads in Victoria such as freeways are of a high standard. However, the Committee believes that the Government should review current maintenance schedules for high-speed minor roads (e.g. unsealed roads) in the State to identify and repair the most urgent needs. As noted in Chapter 4, appropriate speed limits are those that match road conditions. See Section 4.4.2 for the Committee's views on speed limits and road standards in rural and regional Victoria.

RECOMMENDATION 9: That the Victorian Government review its current road maintenance priorities to ensure standards such as line marking, safe shoulders and resurfacing are adequately maintained on high-speed minor roads.

RATIONALE: All roads in Victoria must be designed and maintained so that they are safe and fit-for-purpose for all Victorians.

3.5.3 Vulnerable road users

Vulnerable road users are pedestrians, cyclists and motorcyclists. The Committee addresses motorcyclists below regarding the issue of flexible wire rope barriers.

Pedestrians

The Committee heard that while Safe System implementation has mostly been done well for vehicles, in particular cars, much more needs to be done for pedestrians and cyclists on Victoria's roads.

One in six transport trips are undertaken entirely on foot with most people walking to access public transport. Further, walking remains a popular recreation for Victorians.[40] Recent TAC data indicates that an average of 37 pedestrians are killed each year on Victorian roads.[41] The most common crash types between 2014 and 2018 involved a pedestrian:

- crossing the road and being struck from the near side (54%)
- crossing the road and being struck from the far side (18%)
- playing, working, laying or standing on carriageway (8%).[42]

Dr Ben Rossiter, Executive Officer at Victoria Walks, told the Committee that pedestrians are four times more likely to be injured in a road crash than any other road user. He said:

> Pedestrian deaths … have been trending downward for over 20 years, with a big reduction when the default urban speed limit was reduced to 50 kilometres an hour

40 Dr Ben Rossiter, Executive Officer, Victoria Walks, public hearing, Melbourne, 8 September 2020, *Transcript of evidence* p. 15.

41 Transport Accident Commission, *Pedestrian* statistics, (n.d.), <https://www.tac.vic.gov.au/road-safety/statistics/summaries/pedestrian-statistics> accessed 20 January 2021.

42 Ibid.

> in 2001. However, pedestrian fatalities are not declining as fast as the overall road toll. In 2019 pedestrians were the highest proportion of overall fatalities in more than 10 years. There has been little or no decline in pedestrian injuries in the last decade as well. Hospital admissions have not dropped at all and are stubbornly stuck at around 1,000 a year.[43]

Dr Rossiter also explained to the Committee that improved infrastructure remains vital to removing risks for pedestrians. He said:

> that will be things like both raised thresholds. It might be reducing the distance particularly … that seniors have to cross when they cross the road. It will be formal crossings, informal crossings, changing the road environment … So there are a variety of things it really needs to do, but we would say prioritise around the areas where people need to get to, where there are higher proportions that need to get to school, to shops, to public transport, to activity centres—and that can be in the regional centres and regional towns that people need to walk to. [44]

As part of *Towards Zero*, the Victorian Government committed to implementing traffic calming measures, such as reducing speed limits in certain areas to 40 km/h and installing pedestrian refuges.[45]

The Committee supports the need for continued improvement in pedestrian infrastructure and acknowledges that the Government has committed to undertaking further action to address this in the *2021–2030 Road Safety Strategy*.

FINDING 10: Pedestrians are the most vulnerable road user.

Cyclists

TAC data shows that a person riding a bike is 34 times more likely than a vehicle occupant to be seriously injured in a crash, further a cyclist is 4.5 times more likely to be killed in a crash.[46]

Similar to pedestrians, stakeholders identified a need for improved infrastructure to protect cyclists, in particular separate bicycle lanes and protected intersections that direct the different road users on distinct paths. Dr Jeremy Lawrence, Founder and Director of Streets Alive Yarra, told the Committee that bicycle lanes and protected intersections that promote full visibility of all road users would help prevent collisions. He said:

> It is much less focus on enforcement and a much greater focus on infrastructure that guides the behaviour of the road users. Clear examples would be: you have a separate lane for a footpath, a bicycle path and a motor vehicle, and you have protected

43 Dr Ben Rossiter, *Transcript of evidence,* p. 15.

44 Ibid., p. 19.

45 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan,* 2016, p. 5.

46 Transport Accident Commission, *New TAC campaign reminds drivers to give space and slow down for cyclists*, media release, 5 November 2017.

> intersections that guide the different road users on clear paths so that they have clear vision to each other. So a bicycle path would not go straight through—it would deviate around—and a motorist would have to turn a corner around a bollard and they would have a clear vision to the cyclist and therefore they are able to pause and brake before a collision occurs.[47]

At a public hearing, Dr Dan Kneipp, Chief Executive Officer of the Amy Gillett Foundation, Australia's leading cycling safety charity, presented a five-item plan that the Foundation believes will greatly increase cycling safety. The five items are:

- 'A Metre Matters'—minimum passing distance road rules in Victoria
- 30 km/h default urban speed limits
- separated cycling infrastructure
- education for truck drivers
- education for novice drivers.[48]

Separate to this, the Committee was told that cyclists need to be moved off footpaths, both for pedestrian safety and the fact that footpath infrastructure is not suitable for bicycles. Dr Rossiter said:

> The thing with footpaths is that they are not designed for cycling as well. They are not designed for e-scooters and fast-moving traffic. They have overhanging branches, they are in poor condition and there are cars coming into and out of driveways, and there is not research saying they are any safer. In fact cyclists have greater risk of crash on the footpath. They might be more severe sometimes on roadways, but the crash risk is quite high. So we say where there are higher volumes they need to be separated …[49]

Towards Zero allocated $100 million to increase the safety of cyclists (and pedestrians) across Victoria. The funding was allocated to:

- Increase the number of separate bike paths and lanes on principal and priority networks.
- Implement priority signalling for bicycles at intersections on key cycling routes.
- Invest in kerb outstands[50] and mid-block refuges around busy streets.[51]

The Committee recognises that the Government has committed to undertaking further action to address cyclist infrastructure as part of its *2021–2030 Road Safety Strategy*.

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47 Dr Jeremy Lawrence, Founder and Director, Streets Alive Yarra, public hearing, Melbourne, 8 September 2020, *Transcript of evidence*, p. 24.

48 Dr Dan Kneipp, Chief Executive Officer, Amy Gillett Foundation, public hearing, Melbourne, 8 September 2020, *Transcript of evidence*, p. 27.

49 Dr Ben Rossiter, *Transcript of evidence*, p. 19.

50 A kerb outstand is a protrusion from the kerb that mitigates the risk of vehicles driving into kerbside installations or cycling lanes.

51 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan*.

3.5.4 Roadside vegetation

A number of stakeholders spoke about the relationship between roadside vegetation and road safety. The Committee heard a range of opinions doubting that roadside vegetation is being appropriately managed to provide the safest possible roads. Some of the concerns noted that roadside vegetation can be a hazard when it:

- obscures a driver's vision, particularly at intersections
- encroaches onto the road and causes damage to the road surface
- encourages wildlife to congregate at or by the roadside
- impedes run-off areas.[52]

However, Mr Peter Kartsidimas from the RACV told the Committee that environmental considerations make management of roadside vegetation difficult.[53] Ms Seymour spoke to the important role of roadside corridors in supporting biodiversity and the Government's commitment to creating 'safe places' for wildlife corridors. She told the Committee:

> Our roadsides and those corridors are also amazing opportunities for supporting biodiversity, so the roadsides have amazing biodiversity. In terms of wildlife corridors, our preference would be that there are probably safer and other places that are more appropriate as wildlife corridors, but in terms of supporting that biodiversity, that is a great opportunity for us as a road manager to ensure that we can continue to have that biodiversity in this state. I think there is a role for us to play from an environmental perspective in terms of the work that we do. But that has to be balanced against the safety of those using the road.[54]

Striking the balance between conservation and road safety was expanded on by Mr Eric Howard. Ultimately, Mr Howard argued, the management of roadside vegetation, both from a road safety and environmental perspective, is considered on a case-by-case basis. He said: 'It is a very complex issue … But the environment is important to a lot of people and road safety is a window into our lives; it is a tough taskmaster. What we try and do is find the policy opportunities that might be achievable, and that is the basis of this discussion.'[55]

3.5.5 Flexible wire rope barriers

Flexible wire rope barriers (WRBs) are road barriers made up of tensioned wire ropes supported by steel posts. They are installed in the centre and/or along the side of high-risk roads in order to prevent vehicles from leaving the road and hitting objects,

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52 Moyne Shire Council, *Submission 82,* p. 2; Mr Damien Codognotto OAM, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 13.

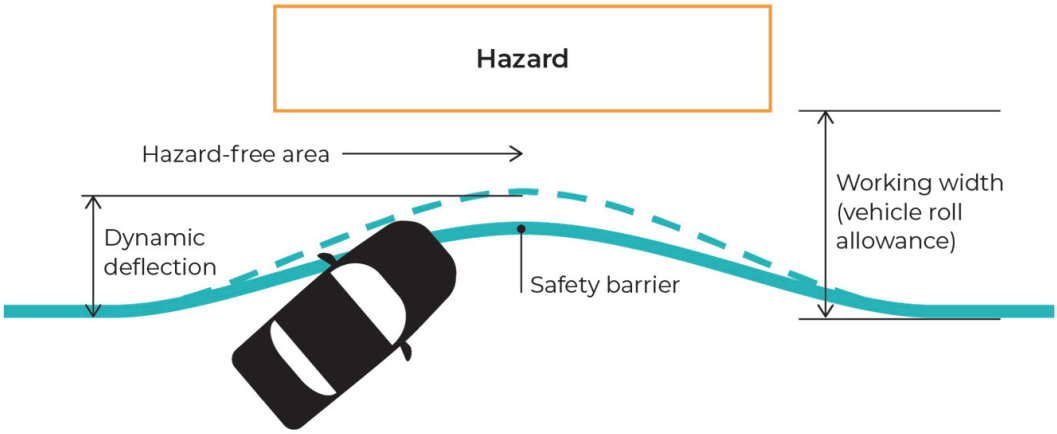
53 Mr Peter Kartsidimas, Senior Manager, Transport, Planning and Infrastructure, Royal Automobile Club of Victoria, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 4.

54 Ms Robyn Seymour, *Transcript of evidence*, p. 41.

55 Mr Eric Howard, *Transcript of evidence*, p. 11.

rolling over or hitting oncoming vehicles. WRBs use a dual mechanism to slow down and divert excessive force away from the people inside a vehicle. The ropes deflect and absorb the energy and the posts collapse, slowing down and redirecting a vehicle away from a potential hazard, as shown in Figure 3.3 below.

Figure 3.3 Flexible wire rope barriers



Source: Victorian Auditor-General's Office, *Safety on Victoria's Roads—Regional Road Barriers*, 2020, p. 76.

In 2017, the Victorian Government invested $340 million to improve the safety of more than 2,500 kilometres of rural and regional roads. As part of that project, the Government committed to installing 330 kilometres of WRBs on high-risk, high-volume roads that have a speed limit of 100 km/h or greater.

Impact on road safety

During this Inquiry, the Committee heard concerns around the risk posed by flexible wire rope barriers.[56] For example, several stakeholders raised the issue of their placement. Some submitters believe that some barriers are placed too close to the edge of the road, thereby creating a dangerous situation when vehicles need to pull over. One submitter told the Committee:

> WRBs make drivers feel 'hemmed in'. Some on the left are so close a driver often subconsciously moves nearer the centre and oncoming traffic, e.g. Hyland Highway in Gippsland. Left side WRBs prevent a vehicle moving safely off the road if it has to stop. It is simply dangerous for a disabled vehicle now.[57]

56 Charles Todd, *Submission 14;* Brian Duggan, *Submission 46;* Andy Nguyen, *Submission 55*; Greg Kelly, *Submission 65;* Victorian Automobile Chamber of Commerce, *Submission 74*; Peter Scott, *Submission 91*; Robert Barnard, *Submission 92*; Paul Barber, *Submission 94;* Jamie Suratman, *Submission 97*; Ross Block, *Submission 98*; Les Bennett, *Submission 99*; Michael Czajka, *Submission 100*; Glenn Fazzino, *Submission 102*; Chris Noble, *Submission 103*; Jan White, *Submission 104*; Graham Holland, *Submission 105*; Denis Ackland, *Submission 106*; Rodney Brown, *Submission 107*; Mark Bartleman, *Submission 108*; Phillip Mickan, *Submission 109*; Garry Boucher, *Submission 113*; Stephen Bardsley, *Submission 120*; Chris Swalwell, *Submission 121*; John Doward, *Submission 124*; Anthony Fraietta, *Submission 125*; Matthew Waite, *Submission 129*; Peter Eberbach, *Submission 130*; Daryle Bell, *Submission 131;* Jon May, *Submission 136*; Mal Peters, *Submission 137*; Cate Hughes, *Submission 140*; Motorcycle Riders Association, *Submission 141*; Peter Keays, *Submission 151*.

57 Charles Todd, *Submission 14*, p. 1.

However, research bodies and road safety experts provided critical evidence that demonstrated to the Committee that WRBs are very effective in preventing fatal and serious accidents.

Ms Seymour informed the Committee that data from the eight sites where the installation of WRBs has been completed revealed a 65% reduction in fatal and serious injury crashes between January 2016 and December 2019. Further, the days spent in hospital for people in an accident along those routes has reduced to four days from 261 days.[58]

Dr David Logan, a Senior Research Fellow at MUARC, told the Committee that WRBs reduce run-off and head-on fatalities on high-speed rural and regional roads and eliminate approximately 80–90% of fatalities and serious injuries in comparison with no barriers at all.[59] The Committee was also told that the barriers installed along the Bass Highway and Princes Freeway in Gippsland saw a 78% reduction in road trauma.[60]

Further to this, statistics from the New Zealand Transport Agency showed that installing WRBs resulted in a 65% reduction in all deaths and serious injury and a 100% reduction in head-on deaths and serious injury.[61]

Motorcyclist safety

A large portion of submitters concerned by the installation of WRBs were motorcyclists providing anecdotal evidence of their experience with, and perceived dangers of, WRBs. Some submitters told the Committee they found barriers to be dangerous because:

- The choice of evasive action is limited for motorcyclists.[62]
- It may cause more injury to a motorcyclist than if there were no barrier present.[63]
- The funding could be better spent fixing road surfaces that lead to falls.[64]

Evidence provided to the Committee by the TAC indicates that while WRBs are not without problem for areas of high motorcycle activity, they may see a 40–50% reduction in motorcyclists being killed.[65]

The Victorian Government has acknowledged that WRBs pose some risk to motorcyclists because of their steel posts and the potential for riders to slide under the

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58 Ms Robyn Seymour, *Transcript of evidence*, p. 37.

59 Dr David Logan, Senior Research Fellow, Monash University Accident Research Centre, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 40.

60 David Anderson and Eric Howard, *Submission 45*, p. 19.

61 Colin Brodie, 'Implementing the Safe System Approach in New Zealand', PowerPoint presentation to the International Transport Forum, 2016, <https://www.itf-oecd.org/sites/default/files/docs/implementing-safe-system-new-zealand.pdf> p. 20.

62 Mark Bartleman, *Submission 108*, p. 1.

63 Victorian Motorcycle Council, *Submission 56*, p. 9.

64 Charles Todd, *Submission 14*, p. 1.

65 Towards Zero, *Flexible Wire Rope Safety Barriers*, (n.d.), <https://www.towardszero.vic.gov.au/news/articles/flexible-barriers-how-they-work-and-the-cheese-cutter-myth> accessed 20 November 2020.

wire or into the post. However, the Government does not support the view that barriers act as a 'cheese cutter' for motorcyclists, as some believe.

The Victorian Government has undertaken to:

- install 'stack cushions' onto the barriers' steel posts
- develop posts that have a larger surface area to lessen the impact of force
- conduct further research to find possible alternative ways to protect motorcyclists in high risk settings.[66]

At the time of writing, DoT had not informed the Committee of any such research nor whether any stack cushions have been installed.

FINDING 11: While flexible wire rope barriers improve road safety for all road users, authorities should continue to reduce any risk they do pose to motorcyclists.

Planning problems

The Committee also heard examples of poor planning when WRBs are placed near agricultural properties. Mr Peter Keays told the Committee that the WRBs located alongside his properties on Fyansford-Gheringhap Road, Gheringhap and Hamilton Highway have created logistical and safety issues, including:

- Limiting farm machinery's access to a paddock and not being able to fit or perform U-turns between the barriers.
- Delays in emergency services attending certain paddocks due to the location of gaps in barriers and misplacement around emergency access points.
- Lack of safe space to pull over in the case of a breakdown.[67]

Further to this, Mr Keays spoke of his experience with RRV and its consultation process before the barriers were installed. He explained that the RRV representatives presented a set of virtual drawings but did not undertake an in-person assessment of the site or farm entrances. Further, he said:

> The consultation process: early in the process we had what Regional Roads Victoria would call 'a consultation process'—because my son was captain of the local fire brigade and we were farmers using the Fyansford-Gheringhap Road—but in reality this session just turned out to be to tell us what we were getting. Any of our requests and information we gave were not listened to. I gave Regional Roads Victoria plans of where our farm paddock access points were located and the sizes of machinery that we and other farmers are using on the road. This information was obviously ignored as there were no changes. I do not believe they really had any idea of what farmers require for

66 Ibid.

67 Peter Keays, *Submission 151*, p 1.

> their farming operations, nor did they seem very interested. All in all, it is very poor quality construction, creating the possibility of some very dangerous situations on what was previously a reasonably safe country road, apart from the poor surface and broken edges.[68]

The Committee believes there is a need for DoT to improve community and stakeholder consultation when it comes to the planning and installation of WRBs in regional Victoria. In particular, the Committee considers that it should be a basic requirement for road designers to:

- Visit the site during the planning phase.
- Provide design guidelines and plans that relate to how barriers are installed.
- Consult with land owners and emergency services regarding the required functionality of a roadway.

This view was shared by Mr McInerney, who said more can be done to ensure the needs of the whole community are met when WRBs are installed. He told the Committee:

> What you have then got to consider is perhaps the planning and the design mechanisms by which they put them in are not taking into account that 5.1-metre farmers' machinery, and the design and planning teams can perhaps do a better job of making sure they look after all the community needs in that environment to keep those other essential parts of the economy going, to keep access to properties open and all of those. But what I would do is say that that is an access and a community engagement issue.[69]

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 2.4 of Appendix B.

RECOMMENDATION 10: That the Victorian Government improve its standard of community engagement and consultation relating to the planning, positioning and implementation of flexible wire rope barriers in Victoria by undertaking site visits, publishing design guidelines and plans for specified stretches of road, and addressing logistical concerns with land owners and emergency services.

RATIONALE: Improved consultation and engagement regarding the installation of flexible wire rope barriers, including undertaking in-person site visits and publishing design guidelines and plans for a specific stretch of road, would better meet the needs of rural and regional communities.

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68 Mr Peter Keays, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 9.

69 Mr Rob McInerney, *Transcript of evidence*, p. 17.

Victorian Auditor-General's Office report

In June 2020, VAGO tabled its report, *Safety on Victoria's Roads—Regional Road Barriers*, which focused on the 20 high-risk rural and regional roads where WRBs were installed. The report determined that the Program was not as cost-effective as DoT and the TAC had expected, with 12 installations going overbudget, costing the program 22% more than its initial $450 million budget.

Some stakeholders viewed the Auditor-General's findings differently. They considered that the report demonstrated that money had been poorly spent on barriers instead of other proven methods of improving road safety,[70] while others contended that the report relied upon incomplete project data.[71]

However, there was consensus among most stakeholders in this Inquiry that DoT demonstrated poor planning and record keeping practices throughout the Program, which hindered its success. The Committee agrees that the VAGO report focused on these issues, rather than questioning the efficacy of WRBs themselves.

The Committee is aware that DoT and the TAC provided a response to the recommendations of the Auditor-General, outlining that a number of steps would be taken to address the concerns raised in the report by December 2020. At the time of writing this Report, the Department had not informed the Committee whether the outlined improvements have been implemented. It strongly urges DoT to ensure that they are addressed in a timely manner.

RECOMMENDATION 11: That the Victorian Government, in line with the Victorian Auditor-General's report, *Safety on Victoria's Roads—Regional Road Barriers*, ensure the Department of Transport improves record keeping in relation to future installation of flexible wire rope barriers, including accurately recording the:

- location of barriers
- installation date
- state of repair
- cost of routine maintenance and monitoring.

RATIONALE: The Victorian Auditor-General's report was clear in its findings that the Department of Transport's inadequate record keeping in relation to construction dates, barrier locations, state of repair and types of flexible wire rope barrier installed hindered its ability to plan, evaluate and maintain the barriers.

70 Charles Todd, *Submission 14*, p. 1.

71 Dr David Logan, *Transcript of evidence*, p .41.

4 Speed and road safety

4.1 Introduction

This Chapter addresses the link between speed and road safety. The key message is that speed is one of the four pillars of *Towards Zero*, which acknowledges that safe speed limits are those that match the road conditions. However, evidence received by the Committee suggests that this is not the case in parts of rural and regional Victoria where speed limits are too high for the conditions.

The Chapter then discusses speed enforcement and identifies a strong link between the efficacy of speed enforcement programs and the public's view on the broader road safety strategy. It concludes by noting how community attitudes towards speeding over recent years have become more focused on the dangers of speeding thanks to campaigns by Victoria's road safety partners. This is important as the community is more likely to accept that speed cameras are not simply 'revenue raising' when their road safety role is made clear.

4.2 Speed in the Safe System

In Victoria, speed is one of the most significant contributing factors to road trauma, with approximately 29% of fatalities attributable to speed in 2019.[1] The Victorian Government's submission to this Inquiry stated:

> Both the severity of a crash, and the likelihood of crashing, increase as speed increases.
>
> Driving at or below the speed limit will reduce road trauma. Specifically, a measured reduction in average vehicle speeds results in a decline in crash rates. For those crashes that do occur, reduction in the speed of the involved vehicles reduces crash rates and severity.[2]

The Government provided no data to support this statement. While the Committee does not challenge the accuracy of the statement, it is another example of road safety stakeholders finding it difficult to evaluate data underpinning the Victorian Government's road safety policy.

More recently, the Monash University Accident Research Centre's (MUARC) study of serious injuries found that exceeding the speed limit was the most common non-compliant behaviour from drivers (26.2% of crashes studied), followed by the

1 Government of Victoria, *Submission 71*, p. 8.

2 Ibid., p. 32.

presence of alcohol or drugs (19.1% of crashes studied) and not obeying instructions including stop signs and traffic lights (13.7% of crashes studied).[3]

'Safe Speeds' was one of the four pillars of *Towards Zero*. Safe is defined as setting appropriate speed limits or speeds that are right for the conditions.[4] The underlying philosophy is one of harm minimisation.[5]

In Australia, the *Austroads Guide to Road Safety* (the primary technical reference for traffic management across Australian jurisdictions[6]), notes 'speed limit management is about meeting an acceptable compromise across a wide range of objectives and a diverse group of road users and communities' and the 'moderation of speeds chosen by drivers and riders is critical in establishing a safer road system'.[7] It states:

> Within the context of a safe road system, speed limits need to reflect the varying types of road users, the road environment, types of vehicles driven and the safety, amenity and economic needs of the community.
>
> The general philosophy adopted when setting speed limits is that when they are being assessed they take into account a comprehensive range of factors. These factors include the safety record of the road, the road's operating performance, the road and roadside infrastructure, geometry and roadside development.[8]

This thinking is aligned with the 'three Es' as discussed in Chapter 1 of this Report: engineering the road; educating the drivers; and enforcing road rules.

The Austroads guidelines set out the factors that should be taken into account when setting speed limits in the Safe System:

- Crash history: The most important consideration in the assessment of review of a speed zone. Crash history can be viewed in two ways: individual risk (measured by the casualty rate per 100 million vehicle kilometres); and collective risk (measured by the casualty crash rate per kilometre of road). The guidelines state that a 'focus on individual risk is likely to provide a more consistent relationship between speed limits and characteristics of the road and road environment, giving a hierarchy of limits that makes more sense to most road users.'[9]
- Current operating performance: The physical and operating environment of road sections, which includes, among other things: assessment of driver behaviour and road user activity; road environment factors such as roadside hazards, uncontrolled

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3 Monash University Accident Research Centre, *ECIS report released: Major study reveals factors causing serious injuries on Victoria roads,* 2020, <https://www.monash.edu/muarc/news-and-events/articles/major-study-reveals-factors-causing-serious-injuries-on-victorian-roads> accessed 8 February 2021.

4 Towards Zero, 'Why Safe Speeds Matter', *Safe Speeds*, (n.d.), <https://www.towardszero.vic.gov.au/safe-speeds/why-safe-speeds-matter> accessed 16 December 2020.

5 Austroads, *Guide to Road Safety Part 3: Speed Limits and Speed Management*, Sydney, 2008, p. 1.

6 VicRoads, *Traffic engineering*, (n.d.), <https://www.vicroads.vic.gov.au/business-and-industry/technical-publications/traffic-engineering> accessed 16 December 2020.

7 Austroads, *Guide to Road Safety Part 3: Speed Limits and Speed Management*, p. 1.

8 Ibid., p. i.

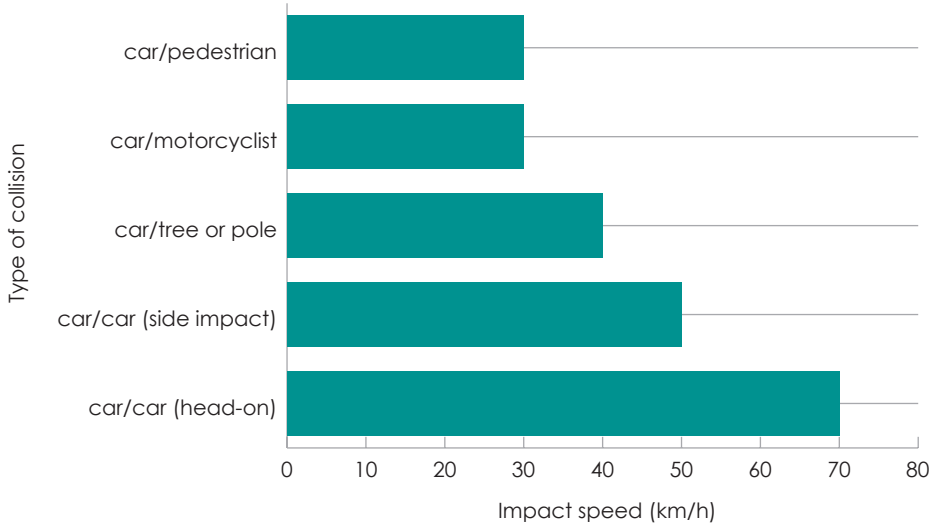
9 Ibid., p. 9.

intersections and access points such as driveways; the potential for collision between vehicles and pedestrians/cyclists; road function (whether the road is a major traffic route and/or freeway, forms part of a residential precinct, is a shared zone etc.); and composition and patterns of traffic.[10]

- Road and roadside infrastructure, geometry and roadside development: Geometric features of a road including alignment (straight or curved, flat or steep etc.); road cross-section (divided or undivided, number of lanes, lane width, presence of bicycle/bus lanes, sealed or unsealed shoulders etc.); activity levels of abutting properties etc.[11]
- Unsealed roads: While rural speed limits on unsealed roads may be the same as for sealed roads, lower speed limits should be considered where appropriate. Factors for consideration include function, type and volume of traffic, alignment, climatic variation and crash history.[12]

There are a number of reasons why speed, and high speed in particular has a major influence on road safety. The faster a vehicle is travelling, the greater the distance required to stop and the less time there is to react quickly to changing conditions. As well, in crashes at higher speeds, the body is subjected to greater physical forces. Figure 4.1 uses a variety of crash scenarios to demonstrate the link between speed and the likelihood of surviving a crash.

Figure 4.1 Survivable impact speeds for different crash scenarios



Source: Amy Gillett Foundation, *Submission 62*, p. 10 (with sources).

10 Ibid., pp. 9–10.

11 Ibid., p. 10–1.

12 Ibid., p. 11.

4.3 Speed limits and speed management

The Austroads guidelines list two main categories of speed limit:

- Default speed limit—the limit that legally applies to various road types where there is no speed limit sign.
- Signed speed limit—the limit that applies where a regulatory speed limit sign is posted.[13]

There are two general 'default' (unsigned) speed limits in Australia, one that applies within the urban or 'built-up' area, and the other that is applicable within a 'rural' open-road environment. Generally, the default limit in urban areas is 50 km/h and in rural areas 100 km/h, although there is an increasing variety of speed limits in different areas. When there is no speed limit sign, these default limits apply.[14]

Road safety experts Mr David Anderson (former CEO of VicRoads) and Mr Eric Howard (former General Manger of Road Safety at VicRoads) provided an international comparison of speed limits to the Committee shown in Table 4.1 below.

Table 4.1 Speed limit comparison of OECD Countries

Country	Speed Limits
Australia	Urban roads: 50 km/h (default) 60–80 km/h (arterial roads – increasing use of 40 km/h or lower in urban areas with high pedestrian activities); 100–110 km/h rural roads; Motorways 100 km/h default, although often set to 110 km/h
Belgium	30–50 km/h on urban roads; 70–90 km/h on rural roads; 120 km/h on motorways
Canada	40–70 km/h on urban roads; 80–90 km/h on rural roads; 100–110 km/h on motorways
Chile	50 km/h on urban roads (maximum default speed limit but can vary according to the type of road); 100 km/h on rural roads; 120 km/h on motorways (maximum default speed limit)
Czech Republic	50 km/h on urban roads; 90 km/h on rural roads; 130 km/h on motorway
Denmark	50 km/h on urban roads; 90 km/h on rural roads; 130 km/h on motorway
Finland	50 km/h on urban roads (sections with 30, 40 or 60 km/h); 100 km/h on rural roads (80 km/h in winter); 120 km/h on motorways (100 km/h near cities and in winter)
France	50 km/h on urban roads; 80 km/h on rural single carriageways (90 km/h when two lanes dedicated to the same direction); 110 km/h on dual carriageways; 130 km/h on motorway
Germany	50 km/h on urban roads; 100 km/h on rural roads; 130 km/h on motorways (recommended)
Ireland	60 km/h on arterial roads; 30/50 km/h on urban roads in built-up areas; 80 km/h or 100 km/h on rural roads; 120 km/h on motorways

13 Ibid., p. 7.

14 Ibid.

Country	Speed Limits
Israel	50–70 km/h on urban roads; 80/90/100 km/h on rural roads; 100/110/120 km/h on motorways
Italy	50 km/h on urban roads; 70–90 km/h on rural roads; 110–130 km/h on motorways
Japan	40/50/60 km/h on urban roads; 50/60 km/h on rural roads; 100 km/h on motorways
Korea	50 km/h on urban roads; 60–80 km/h on rural roads; 110 km/h on motorways (100 km/h in urban areas)
Lithuania	50 km/h on urban roads; 90 km/h on rural roads; 120–130 km/h on motorways
Luxembourg	50 km/h on urban roads; 90 km/h on rural roads; 130 km/h on motorways (110 km/h in wet weather)
Netherlands	Urban roads 30/50 km/h, rural roads 60/80 km/h, motorways 100/130 km/h
New Zealand	50 km/h on urban roads; 100 km/h on rural roads; 100 km/h on motorways
Norway	50 km/h on urban roads (30 km/h on residential streets); 80 km/h on rural roads; 90–110 km/h on motorways
Spain	50 km/h on urban roads; 90 km/h on rural roads; 120 km/h on motorways
Sweden	50 km/h on urban roads; 90 km/h on rural roads; 120 km/h on motorways
Switzerland	50 km/h on urban roads; 80 km/h on rural roads; 120 km/h on motorways
United Kingdom	30 mph[a] (48 km/h) on urban roads; 60–70 mph (96–112 km/h) on rural roads; 70 mph (112 km/h) on motorways
United States of America	Varies by state: motorways 88–129 km/h (55–80 mph, set by each state)

a. mph = miles per hour

Source: David Anderson and Eric Howard, *Submission 45*, pp. 20–1.

4.3.1 Speed limits in Victoria

The main default speed limits that apply in Victoria are set out in Table 4.2 below. These apply on all roads where a speed limit sign is not displayed.

Table 4.2 Default speed limits at a glance

Area	Speed Limit (km/h)	Why?
School zones	40	School speed zones are reduced-speed areas located around schools. They're designed to keep children safe by lowering the speed limit at peak times when they are travelling to and from school. In rural and regional Victoria, school zones are 60 km/h.
Shopping strips	40	A 40 km/h speed limit applies in some of Melbourne's busy strip shopping centres because of high-level pedestrian activity. These limits are clearly marked with electronic variable speed signs and advance warning signs.
Built-up areas	50	The default speed limit for Victoria's roads in built-up areas is 50 km/h and applies on all roads in suburban areas where there are no speed limit signs displayed. As high pedestrian and cyclist activity occurs in built-up areas, the Department of Transport (DoT) recommends travelling 'well below' the maximum speed limit.

Area	Speed Limit (km/h)	Why?
Rural and outer metropolitan towns	50	A reduced speed limit of 50 km/h has been introduced in many rural and outer metropolitan areas. The 50 km/h speed limit in these areas applies at all times and is marked by clearly visible speed signs.
Country roads	100	In rural Victoria, the default speed limit outside of built-up areas is 100 km/h. This default speed limit operates on roads where there are no speed limit signs.

Source: VicRoads, *Speed Limit*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/road-rules/a-to-z-of-road-rules/speed-limits> accessed 18 December 2020.

Speed limits in Victoria are predominantly dictated by road design, including factors such as corners, road edges, barriers and other related components.[15] Further the 50 km/h default can be upgraded to 60 km/h with appropriate signage and approval, and 80 km/h and 100 km/h are commonplace on urban freeways. In shared zones, where pedestrians have priority on a road or path also used by vehicles, lower speed limits (usually 10 km/h) apply when fitted with a shared zone sign.[16] Councils can apply for 40 km/h area-wide zones for residential areas and for pedestrian activity areas, with some councils now pushing for 30 km/h zones (covered further in Section 4.4 below). For example, the Melbourne central business district (CBD) and Hoddle Grid is set at 40 km/h with some 30 km/h exceptions.[17]

Variable speed limits

Variable speed limits (VSLs) manage speed limits based on operational and/or environmental conditions on certain sections of a road. VSLs may be used:

- At certain times of the day or year where there is an elevated crash risk, for example due to icy or windy conditions, or high pedestrian traffic zones such as shopping centres and schools.
- To improve road safety and/or traffic flow on congested roads, for example freeways during morning and afternoon peak periods, roadworks sites, and traffic incidents such as vehicle breakdown, loss of loads or crashes.[18]

One of the most common uses of VSLs in Victoria are time-based school zones. These operate from 8 am to 9:30 am and 2:30 pm to 4 pm on weekdays during Victorian school terms (except for public holidays). In most cases the speed limit during school speed zone times is:

- 40 km/h (when the usual speed limit is less than 80 km/h)

15 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, p. 43.

16 VicRoads, *Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines*, 'Speed Zoning Guidelines', Ed. 1, June 2017, p. 11.

17 Monash University Accident Research Centre, *Submission 66*, p. 24.

18 VicRoads, *Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines*, 'Speed Zoning Guidelines', pp. 7, 12.

- 60 km/h (when the usual speed limit is 80 km/h or higher).[19]

The Victorian Government told the Committee that speed limits on the State's busiest freeways vary according to traffic conditions, the requirements for which are outlined in volume three of the VicRoads Traffic Engineering Manual, 'Speed Zoning Guidelines'.[20] DoT relies on technology, such as Side Road Activated Speed (SRAS) technology,[21] to implement VSLs.[22]

This technology is also among the interventions that have been rolled out as part of Regional Roads Victoria's high-speed rural intersections safety improvements program.[23]

Inquiry stakeholders encouraged DoT to continue to implement speed limits that 'react to traffic flow'[24] and use technology to aid speed management. For example, Transurban envisioned reducing the road toll to zero, telling the Committee:

> We support trialling new speed management and enforcement technologies with the aim of improving safety on the broader network, reducing crashes and eventually eliminating serious injuries and fatalities.[25]

The Committee also heard from Mr Robert Barnard, a motorsport consultant with over 30 years' experience designing and building motor racing circuits around the world. Mr Barnard identified a problem that occurs when every vehicle on a road travels at the same speed, a situation he described as a 'slug of traffic'. He said that with everyone grouped together, there is a large risk of a major traffic incident if a driver at the front of the group does something wrong.[26] Mr Barnard told the Committee that in Spain, the concept of VSLs on freeways had been extended to varying speed limits according to vehicle type:

- cars: 120 km/h
- buses: 100 km/h
- commercial and heavy goods vehicles: 90 km/h
- towing a caravan: 80 km/h.[27]

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19 VicRoads, *School speed zones*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/road-rules/a-to-z-of-road-rules/school-speed-zones> accessed 15 January 2021.

20 VicRoads, *Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines*, 'Speed Zoning Guidelines'.

21 SRAS systems are used in place of static signs to reduce crash risk at intersections in rural areas. When the system detects traffic attempting to cross an intersection, it activates reduced speed limit signs that apply in place of the normally indicated limit.

22 Government of Victoria, *Submission 71*, pp. 8, 33.

23 Regional Roads Victoria, *Safety improvements at intersections in Northern Victoria*, (n.d.), <https://regionalroads.vic.gov.au/map/northern-improvements/safety-improvements-in-northern-victoria--high-risk-rural-intersections> accessed 18 December 2020.

24 Mr Robert Barnard, *Transcript of evidence*, p. 25.

25 Transurban, *Submission 52*, p. 2.

26 Mr Robert Barnard, *Transcript of evidence*, p. 25

27 Ibid.

The Committee also considered the issue of motorcycles driving slightly faster than other vehicles, in particular when taking off from stationary traffic, as a safety measure. Mr Damian Codognotto, a motorcyclist with over 50 years' riding experience, told the Committee that '… allowing some leeway, some discretion to allow bikes to get away from the cars, to penetrate traffic, is definitely a road safety asset.'[28]

RECOMMENDATION 12: That the Victorian Government consider wider deployment of variable speed limits across appropriate sections of the road network.

RATIONALE: Variable speed limits are an important road safety tool. They should be applied on every part of the road network where appropriate.

RECOMMENDATION 13: That the Victorian Government undertake research into whether vehicle-specific speed limits would be an effective speed management option in Victoria.

RATIONALE: There may be merit in applying different speed limits to difference classes of vehicles, however more research needs to be done to provide evidence to Victoria's road safety partners.

4.3.2 Speed management and road standards

In the joint submission to the Inquiry, Mr Anderson and Mr Howard told the Committee that speed and road standards must be considered simultaneously, not as distinct issues. They wrote: 'Existing travel speed and infrastructure safety quality are in effect two sides of one coin and both need to be assessed in evaluating the crash risk on a road length.'[29]

This view was echoed by the Royal Automobile Club of Victoria (RACV), which told the Committee that, consistent with the Austroads guidelines, speed limits must be appropriate for the conditions, including:

- traffic volume and type
- road standards
- roadside conditions
- nearby land use.

28 Mr Damien Codognotto, OAM, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 16.

29 David Anderson and Eric Howard, *Submission 45*, p. 14.

Further, a Principal Finding of MUARC's recently published study of serious injuries was that 'mismatched speed limits' contribute to road trauma including for drivers who are obeying speed limits.[30]

On this basis, therefore, higher speed limits can be maintained by improving infrastructure; where infrastructure cannot be improved, lower speed limits can be used to improve road safety.[31]

The relationship between speed and road infrastructure in Sweden's Safe System design was explained in some detail at a public hearing by Dr Matts-Âke Belin, Director of the Vision Zero Academy, Swedish Transport Administration. He told the Committee that, particularly in mixed and urban traffic zones, the interaction between protected and unprotected road users must be planned for and managed. This is typically achieved through two main options:

- Physically separating vulnerable road users from vehicles in highspeed environments.
- Reducing speeds with traffic calming.[32]

Dr Belin also told the Committee that some roads in Sweden are designed to allow safe travel at 120 km/h. He said:

> If you are smart, if you are going to design your road, then you can allow a higher speed. And on some of our roads now it is a very safe design. It is not a large part of the system, it is a small part of the network, where we allow 120 kilometres per hour. But on our two-plus-one roads, for example, in most cases we allow 100 kilometres per hour.[33]

Dr Belin added that speed limits are reduced on roads where vehicles cannot be safely separated. Dr Belin explained:

> We know now, for example, that if you are in a new car and you have a head-on collision, at up to 80 kilometres you will survive in that kind of crash. But at about 80 kilometres the risk will increase exponentially if something happens. We have a strategy, though, that if we need a higher speed than 80 kilometres, then we have to do something about the road environment. We cannot allow head-on collisions on these roads. And if you do not prioritise that, then you have to reduce the speeds, so you connect the speed limit to the design of the road. We have done lots of things now to adjust, both to make investment in the road environment but also to reduce the speed, all over the country now, to make that happen.[34]

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30 Michael Fitzharris et al., *ECIS Report 1: Overview and analysis of crash types, injury outcomes and contributing factors*, Enhanced Crash Investigation Study (ECIS), no. 1, Monash University Accident Research Centre, Australia, 2020, p. xvi.

31 Royal Automobile Club of Victoria, *Submission 53*, pp. 16–8.

32 Dr Matts-Âke Belin, Director, Vision Zero Academy, Swedish Transport Administration, public hearing, Melbourne, 23 September 2020, *Transcript of evidence*, pp. 4–5.

33 Ibid.

34 Ibid.

FINDING 12: Safe speed limits are those that match the properties of the roads they apply to. This means that road standards and speed limits are inextricably linked.

However, Mr Anderson and Mr Howard argue that in many parts of Victoria speed limits are not safely aligned with conditions.[35] The RACV's submission provides examples of roads in rural and regional Victoria where it believes the speed limits are not safe because they do not match the road conditions.[36]

At a public hearing, Mr Anderson also told the Committee:

> We are not saying at this stage that speed limits should be reduced, but if we cannot improve the safety features and quality of roads and you want to reduce the road toll, then that has got to be considered.[37]

Road standards are discussed in Chapter 3 of this Report.

4.4 Urban and rural and regional roads

Over the course of this Inquiry, the bulk of evidence provided to the Committee in relation to speed management policy in Victoria centred on two main themes:

1. Urban speed limits: in particular low speed crashes in areas with high numbers of vulnerable road users.
2. High-speed rural roads: in particular whether speed limits reflect the quality and standard of the road.

4.4.1 Urban speed limits

Evidence to this Inquiry drew the Committee's attention to examples of 30 km/h speed limits across the world in CBDs and other urban areas.[38] Stakeholders noted that local roads, particularly in and around schools, shopping and recreational precincts, and other areas of high pedestrian and cyclist activity, place vulnerable road users at increased risk of trauma. They called for 30 km/h speed limits to be introduced in comparable urban areas in Victoria.

At a public hearing, Mr Richard Smithers, Team Leader, Transport Planning, Urban Strategy Branch at the City of Melbourne identified social and economic benefits that followed lowering speed limits in the centre of Melbourne. He told the Committee:

> In 2006 the city proposed reducing the speed limit in the central, busiest part of the city—we often call that the Hoddle Grid—from 50 kilometres per hour to 40. In 2012 that new limit was approved and signs were installed, and in the five years afterwards

35 David Anderson and Eric Howard, *Submission 45*, p. 11.

36 Royal Automobile Club of Victoria, *Submission 53*, p. 18.

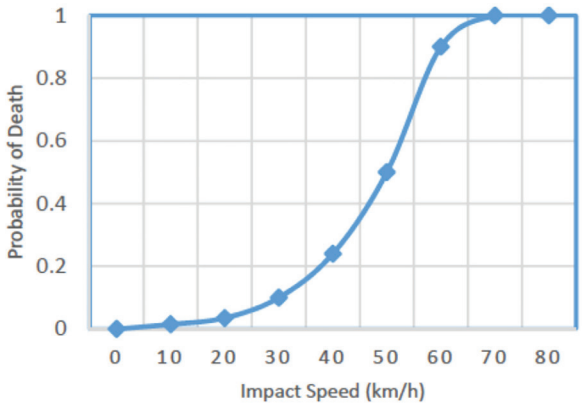
37 Mr David Anderson, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 2.

38 See for example Amy Gillett Foundation, *Submission 62*, p. 12; Victoria Walks, *Submission 47*, p. 8.

crashes between motor vehicles and pedestrians dropped by 37 per cent. The predicted benefit-cost ratio of that change was $60 of community benefit for every dollar invested by the community, so a fantastic rate of return and a whole lot of people who are walking around happily today and did not suffer road trauma.[39]

MUARC, in its submission, also drew attention to the City of Melbourne's approach, noting that 'a 40 km/h limit across the central city improves safety for drivers, pedestrians and cyclists without significantly affecting vehicle travel times or conditions.' Figure 4.2 below, included in MUARC's submission, highlights how the risk of death for pedestrians increases in line with the speed at which they are struck.[40]

Figure 4.2 Pedestrian fatality risk by impact speed



Source: Monash University Accident Research Centre, *Submission 66*, p. 25.

The Council on the Ageing Victoria told the Committee that speed limits of 30 km/h should be in place wherever pedestrians and cyclists interact with vehicles. It added that around 75% of all crashes involving older pedestrians occur in 50 or 60 km/h zones in urban streets.[41] A 30 km/h suburban speed limit was also recommended by several other stakeholders, including:

- Victoria Walks[42]
- Victorian State Trauma Outcomes Registry Monitoring Group (VSTORM)[43]
- Walk on Moreland[44]
- RACV[45]
- Mr David Anderson and Mr Eric Howard.[46]

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39 Mr Richard Smithers, Team Leader, Transport Planning, Urban Strategy Branch, City of Melbourne, public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 38.

40 Monash University Accident Research Centre, *Submission 66*, pp. 24–5.

41 Council on the Ageing Victoria, *Submission 42*, pp. 5, 8.

42 Victoria Walks, *Submission 47*, pp. 3, 8.

43 Victorian State Trauma Outcomes Registry Monitoring Group, *Submission 52*, p. 5.

44 Walk on Moreland, *Submission 57*, pp. 17–8.

45 Royal Automobile Club of Victoria, *Submission 53*, p. 11.

46 David Anderson and Eric Howard, *Submission 45*, p. 11.

However, as noted by Victoria Walks in its submission to the Inquiry, lowering speed limits is not a straightforward process:

> the VicRoads Traffic Engineering Manual does not contemplate a reduction in speed limit to less than 40 km/h on public roads unless they are signed as shared zones (VicRoads, 2017). Under the guidelines, 30 km/h speed limits are effectively not an option available to road managers. The guidelines also require that the majority of traffic already travels below the speed of a proposed, lower limit.[47]

According to the Speed Zoning Guidelines, where it is necessary to deviate from usual speed limits:

> the speed zoning principles should be used to make a principle-based decision. The application of the principles and resultant decision must be documented and approved by the relevant Regional / Project Director to ensure transparency and clarity in the decision making process. The principles must be read and applied as a set, and all principles need to be considered in reaching a decision.[48]

Local government stakeholders in this Inquiry in favour of introducing 30 km/h speed zones told the Committee that the current procedures in place to achieve speed limit reductions were 'cumbersome' and 'inefficient'. Mornington Peninsula Shire told the Committee:

> Currently, these procedures are cumbersome, involve lengthy delays (e.g., up to 18 months for a simple application to modify a speed limit or several years of advocacy to implement innovative treatments) and often require years of perseverance to gain necessary approvals.[49]

Similarly, the City of Darebin submitted:

> we suggest that government simplifies the process for local government to implement speed limit reductions on both local and arterial roads … This would be particularly applicable in neighbourhoods where walking trips form a large part of the mode share due to local services such as schools and community centres.[50]

The Towards Zero website did not offer much in the way of additional detail in this area. Rather, it provided very general information, with an emphasis on individual responsibility of drivers. For example, the 'Local traffic precincts' section of the site simply stated:

> Local traffic precincts are areas that are typically very busy, especially with vulnerable road users. For this reason, reduced speed limits are in place and are marked with clear signage. Drivers are encouraged to be extra vigilant and look out for other road users especially elderly people, cyclists, other cars, shoppers and children.[51]

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47 Victoria Walks, *Submission 47*, p. 8.

48 VicRoads, *Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines*, 'Speed Zoning Guidelines', p. 6.

49 Mornington Peninsula Shire, Submission 59, pp. 9–10.

50 City of Darebin, *Submission 60*, p. 2.

51 Towards Zero, 'Safe Speeds – Local traffic precincts', *Safe Speeds*, (n.d.), <https://www.towardszero.vic.gov.au/safe-speeds/local-traffic-precincts> accessed 18 December 2020.

This approach to road safety is contrary to the concept of shared responsibility as discussed in Chapter 1.

The recent trial of 30 km/h speed zones conducted by the City of Yarra, resulting in their permanent introduction, illustrates the positive effect such initiatives can have.

CASE STUDY 4.1: City of Yarra 30 km/h speed zones

In October 2018, the City of Yarra undertook a 12-month trial to evaluate the benefits of a lower speed limit in a residential area in Fitzroy and Collingwood. It aimed to reduce the risk of severe injury to vulnerable road users by reducing the speed limit from 40 km/h to 30 km/h. The trial was funded by the City of Yarra and the Transport Accident Commission (TAC) and a report was published in June 2020.

The intervention demonstrated:

- A reduction in the mean speed from 27.6 km/h before to 27.3 km/h after (down 1.1%).
- An 11% reduction of the likelihood of a vehicle travelling above 40km/h.
- A 25% reduction of the likelihood of a vehicle travelling above 50km/h.

Questionnaire responses following the trial revealed an increase in support for the 30km/h speed limit among the local community from 42.7% to 50.3%.

Project Manager Professor Brian Fildes from MUARC told the Committee that for pedestrians and cyclists the trial estimated '... somewhere between 4 and 6 per cent reduction in the likelihood of being killed or seriously injured [which is] a fairly sizeable reduction to a fairly vulnerable group of people in their own residential streets.'

The report stated that these safety improvements occurred without any police enforcement and argued that police surveillance would ensure the benefits of the speed reduction would be long lasting. However, the trial did not collect enough evidence to estimate the likely reductions in collisions from the reduced speed limit.

In December 2019, the Council resolved to apply to DoT to make the 30 km/h limit permanent. The Department has since approved the application.

Sources: Monash University Accident Research Centre, Final Report of the 30 km/h Speed Limit Trial Evaluation in the City of Yarra, report prepared by B Lawrence et al., 15 June 2020, pp. ix–x, 21, 31; Professor Brian Fildes, Monash University Accident Research Centre, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 37; City of Yarra, *Yarra Council Recommends Maintaining 30 km/h Limit*, media release, 19 December 2019.

Local councils as relevant road authorities in their municipalities are well placed to know if a speed limit change is warranted. Where a change to those conditions is required, the process to enable this should be efficient, consistent and timely. While the Committee recognises empowering local councils in their capacity as a road authority is critically

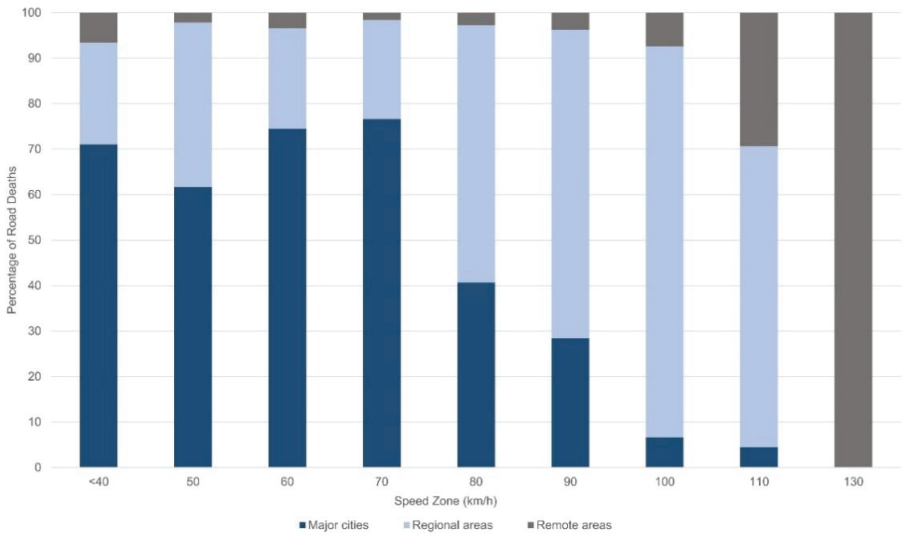
important, it did not receive enough evidence to explore this issue in significant detail during this Inquiry. Notwithstanding this, the Committee acknowledges the concerns raised by some councils.

FINDING 13: Local councils involved in this Inquiry have found the application process to change speed limits in specific areas to be extremely difficult to navigate. They believe the application process should be streamlined.

4.4.2 High-speed rural and regional roads

There is a great deal of data on road trauma in rural and regional areas in Australia. Although the data varies slightly, the Committee observed a strong link between fatalities and remoteness, with one national study showing rural and regional areas account for two-thirds of all road fatalities.[52] A breakdown of fatalities by speed limit and remoteness level from the study is shown in Figure 4.3 below.

Figure 4.3 Australian fatal road user data (01/2016–11/2019) compared by speed limit of road and remoteness level



Source: Sujanie Peiris et al., 'Road Trauma in Regional and Remote Australia and New Zealand in Preparedness for ADAS Technologies and Autonomous Vehicles, *Sustainability 2020*, vol 12 issue 11, article 4347, p. 8.

52 Based on the Australia Bureau of Statistics Accessibility/Remoteness Index of Australia (ARIA). ARIA has five categories of remoteness: major cities, inner regional, outer regional, remote, and very remote. Very remote is the only category that does not currently apply in Victoria (Australian Bureau of Statistics, *Australian Statistical Geography Standard (ASGS) Remoteness Structure: Map of the 2016 Remoteness Areas for Australia*, <https://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure> accessed 15 January 2021).

In a paper presented at the 2017 Australasian Road Safety Conference, Victoria Police Assistant Commissioner Doug Fryer APM noted:

> In 2016, there were 291 fatalities on Victorian roads. Frustratingly, 150 of these fatalities occurred on country roads. More than half of these were single vehicle crashes and 72 per cent of the crashes occurred in 100 km/h speed zones.[53]

Victoria's speed zoning guidelines state:

> Lowering of speed limits may be appropriate on roads which have sub-standard infrastructure, in particular, low volume roads. Where the operational safety of a road or length of road is unsatisfactory (i.e. the crash rate or crash risk is high) the preferred response is to identify and implement infrastructure improvements that address the specific safety problem. However, where infrastructure improvement options have been exhausted or are not feasible in the short term and current risks are unacceptably high, a reduced speed limit may be appropriate.[54]

However, as discussed in section 4.3.1 above, the Committee notes the default maximum speed limit on rural and regional roads in Victoria applies equally to sealed and unsealed roads. Safe System recommendations state that oncoming traffic should not approach at speeds above 70 km/h without a form of physical separation.[55] Yet as well as being unsealed, some 100 km/h rural and regional roads lack physical separation and other safety infrastructure (as well as unforgiving shoulders).[56]

At a public hearing Mr Howard elaborated on the concept noted earlier in this Chapter of setting speed limits based on road quality. He said that reducing the speed limit by 10 km/h on high-speed roads produces the same safety benefit as improving road standards. The issue then becomes a matter of funding, as Mr Howard explained:

> If you want to go from 1-star to 2-star, and a lot of our rural, low-volume roads are 1- or 2-star safety standard, if you want to go from 1 to 2 or 2 to 3 you have got to spend a fair bit of money, probably $10 million a kilometre, to make them safe and to go to that next level of safety—1 to 2, 2 to 3. You can get the same improvement in safety if you reduce the travel speed by 10 kilometres an hour—a 50 per cent reduction in deaths and serious injuries. You can invest a lot of money to do it, or you can look at reducing the speed limit on these unsafe, low-volume roads that currently have a speed limit the same as the state highways.[57]

The star rating system for roads and road standards more generally is discussed in Chapter 3 of this Report.

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53 Assistant Commissioner Doug Fryer APM, Victoria Police, 'Posted Speed Limits: Where the Maximum is not Recommended. The Need for Discussion and Review of Speed Limit Settings', Extended Abstract, paper presented to the Australasian Road Safety Conference, Perth, 10–12 October 2017, p. 1.

54 VicRoads, *Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines*, 'Speed Zoning Guidelines', p. 3.

55 This is particularly relevant where older cars are predominantly using single-lane roads.

56 Sujanie Peiris et al., 'Road Trauma in Regional and Remote Australia and New Zealand in Preparedness for ADAS Technologies and Autonomous Vehicles, *Sustainability 2020*, vol 12 issue 11, article 4347, pp. 2–3.

57 Mr Eric Howard, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 3.

In his conference paper, Assistant Commissioner Fryer noted that parts of Victoria's road network lack the safety infrastructure determined by the Safe System. He states:

> An absence of safety features such as roadside and central median barriers and other traffic separation and treatment options, too often expose road users to unforgiving roadside architecture. Multiplying this risk is the fact that many of these roads have high posted speed limits up to 100 km/h. Cognisant of the fact that such roads feature far too often in fatal crashes, the case for reviewing speed limit settings in lieu of applying engineering treatments is compelling.[58]

In its submission, the RACV called for 'an urgent review of speed limits on country and outer urban roads, prioritising roads where crashes are occurring or are most likely to occur. Data on road crashes shows this is often secondary roads (such as local and C class roads) with lower traffic volumes.'[59] The Committee also learnt that the majority of crashes on rural and regional roads (38%) occur 'midblock', that is away from intersections. For intersections, this figure drops to 23%.[60]

At a public hearing, the RACV's Ms Elvira Lazar, Senior Policy Advisor – Safety, argued that upgrading high-speed rural and regional roads to a minimum 3-star standard was simply not feasible, stating:

> In terms of speed limits, RACV estimates that upgrading over 180 000 kilometres of 100-kilometre regional roads in Victoria to a 3-star safety standard would take around 1000 years at the current level of funding. Even if funding was doubled, this timeline is not acceptable. Just because a road has always had a certain speed limit does not mean that it is a safe speed. Speed is not always the cause of the crash, but the speed a vehicle is travelling at the point of impact will always affect how severely people are injured. Therefore RACV calls for an urgent review of speed limits on country and outer urban roads, prioritising roads where crashes are most likely to occur. This needs to be supported by strong community campaigns and education to ensure drivers understand these changes and obey them.[61]

Mr Peter Kartsidimas, Senior Manager Transport, Planning and Infrastructure, RACV added that lowering speed limits would be welcomed in some rural and regional areas. He said:

> Through our own market research we have identified through our ongoing work in regional Victoria—and I go out there quite often and talk to the locals as well about some of these issues—it is very clear that there are locations in regional Victoria where many locals believe that speed limits should be reduced, particularly on those, what I

58 Assistant Commissioner Fryer APM, Doug, Victoria Police, 'Posted Speed Limits: Where the Maximum is not Recommended. The Need for Discussion and Review of Speed Limit Settings', Extended Abstract, p. 1.

59 Royal Automobile Club of Victoria, *Submission 53*, p. 19.

60 Government of Victoria, *Victorian Road Safety Strategy 2021–2032,* 2020, <https://www.tac.vic.gov.au/__data/assets/pdf_file/0020/502166/RoadSafetyStrategy_DEC2020.pdf> accessed 29 January 2021, p. 14.

61 Ms Elvira Lazar, Manager, Safety and Education, Royal Automobile Club of Victoria, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 2.

> will call, lower order roads: not highly used, often do not have shoulders, trees are up beside the road and very difficult to take the corners at 100 kilometres per hour.[62]

Mr Kartsidimas advised the Committee that the RACV would like to see spending prioritised on the major arterials, with people encouraged to travel on these roads at speeds of 100 km/h (or even 110 km/h where the road is of sufficient quality) in favour of less-safe, lower order roads.[63]

Mr Anderson and Mr Howard also told the Committee that the safety rating levels of many rural and reginal roads do no support speed limits higher than 80 km/h.[64] They added that, as shown in Table 4.1 above, many countries have non-motorway rural road speed limits of 70–90 km/h. This contrasts with Victoria's 100 km/h default limit, which applies (inappropriately) to unsealed roads. They argue that changing this policy would reduce both fatalities and serious injuries.[65]

Towards Zero, published in 2016, acknowledged these issues and targeted them for action. Yet derogation from Safe System principles was embedded in the *Towards Zero* approach to low-quality, high-speed rural roads from the outset, with the onus placed squarely on road users rather than shared with system operators.[66]

A lack of meaningful change in speed management on, particularly, high-speed rural roads that are not up to standard, as well as the reported difficulties in achieving changes to speed limits in urban settings, leaves the Committee unconvinced that genuine reflection on the need for outcomes-driven policy change has occurred in Victoria.

FINDING 14: The Safe System approach to road safety provides the overarching principle that guides the setting of speed limits in Victoria. Despite many of the programs, funding commitments and other initiatives implemented under Towards Zero, the fundamental principle of how 'safe speed' works in the Safe System has not consistently driven Victoria's approach to speed management policy.

The Mornington Peninsula Shire is a leading municipality in committing to and promoting Safe System principles. It became Victoria's first 'Towards Zero municipality' in 2016.[67] The case study below outlines the Shire's approach to road safety and how it wishes to develop a Towards Zero Leadership Team.

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62 Mr Peter Kartsidimas, Senior Manager Transport, Planning and Infrastructure, Royal Automobile Club of Victoria, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 2.

63 Ibid., p. 3.

64 David Anderson and Eric Howard, *Submission 4*5, p. 13.

65 Ibid., p. 18.

66 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* 2016, p. 12.

67 Transport Accident Commission, *TAC congratulates Victoria's first Towards Zero council*, media release, 26 April 2016.

CASE STUDY 4.2: Mornington Peninsula Shire—a 'Towards Zero municipality'

Mornington Peninsula Shire has been a 'Towards Zero Municipality' since April 2016, the first local government in Victoria to commit to reducing its road toll to zero. As part of its 'Towards Zero Road Safety Strategy 2020–24', the Shire has proposed becoming a Safe System demonstration area for innovative system-based design, speed management and other trauma reduction measures. It wishes to achieve this through forming a Towards Zero Leadership Team in partnership with Victoria's road safety partners.

Mr Tom Haines-Sutherland, Team Leader, Traffic and Transport, Mornington Peninsula Shire Council explained that the team would prioritise infrastructure projects according to data analysis from the Shire's road safety strategy. He said: 'The team would require the authority to approve speed limit changes aligned to the Safe System and to implement innovative road safety treatments. Innovative treatments would then be evaluated to inform the rollout of the most effective treatments statewide.'

A small team has already been formed comprising the Shire, Road Safety Victoria and the TAC. This team implemented a two-year 'Safer Speeds Trial' reducing the speed limit on 38 Shire-managed high-risk roads from 100 km/h to 80 km/h.

The Shire's long-term goal is that people who use the Peninsula's roads:

- With speeds above 80 km/h, will be protected by continuous flexible mid- and side-barriers from the risks of high-severity injuries and death caused by head-on impacts or collisions with roadside hazards.
- Without continuous flexible mid- and side-barriers will be protected with 80 km/h speed limits or lower.
- At intersections, will experience minimal conflicts and/or entry speeds not greater than 50 km/h.
- In residential areas will be limited to 30 km/h or 40 km/h travel.
- In townships and other places used for social, business or educational purposes will experience safe, enjoyable and, where appropriate, commercially prosperous surroundings.
- For access to schools, or places where children, senior citizens or mobility-impaired people live or gather, will be limited to 30 km/h or 40 km/h, while walking and cycling will become low-risk, convenient choices for short to medium length journeys.
- For access to and from coastal and tourism attractions, local events, and sporting, recreational and entertainment venues will present the lowest practicable risk.

(*continued*)

CASE STUDY 4.2 (*continued*)

The Shire has committed to integrating Victoria's Towards Zero message into all applicable forms of community consultation and supporting communities to be informed about and understand Towards Zero and the Safe System.

Mr Haines-Sutherland told the Committee:

> One of the big challenges in implementing speed limit changes and other less traditional … methods is community engagement and bringing people along. We know that people on the Mornington Peninsula have generally been in favour of speed limit reductions on roads where they understand that we cannot practically install a wire rope barrier along hundreds of kilometres of our roads …

Mornington Peninsula Shire explained that its proposal would require an initial capital investment of approximately $30 million in the short term (6 to 24 months). The success of the trial in the long term (over the following eight years) would require a further investment of approximately $120 million.

Sources: Mornington Peninsula Shire, *Submission 59*, pp. 3–5, 6, 9, 10; Mr Tom Haines-Sutherland, Team Leader, Traffic and Transport, Mornington Peninsula Shire, public hearing, Melbourne, 8 September 2020, *Transcript of evidence*, pp. 3, 6.

The Committee notes that Victoria's road safety agencies acknowledge that a significant proportion of trauma occurs on high-speed rural roads.[68] Further, the Committee notes the danger of, particularly, low quality, high-speed rural roads was singled-out and acknowledged under *Towards Zero* from the outset, however, the planned education measure to address the issue was on its own, less than adequate. The *Towards Zero Action Plan*, published in 2016, states:

> There is an extensive network of narrow, lower quality, high-speed roads spread across rural Victoria that provide vital local connections and help rural economies thrive. But for every 100 km stretch of this type of road, three people will die or be seriously injured. Building local knowledge of the danger of these roads will help people understand the need to drive at safer speeds.[69]

It is not enough to simply 'help people to understand the need to drive at safer speeds' when road standards and design are inappropriate for the posted speed limits. This makes road safety the responsibility of road users alone. Under the Safe System, network designers and operators have a duty of care to manage not only road standards and infrastructure, but also speed limits. This principle is stated in Victoria's own speed zoning guidelines.[70]

68 Ms Robyn Seymour, *Transcript of Evidence*, p. 37.

69 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* p. 12.

70 VicRoads, *Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines*, 'Speed Zoning Guidelines', p. 3.

The Committee considers that reducing speed limits must be considered particularly where timely engineering and road treatment solutions cannot be applied. This acknowledges the evidence presented by stakeholders, such as RACV, regarding the funding and timeframe that would be needed to upgrade Victoria's roads (see also Recommendations 6 and 7 in Chapter 3 that address publishing this information). However, reducing speed limits should never be a substitute for a properly funded road maintenance program.

RECOMMENDATION 14: That the Victorian Government review speed limits on all rural and regional roads as a matter of priority to:

- Identify unsafe roads with low traffic volumes where speed limits should be reduced and reduce them accordingly.
- Identify unsafe roads with high traffic volumes where spending should be prioritised and develop a spending and construction program based the review outcomes.

RATIONALE: Relying on upgrades for unsafe low traffic roads is currently not a feasible, nor an economically possible solution. Default speed limits on such roads should be lowered to safer levels.

4.5 Speed enforcement

According to Austroads, speeding can typically be divided into three categories:

- Excessive: deliberate and substantially over the speed limit.
- Low level: travelling at a speed marginally over the posted speed limit, typically by 5km/h.
- Inappropriate: travelling at a speed that is inappropriate for the conditions, such as driving at the posted speed limit when the road is wet.[71]

As already stated, road safety can be improved through appropriate speed limits and investing in road infrastructure. However, these measures are most effective as part of an integrated approach to speed that includes effective speed enforcement.[72]

Speed enforcement in Victoria involves both direct police enforcement and automated enforcement using cameras. At the time of writing this Report, the mix of road safety camera types in place across the State was:

- 239 intersection speed/red-light camera sites

71 Transport Accident Commission, *Speed Statistics*, (n.d.), <http://www.tac.vic.gov.au/road-safety/statistics/summaries/speed-statistics> accessed 16 December 2020.

72 Austroads, *Guide to Road Safety Part 3: Speed Limits and Speed Management*, p. 1.

- 44 fixed highway camera sites
- 9,300 contracted hours per month of mobile camera operations at approximately 2,000 locations across the State.[73]

Other relevant initiatives include:

- A commitment to increase mobile speed camera hours by 75%, resulting in an estimated 60 fewer road fatalities by 2021.
- Increased penalties for drivers exceeding the speed limit by between 20 km/h and 25 km/h in a 110 km/h zone, or between 25 km/h and 35 km/h in other speed zones, cancelling licences for three months instead of the previous penalty of one month (around 10,000 motorists are charged with these two offences each year).[74]

4.5.1 Direct police enforcement

In its submission to this Inquiry, the Victorian Government told the Committee that Victoria Police's major speed enforcement measures are delivered through the State Highway Patrol and regional highway patrol units.[75]

At a public hearing, Assistant Commissioner Libby Murphy, Road Policing Command, Victoria Police, told the Committee that police enforcement of speed was 'improving [with] the use of technology such as handheld speed measuring equipment, moving mode radar and automatic numberplate recognition, creating targeted operations at both a state-wide and local level …'.[76]

Ms Corri McKenzie, Deputy Secretary – Police, Fines and Crime Prevention at the Department Justic and Community Safety (DJCS), commented on the important role police play in concert with the automated camera system.[77]

However, the Committee also received calls for more visible police enforcement of speed limits. For example, Wyndham City Council noted in its submission that despite '… an unprecedented amount of construction activity across Victoria and Wyndham… on our observation, it is rare that reduced speed limits at construction sites are being followed and enforced' and that 'speed limits at construction sites must be enforced more regularly to ensure safety'.[78]

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73 Government of Victoria, *Submission 71*, p. 34.

74 Ibid., pp. 8–9, 33.

75 Ibid., p. 35.

76 Assistant Commissioner Libby Murphy, Road Policing Command, Victoria Police, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 47.

77 Ms Corri McKenzie, Deputy Secretary, Police, Fines and Crime Prevention, Department of Justice and Community Safety, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, pp. 52–3

78 Wyndham City Council, *Submission 13*, p. 2.

Similar requests for more visible policing were made by other stakeholders in this Inquiry.[79] Evidence of this nature reflects broader community concerns about the effectiveness of enforcement activities. This in turn plays an important role in ensuring public confidence in road safety programs.

FINDING 15: Public confidence in the broader road safety strategy is affected by the perceived efficacy of speed enforcement programs.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.8 of Appendix B.

4.5.2 Automated speed enforcement

In Victoria, automated speed enforcement takes several forms:

- Fixed spot cameras on highways measuring speed at a single point.
- Point-to-point (P2P) cameras on highways measuring average speed over a distance.
- Fixed cameras at intersections.
- Mobile speed cameras (MSCs) (mobile P2P cameras are in development).[80]

According to MUARC, the most effective methods are mobile speed cameras and point-to-point cameras. This is because drivers who travel roads regularly learn where fixed spot cameras are located and temporarily adjust their speed, whereas other cameras have a broader, 'area-wide' effect.[81]

Mobile speed cameras

MUARC's submission to this Inquiry argued that the effectiveness of MSCs in rural and regional Victoria could be improved by varying the 'visibility and predictability' of where they are placed. MUARC argued that increasing MSC hours could save as much as 22.5 fatal crashes and 172 serious injury crashes per year, equating to 'social cost savings' of more than 45 times the cost of the cameras.[82]

MUARC recommended that the Victorian Government should adopt the less predictable approach to MSCs taken in Queensland, especially in rural and regional areas, which delivers an 'area-wide' effect of up to four kilometres from the camera site.[83] The annual

79 See for example Kieran Cummings, *Submission 6*; Maxine Gibson, *Submission 8*; Allen Hampton, *Submission 50*; Tim Connor, *Submission 85*; Glenn Fazzino, *Submission 102*.

80 Monash University Accident Research Centre, *Submission 66*, p. 18.

81 Ibid., pp. 18–9.

82 Ibid., pp. 21–3.

83 Ibid., p. 20.

estimated effect on crash reduction of Queensland MSC sites in rural areas from 2008 to 2015 is shown in Table 4.3 below.

MUARC states that positive results could be achieved in Victoria if:

- New sites are determined by having at least two serious casualty crashes within 2.5 kilometres over the previous five years.
- Mobile sites are chosen randomly each day.
- Each site is operated for at least 35 hours per year (the average intensity per site in Queensland in 2015).[84]

Table 4.3 Estimated road trauma reductions measured at Queensland MSC sites in rural areas within 4km of the cameras

Year	Hours per month	Fatal crashes (%)	Serious injury crashes (%)	All casualty crashes (%)
2008	1,639	22.4	28.7	23.3
2009	1,550	11.2	20.6	19.4
2010	1,729	23.8	21.0	15.9
2011	1,651	39.1	25.2	23.2
2012	1,558	31.6	25.0	25.4
2013	1,749	41.3	29.5	27.4
2014	1,489	42.3	17.6	14.7[a]
2015	1,497	33.5	14.5	10.6[a]

a. Rural MSC hours per month were during 2014 and 2015 reduced from relatively high levels in 2013, with a reduction in serious casualty and overall casualty crashes also comparatively lower for those years compared to 2013.

Source: Adapted from Monash University Accident Research Centre, *Submission 66*, p. 20.

In Victoria, the 'Cameras Save Lives' website publishes the location of all fixed camera sites. The RACV believes that this practice, along with dedicating all fines to improving roads, plays an important role in gaining community acceptance for speed enforcement as a genuine safety measure and not simply 'revenue raising'.[85] Community perceptions of the use of speed cameras as revenue raising is discussed in section 4.6.1 below.

Point-to-point cameras

Transurban's submission to this Inquiry also raised the issue of claims in the community of revenue raising. It suggested that P2P cameras were more widely accepted in the community '... as they don't just penalise drivers for being slightly over the speed limit in a specific location'.[86]

84 Ibid., pp. 19–21.

85 Royal Automobile Club of Victoria, *Submission 53*, pp. 14–5.

86 Transurban, *Submission 51*, p. 3.

The Royal Australasian College of Surgeons (RACS) and Mr Anderson and Mr Howard[87] were among other stakeholders supportive of the increased use of P2P cameras in Victoria. The RACS stated that '... cameras should be used across the whole road network and not just in accident 'hot spots'.'[88]

MUARC claimed that mobile P2Ps had the potential to produce a 'long-term time-halo' effect (similar to that produced by MSCs in rural Queensland). MUARC believed mobile P2Ps would only need to be in use for an average of 35 hours per year to achieve the same effect produced by a fixed P2P system in continuous operation.[89] It told the Committee:

> It is envisaged that in suitable rural road environments, long sections would be selected, longer than the halo of influence of each spot-speed MSC. Sections typically 20 km in length would be ranked by their serious crash rate per kilometre and the top ranked sections selected.[90]

The RACV supports the use of mobile P2P cameras but urged caution because of '... the risk for error to be introduced into a mobile system where co-ordinates of cameras or distance between two points is inaccurate'.[91]

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 2.2 of Appendix B.

FINDING 16: Mobile speed cameras improve road safety. This is particularly true in rural and regional areas where they can have a wide effect.

4.5.3 Sanctions for speeding offences

There has been a range of changes to speeding penalties in Victoria over recent years:

- In December 2002, with increases ban periods and demerit points.
- In 2006, with the introduction of impoundment for 48 hours, which was increased to 30 days in 2011.
- In 2013, with the introduction of the Safe Driving Program (a behaviour change program).[92]

87 David Anderson and Eric Howard, *Submission 45*, p. 13.

88 Royal Australasian College of Surgeons, *Submission 17*, p. 3.

89 Monash University Accident Research Centre, *Submission 66*, p. 23.

90 Ibid., pp. 23–4.

91 Royal Automobile Club of Victoria, *Submission 53*, p. 15.

92 Government of Victoria, *Submission 71*, p. 33.

The Government informed the Committee that optimal penalty setting is an important component of deterring speeding. The range of penalties that speeding offenders can receive includes:

- fines (ranging from $207 to $826)
- demerit points (1 point for speeding by less than 10 km/h, 3 points for speeding by between 10 km/h–24 km/h)
- good behaviour bonds
- suspension and loss of licence (for 3, 6 or 12 months)
- for high level speeding 45 km/h or more over the limit, vehicle impoundment and the requirement to undertake a Safe Driving Program.[93]

A 2016 evaluation by VicRoads found that demerit points and licence bans had a positive road safety effect, including once drivers retain their licence and begin to drive again. Increasing the amount of time vehicles area impounded for to 30 days has also proved positive.[94]

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.10 of Appendix B.

FINDING 17: Penalties for speeding offences form an important part of the overall approach to speed management, particularly as a deterrent measure.

4.6 Community attitudes toward speeding

Attitudes around the perceived safety of low-level speeding have been a consistent road safety challenge in Victoria. Despite research that consistently shows altering driving speed by 5 km/h more or less can have a drastic impact on road trauma outcomes. The Victorian Government noted that around one-third of Victorians believe that drivers should not be booked for travelling less than 5 km/h above the posted limit in a 100 km/h zone.[95]

Some submitters to the Inquiry contended that speed limits should increase[96] and observed that speeding enabled them to get to a desired location more quickly. However, TAC data confirms that the time saved travelling 5 km/h over the limit, even

93 Ibid. For heavy vehicle penalties see: <https://www.camerassavelives.vic.gov.au/fines-penalties/fine-amounts-demerit-points> accessed 20 January 2021.

94 Government of Victoria, *Submission 71*, p. 33.

95 Ibid., p. 9.

96 Liberal Democrats Victoria, *Submission 143*; Mr Andy Nguyen, *Submission 55*.

over long distances, is very small. For example, if a driver travelled at 65 km/h in a 60 km/h zone, they would only save 46 seconds every 10 kilometres.[97]

The RACV told the Committee that the public viewed driving a few kilometres above the speed limit as a much less dangerous risk compared to drink driving or fatigue.[98] However it also acknowledged that '... drivers are more accepting of reduced speed limits once the Safe Systems concept is explained (i.e. they understand that speed reductions mean people are less likely to die or be seriously injured).'[99]

This attitude regarding low level speeding led to one of the TAC's most effective driver awareness and education campaigns, the 'Wipe off 5' program (summarised in the below case study).

CASE STUDY 4.3: TAC 'Wipe off 5' campaign

The TAC launched the first phase of its Wipe off 5 campaign in August 2001 to target the issue of low-level speeding by 5–10 km/h above the speed limit. The motivation for the campaign was driven by research that found low-level speeding was common among drivers of all age groups.

The purpose of campaign was two-fold. It sought to:

- Dispel the myth that traveling only a few kilometres over the speed limit is safe.
- Convince drivers that a drop of 5 km/h reduced the risk of a crash.

Wipe off 5 was developed to directly support Victoria Police's enforcement activity and reinforce significant changes to speed camera systems. It formed part of a broader program to reduce speeds based on three linked strategies:

- Reduction in the speed limit on local streets in built-up areas throughout Victoria from 60 to 50 km/h.
- Provision of information using mass media to reinforce the proven benefits of reducing low level speeding.
- More intensive police enforcement of speed limits to deter potential offenders-including more hours of camera operation, less visible cars and more camera locations, supported by higher penalties and reduced speed tolerances.

(*continued*)

97 Transport Accident Commission, *The Facts on Speeding*, 26 June 2015, <https://www.tac.vic.gov.au/about-the-tac/media-room/blogs/articles/the-facts-on-speeding> accessed 20 January 2021.

98 Royal Automobile Club of Victoria, *Submission 53*, p. 14.

99 Ibid., p. 19.

CASE STUDY 4.3 (*continued*)

The launch of Wipe off 5 comprised mass media advertising across television, radio and billboards. A total of eight Wipe off 5 campaign phases occurred between 2001 and 2005, consistently emphasising that even a small reduction in speed can make the difference between life and death. The campaign phases were:

- Phase 1, August 2001: reduction of speed and trauma correlation
- Phase 2, August 2001: physical difference 5km/h can make
- Phase 3, November 2001: reinforce the role of mobile speed cameras
- Phase 4, February 2002: guilt of responsibility
- Phase 5, August 2002: crash test proof
- Phase 6, July 2003: crash test proof on a human body
- Phase 7, May 2004: acceptance of blame (moral imperative)
- Phase 8, February 2005: acceptance of blame.

The effectiveness of Wipe off 5 was measured by telephone surveys to gauge public awareness of and response to the advertisements. In addition, driver speeds were monitored at specified sites, and police, VicRoads and crash data relating to speed was also used. Indicators of success included:

- In the four years to 2004, road trauma in Victoria fell, including its lowest road toll on record.
- From 2001 to 2004, fatalities and serious injuries in both 50–60 km/h and 100–110 km/h zones decreased (a particularly large drop was noted in the lower speed zones that coincided with a reduction in the default limit to 50 km/h).
- From 2001 to 2005, the proportion of drivers aged under 50 years who reported they never speed increased from 5% to 11%, while the proportion of those who reported speeding most/all of the time dropped from 25% to 13%.
- Between 2002 and 2005 there was a rise in acceptance and attitudes that exceeding the speed limit even by low levels is speeding.
- From 2001 to 2005 a reduction in measured travelling speeds was observed across 60, 70 and 80 km/h zones.
- Speeding infringement data showed a reduction of the percentage of infringement notices issued for offences of 10 km/h or more over the limit reduce from 2.4% in 2001 to 1.1% in 2004.

Sources: Transport Accident Commission, *Wipe off 5*, (n.d.), <https://www.tac.vic.gov.au/road-safety/statistics/summaries/speed-statistics/wipe-off-5> accessed 18 December 2020; Road to Zero VCAL teacher resource, *Pre-Visit Activity: The TAC's Wipe Off 5 Campaign Case Study*, online, p. 5; TAC, *Wipe off 5 - A Victorian Social Marketing Campaign*, Report prepared by E Mulholland, P Tierney and D Healy, Melbourne, 2005, pp. 1–2, 4, 5–8.

The changing nature of how people access and consume media raises the question of whether Wipe off 5 delivered in the same form today would be as successful. Authorities must adapt community education programs in line with changes to the media and information landscape. At a public hearing, Ms Samantha Cockfield, Lead Director, Road Safety, TAC, explained how the TAC's approach to public education and shaping community attitudes has evolved:

> So we invest around $55 million a year in behavioural-related programs directly to the promotion of road safety. We still are, I suppose, on air in terms of advertising and public education programs almost every day of the year.
>
> [...]
>
> The one thing I will say, though, is that we use an evidence-based approach, and we take us where that evidence leads us. So in terms of the approach we took 30 years ago, that was evidence-based then, and the evidence base now seeks a slightly different approach sometimes to how we talk to the community. So a lot more does happen at a community level, a local level, so you go into local communities, and some of the football clubs we are now supporting are actually at a local level—so, for example, AFL Victoria is really very much based in country Victoria and suburban Victoria rather than necessarily the big AFL leagues that you would have seen in the past.[100]

She also spoke about the positive effect the 'Road to Zero complex' based at the Melbourne Museum has had on, particularly, road safety education and awareness in young people:

> It was designed or developed to complement all of the other programs ... and really takes young people through the Safe System approach to road safety and the key areas that they really need to know about ... whether it is the development of a safe roads system, safe speeds, it really takes them right through what it is that we need to do in Victoria if we are to develop a system that will eventually see us having nobody killed or injured on our roads.[101]

A case study of the Road to Zero complex appears in Chapter 6 of this Report.

The Committee agrees with the views of stakeholders such as the RACV and Mr Anderson and Mr Howard that public acceptance of safe speed limits improves with awareness campaigns.[102]

FINDING 18: The success of Wipe off 5 is an example of how well implemented, evidence-based education campaigns can improve driver attitudes and behaviour around low-level speeding. Evidence shows that attitudes around low-level speeding are an ongoing road safety challenge in Victoria and the TAC should be congratulated for adapting its messaging style in line with new ways the community consumes media.

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100 Ms Samantha Cockfield, Lead Director, Road Safety, Transport Accident Commission, public hearing, Melbourne, 6 October 2020, *Transcript of evidence,* p. 39.

101 Ibid., p. 45.

102 Mr Eric Howard, *Transcript of evidence*, p. 3.

4.6.1 Perception of speed cameras as revenue raisers

The Committee received evidence that community scepticism around speeding fines remains an ongoing challenge for the Government's road safety partners. Ms Seymour explained:

> It is a really challenging point in terms of community perception around speed enforcement and whether that is for road safety purposes or revenue-raising purposes, and I think this comes back in a sense to the culture around speed and the challenges that we have around community perceptions around speed and what is appropriate and what is safe. So I think that is part of the work that we need to do … because the speed limit is there as a maximum speed limit, not as an advisory kind, and it is set for very specific purposes around what is actually safe.[103]

Mr Stephen Leane, the Road Safety Camera Commissioner, informed the Committee that a survey conducted by his office recently found that more than half (54%) of respondents believed that revenue raising is the purpose of speed cameras.[104]

Despite this both Mr Leane[105] and Ms Cockfield noted that drivers who received a ticket were also more likely to change their driving behaviour. Ms Cockfield added that the perception of revenue raising is not as much of a problem as it was in the early 2000s.[106]

Mr Leane suggested that one of the simplest ways to challenge the revenue raising myth was to better inform the community about how money from speeding fines improves road safety through infrastructure investment. He stated:

> I have recommended—and this is not out of school—to the Minister responsible for my Act that it would be nice to see a sign on a country road saying, 'The improvements to this road were actually provided through that fund', so that you can see if you do pay a ticket, if you get one every 10 years if you are an average driver, where that has been invested back into road safety. But there is an absence of knowledge right across the community.[107]

Ms Seymour agreed this recommendation was worth further consideration.[108]

Mr Leane also noted that the Government could do more to improve community confidence and foster a sense of fairness in how the camera system operated. He stated:

> There are some hard edges around some of the things that happen with people who get tickets. If you have not had one ever in your life, you may not be entitled to a caution.

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103 Ms Robyn Seymour, *Transcript of evidence*, pp. 43–4.

104 Mr Stephen Leane, Road Safety Camera Commissioner, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 25.

105 Ibid., p. 26.

106 Ms Samantha Cockfield, *Transcript of evidence*, p. 44.

107 Mr Stephen Leane, *Transcript of evidence,* p. 27.

108 Ms Robyn Seymour, *Transcript of evidence*, pp. 43–4.

> There are lots of diversion programs around the world for first offenders or even second offenders, depending on time limits. So I think there is a bit of a fairness issue that we could probably do a little bit better at in taking the community along.

Ms Lazar and Mr Kartsidimas from the RACV made similar points around improving public awareness about how money raised from speed enforcement is invested, with a clear message that the money goes to funding road safety improvements.[109]

FINDING 19: Community awareness is one of the simplest and most effective ways of challenging the myth that fines for speeding are simply 'revenue raising'.

In Victoria, all revenue generated from speed cameras and on-the-spot fines is paid into the Betters Roads Victoria Trust Account, which funds improvements to the road network. Under legislation introduced in 2019,[110] 33% of the fund must be spent on rural and regional roads, 33% is held for outer-suburban roads and the remainder is dedicated to miscellaneous road improvements as decided by DoT.[111]

This is not a dissimilar arrangement to the New South Wales approach where fine revenue is paid into the Community Road Safety Fund,[112] which is used to pay for road safety programs and initiatives. These include the Community Road Safety Grants Program[113] and for reinvestment back into the road safety camera program.[114]

Many of the concerns expressed above regarding transparency and information about the operation of Victoria's camera system are directly addressed by the Cameras Save Lives website, managed by DJCS. This website provides resources that explain how road safety cameras work and where cameras are positioned and why.[115] However, only two paragraphs explain how revenue from fines is spent.[116]

The Cameras Save Lives website could be an important tool in promoting confidence in the road safety camera program. The Committee considers more could be done both to promote community awareness of this resource and to provide better information about how and where speed camera revenue is spent.

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109 Ms Elvira Lazar and Mr Peter Kartsidimas, *Transcript of evidence*, pp. 5–6.

110 *Transport Legislation Amendment (Better Roads Victoria and Other Amendments) Act 2019* (Vic.).

111 Cameras Save Lives, *Revenue from fines*, (n.d.), <https://www.camerassavelives.vic.gov.au/fines-penalties/revenue-from-fines> accessed 15 January 2021.

112 *Transport Administration Amendment (Community Road Safety Fund) Act 2012* (NSW).

113 Transport for NSW Centre for Road Safety, *Community Road Safety Grants*, 2020, <https://roadsafety.transport.nsw.gov.au/aboutthecentre/communitygrants/index.html> accessed 15 January 2021.

114 Mr Bernard Carlon, Executive Director, Centre for Road Safety and Centre for Maritime Safety, Safety, Environment and Regulation, Transport for New South Wales, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, pp. 22–3.

115 Cameras Save Lives, *About us*, (n.d.), <https://www.camerassavelives.vic.gov.au/about-us> accessed 15 January 2021.

116 Cameras Save Lives, *Revenue from fines*.

RECOMMENDATION 15: That the Victorian Government develop a strategy to improve public confidence in the speed camera system, including increasing public awareness of the Cameras Save Lives website and where money raised by fines is invested.

RATIONALE: Research shows that acceptance of and compliance with speed limits improves in line with public education campaigns on the link between speeding and road safety.

5 Data

5.1 Introduction

This Chapter examines the role of data in developing road safety strategies. During this Inquiry, the Committee undertook to understand what data is collected by Victoria's road safety partners. It examines the adequacy of this data by focusing on the following three areas:

- collection and integration practices
- reporting and transparency
- limitations of the current data regime.

The Committee heard evidence throughout the Inquiry that it is not clear what datasets the Victorian Government utilises when:

- forming its road safety strategy
- developing programs
- evaluating the effectiveness of its interventions.[1]

Further, the Committee was told that in some instances the Government has made decisions based on a relatively low amount of data and is not accurately recording the impact of its countermeasures.[2]

5.2 Data collection and integration

As outlined in Chapter 1 of this Report, *Towards Zero* was based on road safety data shared between a number of government agencies. This included all fatalities and serious injuries since 2010.[3] Predominantly, modelling undertaken by the Monash University Accident Research Centre (MUARC) led road safety partners to recognise that without a bolder approach to road safety, trauma levels would increase between 2016 and 2020.

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1 Royal Australasian College of Surgeons, *Submission 17*, pp. 6–7; Dr John Crozier, Royal Australasian College of Surgeons, public hearing, Melbourne, 10 August 2020, *Transcript of evidence,* pp. 29, 35–6; Victorian State Trauma Outcomes Registry Monitoring Group, *Submission 52*, pp. 5–6; Dr Ben Beck, Head of Sustainable Mobility and Safety Research and Professor Belinda Gabbe, Head, Prehospital, Emergency and Trauma Research, Victorian State Trauma Outcomes Registry Monitoring Group, public hearing, Melbourne, 7 July 2020, *Transcript of evidence,* pp. 25, 26–7; Royal Automobile Club of Victoria, *Submission 53*, pp. 36–8; Ms Elvira Lazar, Manager, Safety and Education, Royal Automobile Club of Victoria, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, pp. 2, 9; David Anderson and Eric Howard, *Submission 45*, p. 16

2 Associate Professor Stuart Newstead, Monash University Accident Research Centre, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 38.

3 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* 2016, p. 9.

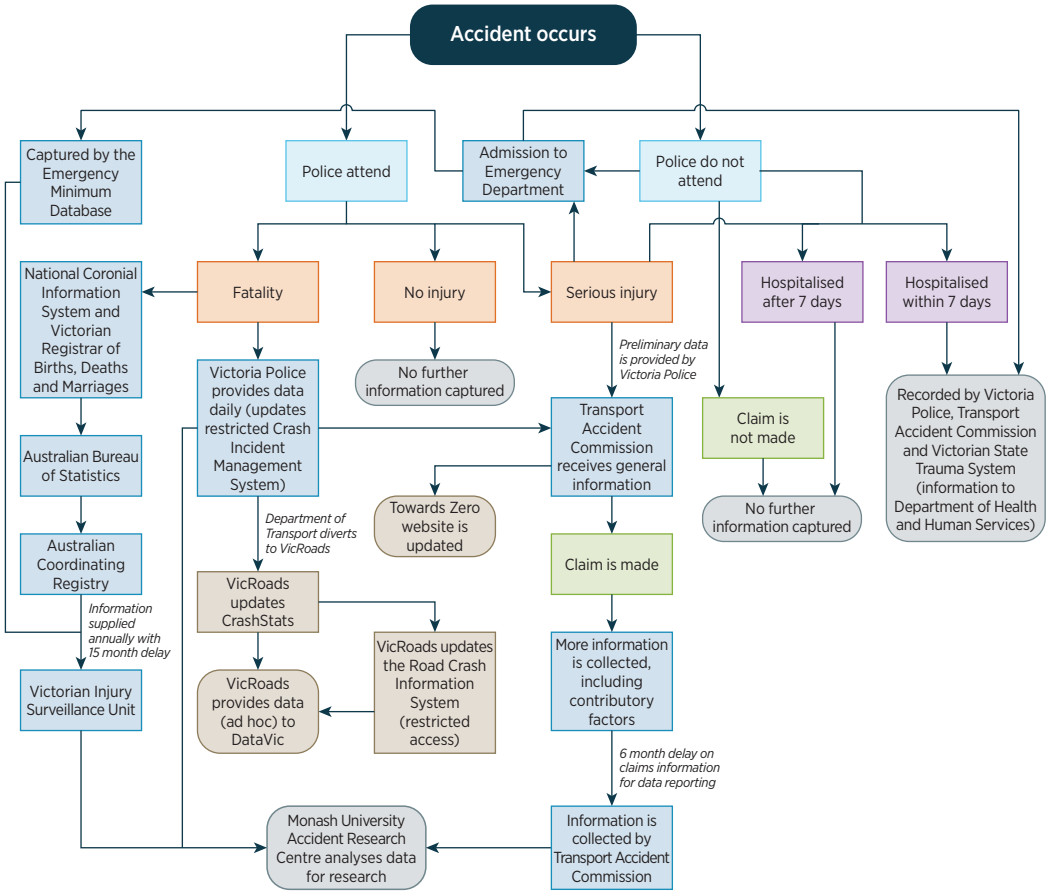
When a road accident occurs in Victoria, datasets are collected by different government and non-government agencies. The primary bodies that collect and maintain road accident data are:

- VicRoads (through the Department of Transport (DoT))[4]
- Transport Accident Commission (TAC)
- Victoria Police
- Department of Health and Human Services (DHHS) (prior to February 2021 when the Department was split into two Departments)
- Victorian Institute of Forensic Medicine
- Ambulance Victoria
- Coroners Court of Victoria
- Department of Justice and Community Safety (DJCS)
- Private insurers.

Figure 5.1 provides an overview of the current approach used to collect road safety data in Victoria by government agencies. The figure highlights that the TAC has most comprehensive crash datasets.

4 It is assumed that all data that is held by road safety partners is shared with Department of Transport to inform policy. The Committee was informed that data sharing and intra-departmental collation is still being formalised.

Figure 5.1 Data collection for road accidents in Victoria



Source: Legislative Council Economy and Infrastructure Committee.

5.2.1 Key agencies

Each road safety partner has its own reporting obligations. The following agencies collect and/or make use of the primary data used for the development of Victoria's road safety strategy.

Transport Accident Commission

The TAC claims process produces a comprehensive dataset containing information such as:

- crash type
- vehicle type
- infrastructure
- injury severity
- post-crash outcomes.[5]

5 Government of Victoria, *Submission 71*, p. 55.

However, the Committee notes that there are significant delays in the reporting and integration of these data sets as the TAC only becomes aware of an accident when a claim is processed or disputed. Further, delays can also occur due to strict data sharing agreements in place between other road safety partners. This is discussed in more detail in sections 5.2.3 and 5.2.4 of this Chapter.

Both prior to and since the launch of *Towards Zero*, the TAC has published fatality data daily and implemented quarterly reporting that covers road trauma in more detail. The Committee notes that data is subject to revision. However, retrospective changes are not highlighted or explained.[6]

Victoria Police

Victoria Police, as the primary responder to road accidents, collects the most information in relation to the location, cause and severity of an accident. Attending officers capture preliminary information at the scene which is later revised and updated in the Traffic Incident System (TIS). DoT is then responsible for quality assurance of the dataset in its Road Crash Information System (RCIS) and utilises its internal datasets to provide greater detail on attributes such as location information, vehicle type and crash type.[7] Any refinements made by DoT are then provided to Victoria Police to ensure both the TIS and RCIS hold consistent records.

Crashes that do not result in injury are not recorded by Victoria Police. This is discussed further in Section 5.4.2.

Monash University Accident Research Centre

MUARC is Australia's largest transport safety research centre. It does not collect data but works in cooperation with VicRoads and DoT, the TAC, and Victoria Police. As noted, MUARC conducted the modelling for *Towards Zero* and has continued to provide research and evaluations of programs such as the expansion of roadside drug testing in 2018–19 and Victoria Police's *Road Policing Strategy 2019–2020*.[8]

Associate Professor Stuart Newstead from MUARC told the Committee that MUARC is funded by the Victorian Government to conduct research that is independently peer reviewed wherever possible.[9]

Victorian State Trauma Outcomes Registry and Monitoring Group

The Victorian State Trauma Outcomes Registry and Monitoring Group (VSTORM) is an administratively independent data analysis entity of the Department of Health. VSTORM

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6 Transport Accident Commission, *Search statistics*, (n.d.), <https://www.tac.vic.gov.au/road-safety/statistics/online-crash-database/search-crash-data> accessed 18 December 2020.

7 Government of Victoria, *Submission 71*, p. 55.

8 Victoria Police, *Victoria Police Road Policing Strategy Towards Zero 2019–2020*, p. 9.

9 Assoc. Prof. Stuart Newstead, *Transcript of evidence*, p. 42.

does not collect data but provides objective analysis of data relating to the Victorian State Trauma System, which manages the most seriously injured patients in Victoria.

VSTORM receives data from several sources that captures a seriously injured patient's journey from being injured through to post-hospital discharge outcomes. VSTORM routinely links data with other bodies such as the:

- Victorian Registry of Births, Deaths and Marriages
- National Coronial Information System
- Department of Health
- TAC.

The Committee was informed that there are extensive delays in the integration of health data due to privacy agreements and internal workflow structures.[10] For example, the 38 Victorian public hospitals that provide 24-hour emergency care capture data relating to people injured in a road accident that present for treatment. This data is then provided to the Department of Health. The Department must then determine whether the hospital data is in an appropriate form for the Victorian Injury Surveillance Unit (within MUARC) to use. This integration structure has resulted in a two-year delay in data being integrated. The Committee notes that prior to 2004, the Victorian Injury Surveillance Unit collected injury surveillance data directly from hospitals.[11]

FINDING 20: There is a two-year delay in the integration of data captured by Victoria's public hospitals relating to people injured in road accidents.

5.2.2 All datasets

The Committee undertook to identify exactly what datasets are captured by road safety partners, who is responsible for capturing them and how often the datasets are updated. Table 5.1 provides an overview of the specific datasets captured including any known delays.[12]

10 Government of Victoria, *Submissions 71*, p. 55; Prof Belinda Gabbe, *Transcript of evidence,* p. 28.

11 Monash University Accident Research Centre, *About VISU data: sources and injury definitions*, (n.d.), <https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/about-visu-data#Point-C> accessed 18 December 2020.

12 A delay means anything that falls beyond the time period outlined in the 'frequency' column in Table X.

Table 5.1 Datasets collected by Victoria's road safety partners

Source	Dataset	Update frequency	Delay
VicRoads	Road surfaces, including: • roughness • rutting • surface cracking • texture • loss of aggregate • maintenance of patching • deformation • binder condition • skid resistance (partial network) • deflection (project level only)	Every two to three years.	–
Department of Transport	Road type	Unknown	–
Transport Accident Commission	Injury claimants involving hospitalisation within 7 days	Quarterly	6 months
	Injury claimants involving hospitalisation over 14 days	Quarterly	12 months
	Claims data	Unknown[a]	–
	Road user surveys	Annual	–
	Contributing factors (Alcohol, drugs, distraction etc.)	Unknown	–
Victoria Police	Lives lost: • annual • year-to-date • rolling 12 months	Daily	–
	Fatalities by crash type	Daily	–
	Fatalities by speed zone	Daily	–
	Road user fatality	Daily	–
	Vehicle type	Daily	–
	Motorcycle fatality	Daily	–
	Pedestrian fatality	Daily	–
	Drink-driving fatality	Daily	–
	Seatbelt fatality	Unknown	–
	Age of fatality	Daily	–
	Fatality crash location (including by Local Government Area)	Daily	–
	Roadside breath testing	Quarterly	3 months
	Randomised drug testing	Quarterly	3 months
	Crash incident data	Unknown	–

Source	Dataset	Update frequency	Delay
Department of Justice and Community Safety	Mobile camera safety data	Quarterly	–
Department of Health	Hospital admissions	Annual	–
	Presentations to the Emergency Department	Annual	24 months
	Deaths[b] (cause of death reports)	Annual	–
Victorian Institute of Forensic Medicine	Toxicology	Upon request	–

a. The Committee notes that contributing factors to a crash that results in a fatality or serious injury are not currently publicly reported on.

b. The two phrases 'Lives lost' and 'Deaths' relate to the same statistic, however are referred to by different terms depending on the reporting agency.

Source: Legislative Council Economy and Infrastructure Committee.

The Committee notes that several datasets are experiencing significant delays in updating and reporting, particularly as road safety partners developed the new road safety strategy. While the Committee understands there may be some reasonable circumstances where data integration between agencies is delayed, it is concerned that the outcomes of the *Victorian Road Safety Strategy 2021–2030* may not be based on accurate and up-to-date data. It is yet to be seen what data the Government has relied on in forming its action plan as part of Phase 1 of its new strategy.

FINDING 21: Some road safety partners are experiencing significant delays in the collection and integration of road safety datasets, which may affect targets in the new road safety strategy.

RECOMMENDATION 16: That the Victorian Government publish the datasets that underpin targets in the *Victorian Road Safety Strategy 2021–2030*.

RATIONALE: The new road safety strategy should be based upon up-to-date data that provides an effective evaluation of current programs and interventions. As such, the Government should publish the relevant datasets that correlate to measurable targets.

5.2.3 Improvements in data collection practices

The Committee heard evidence regarding problems caused by policy changes in relation to the type of data captured by various agencies. For example, TAC claimants no longer must have reported an accident to Victoria Police. Some changes have caused DoT and the TAC to undertake projects to access important data and re-establish methods to integrate reporting across multiple agencies.

Associate Professor Newstead explained some of the work that was being undertaken to address the changes in baseline reporting. He said:

> I think key in the data collection is there have actually been a number of significant changes in the last decade or so that have affected the accuracy of collision data. There have been decisions by Victoria Police to not collect non-injury data, which were problematic. Subsequently there were changes in TAC policy for claims acceptance, which has changed the basis on which we collect information, and there has also been changes in Victorian hospital admission policy. You put those together and you actually reduce the consistency and the basis for actually reporting crashes, being able to link the information together and being able to know what is happening.
>
> There has been some positive work to try and rectify that, and those are things like linking the police-reported road crash data with hospital admissions and the TAC claims. That has been a real step forward, and I understand that that is now going forward to essentially reconstruct the database back to 2005 in the official records in the VicRoads/Department of Transport road crash information system and the police traffic incident system. But there is still a lot of room for further enhancements.[13]

The Committee commends Victoria's road safety partners for their work in improving road safety data collection and integration.

5.2.4 Integration capabilities

Throughout the course of the Inquiry, the Committee heard about the importance of data being integrated (also referred to as linked) among agencies. This enhances the material to help form a greater understanding of a collision, its cause and its ongoing impact on the people involved.

Former parliamentary inquiries have made recommendations to governments to improve the capability of data integration between road safety partners. For example, the 2014 Road Safety Committee's *Inquiry into Serious Injury* recommended that 'road safety agencies, in cooperation with the Victorian State Trauma Outcomes Registry Monitoring Group, undertake a data linkage pilot'.[14]

At a public hearing, the Committee was informed that the pilot was currently underway with the aim of linking VSTORM data with data from Victoria Police, the TAC, DoT, and Ambulance Victoria.[15] Dr Ben Beck from VSTORM explained there had been a number of hurdles along the way, however by January 2021 agreement had been reached between all parties. Dr Beck explained what the pilot would enable road safety partners to do, telling the Committee:

> what this platform will enable us to do is bring together crash data across multiple organisations, give us the detailed prehospital and hospital information that I have spoken about, provide us with really detailed injury information using the globally

13 Assoc. Prof. Stuart Newstead, *Transcript of evidence*, p. 38.

14 Parliament of Victoria, Road Safety Committee, *Inquiry into Serious Injury*, May 2014, Recommendation 15, p. 155.

15 Dr Ben Beck, *Transcript of evidence*, p. 25.

> accepted method for coding injury information and enable us to quantify in-hospital outcomes but also importantly patient-reported outcomes … Finally, it will give us a really unique opportunity to provide robust measures of disability burden and monitor these over time.[16]

In its submission to this Inquiry, VSTORM recommended that this 'independent data platform' should be used to monitor serious road trauma in Victoria. The Committee agrees with VSTORM, especially as serious injuries on Victorian roads have continued to increase in recent years.

Ms Robyn Seymour, Deputy Secretary, Network Planning, and Head of Road Safety Victoria at DoT, informed the Committee that other data integration projects were also underway. Referring to improvements to road safety data intelligence, Ms Seymour outlined that road safety partners had focussed on integrating more health data to supplement the datasets collected by Victoria Police, the TAC and DJCS.[17] In doing so, Ms Seymour noted that from one year of health data already integrated, DoT was able to identify under-reporting in some areas, such as vulnerable road users, that its traditional datasets did not register. She said:

> through Health we have managed to get a data linkage trial going where we have got a full year of data linking all of these different platforms of data, and we are just in the process of looking at linking that to 10 years' worth of data, which obviously will provide us with an enormous amount of insight. And even just from the one year of data, part of what we really learned through that process is that there is an under-reporting in some of our traditional datasets around some of our road user groups, such as our cyclists. So the Health data shows higher levels of trauma to cyclists than the traditional TAC or Victoria Police or Justice data.[18]

FINDING 22: Effective data integration enables monitoring of all road crashes. Road safety agencies are then better able to address the underlying causes of those incidents.

The Committee believes that giving one agency oversight responsibility for data integration among Victoria's road safety partners would be a positive move. For example, the Victorian Centre for Data Insights (VCDI) is a government agency empowered by law to enable data sharing across government for the purpose of informing policy. VCDI is monitored by the Office of the Victorian Information Commissioner and applies best practice in upholding privacy principles.[19]

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16 Ibid.

17 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, p. 37.

18 Ibid.

19 Government of Victoria, 'Introduction', *Victorian Centre for Data Insights Strategy*, February 2020, <https://www.vic.gov.au/victorian-centre-data-insights-strategy/introduction> accessed 18 December 2020.

RECOMMENDATION 17: That the Victorian Government address delays in road safety data integration by enabling a central body, such as the Victorian Centre for Data Insights, to oversee the integration of road safety datasets from all road safety partners.

RATIONALE: A wide variety of data is currently collected by Victoria's road safety partners. Utilising the existing functions and powers of a body such as the Victorian Centre for Data Insights is an effective way of improving the integrating of key datasets, thereby enabling easier and more targeted analysis of the data.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.14, 1.15, 1.16, 1.17 and 1.18 of Appendix B.

5.3 Reporting and transparency

Without a strong knowledge of current and emerging trends in road trauma, strategies may not be as effective as they should be in reducing fatalities and serious injuries. In addition, there is a strong need for greater transparency to enable independent evaluations of strategies. As a recent example, the *Road Safety Strategy 2021–2030* refers to statistics but does not explain when the data was captured or where it can be viewed.

The Committee received 36 submissions that directly addressed the current data reporting practices of Victoria's road safety partners. Of these, several argued that there is a need for greater transparency and access to full road trauma datasets[20] explaining where, when and how road accidents occur. Greater access, it is believed, would enhance independent analysis by external research bodies leading to improved interventions in areas that have stagnated in recent years.

At a public hearing, Dr John Crozier from the Royal Australasian College of Surgeons (RACS) told the Committee that good quality data that is integrated and easily accessed is key to building a better understanding of road trauma. He added that transparency in data collection also enhances the ongoing funding of effective road safety interventions.[21]

As highlighted in Table 5.1 above a significant percentage of road safety data is updated daily, with a smaller portion made publicly available. The key areas that are reported on and updated on a near day-to-day basis are:

- number of fatalities over the last five years
- gender

20 Robert Morgan, *Submission 101*; Peter Cox, *Submission 37*; Transurban, *Submission 51*; Mal Peters, *Submission 137*; Jim King, *Submission 39*; Victorian Transport Association, *Submission 83*.

21 Dr John Crozier, *Transcript of evidence,* p. 35.

- road user
- location
- age group
- level of urbanisation where the accident occurred.

Further to this, the TAC publishes the Towards Zero Quarterly Statistics that report an overview of:

- lives lost to date
- injured claimants who were admitted to hospital
- booze bus random breath testing
- random drug testing
- mobile safety camera data.[22]

The Committee is encouraged that some data is made publicly available in a timely manner as recommended by the 2014 *Inquiry into Serious Injury*. However, trends relating to patterns of injury, vehicle speed, the time of day an accident occurred, or whether drugs or alcohol were a contributing factor, remain unavailable.

The Committee recognises that the VicRoads Interactive Crash Statistic Workbook does already provide some datasets. However, the data is, on average, incomplete for the last six months.[23]

FINDING 23: Publishing more road safety data collected by Victoria's road safety partners will enable greater contribution from other experts to improve road safety.

5.3.1 Published data—an example

The Committee undertook to identify what information can be derived from statistics made publicly available by the TAC. Box 5.1 provides an example of problems a user may experience when using the two TAC data search functions: the TAC Statistics Search; and the TAC–iRAP Road Injury dashboard.

22 Transport Accident Commission, *Towards Zero Road Safety Quarterly Statistics*, (n.d.), <https://www.tac.vic.gov.au/road-safety/statistics/road-safety-statistical-summary> accessed 20 January 2021.

23 VicRoads, *Crash summary 2014 – 2018*, July 2019, <https://public.tableau.com/profile/vic.roads#!/vizhome/Crashstatallstat/Crashsummary> accessed 20 January 2021.

BOX 5.1: TAC data search functions—lack of correlation

A user selects the following fields in the TAC statistics search engine:

- claim involving hospitalisation
- length of hospital stay 14 days or less
- aged 26 to 39
- motorcyclists
- run off road (straight road and curved road)
- rural Victoria
- all local government areas
- from January 2008 to January 2009
- on a Saturday
- all hour ranges.

Results state that:

- there were 31 claims involving 14 or fewer days of hospitalisation
- 2 females and 29 males aged between 26 to 39 riding motorcycles in Rural Victoria
- 20 riders crashed on a straight road
- 11 riders crashed on a curved road
- 10 crashes occurred between 6 am to 11:59 am
- 19 crashes occurred between 12 pm and 5:59 pm
- 2 crashes occurred between 6 pm and 11:59 pm.

When using the same search parameters, correlating information cannot be found through the TAC–iRAP dashboard, nor can any further conclusions be drawn regarding the injury type or speed of travel when crashes occurred.

The iRAP dashboard provides only a financial cost category for all accidents over the chosen time period, despite having detailed datasets that inform its findings.

Source: Legislative Council Economy and Infrastructure Committee.

The Committee found when using both the TAC Statistics Search and the TAC–iRAP Road Injury dashboard, it was impossible to narrow the data fields to link crash types and undertake further analysis of the information. A user would only have a rough estimate of the cost of an injury or fatality, without any further understanding of the underlying factors (speed, drugs or alcohol, road surface conditions etc.).

The Committee believes that having two databases with similar data that do not link, or add value to one another, prevents independent evaluation. Alternative approaches may be to utilise the source data to ensure that the two databases complement one another and provide greater detail in relation to certain crash types, or combine the two to provide a fully integrated dataset. Further, the data within these two databases is different again from that published on the VicRoads Interactive Crash Statistics database.

To further explain the challenges a user is presented with in reviewing the searchable statistics, see Appendix C, which highlights the different TAC and VicRoads datasets that do not interact with one another, despite having the same or similar source data.

RECOMMENDATION 18: That the Transport Accident Commission work with the Office of the Victorian Information Commissioner and the Victorian Centre for Data Insights to make all traffic accident datasets publicly available in a way that:

- enables simple and reliable independent analysis
- upholds privacy principles.

These should continue to be published quarterly.

RATIONALE: The Transport Accident Commission maintains extensive road safety datasets. However, a large portion of this information is not made publicly available or does not correlate with other datasets. Publishing reliable datasets quarterly increases and enhances independent evaluation.

5.4 Limitations in the current data regime

The Committee received evidence on three areas where road safety data in Victoria should be improved:

- serious injury data
- non-injury data
- toxicology data.

5.4.1 Serious injury data

The Committee was informed that in Victoria, anyone admitted to hospital as a result of a road crash is considered to have a serious injury for the purposes of road crash data collection.[24] The Government explained in its submission that other measures

24 Government of Victoria, *Submission 71*, p. 57. See also Chapter 1 of this Report in relation to the difficulties surrounding analysis of serious injuries in Victoria.

to determine the severity of an injury are used globally, however it did not expand on these differences.

The Committee heard that in Victoria, crashes resulting in serious injuries are between 25 times[25] and 30 times[26] more common than crashes involving fatalities. While the TAC has undertaken some studies to better understand serious injuries, including the $8 million Enhanced Crash Investigation Study led by MUARC,[27] the Committee heard that much more needs to be done to understand this issue.

The Committee reflected upon past parliamentary inquiries into road safety in Victoria. In doing so, it became apparent that the learnings and recommendations of the 2014 Road Safety Committee's *Inquiry into Serious Injury* were not responded to or adopted by the Government. The Committee notes there was a change of Government following the 2014 Victorian State Election.

At a public hearing, Associate Professor Newstead highlighted the work of the *Inquiry into Serious Injury*. He informed the Committee that recommended measures to improve the collection of serious injury data were yet to be adopted. He said:

> The other thing that I would say is probably a very useful potential future enhancement is trying to get some additional measures of serious injury. A number of these were considered in the parliamentary Inquiry into Serious Injury, but we have not yet got to actually putting those onto our database—things like threat-to-life measures, the abbreviated injury scale and long-term outcomes like a disability-adjusted life year. We really need better measures of serious injuries still, and that has not happened even since the inquiry.[28]

The Committee was particularly concerned with evidence provided during this Inquiry around the increase in serious injuries on Victorian roads over the past several years (see section 1.4 of this Report). Further, while some work had been done to improve the methods for capturing, collating and integrating datasets, research conducted by the Committee found that it had taken three years to undertake a review of 12 months' worth of serious injury data.

The RACS added that the continued lack of proper attention paid to serious injury meant that the full impacts of such trauma on individuals was unknown.[29] Further, VSTORM cautioned the Committee that if road safety partners cannot accurately capture serious injury data, it will be much harder to capture data on less severe accidents and injuries.[30]

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25 Michael Fitzharris et al., *ECIS Report 1: Overview and analysis of crash types, injury outcomes and contributing factors*, Enhanced Crash Investigation Study (ECIS), no. 1, Monash University Accident Research Centre, Australia, 2020, p. 1.

26 Royal Automobile Club of Victoria, *Submission 53*, p.4.

27 Monash University Accident Research Centre, *Enhanced Crash Investigation Study (ECIS)*, (n.d.), <https://www.monash.edu/muarc/research/research-areas/transport-safety/enhanced-crash-investigation-study> accessed 8 February 2021.

28 Assoc. Prof. Stuart Newstead, *Transcript of evidence*, p. 38.

29 Royal Australasian College of Surgeons, *Submission 17*, p. 2.

30 Prof Belinda Gabbe, *Transcript of evidence*, p. 27.

RECOMMENDATION 19: That the Victorian Government review the recommendations made in the 2014 Road Safety Committee *Inquiry into Serious Injury* with the intention of implementing improved mechanisms for capturing serious injury data.

RATIONALE: The recommendations of the 2014 *Inquiry into Serious Injury* have not been adopted by the Victorian Government. This is despite serious injuries increasing on Victoria's roads.

5.4.2 Non-injury data

Victoria Police does not collect data where an accident has occurred but no injury is reported. The collection of this type of data ceased in 1990[31] and since that time Victoria Police has only captured collision data where:

- The preliminary investigation indicates an apparent injury to a party.
- There is no apparent injury to any party, but the owner of damaged property cannot be notified before the end of an investigating officer's shift.
- An alleged hit and run has occurred and there are known details of the offender or there is a chance of identification.
- An injury is later reported as a result of a collision that was previously identified as a non-injury report.
- A collision or incident involves a police vehicle or bicycle.[32]

In addition, the TAC no longer requires an accident to be reported to the police before a TAC claim can be made. Statistics provided to the Committee indicate that this change led to a 14% drop in crash records.[33]

The Committee heard evidence from some submitters, such as Mr Robert Morgan, an experienced traffic engineer, who called for Victoria Police to recommence capturing non-injury crash data. Mr Morgan explained that, in his opinion, the cause of most non-injury crashes is the same as the circumstances that surround most fatal and serious injury crashes.[34] Therefore, such data is important in fully understanding road safety.

This is not the first time this issue has been raised. The *Inquiry into Serious Injury* recommended that the collection of non-injury data be reintroduced. The Committee is concerned that the Government is not seeking to obtain more robust datasets to

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31 Robert Morgan, Inquiry into the Increase in Victoria's Road Toll, responses to questions on notice received 28 August 2020, p. 5.

32 Victoria Police, Inquiry into the Increase in Victoria's Road Toll, response to question on notice, p. 1.

33 Robert Morgan, Inquiry into the Increase in Victoria's Road Toll, responses to questions on notice received 28 August 2020, p. 5.

34 Ibid.

provide a greater insight into road safety trends and assist in the development of future interventions and strategies.

RECOMMENDATION 20: That Victoria Police recommence capturing non-injury crash data.

RATIONALE: The more data relating to collisions that is captured, irrespective of severity, provides a greater insight into road safety and helps develop evidence-based targets.

5.4.3 Toxicology

The Government acknowledges that road crash toxicology information can provide a crucial lens into alcohol and other drugs use and assist in shaping road safety policy, operational guidance and long-term enforcement strategies.[35]

However, the Committee is concerned that the influence of alcohol and other drugs on fatalities and serious injuries in Victoria may not be fully appreciated. At present, there is no mandatory data collection policy or integration strategy in Victoria. Accessing toxicology data is largely based on individual requests made by authorised analysts within Victoria Police. The Committee did not receive evidence as to why this is the standard practice, despite the road safety partners identifying that improvement was needed.

The RACS supports the view of the Government — and previous parliamentary inquiries in Victoria — that capturing this data would improve understanding of the full impact of alcohol and other drugs. The RACS recommended establishing programs to screen all road crash patients for the presence of alcohol and other drugs. It also supported the introduction of mandatory blood alcohol concentration (BAC) testing for all road casualty patients 16 years and older who attend hospital.[36]

A study carried out between 2013 and 2018 by road safety partners analysed almost 5,000 blood specimens in hospitalised drivers. The outcome of the study found that a large proportion of drivers injured and hospitalised tested positive to one or more drugs and alcohol was present in 15.8% of all cases.[37] The Committee believes this study demonstrates the need to expand the current testing framework in Victoria.

The alcohol and other drugs testing regime is covered in more detail in Chapter 7.

35 Government of Victoria, *Submission 71*, p. 57.

36 Royal Australasian College of Surgeons, *Submission 17*, p. 2.

37 Government of Victoria, *Submission 71*, p. 26.

RECOMMENDATION 21: That the Victorian Government expand its alcohol and other drugs testing regime to require all persons, other than passengers, who attend a hospital as a result of a road accident to undergo a BAC test.

RATIONALE: Expanding the testing regime to capture any person who presents to an emergency department as a result of a road accident will provide a greater understanding of prevalence of alcohol and other drugs on Victorian roads. Currently, toxicology reports are only completed on an ad hoc basis.

6 Driver training and licensing

6.1 Introduction

This Chapter provides an overview of driving training for new drivers; that is, the practical skills and theoretical knowledge needed to drive a vehicle. This includes attitudes to road safety (sometimes referred to as cultural issues).

Victoria has a Graduated Licencing System (GLS), which increases privileges in line with experience. Victoria's GLS has been very effective in reducing road trauma for young drivers. Issues addressed in this Chapter include the role played by driver training programs, increasing the age to which learner drivers must complete 120 hours of driving to 25 years, the influence of parents on learners and periodic licence retesting.

The Chapter then provides examples of young driver programs in Victoria, in particular the L2P program, and discusses concerns around older drivers and motorcyclists. The Chapter ends with suggestions for improving the quality of professional driver training and safety for occupational drivers in Victoria.

6.2 Driver training in the Safe System

Driver training forms part of the principle of shared responsibility in the Safe System. Individuals are responsible for engaging in training programs and applying what is learned, while the responsibility to provide an effective training system rests with the Government and other relevant authorities. However, no matter how effective driver training programs can be, they are not a panacea for road trauma. Rather they are one of several interventions that, working in concert, improve road safety.

It should be noted that although the terms 'driver training' and 'driver education' are often used interchangeably, they are not the same:

- Driver training is usually practical, often in-vehicle, and focused on building specific skills and competencies, usually over a short time period.
- Driver education is a broader concept encompassing knowledge about road laws and road safety concepts together with attitudinal and behavioural issues, and typically includes in-class learning.[1]

For the purposes of this Chapter, the term 'driver training' is used to encompass both training and education. Driver attitudes and behaviour are covered in Chapter 7.

1 Royal Automobile Club of Victoria, *The Effectiveness of Driver Training/Education as a Road Safety Measure*, 2016, p. 1.

6.3 Graduated Licensing Scheme

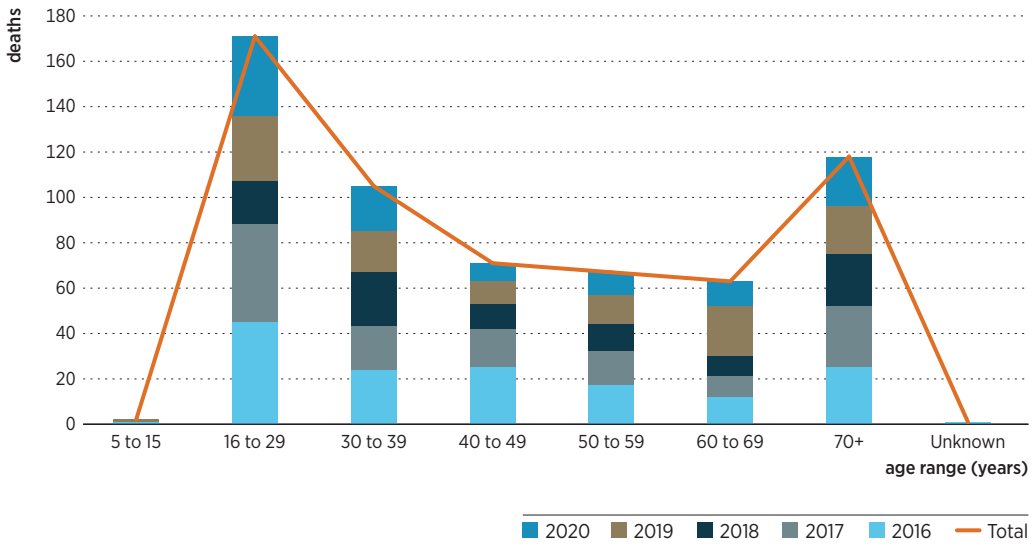
In Victoria, the Graduated Licensing Scheme (GLS) is at the centre of Victoria's driver training regime.[2] The Victorian Government's submission to this Inquiry states that the GLS recognises that 'driving is a complex and self-paced task, requiring the development of critical knowledge and skills'.[3] The key principles of the GLS are to:

- Allow new drivers to gain driving experience and acquire critical driving skills over an extended period of time under low-risk conditions.
- Gradually remove restrictions on driving as drivers gain experience and build capabilities.

Graduated licensing is based on extensive and accepted research that young driver crashes are commonly caused by a combination of inexperience, immaturity/young age, driving in high-risk situations (late at night, with peer passengers etc.), and undertaking unsafe behaviours (speeding, drink/drug driving etc).[4] Graduated schemes around the world have shown that a systematic process of phasing in driving privileges reduces the number of crashes among new drivers.

The GLS was introduced in Victoria in 2007 in response to the overrepresentation of young drivers in road trauma statistics. Young drivers continue to have one of the highest rates of crashes resulting in death and serious injury and car crashes are one of the leading causes of death of young people.[5] Driver fatalities by age group from 2016 to 2020 (the period covered by *Towards Zero*) are shown in Figure 6.1.

Figure 6.1 2016 to 2020 Victorian driver fatalities by age



Source: Legislative Council Economy and Infrastructure Committee using data from Transport Accident Commission searchable road trauma statistics, <https://www.tac.vic.gov.au/road-safety/statistics/online-crash-database> accessed 20 January 2021.

2 Government of Victoria, *Submission 71*, p. 50.

3 Ibid.

4 VicRoads, *Examination of the Impact of the Graduated Licensing System on Young Novice Driver Safety – Summary Report*, October 2017, p. 5.

5 Ibid.

6.3.1 Overview of Victoria's Graduated Licensing Scheme

The key features of the Victorian GLS are:

- Minimum aged-based learner permit periods.[6]
- Minimum of 120 hours of logged, supervised learner driving (including 20 hours of night driving) for learner drivers under the age of 21[7] (including the ability to log hours using the 'myLearners app', which is covered in section 6.4.4 below).
- On-road driving test (to assess car handling and safe driving skills) and a computerised hazard perception test (to assess the ability to safely identify and respond to potential hazards, such as other vehicles, pedestrians, and cyclists).[8]
- Two-stage probationary licensing: P1 (red P-plates; minimum 12 months) and P2 (green P-plates; minimum 3 years) with associated restrictions.
- A limit of 1 'peer passenger' (passengers aged between 16 and under 22 years old) for P1 drivers.[9]
- A ban on certain types of vehicles for probationary drivers ('prohibited probationary vehicles' or PPVs).[10]
- A ban on any form of mobile phone use, including hands-free and GPS systems, for probationary drivers.[11]

Motorcycle-specific graduated licensing also applies in Victoria. Motorcycles are covered in section 6.6 below.

6.3.2 Effectiveness of the GLS

Figure 6.2 (below) is a crash risk graph, included in the Victorian Government's submission to this Inquiry, which shows a breakdown of the number of drivers involved in casualty crashes before and after the introduction (up to 2014) of the GLS. The graph highlights four important points:

1. Learner drivers assisted by a supervising driver are relatively safe.
2. The highest crash risk is associated with new P1 drivers.

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6 VicRoads, *How to get your Ps*, (n.d.), <https://www.vicroads.vic.gov.au/licences/your-ps/get-your-ps/how-to-get-your-ps> accessed 15 January 2021.

7 VicRoads, *120 hours driving experience*, (n.d.), <https://www.vicroads.vic.gov.au/licences/your-ps/get-your-ps/preparing-for-your-licence-test/120-hours-driving-experience> accessed 15 January 2021.

8 VicRoads, *The Drive Test*, (n.d.), <https://www.vicroads.vic.gov.au/licences/your-ps/get-your-ps/the-drive-test> accessed 15 January 2021; VicRoads, *Hazard Perception Test*, (n.d.), <https://www.vicroads.vic.gov.au/licences/your-ps/get-your-ps/hazard-perception-test> accessed 15 January 2021.

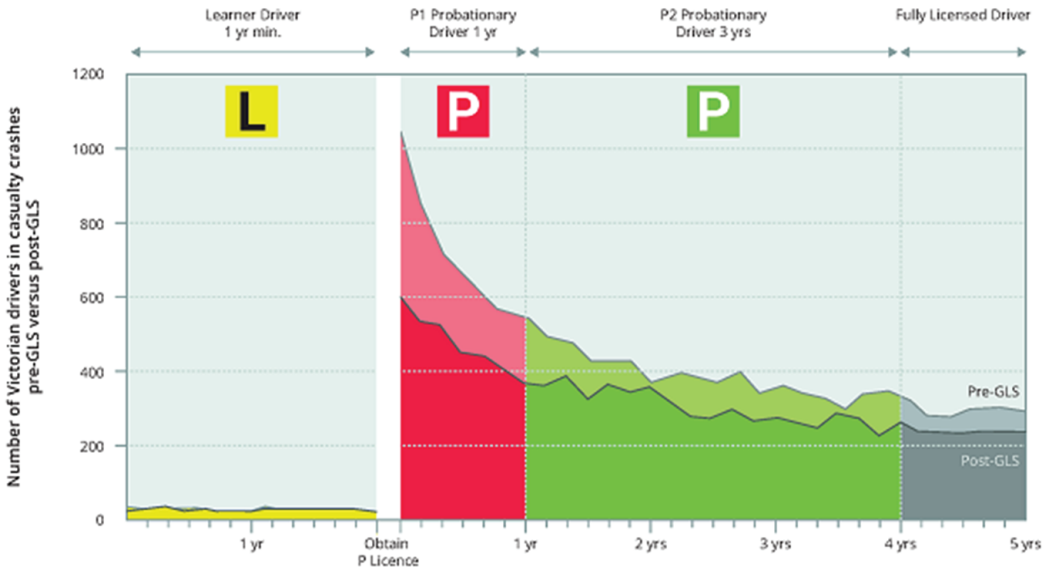
9 VicRoads, *P1 & P2 probationary licence restrictions*, (n.d.), <https://www.vicroads.vic.gov.au/licences/your-ps/p1-and-p2-probationary-licence-restrictions> accessed 15 January 2021.

10 VicRoads, *About prohibited vehicles*, (n.d.), <https://www.vicroads.vic.gov.au/licences/your-ps/prohibited-vehicles-for-p-plate-drivers/about-prohibited-vehicles> accessed 15 January 2021.

11 VicRoads, *P1 & P2 probationary licence restrictions*.

3. Drivers continue to have a relatively high risk of crashing in the first few years of driving, with crash risk decreasing gradually year-on-year.
4. The number of crashes involving new drivers decreased.[12]

Figure 6.2 Number of Victorian drivers in casualty crashes pre-GLS vs post-GLS



Source: Government of Victoria, *Submission 71*, p. 51.

In 2017, VicRoads conducted an evaluation of the impact of the GLS on fatal and serious injury crashes. The evaluation primarily measured whether the GLS reduced the rate at which new drivers were involved in crashes and whether changes in young driver behaviour contributed to crash reductions. Key findings were:

- 42.5% fewer drivers aged 18–23 years, the group with the highest crash risk, have been involved in fatal or serious injury crashes since the GLS was introduced (compared to a 29% reduction among older, more experienced drivers over the same period).
- 19.4% reduction in fatal and serious injury crash involvement rates among drivers aged 18–23 years in their first year of driving.
- 20.3% reduction in the rate of involvement in fatal and serious injury crashes, and a 13.6% reduction for all injury crashes for drivers aged 18–20 years.
- No significant change in the crash rates for drivers aged 21–23 years.
- In relation to peer passenger restrictions on P1 licence holders (P-platers in their first year), there was a 69.2% decrease in the rate of involvement in fatal and serious injury crashes and a 69.8% corresponding reduction in injury crashes for P1 drivers carrying more than one peer passenger.

12 VicRoads, *Victoria's Graduated Licensing System*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/young-and-new-drivers/victorias-graduated-licensing-system> accessed 20 January 2021.

- 60% of drivers aged 18–20 years held a learner permit for at least 24 months compared with 37% before the GLS.[13]

The Government's submission noted some of this evaluation's findings[14] and drew the Committee's attention to a 2014 Austroads project on a national GLS policy framework, which set out models for standard, enhanced and exemplar GLSs. The Government submitted: 'Victoria's GLS can be considered to align most closely with the exemplar model.'[15]

At a public hearing, Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport (DoT) spoke to the positive effects of the mandated minimum 120 driving hours, as well as other features of the GLS noted above. She told the Committee:

> there was a huge amount of work done over a large period of time to really encourage parents to ensure that their kids got lots and lots of practice. When the graduated licensing system was implemented … kids in Victoria were on average getting about 96 hours of driving practice when we mandated the 120 hours—and that is our youngest drivers, those who get their learners at about 16, which gives them two years to get that practice. As part of that there was a huge amount of work that was done to develop a very rigorous system which is world renowned, which is our licensing system. The drive test, for example, is one of the only drive tests in the world that can differentiate between those young people who have gained the 120 hours and those who have not, which is why those young people who get their 120 hours have a very high pass rate … and that is because the test helps differentiate between those who have the higher order kind of decision-making, to make decisions in complex environments, versus those who have not had enough practice to be able to do that.[16]

6.3.3 Issues raised by stakeholders

120 hours requirement

While the Royal Automobile Club of Victoria (RACV) was generally supportive of Victoria's GLS, it submitted that the 120 hours requirement should be extended to include learner drivers up to the age of 25 years. It pointed out that the GLS evaluation (noted above) attributed the lack of any significant reduced crash risk in older new drivers to the fact they are not required to complete the minimum 120 hours of supervised driving. It also noted that both New South Wales and Queensland require learner drivers to undertake mandatory supervised driving up to the age of 25.[17]

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13 VicRoads, *GLS Evaluation Media Summary*, October 2017, p. 2.

14 Government of Victoria, *Submission 71*, p. 51.

15 Ibid.

16 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, p. 44.

17 Royal Automobile Club of Victoria, *Submission 53*, pp. 33–4.

RECOMMENDATION 22: That the Victorian Government review whether the age limit for learner drivers to complete a compulsory minimum of 120 hours of logged, supervised driving (including 20 hours of night driving) should be increased to 25 years old. The Government may also consider requiring all drivers to complete a compulsory minimum of 120 hours regardless of age.

RATIONALE: There is some evidence to support the need for supervised driving for young drivers up to the age of 25, including its use in other jurisdictions in Australia. The Victorian Government should look at this evidence and consider raising the age limit.

Parents as supervising drivers

The role of parents in driver training is critically important. The majority of driving instruction and supervision of learner drivers is undertaken by parents (and other friends or relatives), private driving instructors, or a combination of both. The Committee recognises that parents are not always, or necessarily solely, the primary driving influence in all households with a novice driver. The term 'parent' in this section also refers to the many carers, guardians and other relatives who perform this critical role for many new drivers.

A recent report on parental influence in driver education, produced as part of the Commonwealth's Keys2Drive program,[18] stated:

> Many studies have found that people drive in similar ways to their parents. Parents who break road rules, drive aggressively or engage in risky behaviour on the road, for example, are more likely to have children who behave the same way as drivers.[19]

Further, some of these same studies underpinned the Transport Accident Commission's (TAC) 'Strings' campaign.[20] This promoted positive role modelling by parents with the aim of 'instilling safe practices and attitudes from a young age' in recognition of the significant influence that parents can have on how children drive in the future.[21]

Consequently, it is important that parents have access to appropriate support and resources to help them understand their role as a driver trainer and better equip them to teach their children. An example of such a resource is the TAC's 'Safer P-Platers' campaign. This is designed to inform parents of the unique risks faced by young drivers and provide them with a range of strategies to improve their children's safety. VicRoads was a key contributor to this campaign alongside the RACV.[22]

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18 Keys2Drive is a Federal Government driver training program that provides learner drivers and their parents/supervisors a free driving lesson with a Keys2Drive accredited professional driving instructor.

19 Keys2Drice, *Parental influence in driver education*, report prepared by Andrew Rasch, 2020, p. 2 (with sources).

20 Transport Accident Commission, *Parents driving role models*, (n.d.), <https://www.tac.vic.gov.au/road-safety/tac-campaigns/young-drivers/strings> accessed 9 February 2021.

21 Ibid.

22 VicRoads, *Issues & initiatives for young drivers*, 'Involving parents', (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/young-and-new-drivers/issues-and-initiatives-for-young-drivers> accessed 21 January 2021.

However, it was not unexpected that a common view expressed to the Inquiry was that many parents are not sufficiently qualified to provide adequate driving instruction to learner drivers.[23] Some stakeholders recommended that professional driving lessons from a qualified driver trainer should be a requirement for obtaining a licence.[24]

In contrast, a comprehensive literature review on the effectiveness of driver training and education published by the RACV states:

> Comparisons of the post-licence crash experience of learners who were trained exclusively by professional driving instructors and those trained exclusively by parents, relatives or friends, have shown no difference, or favourable outcomes for those trained by professional instructors.[25]

While the Committee recognises the important role played by professional driver trainers (covered in section 6.7 below), it did not receive substantial evidence identifying a need to mandate professional lessons for all new drivers as a condition of licensing. The Committee also notes that programs such as L2P in Victoria (see section 6.4.1 below) and Keys2Drive (national) already provide an opportunity for eligible students to access free professional driving lessons.

Periodic licence retesting

A common argument expressed by submitters was that periodic licence retesting, for example every five or ten years, would improve driver standards.[26] This is reflective of a broadly-held public attitude both within and outside of Victoria.

In support of such an approach, stakeholders argued that periodic retesting would:

- require individuals to maintain adequate driver competency over time
- ensure drivers remained conversant with, and aware of changes to, road rules
- motivate drivers to take ongoing interest in their driving skills
- identify declining driving skills due to disability or age.

While the Committee understands this argument, the reality of implementing such a framework would require significant funding and resources from government in order to cope with the added strain on the licensing system. The backlog created by the suspension of licence testing during COVID-19 restrictions indicates the impact a relatively small increase in load can have on the licensing system,[27] let alone the sort of strain produced by periodic testing of all drivers. Further, the Committee considers that

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23 See for example Andy Nguyen, *Submission 55*, p. 1; Chris Swalwell, *Submission 121*, p. 1; Cate Hughes, *Submission 140*, p. 4.

24 Gillian Williamson, *Submission 7*, p. 1; Andy Nguyen, *Submission 55*, p. 1.

25 Royal Automobile Club of Victoria, *The Effectiveness of Driver Training/Education as a Road Safety Measure*, p. 2.

26 See for example Gary Paul, *Submission 26*, p. 1; Brian Ward, *Submission 36*, p. 1; Streets Alive Yarra, *Submission 49*, p. 15; John Doward, *Submission 124*, p. 1; Matthew Waite, *Submission 129*, p. 2.

27 Department of Transport, *Licence testing to resume at Third Step*, (n.d.), <https://transport.vic.gov.au/about/transport-news/news-archive/licence-testing-to-resume-at-third-step> accessed 10 February 2021.

such a measure could only be justified by evidence supporting the likelihood that the suggested benefits would be realised. Periodic licence testing is also discussed in relation to older drivers in Section 6.5 below.

The Committee did not receive evidence that an initiative of this nature would deliver a value-for-money road safety outcome. The Committee notes the comment from former VicRoads CEO Mr David Anderson that, compared to other OECD countries, Victoria's GLS performs well.[28]

The Committee also found it relatively easy to find the evidence used by the road safety partners supporting the development, implementation, evaluation and ongoing improvements of the GLS, as opposed to other areas of road safety covered throughout this Report. This level of transparency and public information should be a standard feature of an effective road safety strategy in Victoria. The Committee urges the Government to continue its ongoing evidence-based approach to evaluating and improving the GLS.

FINDING 24: Victoria is overall served well by the Graduated Licensing Scheme. Ongoing evaluation of its operation and an evidence-based approach to its continued improvement is necessary for this to remain the case.

6.4 Young driver programs

There are a number of programs designed to support learner drivers in Victoria.

6.4.1 L2P program

L2P is a community-based mentor program (the largest in the State[29]) that recruits volunteers to provide supervised driving experience to learner drivers aged under 21 years who struggle to meet the mandated 120 hours of driving practice due to familial, economic or other reasons.

Drivers who do not have access to a suitable vehicle and/or supervising driver are matched with fully licensed mentors and a program vehicle. The program also includes funding for up to seven lessons with a professional trainer, as well as part-funding for the probationary licence test.[30]

An evaluation[31] of L2P commissioned by DoT found:

- A demonstrated need for a program like L2P to support young people gain supervised driving experience.

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28 Mr David Anderson, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 2.

29 Ms Robyn Seymour, *Transcript of Evidence,* p. 44.

30 Government of Victoria, *Submission 71,* p. 52.

31 Unpublished evaluation report prepared by Deloitte Access Economics.

- From 2015 to 2019, the L2P program prevented an estimated 26 crashes, including eight fewer fatal and serious injury crashes, an economic saving of approximately $15 million (a benefit–cost ratio of 1.82).
- Evidence that the L2P program increased the life aspirations, confidence, social, and behavioural outcomes of learner drivers, and a reduced level of social isolation for mentors.
- Demand for L2P outweighed supply, and while the program had been delivered within its scope and budget, there was a reliance on additional resources and funding from program stakeholders in order for this to be sustained.[32]

In response to the evaluation findings, the Government informed the Committee that the TAC had committed funding of $33.4 million to 30 June 2023, to double the investment in the program and deliver improvements, including:

- increased number of learner places per year from 1,800 to 2,800
- increased mentor recognition and improved mentor training
- introduction of a tiered funding model based on operating costs in rural and regional Victoria to reflect the higher costs of running the program there.[33]

Ms Seymour also noted the wider benefits of the L2P program for disadvantaged young people. She said:

> Because it is a mentoring program, it provides a fantastic environment for some of our most vulnerable young people to be spending a lot of time with an older person. When you speak to those young people they talk about the value that that has provided them in thinking about their future, their career, their education and more broadly how they manage their lives, which is great.[34]

FINDING 25: The L2P program offers both road safety and social benefits to many disadvantaged young people in Victoria.

The concept of L2P as a resource for disadvantaged young drivers has been adapted into an initiative targeting vulnerable migrant communities in some local government areas,[35] illustrated in the case study below.

32 Government of Victoria, *Submission 71*, p. 52.

33 Ibid., pp. 52–3.

34 Ms Robyn Seymour, *Transcript of Evidence*, p. 45.

35 Darebin Information, Volunteer & Resource Service, *Submission 80*, p. 3.

CASE STUDY 6.1: Darebin Migrant Driver Program pilot

In 2019, the Darebin Information, Volunteer & Resource Service (DIVRS) obtained funding from Darebin City Council for a pilot Migrant Driver Program (MDP), based on the L2P model, to support 50 individuals from migrant communities to gain driving experience on Victorian roads.

DIVRS is a not-for-profit, volunteer-driven organisation that has coordinated the L2P program in Darebin since 2010. Throughout this time DIVRS identified accessibility barriers for many new migrant community members in meeting the L2P eligibility requirements due to a lack of local driving experience and confidence in interpreting and adhering to local road rules and regulations, including specific factors such as:

- difficulty understanding and navigating the systems and processes to obtain a licence
- difficulties converting an international licence to a Victorian licence
- prohibitive cost of driving lessons for many people
- being older than the L2P age limit
- lack of access to a fully licenced supervising driver
- language barriers.

DIVRS explained that being unable to gain driving experience and a licence has a significant impact on people's ability to engage in education, employment and community life. It also puts drivers, their passengers and the wider community at risk.

The MDP pilot has been operating since February 2020. As with the L2P program, it matches community members with trained volunteers who use a program vehicle to gain driving experience and work towards gaining a probationary licence. Participants have access to a number of professional lessons prior to being matched with a mentor.

The MDP pilot has been well accepted in the community. Many program participants have stated their main reasons for wanting to obtain their licence included the ability to provide greater support to their family and being better able to support themselves with increased accessibility to work, education and other opportunities. Although only in operation for a short time, the feedback from participants, caseworkers and organisations working in the sector, as well as local police, has been overwhelmingly positive. Organisations such as the Adult Migrant English Program, Asylum Seeker Recourse Service and Launch Housing have said the Program will make a significant difference in supporting newly arrived members of the Darebin community.

One of the main findings of the pilot is that there is an enormous need for programs such as the MDP across the wider community. DIVRS has received enquiries from people outside the Darebin area wanting to participate. DIVRS say that a state-wide program is necessary to meet this demand.

Sources: Darebin Information, Volunteer & Resource Service, *Submission 80*, pp.2–5;
Ms Julie-Anne O'Brien, TAC L2P Coordinator, Darebin Information, Volunteer & Resource Service, public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 12.

RECOMMENDATION 23: That the Victorian Government expand and more widely promote the L2P program to ensure there are no barriers to access by any groups and individuals, for example new migrant communities.

RATIONALE: Not all members of migrant communities can qualify for the L2P program. A similar program meeting the needs of these communities has both road safety and social benefits for the whole Victorian community.

6.4.2 Road Smart program

A practical safe driving program for Year 10 or equivalent students and their supervisors. Delivered as a classroom and an in-car program to support young people as they are first getting or thinking about getting their learner permit and to show how they can then get the most value from having a learner permit.[36]

6.4.3 Fit to Drive

A Year 11 program focused on peer pressure, alcohol and drugs, and other issues related to driving.[37]

6.4.4 myLearners app

A mobile app for learner drivers and driving supervisors that:

- replaces paper log book recording of mandated 120 hours of supervised driving for leaner drivers
- assists learner drivers form lifelong safe driving behaviours to prepare them for solo driving
- helps supervisors keep track of learners' hours.[38]

6.4.5 DriveSmart program

An online training tool designed to accelerate learning the skills needed for safe driving, particularly those relating to hazard perception and concentration. The program is based on research conducted by the Monash University Accident Research Centre (MUARC) using driving simulators and techniques adapted from Airforce pilot training.[39]

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.13 of Appendix B.

6.4.6 Road to Zero: Road Safety Education Experience

The Road to Zero: Road Safety Education Experience opened at the Melbourne Museum in August 2018. It is a world-first road safety education complex developed by the TAC in partnership with the Melbourne Museum created as part of the *Towards Zero Road Safety Strategy*. See the below case study.

CASE STUDY 6.2: Road to Zero: Road Safety Education Experience

The Road to Zero complex draws on decades of research. It has been co-created with teachers to reduce road trauma in pre-learner drivers by building knowledge and awareness that will help them to make safe decisions.

The Road to Zero experience comprises two elements:

1. Road to Zero Experience Space—an immersive and exploratory gallery showcasing the latest in multi-sensory interactive technologies, including:

- A multi-screen, multi-narrative video on the importance of working towards no lives lost or serious injuries on our roads, and looking at how this might be achieved.
- An interactive experience that examines how your body would have to adapt to survive impacts at different speeds as a cyclist, motorcyclist or pedestrian.
- A multi-screen interactive experience that looks at four different road environments and the risks they can pose and tasks visitors with making each environment as safe as possible through the application of different road treatments.

2. Curriculum-linked programs in the purpose-built Learning Studios:

- Getting the message (Health and PE, Years 9–10, VCAL): Students research a 14–17-year-old road user group (e.g. pedestrians or cyclists) and come up with a 'call to action' designed to reinforce a chosen positive behaviour through the creation of a video ad campaign.
- Road to Zero physics challenge (Science, Years 9–10, VCAL): Students participate in a virtual reality physics experiment to explore the relationships between speed and friction on car stopping distances using touch-table and VR technology.

In addition to the museum complex, a travelling in-school program that replicates the museum experience, including an immersive pop-up exhibition, followed by a curriculum-based education program, is available to secondary schools more than two hours' drive from Melbourne.

The Road to Zero complex has won awards including the 2020 Museums and Galleries National Award for Interpretation, Learning and Audience Engagement and gold and silver Melbourne Design Awards in 2020 and 2019, respectively.

(continued)

CASE STUDY 6.2: ***(continued)***

The TAC's Head of Road Safety, Ms Samantha Cockfield, spoke about the positive effect the Road to Zero complex has had on, particularly, road safety education and awareness in young people.

Sources: Museums Victoria, *Road to Zero: Road Safety Experience*, (n.d.), <https://museumsvictoria.com.au/melbournemuseum/learning/school-programs-and-resources/road-to-zero-road-safety-experience> accessed 5 February 2021; Road to Zero, *Experiences*, (n.d.), <https://www.roadtozero.vic.gov.au/about-the-exhibit/experiences> accessed 5 February 2021; Australian Museums and Galleries Association, *MAGNA 2020*, (n.d.), <https://www.amaga.org.au/magna-2020> accessed 5 February 2021; Melbourne Design Awards, *2019 Melbourne Design Awards*, (n.d.) <https://drivenxdesign.com/MEL19/default.asp> accessed 5 February 2021; Ms Samantha Cockfield, Lead Director, Road Safety, Transport Accident Commission, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 45.

6.4.9 Concerns raised to the Committee

Although many views on programs such as L2P were positive, several stakeholders told the Committee they would like to see greater support for, and an expansion of, community-based education. Further, the need to expand the availability of road safety programs in rural and regional areas was identified,[40] while the VFF called for a greater focus on rural-specific driver training.[41]

Wyndham City Council argued that a Towards Zero vision was unlikely to be achieved 'until there is a shift of culture throughout the community to embrace safer road behaviour' and that programs can be used to help achieve such a shift.[42] While Hobsons Bay City Council pointed out that community road safety groups and programs provided valuable, low-cost road safety improvements and argued that expanded support could yield strong community outcomes.[43]

Other stakeholders called for greater provision of programs in schools from an early age.[44] Roadsafe Westgate Community Road Safety Council raised concerns that support for road safety programs was 'reducing at an alarming rate' with fewer schools taking up road safety programs. It was of the view that there was decreasing room in the school curriculum for road safety education. It submitted:

> There needs to be a change by both the Education Department and Department of Transport in ensuring these road safety programs are promoted and made available in all secondary schools throughout Victoria. Currently only a small proportion of secondary schools are taking up the option of having both or one of these road safety programs as part of their school curriculum.[45]

40 Council on the Ageing Victoria, *Submission 42*, p. 10; Elizabeth Ryan, *Submission 58a*, p. 1.

41 Victorian Farmers Federation, *Submission 70*, p. 2.

42 Wyndham City Council, *Submission 13*, p. 2.

43 Hobsons Bay City Council, *Submission 20*, p. 1.

44 See for example Transport Alliance Australia, *Submission 12*, p. 6; Ms Gillian Williamson, *Submission 7*, p. 1; Ms Elizabeth Ryan, *Submission 58*, p. 1; Ms Cate Hughes, public hearing, Melbourne, 8 September 2020, *Transcript of evidence*, p. 9; Victorian Motorcycle Association, *Submission 141*, p. 6.

45 Roadsafe Westgate, *Submission 21*, pp. 4–5.

The Committee also received evidence that more could be done to ensure driver education programs sufficiently targeted improved driver knowledge, awareness and attitudes toward other road users. For example:

- The need to ensure drivers had a better understanding of sharing the road, especially regarding situations where drivers must give way to vulnerable road users (cyclists, pedestrians – see also Section 3.5.3 of this Report).[46]
- Improving awareness of and behaviour around motorcyclists (covered in section 6.6 below).
- Better knowledge of how to drive safely around trucks and other heavy vehicles.[47]

FINDING 26: Driver training programs help create a positive culture around road safety in young drivers, especially when done from an early age.

6.4.10 Driving simulators

Driving simulators (also referred to as 'online' or 'virtual reality' simulators) are a safe way for learners to experience a wide variety of challenging experiences before they drive on the road. Areas that simulators can cover include:

- texting while driving
- driving on rural roads
- fatigue management
- drug and alcohol impairment
- driving on 'black ice'
- experiencing anti-lock braking systems.

Deakin University's submission argued that simply completing the required number of supervised hours for the GLS 'does not guarantee that learner drivers have experienced a sufficiently wide range of driving experiences and scenarios to be adequately prepared for solo driving.' It added:

> In a similar way, commercial pilot training requires access to required experiences and scenarios for training and has long used simulator technologies to achieve this. Until recently the cost and complexity of these simulator technologies meant that they weren't feasible for driver training. Recent advances in virtual reality can provide cost-effective immersion in a virtual environment that can be especially beneficial in generating scenarios that are hard to access ...[48]

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46 Walk on Moreland, *Submission 57*, p. 22; Victoria Walks, *Submission 47*, pp. 10, 14; Amy Gillett Foundation, *Submission 62*, p. 15; Council on the Ageing Victoria, *Submission 42*, p. 9; Maurice Blackburn Lawyers, *Submission 67*, p. 8.

47 See for example Victorian Transport Association, *Submission 83*, p. 8; Tim and Mandy Leary, *Submission 75*, p. 1; Ms Cate Hughes, *Transcript of evidence*, p.9.

48 Deakin University, *Submission 133*, p. 12.

At a public hearing, the Committee spoke with Ms Lisa Skaife, Founder and CEO of Driveschool Enterprises, a company that provides driving simulators to school students. Ms Skaife told the Committee that Driveschool Enterprises' program combines simulation, gaming and artificial intelligence. She explained that students must pass each stage of the program before progressing:

> For our program there is a series of graduated pass—fail exercises. So every exercise they have got to pass. If they speed, they fail; if they do not put their blinkers on, they fail. There is a series of areas in the program where they have actually got to conduct themselves appropriately in order to get to the next stage of the program …[49]

Deakin University's Virtual Reality Lab is conducting several research projects in this field, including how virtual reality can:

- increase awareness of safe interaction with heavy vehicles for learner drivers aged 16 to 18 years
- support older drivers to practise driving safely and receive feedback on their driving
- provide drivers with the experience of being a cyclist on Victorian roads (experiencing cycling has been shown to be a positive influence on drivers' attitudes to cycling safety).[50]

The Committee was interested in how projects such as these could lead to virtual reality technology supplementing and enhancing driver training, particularly for drivers that are over-represented in the death and serious injury statistics. Associate Professor Ben Horan, Director, Centre for Advanced Design in Engineering Training at Deakin's Virtual Reality Lab, argued that the opportunity to use the technology in this manner already existed. He told the Committee:

> I think we can do this using virtual reality technologies, which are now ready and people can use them. I see a gap and an opportunity to provide this as part of the graduated licensing system that is in place, as well as the driver testing that is there—not just for investments in this technology and research into this technology, but it can span the whole suite of driver training and awareness needs all the way through to aged drivers as well, which is another high-risk group … I do think there is a big opportunity for us to better prepare our younger drivers for being alone on the roads.[51]

Driveschool Enterprises' submission includes a 2008 Spanish study showing that while young drivers may lack basic driving skills, a much bigger problem is that they have yet to develop 'higher order skills', such as risk perception, self-assessment and the motivation to drive safely. This is consistent with the widely accepted research regarding young drivers that underpins the GLS (noted earlier in this Chapter). Simulators, it is argued, can target these higher order skills, as well as helping young

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49 Ms Lisa Skaife, Founder and CEO, Driveschool Enterprises, public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 8.

50 Deakin University, *Submission 133*, pp. 12–3.

51 Associate Professor Ben Horan, Director, Centre for Advance Design in Engineering Training, Virtual Reality Lab, Deakin University, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, pp. 33–4.

drivers correctly estimate their ability to safely deal with hazards they are likely to encounter on the road. The study found:

> Driving simulator technology makes it possible to implement driver training applications with a growing level of complexity and fidelity to real driving conditions. Driving simulators only become an effective tool in drivers' training if they are effectively incorporated as an integral part of the training curriculum. Such integration requires a methodical approach and a detailed analysis of the training curriculum, the learning goals and training needs.[52]

Ms Skaife told the Committee that a group of Victorian school students who had completed the Driveschool Enterprises program were found to be '48 per cent more competent and 17 per cent less anxious' than students who did not complete the program.[53] These results were based on the students finishing the TAC Road Smart lesson immediately following completion of the program referred to in section 6.4.2 above.

The Committee notes these results and is interested in knowing if simulators produce similar long-term results. It therefore recommends a 12 month pilot program to determine the long-term benefits of virtual reality and simulation technologies.

RECOMMENDATION 24: That the Victorian Government conduct a 12 month pilot program of driver training virtual reality and simulation technologies to determine its long-term benefits.

RATIONALE: There are some short-term benefits of virtual reality and simulation technologies for young drivers. Learning more about the long-term effects of these technologies will guide policy development.

6.4.11 Preventing vs responding to dangerous situations

Several stakeholders to this Inquiry held the view that that driver training programs, such as defensive driving courses, particularly as a condition of licensing, were among the most effective measures to improve overall standards of driving and reduce road trauma.[54]

Others, such as the RACV, argued that conventional driver training can be inadequate in reducing crashes, regardless of a driver's age or experience. This is because training may foster overconfidence in (particularly young) drivers resulting in drivers not taking appropriate precautions to avoid dangerous situations.

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52 José María Pardillo Mayora, *A Human Factor-Based Approach for the Effective Use of Driving Simulators and E-Learning Tools in Driver Training & Education*, Technical University of Madrid, Spain, 2008.

53 Ms Lisa Skaife, *Transcript of evidence*, p. 9.

54 See for example Neil Campbell, *Submission 11*, p. 1; John Tserkezidis, *Submission 16*, p.1; Jeremy Venables, *Submission 31*, p. 1; Rosalie Dows, *Submission 35*, p. 2.

To expand on this view, the RACV spoke about how defensive driving courses can focus on the skills to get out of trouble rather than avoiding trouble in the first place. Ms Elvira Lazar, Manager, Safety and Education at the RACV told the Committee:

> At the moment the responsibility lies with the driver, so you need to make sure that you are safe to drive, you are aware of the latest road rules and so forth. So we would caution against defensive driving courses, so those types of courses that might cause drivers to be overly confident … So that can actually lead to increases in crashes, because they are facing situations that they would not normally face on a day-to-day basis. They are harsh braking conditions which hopefully no driver needs to encounter when they are driving around on the roads. So those defensive driving courses—there is evidence that those do not work. But in terms of refresher courses through drive schools or whatever the case might be, if you feel like you want to brush up on some skills, that is absolutely recommended. But those short-term courses we would caution people against.[55]

Addressing this issue in the context of occupational driver training (discussed in section 6.8 below), MUARC informed the Committee that 'driver training programs lack effectiveness due to a reliance on knowledge and vehicle handling skills, rather than addressing the factors affecting judgement and decision-making … and their failure to incorporate key behavioural objectives and teaching strategies'.[56]

In its submission, the RACV pointed to the 'P Drivers Project'[57] as an example of a good evidence-based driver training program. The P Drivers Project is a behavioural change program based on best practice for young drivers who have just attained their P-plates and are in their first months of solo driving. The RACV submitted:

> Research and trials such as the P Drivers Project are important steps to ensure only the best possible programs are being promoted. They also provide important learning points that should be considered when developing future programs.[58]

The Committee accepts that properly researched and developed, evidence-based driver training programs can improve driving skills. However, it did not receive substantial evidence that requiring drivers to undertake such training as a condition of licensing would improve road trauma outcomes in lieu of other, more effective initiatives.

FINDING 27: Driver training programs should be evidence-based and subject to thorough evaluation to determine their effectiveness in both preventing and responding to dangerous situations.

55 Ms Elvira Lazar, Manager, Safety and Education, Royal Automobile Club of Victoria, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 11.

56 Monash University Accident Research Centre, *Submission 66*, p. 40 (with sources).

57 Project conducted from 2011–17, funded by the Australian, NSW and Victorian Governments, the TAC, the Federal Chamber of Automotive Industries (FCAI), Insurance Australia Group (IAG) and RACV.

58 Royal Automobile Club of Victoria, *Submission 53*, p. 33.

6.5 Older drivers

As shown in figure 6.1 above, older drivers are also at an increased risk of death as a result of road trauma, a longstanding issue that was also recognised at the time *Towards Zero* was implemented. In 2016, the *Towards Zero Action Plan* noted that drivers over 60 were the fastest growing age group of drivers on the road and were involved in 19% of deaths and 17% of serious injuries.[59] In 2020:

- 31 of 104 driver fatalities (29.8%) were drivers aged 60 and older (Jan–Dec)
- 334 of 1,405 drivers hospitalised (23.7%) as a result of road trauma subject to a TAC claim were drivers aged 60 and older (Jan–Sep).[60]

There is no maximum age limit on driving or licence testing in Victoria, rather the determining factor for a person's driving capacity is whether they are considered medically safe to drive. This is generally managed via the expectation that drivers will self-regulate. There is also provision for people to report someone to VicRoads and/or Victoria Police as a road safety risk.[61]

6.5.1 Resources and programs for older drivers

General information resources for older drivers are available on the VicRoads[62] and Victoria Police[63] websites. Additionally, the following community programs are available to groups and individuals through the Community Road Safety Grants Program:

- Safe Driver: One-hour VicRoads road safety awareness presentation for older road users covering safe driving and mobility strategy, road rules, and the effects of medication.[64]
- Wiser Driver: Four-week course targeting older drivers that provides them with an opportunity to update and improve their knowledge of the road rules, road safety, vehicle safety and planning.[65]
- Years Ahead: One-hour road safety awareness presentation delivered by RACV that promotes safe driving and road use behaviours, continued mobility and quality of life.[66]

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59 Government of Victoria, *Towards Zero 2016–2020 - Victoria's Road Safety Strategy & Action Plan,* 2016, p. 21.

60 Transport Accident Commission searchable road trauma statistics, <https://www.tac.vic.gov.au/road-safety/statistics/online-crash-database> accessed 5 February 2021.

61 VicRoads, *Worried about someone's driving?*, (n.d.), <https://www.vicroads.vic.gov.au/licences/health-and-driving/worried-about-someones-driving> accessed 5 February 2021.

62 VicRoads, *How ageing can affect driving*, (n.d.), <https://www.vicroads.vic.gov.au/licences/health-and-driving/how-ageing-can-affect-your-driving> accessed 20 January 2021.

63 Victoria Police, *Older drivers*, (n.d.), <https://www.police.vic.gov.au/older-drivers> accessed 20 January 2021.

64 VicRoads, *Community Road Safety Grants Program 2019/2020 Standard Program Guidelines*, p. 7.

65 Ibid., p. 8.

66 Ibid., p. 7.

Several submissions called for regular testing of older drivers citing a need:

- for mandatory driver training programs for at-risk groups (including new and older drivers)[67]
- to regularly test for capacity to safely operate a vehicle, guard against developing bad driving habits, and stay up to date with rule changes[68]
- to check for deteriorating eyesight and/or other medical conditions.[69]

The Council of the Ageing Victoria (COTA) cautioned against generalising about people over the age of 60.[70] It expressed concern regarding the portrayal of older drivers as a danger to other road users and how statistics may be incorrectly used to promote this idea. Instead, COTA argued that older drivers were more likely to be killed or injured because of specific physical conditions.[71] COTA submitted:

> Strategies that perpetuate age stereotypes may result in medical practitioners and licence renewal centres assuming driving capacity is linked to age – not specific physical deterioration or limitations as a result of ageing. The basis for medical testing and licence reviews should always focus on capacity.[72]

In its submission to this Inquiry, COTA called for greater investment in programs such as Wiser Driver. It also urged community education to identify at-risk drivers without adversely affecting safe older drivers.[73]

RECOMMENDATION 25: That the Victorian Government conduct research on road trauma involving drivers aged over 60 years. The research should determine:

- the specific risks posed and faced by older drivers
- targeted road safety policies to negate these risks.

RATIONALE: Not all older drivers pose a risk to road safety. Policies should be based on the specific risks posed and faced by individual drivers and their capacity to drive safely.

67 Royal Australasian College of Surgeons, *Submission 17*, p. 6.

68 Jeremy Venables, *Submission 31*, p. 1; Allen Hampton, *Submission 50*, p. 2; Geraldine Eales, *Submission 122*, p. 1.

69 Ibid.

70 Council on the Ageing Victoria, *Submission 42*, p. 10.

71 Ibid., p. 11 (with sources).

72 Ibid., p. 11 (with sources).

73 Ibid., pp. 10–1.

6.6 Motorcyclists

Riding a motorcycle carries a higher risk of crash and injury compared to driving due to the relative instability of a motorcycle (compared to vehicles with four wheels). Further, because riders are essentially unprotected, they therefore tend to sustain serious injuries as a result of direct contact with solid objects or from crush forces.[74]

Compared with car occupants, motorcyclists are at least 30 times more likely to die and 41 times more likely to be seriously injured in a road accident in Australia.[75] For every motorcyclist killed in a crash, 35 more are hospitalised; this ratio is far higher than for pedestrians (1:16) or for vehicle occupants (1:18)[76]

Like driving, graduated licensing applies to motorcycle licensing in Victoria. Originally introduced as a method to address the high crash involvement of young, newly licenced riders, the motorcycle GLS (M-GLS) targets the key factors which contribute to this.[77] Graduated licensing for motorcyclists was a commitment in *Victoria's Road Safety Action Plan 2013–2016*[78] and the final stage of its implementation was in effect from October 2014.[79]

Specific M-GLS requirements include:

- New riders must attend and pass a two-day course comprising off-road training and an on-road assessment, in addition to the motorcycle knowledge test, before they can apply for a learner permit.
- Learner riders must complete an on-road practical skills check (known as a 'check ride') at least one month before undertaking a motorcycle licence assessment.
- Different types of licences (P1 – probationary; and P2 – restricted full licence) are issued after passing a licence test depending on a rider's age and whether they also hold a car licence.
- Different licence conditions (including the same P1 and P2 restrictions imposed on drivers, covered in section 6.3.1 above) for learner, probationary and restricted full licence riders.[80]

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74 Government of Victoria, *Graduated Licensing for Motorcyclists: A Discussion Paper*, 2010, p. 7.

75 Centre for Accident Research & Road Safety – Queensland, *Motorcycle safety fact sheet*, 2017, <https://research.qut.edu.au/carrsq/wp-content/uploads/sites/45/2017/05/FINAL-Motorcycle-Safety-2017-08-18-1030-screen.pdf> accessed 3 February 2021.

76 Department of Infrastructure and Regional Development (BITRE), *Motorcycling Safety Information Sheet*, 2017, <https://www.bitre.gov.au/sites/default/files/IS89%20Motorcycling%20Safety_rev.pdf> p. 1, accessed 21 January 2021.

77 E. Mitsopoulos-Rubens et al, *Graduated licensing for motorcyclists: Rationale, effectiveness, challenges and opportunities for the future*, report prepared for Monash University Accident Research Centre, 2009, p. 1.

78 Victorian Government, *Response to the Parliament of Victoria, Road Safety Committee, Inquiry into Motorcycle Safety*, 11 June 2013, p. 5.

79 VicRoads, *The motorcycle graduated licensing system*, (n.d.), <https://www.vicroads.vic.gov.au/licences/licence-and-permit-types/motorcycle-licence-and-learner-permit/a-new-motorcycle-graduated-licensing-system> accessed 9 February 2021.

80 Ibid.

Additionally, supplementary online education and information resources provided by the TAC inform motorcyclists about how to ride safely. For example:

- The 'Spokes' website provides information about all aspects of safe riding, including:
  - observing speed limits
  - wearing suitable protective clothing
  - riding scooters safely
  - riding for the road conditions
  - not riding when tired or fatigued
  - how Antilock Braking Systems (ABS) work.[81]
- 'Ride Smart' is a free online tool designed by motorcycle trainers that takes riders through a series of exercises to improve decision-making and hazard perception skills in a variety of locations.[82]

The Committee was unable to find evidence on what, if any, work had been done to measure the effectiveness of the M-GLS and related education measures in Victoria since its implementation in 2014.

However, a 2016 University of New South Wales report on the education and assessment components of the M-GLS found that the curriculum was: feasible; could be delivered and received as intended; and was generally acceptable to Victorian trainers, learners, and other stakeholders. However, it also observed a need for ongoing monitoring and evaluation:

> including potential refinements to course materials, the hybrid competency-based assessment and testing approach, and the ability to coach course participants effectively without resulting in miscalibration of perceived versus actual riding competency.

The Committee notes the lack of publicly available evaluation makes it difficult to assess the impact of the M-GLS since 2014 and what, if any, improvements could be made.

FINDING 28: It is unclear what, if any, evaluation of motorcycle licensing and related education and training measures have been undertaken by Victoria's road safety partners since implementation of the current framework in 2014.

The link between rider skills and safety was identified by many motorcycling groups and individuals who engaged with this Inquiry. The Committee notes this is consistent with observations of the former Road Safety Committee's 2012 *Inquiry into Motorcycle*

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81 Transport Accident Commission, *Safer People*, 'Safer motorbike riders', (n.d.), <https://www.tac.vic.gov.au/road-safety/victorian-road-safety/towards-zero-2016-2020-road-safety-strategy/safer-people> accessed 21 January 2021.

82 Transport Accident Commission, *Ride Smart*, (n.d.), <https://www.tac.vic.gov.au/road-safety/safe-driving/motorcycle-safety/ride-smart> accessed 21 January 2021.

Safety, which reported 'a strongly held view among motorcyclists that additional training, such as advanced rider training, can reduce risks and improve riding performance'.[83]

Evidence received by the Committee indicated that this view persists among many in the motorcycling community. For example, the Victorian Motorcycle Council (VMC) identified a need for more programs and resources to encourage riders to update and improve their skills. The VMC submitted that post-licence and advanced motorcyclist training programs in Victoria were inadequate. It advocated for a program along the lines of the subsidised New Zealand Ride Forever program that, the VMC claimed, has reduced crashes and accident injury claims in that country.[84]

The VMC added that road safety messaging must acknowledge that 'even in the most ideal environment it still remains true that a motorcycle is almost entirely reliant on rider inputs to make safe progress'.[85] It complimented the TAC's 'Perfect Ride' campaign, writing:

> The more recent 'Perfect Ride' TAC campaign generated almost universal acceptance from riders. It reminded riders to look out for each other and ride in a manner that allowed for common road user and rider errors. This kind of realistic and relatable approach needs to be pursued further if the motivation of road users is a key plank to winning improvements in road safety.[86]

Along with improving riding skills the Committee also heard that more should be done to increase awareness of motorcyclists in non-riding road user groups.[87] At a public hearing, one motorcyclist argued driver education programs should instil better awareness of other road users through exposure to all types of vehicles from an early age. She said:

> The majority of behavioural road user issues can be addressed by education, beginning in schools with exposure to all types of vehicles, to encourage a better understanding of sharing roads as a car driver, particularly trucks and buses, whose weight prevents them from stopping suddenly, and looking out for motorcycles.[88]

The Committee recognises the value of effective rider training programs and resources but cautions placing the sole onus for safety on riders improving their own behaviour. The concept of shared responsibility implies that many of the risks faced by riders are outside of their control, not the least of which is the behaviour of other road users (see Chapter 7 of this Report for more on driver behaviour).

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83 Parliament of Victoria, Road Safety Committee, *Inquiry into Motorcycle Safety*, December 2012, p. 338.

84 Victorian Motorcycle Council, *Submission* 56, pp. 9, 11–2.

85 Ibid., p. 8.

86 Ibid.

87 Ibid., p. 9.

88 Ms Cate Hughes, *Transcript of evidence*, p. 9.

This is consistent with the 2012 Inquiry's consideration of how rider training programs work in collaboration with other road safety measures in improving outcomes for motorcyclists. The Committee wrote to DoT in 2020 for an update on several of that Report's findings and recommendations relevant to this Inquiry. However, at the time of writing this Report no response had been received by the Committee.

This makes it almost impossible for the Committee to make a recommendation regarding training for motorcyclists. Again, the Committee repeats its disappointment with the lack of cooperation from Victoria's road safety partners and calls for a cultural change as a matter of urgency.

Further discussion of motorcycle safety can be found in Chapter 3 in relation to road standards and Chapter 8 in relation to vehicle safety and technology.

6.7 Regulating professional driver trainers

The Australian Driver Trainers Association (Victoria) (ADTAV) is the representative body for professional driving instructors.[89] Its submission to this Inquiry stated that apart from teaching how to physically drive a vehicle 'effective driver trainers teach good driving practices that enhance road safety.'[90]

ADTAV identified several ways in which the regulation of professional driver trainers (PDTs) could be improved. These include: minimum age and licence requirements; and a potential mandatory Code of Practice.

6.7.1 Minimum age and licence requirements

ADTAV believes that the current eligibility criteria to become a PDT in Victoria (i.e. minimum age of 21 years and hold a full (non-probationary) licence) is 'manifestly inadequate' and 'fails to take account of [the] lack of driving experience and propensity for risk taking among younger adult drivers'.[91]

In its submission, ADTAV also pointed out that it is possible to obtain a full licence in Victoria if an unrestricted driving licence has been held overseas. This means a person can become a PDT without driving on Australian roads and in Australian conditions.[92]

ADTAV recommended applicants for a Driving Instructor Authority should be at least 25 years old and have held a full Australian driver licence for at least three years. It argued such a change to eligibility requirements would:

- provide PDT applicants with the opportunity to gain greater driving experience

89 Australian Driver Trainers Association (Victoria), *About Us*, (n.d.), <https://adtav.org.au/about-us> accessed 5 February 2021.

90 Australian Driver Trainers Association (Victoria), *Submission 19*, p. 5.

91 Ibid., p. 7.

92 Ibid.

- ensure PDTs would be less likely to model risky behaviours and better able to identify and correct such behaviours in their students' driving
- recognise the importance of gaining experience on Australian roads and in Australian conditions.[93]

Mr Stan Gates, President of ADTAV, gave evidence at a public hearing in support of ADTAV's argument that 25 years should be the minimum eligible age for PDTs. He told the Committee:

> Look, in our submission we say 25 and over would make a more suitable driving instructor unless they have been involved in the CFA or they have been involved in some organisation that matures them … And if you think about it, if you have a driving instructor who is just off his Ps, he does not have the really worldly experience and does not have the experience of communicating properly and understanding the problems on the road. With somebody over 25, we hope they would have better maturity in delivering their message, of course, of safe driving.[94]

ADTAV also pointed out that most other Australian jurisdictions have higher eligibility requirements than Victoria (as shown in Table 6.1, below), many of them similar to its own proposed changes.

Table 6.1 Minimum licence requirements for professional driver trainers in selected Australian jurisdictions

Jurisdiction	Requirements
Victoria	Must be aged 21 years or older and hold a full driver licence with no minimum
Tasmania	Must have held an Australian full driver licence for: • a minimum of three years in total, and • at least one year immediately prior to the date of application.
New South Wales	Must have held the equivalent class of full licence in which the person is seeking to instruct for at least three of the last four years.
Northern Territory	Must have held the relevant class of licence for a continuous period of three years before the date of application.
South Australia	Must have held an Australian licence or a licence from an approved overseas country for a period totalling at least four years with no disqualifications in that time.
Western Australia	Must have held a driver licence for the equivalent class of vehicle in which the person is seeking to teach for a continuous period of at least three years prior to the date of application.
Queensland	Must have held a full licence for at least one year.

Source: Adapted from ADTAV, *Submission 19*, pp. 7, 8.

93 Ibid.

94 Mr Stan Gates, President, Australian Driver Trainers Association (Victoria), public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 3.

6.7.2 Code of Practice

ADTAV argued that, as with many other service-delivery professions, a mandatory Code of Practice (or Code of Conduct) should be implemented for PDTs in Victoria. It contended that without an enforceable professional standards framework there was:

- no way to ensure professional driver trainers adhere to minimum standards
- no formal, consistent complaints handling process for students.[95]

ADTAV also pointed out that other jurisdictions, including the Australian Capital Territory, the Northern Territory, Queensland and South Australia, have a mandatory Code of Practice for PDTs. Further, PDTs accredited under the Commonwealth's Keys2drive program must also comply with a Code of Practice. ADTAV told the Committee that it was willing to work with the Victorian Government to develop a Code.[96]

6.7.3 Other issues

ADTAV also raised issues regarding the need for PDTs to:

- sit an extended road rule knowledge and driving test as part of the application process[97]
- undertake mandatory annual professional development to stay abreast of changes to road rules, advances in road infrastructure and vehicle technology, and developments in training techniques[98]
- hold a current First Aid qualification.[99]

ADTAV argued:

> Raising the standard of PDTs can be achieved in a simple and cost-effective manner, without imposing a significant burden on learner drivers, other road users or the taxpayer. Doing so will improve the standard of learner driver instruction, resulting in improved road safety for all road users.[100]

The Committee is sympathetic to this view and considers professional driver training an area in which the Victorian Government could use regulations to improve standards.

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95 Australian Driver Trainers Association (Victoria), *Submission 19*, p. 14.

96 Ibid., p. 15.

97 Ibid., pp. 9–10.

98 Ibid., p. 15.

99 Ibid., p. 11.

100 Ibid., p 3.

RECOMMENDATION 26: That the Victorian Government work with the professional driver training sector to review professional driver trainer requirements with a view to identifying areas for improvement, including consideration of minimum age and other eligibility criteria, and developing of a Code of Practice.

RATIONALE: Professional driver trainers have an obvious influence on road safety. The Government and the sector should work together to improve the quality of training provided to learner drivers.

6.8 Occupational driver training

As noted in Chapter 8, work-related drivers are a significant cohort represented in road trauma statistics, with an estimation that work-related road crashes account for about half of all occupational fatalities and 15% of national road deaths.[101] This includes people who drive full-time for a living or occasionally as part of their work.

Under the *Occupational Health and Safety Act 2004* (Vic) employers are obliged to ensure employees are provided with the information, instruction, training or supervision necessary for them to do their work safely.[102] In relation to corporate responsibility in the Safe System, the *National Road Safety Strategy* website states that employers 'play a major role in building a road safety culture for Australia, particularly in the area of workplace reforms' and that the reduction of employee involvement in road crashes can be achieved 'through workplace policies and practices that value and promote road safety, encourage safe road user behaviour among employees and contractors'.[103]

Transport Alliance Australia urged the Committee to consider whether workforce programs, in particular as part of safety policies surrounding fleet management and commercial vehicles, was warranted.[104] However, in its submission to this Inquiry, MUARC cautioned there was 'much debate about the potential safety benefits associated with occupational driver training'.[105]

Notwithstanding this, MUARC noted research suggesting that some interventions could improve work-related road safety outcomes as follows:

- Hazard Perception training, arguably the only driving-specific skill consistently found to be associated with crash risk.
- Group-based discussions, for example, to identify traffic environment problems in work-related driving.

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101 Royal Automobile Club of Victoria, *Work Related Road Safety*, Research Report 14/01, 2014, p. i.

102 *Occupational Health and Safety Act 2004* (Vic), s 21(2)(e).

103 National Road Safety Strategy, *Safe System principles*, (n.d.), <https://www.roadsafety.gov.au/nrss/safe-system> accessed 10 February 2021.

104 Transport Alliance Australia, *Submission 12*, pp. 6, 8.

105 Monash University Accident Research Centre, *Submission 66*, p. 40 (with sources).

- Goal setting and feedback.

Interventions MUARC considered ineffective are:

- Driver skills training based on formal instruction and extensive practice.
- Incentive schemes that provide rewards for safe driving behaviour (although MUARC noted they show some efficacy).[106]

The Committee considers that including driver training in workplace occupational health and safety policies and practices forms part of an employer's duty of care in relation to road safety. Workplace occupational health and safety strategies should reflect a genuine and ongoing commitment to improving road safety.

FINDING 29: Employer occupational health and safety strategies should include driver training and providing safe vehicles.

6.8.1 Heavy vehicle licensing

The Victorian Transport Association (VTA) drew the Committee's attention to a specific area of work-related driver training that they argued was lacking. The VTA submitted that the current heavy vehicle driver licencing system does not ensure that licence applicants were 'competent, skilled and emotionally prepared' to drive a heavy vehicle.[107]

Heavy vehicle licensing in Victoria is delivered in line with the National Heavy Vehicle Driver Competency Framework.[108] Developed and established in Australia with input from regulators and industry, the Framework takes a progressive licensing approach to heavy vehicles: a person seeking to operate the most complex heavy vehicle types must first be trained and assessed, and gain experience in driving less complex heavy vehicles, typically for 12 months, before the driver can seek the higher class licence.[109]

The VTA expressed concern that the heavy vehicle licensing system does not require 'adequate' minimum driving experience to obtain a licence.[110] Mr Peter Anderson from the VTA told the Committee:

> The current system we have is that you can get a heavy-vehicle licence within five hours and with $1000. You have to wait a year—have to wait 12 months—and you could be delivering pizzas on a bike for those 12 months, but after that year you become eligible to then sit for the next level of licence, which costs you $1000 and five hours of your

106 Ibid., pp. 41–3 (with sources).

107 Victorian Transport Association, *Submission 83*, p. 8.

108 VicRoads, *How to get a heavy vehicle licence*, (n.d.), <https://www.vicroads.vic.gov.au/licences/licence-and-permit-types/heavy-vehicle-licence/how-to-get-a-heavy-vehicle-licence> accessed 10 February 2021.

109 Austroads, *Vehicles Registration and Driver Licensing in Australia, New Zealand and Europe: A Comparison Study*, Research Report AP-R620-20, p. 25.

110 Victorian Transport Association, *Submission 83*, p. 8.

> time. And then you can wait another year to get the next level. So within three years you could be driving a B-double having driven a truck probably three times in your life. We do not think that that system is adequate, and we have been campaigning very strongly over the past three years.[111]

The VTA argued that heavy vehicle licensing should require comprehensive 'behind the wheel' training to ensure applicants were sufficiently prepared for the daily driving environments they would likely encounter.[112] Mr Anderson further explained:

> We have had some support from the government, which has been tremendous because we have been able to prove that the system that we want to implement actually does work. We have put over 120 drivers into the industry that have been trained, taken up by the industry, because that is one of the issues that we have: industry will not take up new drivers because they are not trained adequately enough. We have a training program of eight days, supported by the government, that actually puts trained drivers behind the wheel of a truck.[113]

The VTA told the Committee that a review of the Victorian Heavy Vehicle Licencing system will 'shortly produce competency based and skilled drivers that will be job ready and attractive to employers and deliver a secure workplace, acknowledging skill levels and knowledge, positive attitudes and safety all being key educational elements.'[114]

Fatigue management in the heavy vehicle sector is covered in Section 7.4.1 of this Report.

RECOMMENDATION 27: That the Victorian Government work with the heavy vehicle sector to review the minimum training requirements needed to obtain a heavy vehicle licence.

RATIONALE: Representatives from the heavy vehicle sector have expressed concern that the current requirements for obtaining a heavy vehicle licence are inadequate. This includes lack of on-road experience.

6.8.2 The gig economy

An increase in fatalities among food delivery workers towards the end of 2020 (see Table 6.2) drew media and government attention. While these accidents occurred on the road—the workplace of the riders and drivers—SafeWork Australia and WorkSafe

111 Mr Peter Anderson, Chief Executive Officer, Victorian Transport Association, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 23.

112 Victorian Transport Association, *Submission 83*, p. 8.

113 Mr Peter Anderson, *Transcript of evidence*, p. 23.

114 Victorian Transport Association, *Submission 83*, p. 8.

Victoria only recently reclassified rider accidents and deaths from road accidents as 'workplace accidents.'[115]

Table 6.2 Estimated deaths in Australian food delivery workers

Year	Deaths		City		
	Verified	Unverified	Melbourne	Sydney	Unknown
2020	5	–	1	4	–
2019 and prior	2	2	–	2	2

Source: Legislative Council Economy and Infrastructure Committee.

Table 6.2 was compiled using media coverage of deaths in the gig economy. It is difficult to confirm the amount of deaths in food delivery workers and others such as rideshare drivers. This is because:

- accidents have only very recently been considered workplace accidents
- companies collate comparatively little information on independent contractors compared to employees (as discussed below)
- WorkSafe Australia does not distinguish between gig economy workers and others (such as heavy vehicle drivers).

Select Committee on the impact of technological and other change on the future of work and workers in New South Wales

In March 2020, the Parliament of New South Wales established a Select Committee to undertake an Inquiry into the impact of technological and other change on the future of work and workers in New South Wales. As part of the Terms of Reference, the Committee was asked to explore whether gig economy providers are using contracting or other arrangements to avoid the application of workplace laws and other statutory obligations. The Terms of Reference also ask for any legislative measures that should be used to reform accident compensation schemes to incorporate gig economy workers.

One of the key issues discussed in the Inquiry was whether those working in the gig economy are employees or independent contractors. This is a rapidly evolving issue, with jurisdictions across the world reaching different conclusions in recent years.

The classification of the rider or driver determines their protection and the liability of companies. Essentially, independent contractors do not have the same protection

115 Mark Morey, Secretary of Unions NSW, noted that 'These deaths initially were seen as road accidents and not as workplace accidents, and that is another serious problem within the system' (NSW Select Committee on the Impact of Technological and Other Change on the Future of Work and Workers in New South Wales, public hearing, Sydney, 9 November 2020, *Transcript of evidence*, p 15). These should also be included as a road safety statistic.

as employees, including occupational health and safety.[116] Of particular relevance is evidence that shows:

- No safety equipment, training (ongoing or otherwise) is provided to food delivery workers (currently considered as independent contractors).[117]
- Workers are encouraged to prioritise speed over safety to ensure higher ratings from customers.

116 Malcolm Mackenzie, Rideshare Driver, NSW Select Committee on the Impact of Technological and Other Change on the Future of Work and Workers in New South Wales, public hearing, Sydney, 9 November 2020, *Transcript of evidence*, p 7.

117 Mr Franco and Mr Salazar, Food Delivery Workers, NSW Select Committee on the Impact of Technological and Other Change on the Future of Work and Workers in New South Wales, public hearing, Sydney, 9 November 2020, *Transcript of evidence*, pp. 8–9.

7 Driver behaviour

7.1 Introduction

The Chapter looks at how the behaviour of individual drivers affects road safety. Driving under the influence of alcohol and drugs, driver distraction, and speeding are the most common contributors to fatalities and serious injuries in Victoria. In particular:

- Approximately 18%[1] of all road users killed over the last five years that were tested had illegal blood alcohol levels.
- Approximately 40% of all road users killed over the last five years that were tested had illicit drugs in their system.
- Drivers and riders involved in distraction-related crashes may make up around 10% of road fatalities, but this figure is growing.
- 31% of Victorians admitted to using a mobile phone illegally while driving over a period of 3 months.
- Approximately 40% of deaths and 20% of serious injuries occur on high-speed rural roads.[2]

This Chapter examines the Victorian Government's current approach to:

- alcohol and drug testing
- driver distraction, including mobile phone use and fatigue.

Speeding is covered in detail in Chapter 4.

7.2 Alcohol and other drugs testing regime

Victoria Police is the agency responsible for alcohol and other drugs testing on Victoria's roads. It uses the following operational approaches:

- police presence and visibility
- offence detection (roadside drug and alcohol testing regime)
- offender management
- offence pattern response.[3]

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1 The TAC website indicates this is an approximate figure over 5 years, however it is not clear what 5 year period the TAC is referring to. The Victorian Government's submission to the Inquiry provided differing figures and no update was provided to further inform the Committee.

2 Transport Accident Commission, *Working with Victoria Police*, (n.d.), <https://www.tac.vic.gov.au/road-safety/working-with-victoria-police?drop=1> accessed 20 January 2021.

3 Victoria Police, *Victoria Police Road Policing Strategy Towards Zero 2019-2020*, p. 5.

The Victoria Police Manual outlines the rules and guidelines for road policing and the operational enforcement actions in relation to alcohol and other drugs.

In Victoria, drivers on a full licence must not have a blood alcohol concentration (BAC) above 0.05. For all other licence types, including transport and commercial drivers, the legal limit is zero i.e. they must not have any alcohol present in their system.[4] There is currently no equivalent test for impairment with other drugs. Instead, drivers are tested for the presence of certain drugs in their system (see 7.2.2 below).

The Victoria Police *Road Policing Strategy 2019-20* committed to administering a total of 3 million random breath tests annually. This was to comprise 1.3 million tests performed through drug and alcohol buses and 1.7 million random breath tests of drivers directly intercepted.[5] In 2019, 1,342,330 alcohol tests were performed through drug and alcohol buses and 122,730 drug tests were carried out. The Committee could not find data on the number of random breath tests carried out in 2019.

7.2.1 Driving under the influence of alcohol

Over the past five years in Victoria, approximately 18% of drivers and riders killed had illegal blood alcohol levels. At present, all vehicles intercepted are requested to undertake a random breath test. If a person is caught driving with a BAC over the legal limit they may:

- be issued with a fine
- lose their licence
- be required to undertake a compulsory Behavioural Change Program or an Intensive Drink and Drug Driver Program
- have an alcohol interlock device installed
- be required to drive with a zero BAC for at least three years
- go to jail (for the most serious offending).

Penalties differ depending on the type of offence committed, when the offence was committed, the age of the offender, their licence or permit type, and whether it was their first or a repeat offence.[6]

4 VicRoads, *Alcohol and road safety*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/drugs-and-alcohol/alcohol-and-road-safety> accessed 20 January 2021.

5 Government of Victoria, *Submission 71*, p. 8.

6 VicRoads, *Drink-driving penalties*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/road-rules/penalties/drink-driving-penalties> accessed 20 January 2021.

The Transport Accident Commission (TAC) explained the effects of alcohol in the following way:

- 0.02 to 0.05 BAC: the ability to see or locate moving lights correctly is diminished, as is the ability to judge distances and respond to several stimuli. The tendency to take risks is increased.
- 0.05 to 0.08 BAC: the ability to judge distances is reduced, sensitivity to red lights is impaired, reactions are slower and concentration span shorter. At 0.08 BAC drivers are five times more likely to have an accident than before they started drinking.
- 0.08 to 0.12 BAC: euphoria sets in, overestimation of ability leads to reckless driving, peripheral vision is impaired and perception of obstacles is impaired. Drivers are up to 10 times more likely to have an accident.[7]

According to the TAC the most common drink-driving times are between 6 pm and 6 am. Saturdays and Sundays also show high rates between 6 am and 10 am, and 4 pm and 6 pm.[8]

The Committee notes calls for the Government to consider decreasing the legal BAC to 0.02 for full licensed drivers. Mr Eric Howard, a former General Manager Road Safety at VicRoads, told the Committee that reducing the limit to 0.02 would result in a 10% reduction in the road toll.[9] However, the Committee also received evidence in relation to Norway, which has a BAC limit of 0.02. Mr Arild Engebretsen from the Norwegian Public Roads Administration said the reduction had had no effect on high-volume drink-drivers:

> Research shows that the people with a low concentration of alcohol in the blood have stopped. They do not drink at all when they are driving now—not a sip of alcohol. But the problem is the group with a high concentration. Reducing this limit has had no effect on those people, unfortunately. So I think for those persons you have to have other measures to cope with them. I am not sure what we are going to do with them. It is a very, very tough topic.[10]

Overall, the Committee does not believe there is evidence to support lowering the current legal BAC limit. The Committee believes there are better deterrents to reduce drink-driving than lowering the legal limit, including police presence and increasing the roadside breath testing regime.

7 Transport Accident Commission, *Drinking. Driving. They're better apart. – The Vet*, (n.d.), <https://www.tac.vic.gov.au/road-safety/tac-campaigns/drink-driving?gclid=EAIaIQobChMIuL_Nk4mW7gIVhzUrCh2tOAjSEAAYASAAEgKxjfD_BwE> accessed 20 January 2021.

8 Transport Accident Commission, *Drink driving statistics*, (n.d.), <https://www.tac.vic.gov.au/road-safety/statistics/summaries/drink-driving-statistics> accessed 20 January 2021

9 Mr Eric Howard, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 6.

10 Mr Arild Engebretsen, Senior Adviser, Traffic Safety, Transport and Society, Norwegian Public Roads Administration, public hearing, Melbourne, 23 September 2020, *Transcript of evidence*, p. 16.

7.2.2 Driving under the influence of other drugs

In Victoria, drug testing looks for traces of drugs in the body using samples of blood, urine, breath or saliva.[11] Drug tests can be conducted via alcohol/drug buses, marked and unmarked patrol cars, police motorcycles, and mobile intercepts.[12]

Illicit substances can be detected up to two days after use for methamphetamine and MDMA[13] (ecstasy) and between 12 and 30 hours after using cannabis.[14] Police may also carry out a behavioural assessment to test drivers they believe are impaired.[15] The test includes observing balance, coordination and behaviour. If this test indicates to the officer that a person is impaired, the driver can be required to undertake a drug test.[16]

One in four Victorians who use drugs admit to driving under the influence. In the last five years, around 40% of all driver and motorcyclist fatalities, who were tested, had illicit drugs in their system.[17] Professor Max Cameron from the Monash University Accident Research Centre (MUARC) informed the Committee that there had been an increase in recent years in the link between methamphetamine use and road trauma. He said: 'what has been very apparent in recent years is this enormous increase in the use of methamphetamine, or ice, and its role in road trauma. It has far outstripped cannabis or THC[18] in contributing to serious crashes.'[19]

Figure 7.1 below highlights the increase of methylamphetamine presence detected in seriously injured drivers in Victoria between 2006 and 2016 compared to cannabis (THC).

11 *Road Safety Act 1986* (Vic), ss 55 and 55B.

12 Transport Accident Commission, *More drug tests, more places, more often.*, (n.d.), <https://www.tac.vic.gov.au/road-safety/tac-campaigns/drug-driving> accessed 20 January 2020.

13 Methylenedioxymethamphetamine.

14 Alcohol and Drug Foundation, *Roadside drug testing*, October 2019, <https://adf.org.au/insights/roadside-drug-testing> accessed 20 January 2021.

15 *Road Safety Act 1986* (Vic), s 55A.

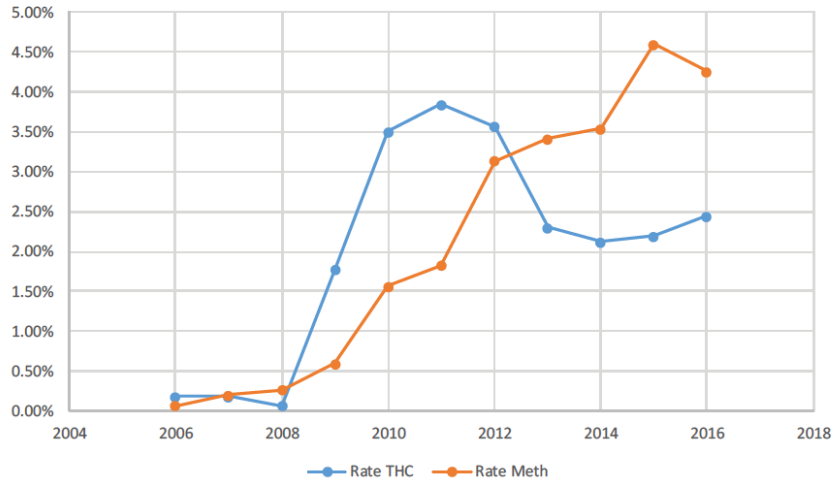
16 Ibid.

17 VicRoads, *Illicit drugs & road safety*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/drugs-and-alcohol/illicit-drugs-and-road-safety> accessed 20 January 2021.

18 Tetrahydrocannabinol.

19 Professor Max Cameron, Monash University Accident Research Centre, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 36.

Figure 7.1 Rate of drug presence in seriously injured drivers



Source: Monash University Accident Research Centre, *Submission 66*, p 20.

Table 7.1 below outlines the current penalties that are in place for drug-driving offences.

Table 7.1 Drug driving penalties

Offence	Penalties
First drug-driving offence and you received a Traffic Infringement Notice	An offender will: • receive a fine to the value of three penalty units (a penalty unit is $165.22 as at 1 July 2020) • have their licence or learner permit suspended for six months • need to complete a Drug Driver Program in the first three months of their suspension period or their licence/learner permit will be cancelled.
First drug-driving offence and you are required to go to court	An offender will: • receive a fine of up to the value of 12 penalty units • need to complete a Drug Driver Program Behavioural Change Program • have their licence or learner permit cancelled for at least six months • have a zero BAC condition for three years. The court may also record a conviction.
Second drug-driving offence	An offender will go to court and will: • receive a fine of up to 60 penalty units • have their licence or learner permit cancelled for at least 12 months • need to complete an Intensive Drink and Drug Driver Behavioural Change Program • have a zero BAC condition for three years. The court may also record a conviction.
More than two drug-driving offences	An offender will go to court and will: • receive a fine of up to 120 penalty units • have their licence or learner permit cancelled for at least 12 months • need to complete an Intensive Drink and Drug Driver Behavioural Change Program • have a zero BAC condition for three years. The court may also record a conviction.

Source: Legislative Council Economy and Infrastructure Committee.

Presence and impairment

Under s 49(1)(bb) of the *Road Safety Act 1986* (Vic), it is illegal to drive with the presence of the prescribed concentration of drugs in a driver's system. Tests are carried out for the following substances:

- Delta-9-tetrahydrocannabinol (THC)
- Methamphetamine (commonly known as 'meth')
- 3,4-Methylenedioxymethamphetamine (commonly known as MDMA or ecstasy).[20]

The Committee was informed that other jurisdictions, such as New South Wales, also test for the presence of cocaine.[21] Victoria has not stated why it does not include testing for cocaine.

The Committee received evidence on the value of testing merely for the presence of illicit substances, as opposed to determining the level of impairment a person may be experiencing. Professor Cameron told the Committee that while impairment tests exist, they are extremely time consuming, making them difficult to be used as an effective enforcement method.[22] He added that while there are 'serious questions' about the link between cannabis and risk, no such doubt exists on the dangers of drugs such as methamphetamines. Professor Cameron said:

> I can tell you there is no doubt about methamphetamines and many other serious drugs, and we need to be careful if we are going to attack the roadside drug testing program on the basis of the cannabis question and throw the baby out with the bathwater in terms of Ice. That would be a serious mistake. [23]

Dr John Crozier from the Royal Australasian College of Surgeons held a different position on cannabis, telling the Committee: 'Virtually every jurisdiction that has promoted the free availability of recreational marijuana in the United States has seen a tripling of presentations to emergency departments with crashes where THC is a significant element of the crash matrix.'[24]

The Committee was also informed that the Norwegian police force is currently trialling 'drug meters' that attempt to detect the level of drugs present in a person's blood stream through a breath test.[25]

The Committee believes that the idea that presence does not automatically cause impairment underlines the road safety approach taken to alcohol, which is that a driver is assumed to be impaired when their BAC is above 0.05. A similar testing

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20 Government of Victoria, *Submission 71*, p. 29.

21 Professor Max Cameron, *Transcript of evidence*, p. 40.

22 Ibid., p. 39.

23 Ibid.

24 Dr John Crozier, Royal Australasian College of Surgeons, public hearing, Melbourne, 10 August 2020, *Transcript of evidence,* p. 48.

25 Mr Arild Engebretsen, *Transcript of evidence*, p. 16.

regime should apply to drug driving. The Committee supports the view that further research should be undertaken to improve the effectiveness of the current drug testing regime in Victoria, in particular developing a simple drug testing regime that identifies impairment.

RECOMMENDATION 28: That the Victorian Government conduct research into drug testing that identifies the level of drug impairment in drivers.

RATIONALE: The establishment, or furthering of research towards the development, of a drug impairment test would assist in ensuring impaired drivers are appropriately dealt with in the same way as alcohol-impaired drivers.

RECOMMENDATION 29: That the Victorian Government expand its drug testing regime to include testing for cocaine.

RATIONALE: It is currently not possible for Victoria's road safety partners to understand the prevalence of cocaine in drivers or the impact the drug has on road trauma.

Prescription medication

In Victoria, it is illegal to drive, attempt to drive or supervise a learner while affected[26] by medication whether prescribed by a doctor or acquired 'over-the-counter'. Medications that are known to affect driving include:

- some painkillers
- medicines that treat blood pressure, nausea, allergies, inflammation and fungal infections
- tranquilisers, sedatives and sleeping pills
- some diet pills
- some cold and flu medications.[27]

The Victorian Institute of Forensic Medicine completed a study in 2016 that estimated that benzodiazepines, a prescribed medication, were present in 10% of road fatalities in Victoria between 2011 and 2015.[28] The Committee notes that this is the most recent,

26 The 'affect' of a prescription medication is widely understood to relate to an impact on mood, cognition or psychomotor functioning of the driver and is observed using the same practices as detecting illicit drug impairment.

27 VicRoads, *Medicines & road safety,* (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/drugs-and-alcohol/medicines-and-road-safety> accessed 20 January 2021.

28 Ibid.

publicly available data and is concerned that the use and impact of prescription medication may be under-reported in road trauma statistics.

The Victorian Government encourages individuals to speak with their doctor or pharmacist to understand if medicines will affect their driving and, if so, to not drive. However, the Committee heard that more can be done to educate the public. Ms Elvira Lazar, Manager, Safety and Education at the Royal Automobile Club of Victoria (RACV) told the Committee:

> There are warnings on prescription medication packets. Some people do follow those warnings, but there is also a group of people that do not really understand the effects of medications and driving or the effects of mixing those medications with alcohol. So there is more that can be done to educate the public about the length of time they need to wait after taking certain medications before they can safely drive again. So it is about the medical professionals actually giving the right information or people actually being able to seek out that information about the medications.[29]

The Committee did not receive a great deal of evidence regarding prescription medication. However, it believes that the impact of prescription medication on road safety, which is currently not fully understood, justifies more public education.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.9 of Appendix B.

RECOMMENDATION 30: That the Victorian Government undertake research into the prevalence of driving under the influence of prescription medication and collaborate with medical practitioners and pharmacists to establish effective messaging around the dangers of driving while impaired.

RATIONALE: Front-line care providers, doctors and pharmacists are best placed to understand and explain how prescription medication affects individuals. The Victorian Government should partner with these health professionals to develop effective messaging regarding the dangers of driving under the influence of prescription medication.

7.2.3 Behavioural Change Program

Introduced in April 2018 by VicRoads and administered by authorised bodies, the Behavioural Change Program uses psychological and therapeutic approaches that include cognitive behavioural and motivational techniques. The program includes:

- identifying motivations behind drink/drug-driving
- considering how offenders can change their behaviour

29 Ms Elvira Lazar, Manager, Safety and Education, Royal Automobile Club of Victoria, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 9.

- considering the impact of their offence
- identifying strategies and actions to avoid drink/drug-driving in the future
- a screening assessment for referral to further treatment services.[30]

The program is tailored for different cohorts. A more intensive version of the program is provided to drink-driving offenders with a BAC reading of 0.15 and above as well as repeat drink/drug-drivers.

Since its commencement in 2018:

- 912 drink-driver programs have been delivered to 6,748 participants
- 522 drug-driver programs have been delivered to 3,811 participants
- 178 intensive programs have been delivered to 1,215 participants.[31]

The RACV contends that drug and alcohol driving should be treated as a public health issue as addressing road user behaviour does not tackle the root cause of dangerous behaviour.[32] The Committee shares this view and believes the Government, in evaluating the Behavioural Change Program, should consider what additional public health support can be provided to drink- and drug-drivers.

The Committee also notes that enforcement must remain an option for repeat offenders whose behaviour cannot be changed by such programs. The Committee heard that this is a challenge faced by road safety authorities in jurisdictions across the world. For example, at a public hearing Mr Arild Engebretsen from the Norwegian Public Roads Administration told the Committee:

> the problem is this group of persons is very hard to reach. For example, people who drive multiple times with alcohol or drugs in their blood, we try to take their car from them, but the police fine them again and again, because they steal another car … we have reached a limit and it is very hard to get further down, because this group of persons are like on the side of the society, if I can say it that way.[33]

RECOMMENDATION 31: That the Victorian Government continue to invest in the Behavioural Change Program for drink- and drug-driving offenders.

RATIONALE: Persistent drink- and drug-driving offending is a public health issue as well as a road safety issue. Offenders need the support of public health services while prevented from driving.

30 Government of Victoria, *Submission 71*, p. 30.

31 Ibid., p. 31.

32 Royal Automobile Club of Victoria, *Submission 53,* p 10.

33 Mr Arild Engebretsen, *Transcript of evidence,* p. 16.

7.3 Driver distraction

There is no single definition for driver distraction. However, the National Transport Commission (NTC) has proposed that it be defined as: 'the voluntary or involuntary diverting of attention, in a visual, manual or auditory or cognitive sense, away from the driving task to focus on a competing secondary activity'.[34] For the purpose of this Chapter, the Committee will use the NTC's proposed definition.

There are four broad categories of driver distraction:

- Visual distraction: tasks that require the driver to look away from the road (screens, mobile phones, navigation systems).
- Manual distraction: tasks that require the driver to take one or both hands off the steering wheel (eating or drinking, smoking, texting, changing radio stations).
- Auditory distraction: where the driver focuses on noises rather than on the road (passengers/crying children).
- Cognitive distraction: tasks that require the driver to think about something other than driving (talking on the phone, interacting with passengers).[35]

Pedestrians and cyclists can also be distracted by devices such as mobile phones, GPS navigation and fitness trackers.

Research into driver distraction is relatively limited in comparison to other road safety risks, such as drink-driving and speeding. However, an example of research, albeit dated, is a 2012 MUARC study which concluded that reducing driver distraction by 25% would save 12 lives, prevent serious injury for 239 people and produce savings of $321 million to the community.[36]

More recently, the TAC reports that distraction-related crashes make up around 10% of fatalities.[37]

The Committee also notes the Australian Naturalistic Driving Study, a study at the University of New South Wales that aims to understand people's behaviour when driving cars in normal and dangerous situations.[38] The study of 360 volunteer drivers, observed over four months, identified that on average drivers engage in one or more secondary tasks every 96 seconds.[39] Further, it found that while drivers were significantly more likely to initiate a secondary task while the vehicle was stationary,

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34 National Transport Commission, *Developing technology-neutral road rules for driver distraction, Decision regulation impact statement*, November 2020, p. 27.

35 National Transport Commission, *Developing technology-neutral road rules for driver distraction, Issues paper*, December 2018, p. 13.

36 Monash University Accident Research Centre, *Potential benefits of driver distraction regulatory reform*, Michael Fitzharris, Kristie Young and Diana Bowman, report for VicRoads, 2012

37 Transport Accident Commission, *Working with Victoria Police.*

38 University of New South Wales, *Australian Naturalistic Driving Study,* 'About the study', (n.d.), <http://www.ands.unsw.edu.au/about-study> accessed 20 January 2021.

39 Government of Victoria, *Submission 71*, p. 9.

almost 6% of secondary task events were associated with a risk incident, such as drivers veering out of their lane, failure to detect a vehicle breaking ahead or failure to stop for pedestrians on a pedestrian crossing.[40]

Of the identified secondary tasks, the following five were the most observed forms of distraction while the vehicle was moving:

- adjusting non-critical vehicle devices (e.g. seatbelt)
- adjusting central stack controls (e.g. radio, climate controls)
- looking at an object or event outside the vehicle
- talking or singing to self
- personal hygiene.[41]

7.3.1 Mobile phone use

In 2019, MUARC conducted a study into the potential benefits to road safety from using automated cameras to detect illegal mobile phone use. The study concluded that an effective camera system would prevent up to 95 crashes annually and save Victorians $21 million. Further, it would provide an additional deterrence against illegal mobile phone use.[42]

Victoria banned the use of hand-held phones while driving in 1990. Additional changes to legislation were made between 2007 and 2017 banning learner drivers, P1 drivers, P2 drivers, motorcyclists with less than three years' experience, and cyclists from using a mobile device in any way, including through the use of the hands-free function. Penalties were also increased.[43]

In Victoria, it is illegal to use a hand-held mobile device while driving and when the vehicle is stationary. All actions, including texting, talking, playing games, taking photos and any other function of the phone are considered to be using the device. A hands-free mobile phone may only be used by a fully licensed driver or motorcyclist to:

- receive or make a call
- use its audio/music functions
- utilise the navigational system if the phone is secured in a commercially designed holder fixed to the vehicle and can be operated without the driver needing to touch any part of the phone.[44]

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40 Kristie L. Young et al., 'What are Australian drivers doing behind the wheel? An overview of secondary task data from the Australian Naturalistic Driving Study', *Journal of the Australasian College of Road Safety*, Vol. 30, no.1, 2019.

41 Ibid.

42 Monash University Accident Research Centre, *Submission 66*, p. 40.

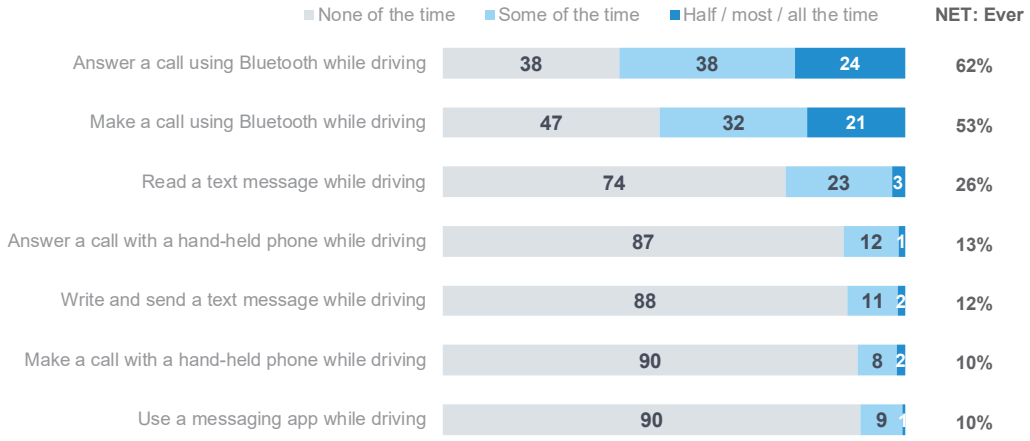
43 Government of Victoria, *Submission 71*, p. 36.

44 VicRoads, *Mobile phones, technology & driving*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/mobile-phones-and-driving> accessed 20 January 2021.

If a person is caught illegally using their mobile phone while driving or riding (motorcycles and bicycles),[45] they may receive an infringement of four demerit points and a $496 fine. In its evidence to the Committee, the Victorian Government indicated it was considering strengthening the penalties around mobile phone use.[46]

In 2019, a TAC Road Safety Monitor survey of Victorian drivers found that around seven in ten respondents (71%) reported using a mobile phone, including Bluetooth, while driving in the past three months. Just under one-third of those users had used a mobile phone illegally in the past three months, that is, without Bluetooth. Figure 7.2 below outlines the actions respondents undertook while driving:

Figure 7.2 2019 TAC Road Safety Monitor survey of mobile phone use



Source: Transport Accident Commission, *Road Safety Monitor 2019 Report*, 2019, <https://www.tac.vic.gov.au/__data/assets/pdf_file/0011/445781/Road-Safety-Monitor-2019-Final-19.05.20.pdf> p 41.

Other research conducted by the Committee heard:

- Illegal mobile phone usage is highest amongst those aged 18 to 25 years old.[47]
- People who use a mobile phone while driving are four times more likely to cause a fatal road accident, while texting, browsing and emailing increase the risk of a crash up to ten times.[48]
- A two-second distraction while driving at 40 km/h will result in a driver taking their eyes off the road for 22 metres, at 100 km/h this distance is 55 metres.[49]

45 Ibid.

46 Government of Victoria, *Submission 71*, p. 40.

47 Transport Accident Commission, *Road Safety Monitor 2019 Report*, 2019, <https://www.tac.vic.gov.au/__data/assets/pdf_file/0011/445781/Road-Safety-Monitor-2019-Final-19.05.20.pdf> p. 42.

48 Cameras Save Lives, *New mobile phone camera trial launches in Victoria*, media release, 29 July 2020, <https://www.camerassavelives.vic.gov.au/new-mobile-phone-camera-trial-launches-in-victoria> accessed 20 January 2021.

49 Transport Accident Commission, *Mobile phone distractions*, (n.d.), <https://www.tac.vic.gov.au/road-safety/tac-campaigns/tac-latest-campaigns/mobile-phone-distractions#mobile-phone-distractions> accessed 20 January 2021.

Challenges

The biggest challenge with mobile phone use detection at present is that police must observe people using their phone while driving. This is difficult as drivers often hold the device below the window line.

Some submitters, such as the Roadsafe Westgate Community Road Safety Council, recommended to the Committee that mobile phone use should be restricted when a vehicle is moving.[50] The Committee notes that mobile phone signal jamming can prevent a driver from receiving calls or notifications to their device. However, this technology is currently prohibited in Australia under the *Radiocommunications Act 1992* (Cth). Blocking signals is not easily localised and can interfere with mobile phones and other technologies being operated outside of the moving vehicle. Further, blocking signals is clearly dangerous during emergencies.

The Victorian Government, in its submission, argued that self-regulation is the hardest challenge to address as most features on a mobile phone are not mandated or sufficiently promoted so people do not use them. The Government also admitted that road rules had not evolved at the same pace as technology, leaving gaps in legislation regarding mobile phone use in vehicles.[51]

Other Inquiry stakeholders called on the Victorian Government to implement a mobile phone detection camera program, as used in New South Wales.[52] Beginning in July 2018, the New South Wales program used three technologies to identify drivers using their mobile phones illegally. Warning letters were issued for non-compliance from December 2018 and enforcement commenced on 1 March 2019. The program has seen a steady reduction in the illegal use of mobile phones since its inception.[53]

On 29 July 2020, the Victorian Government commenced a three-month distracted driver camera trial program using two transportable trailers that travelled through different parts of the State.[54] Cameras were integrated within existing road safety camera systems to detect dangerous driving behaviours, including illegal mobile phone use, drivers failing to wear a seatbelt, speeding and unregistered vehicles.[55]

The pilot utilised the Acusensus Heads Up Solution. This multi-camera system uses an infrared flash to capture clear images of passing vehicles in all traffic and weather conditions and detect drivers illegally using a mobile phone.[56]

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50 Roadsafe Westgate, *Submission 21*. The TAC currently has a campaign promoting the use of a mobile phone 'do not disturb' or 'lock out' function (Transport Accident Commission, *Distracted driving*, (n.d.) <https://www.tac.vic.gov.au/road-safety/safe-driving/distracted-driving> accessed 20 January 2021).

51 Government of Victoria, *Submission 71*, p. 36.

52 David Anderson and Eric Howard, *Submission 45*; Deakin University, *Submission 133*; Victorian Motorcycle Council, *Submission 56*; Walk on Moreland, *Submission 57*; John Doward, *Submission 124*; Royal Australasian College of Surgeons, *Submission 17*.

53 Mr Bernard Carlon, Executive Director, Centre for Road Safety and Centre for Maritime Safety, Safety, Environment and Regulation, Transport for New South Wales, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, pp. 30–31.

54 Mr Alexander Jannink, Managing Director, Acusensus, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 21.

55 Ibid.

56 Ibid., p. 20.

Victoria's Road Safety Camera Commissioner, Mr Stephen Leane, told the Committee that mobile phone and distraction detection cameras have wide public support. In his evidence at a public hearing, Mr Leane stated that 'in relation to distraction cameras, our survey results show 63 per cent of those surveyed knew about them and were supportive of them.' He also stated his intent to publish the data from the consumer surveys to encourage independent insight of the results.[57]

The *2021–2030 Road Safety Strategy* released on 20 December 2020 announced that the Victorian Government was investing $35 million to deliver a fleet of new generation AI-enabled camera systems that can detect illegal mobile phone use and other offences. The program is underway and all cameras will be operational by 2023.[58]

7.3.2 Technology-neutral legislation

The Committee heard that legislation addressing the use of technology in cars needs to be 'technology neutral'. This means that instead of proscribing specific technology, such as smart phones, legislation should address unsafe actions or behaviour.

Mr Rob Langridge, the Federal Chamber of Automotive Industries' Director, Emerging Technologies, told the Committee that 'we do not support the inclusion of prescriptive tables listing devices and their uses; they will quickly become out of date as technology is introduced to the market'.[59] The same point was made by Ms Katie Minogue, Senior Associate in Road and Work Injuries Division at Maurice Blackburn. Ms Minogue spoke of 'managing and regulating behaviour as opposed to the technology itself … We do not want a system where it is permissible for people to be distracted by any number of devices because the regulation is still talking about [outdated] technology'.[60]

The Committee discussed this issue with Ms Malin Ekholm, Head of Volvo Cars Safety Centre in Sweden. She told the Committee that governments should legislate intention—what they want to achieve—not technology. This enables manufacturers to create technology that improves road safety. Ms Ekholm said:

> So it is a hard job, writing the legislation. I have very big respect for the individuals writing legislation. But it is an important tool. As far as possible I would like it to be more directed towards, 'What is it we want to achieve?', rather than pointing at a specific technology, because then that will enable us to make the best possible technology and really improve over time.[61]

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57 Mr Stephen Leane, Road Safety Camera Commissioner, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 26.

58 Road Safety Camera Commissioner, *Victoria's Road Safety Strategy 2021–2030*, media release, 23 December 2020.

59 Mr Robert Langridge, Director, Emerging Technologies, Federal Chamber of Automotive Industries, public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 29.

60 Ms Katie Minogue, Senior Associate in Road and Work Injuries Division, Maurice Blackburn, public hearing, Melbourne, 7 July 2020, *Transcript of evidence, p.* 31.

61 Ms Malin Ekholm, Head, Volvo Cars Safety Centre, Volvo, Sweden, public hearing, Melbourne, 23 September 2020, *Transcript of evidence*, p. 10.

The Federal Chamber of Automotive Industries' submission to this Inquiry agreed that legislation should be carefully written in a way that does not impede technology that improves road safety. It stated:

> A technology-neutral approach to road rules is important to ensure the use of advanced driver assistance systems (ADAS) or emerging connected and automated vehicle (CAV) systems that will provide significant safety and operational benefits for drivers is not prevented within the Australian market.[62]

Ms Minogue explained this issue further by using the example of the safe positioning of 'sat nav' devices in cars. She said.

> The road rules drafted in 1999 have not kept up with the changes in technology, things like people using smart watches that have their text messages come through to them. We do not want a system where that is permissible, for people to be distracted by any number of devices because the regulation is still talking about technology that existed in 1999. We think a behaviour-based approach, which puts the onus on the driver not to be distracted and sets out a list of high-risk behaviours and prohibits those, is the best approach for ensuring that technology reduces the impact of technology-related distraction on people getting injured. But that will account for technology that is helpful, and particularly integrated technology. For example, when you talk … about your sat nav, that is designed by the manufacturer to be placed and integrated into the car in a way that is the safest possible way, and that goes to a number of safety assurance methods to make sure that is safe, as opposed to someone pulling their phone into the car, putting it on the passenger seat beside them and putting Google maps on. There is a distinction to be made there, which is important.[63]

FINDING 30: Legislation addressing technology and driver distraction must be 'technology neutral'; that is, it should address dangerous behaviour not specific technologies or devices.

The Committee asked the road safety partners for more information on this issue, however a response was received too late to be considered for this Report. See 1.3 and 1.4 of Appendix B.

7.4 Fatigue

Every jurisdiction in Australia is responsible for setting its own policy regarding fatigue and road safety.[64] Table 7.2 below provides an overview of the criteria used by each jurisdiction.

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62 Federal Chamber of Automotive Industries, *Submission 2, p.* 3.

63 Ms Katie Minogue, *Transcript of evidence, p.* 31.

64 D. Dawson, A. Reynolds, H. Van Dongen and M. Thomas, 'Determining the likelihood that fatigue was present in a road accident: A theoretical review and suggested accident taxonomy', *Sleep Medicine Reviews*, vol. 20, no. 1, 2018, <https://doi.org/10.1016/j.smrv.2018.08.006> accessed 5 January 2021.

Table 7.2 Fatigue criteria across Australia

State or Territory	Criteria
Victoria	No explicit criteria defined
Tasmania	Police reporting of inattentiveness. The driver allegedly being drowsy or falling asleep.

New South Wales	Assessed as being fatigue-related if:
	• the vehicle's controller was described by police as being asleep or drowsy; and/or
	• the vehicle performed a maneuver which suggested loss of concentration of the controller due to fatigue, that is:
	  • the vehicle travelled onto the incorrect side of a straight road and was involved in a head-on collision (and was not overtaking another vehicle and no other relevant factor was identified); or
	  • the vehicle ran off a straight road or off the road to the outside of a curve and the vehicle was not directly identified as travelling at excessive speed; and
	  • no other relevant factor was identified for the maneuver.

Western Australia	Assessed as being fatigue-related if: • police or the driver stated that fatigue was a likely cause; • a vehicle travelled to the incorrect side of the road and was involved in a head-on collision while not overtaking another vehicle; or • the vehicle ran off the carriageway and the vehicle were not directly identified as travelling at excessive speed and there were no other factors identified as causing loss of control.
Queensland	Determined to be fatigue-related if: • a single-vehicle crashes in 100 km/h or higher speed zone during typical fatigue times (2 pm–4.00 pm or 10 pm–6 am); or • the reporting officer considered that fatigue was a contributory factor in the crash.
South Australia	Police reports indicate that fatigue was considered a contributing factor by the investigating officer(s).
Northern Territory	Police reports indicate that fatigue was considered a contributing factor by the investigating officer(s). The Northern Territory has been exempted from implementing the National Driving Hours Regulations and has gazetted an occupational health and safety approach to the management of fatigue (for all vehicles including heavy vehicles) where operators have an obligation to provide a safe and healthy workplace.
Australian Capital Territory	Police reports indicate that fatigue was considered a contributing factor by the investigating officer(s).

Source: Legislative Council Economy and Infrastructure Committee.

The Committee agrees with the Victorian Government's observation that it is difficult to accurately measure the role of fatigue in road accidents.[65] The Australian Transport Safety Bureau did record fatigue-related incidents in the past but struggled to determine a working definition, given the contradictions between jurisdictions.

In the *Victorian Road Safety Strategy 2021–2030*, fatigue is acknowledged as a 'complex road safety issue to address because there is currently no objective way for it to be measured at the roadside.' However, the Strategy notes that increased awareness of

65 Government of Victoria, *Submission 71*, p. 57.

the issue combined with developing technologies will help reduce the risk of fatigued drivers taking to the road.[66]

Given the difficulties in monitoring and analysing fatigue-related crashes, there is limited data measuring fatigue. Table 7.3 collates estimates from a range of agencies across Australia. The discrepancies seen in the table highlight how most road authorities remain unable to determine the exact extent of the issue.

Table 7.3 Reported prevalence of fatigue in car accidents in Australian jurisdictions

Organisation	Reported prevalence of fatigue	Source
Transport Accident Commission	Around 20% of fatal car accidents Around 30% of severe rural car accidents	Research from VicRoads Road Accident Facts Victoria, 1998 Edition
Transport for NSW Centre for Road Safety	17% of all fatal car accidents between 2008 and 2016 12% of all serious injuries from car accidents between 2008 and 2016	Fatigued and distracted driver trauma trends report 2017
Australian Transport Council	20–30% of all deaths and serious injuries	National road safety strategy 2011–2020
Department of Transport and Main Roads QLD	On average, 31 people are killed and 462 are injured in fatigue-related incidents annually	Unpublished data extracted 27 June 2018 using road casualty statistics 2013–2017
Road Safety Commission WA	70% of serious crashes are caused by symptoms of fatigue 6-16.5% of road deaths between 2010-2015 were related to fatigue	Fatigue information brochure 2018

Source: Legislative Council Economy and Infrastructure Committee

This lack of clarity around fatigue is troubling. Equally troubling is the fact that the TAC and VicRoads rely upon data from a 1998 publication. If the Victorian figure is accurate, fatigue contributes to more road fatalities and injuries than alcohol. Given this, and acknowledging the difficulties involved in measuring fatigue, the Committee supports further research into the influence of fatigue on road trauma. This research should inform future policy.

Although measuring fatigue is currently very difficult, emerging technologies have the potential to help understand the prevalence of fatigue in drivers. Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport (DoT) informed the Committee that the Victorian Government is investigating technology that assists in detecting fatigue. She said:

> One of the things that we are doing is we are looking to see whether or not we can develop a test that actually we can use at the roadside to determine if someone is impaired as a result of fatigue, and that would be the first time anywhere in the world that a test like that would have been used.[67]

66 Government of Victoria, *Victorian Road Safety Strategy 2021–2032,* 2020, <https://www.tac.vic.gov.au/__data/assets/pdf_file/0020/502166/RoadSafetyStrategy_DEC2020.pdf> accessed 29 January 2021, pp. 3, 19.

67 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, p. 42.

The Committee supports this commitment to detecting fatigue in real-time.

The Committee notes the heavy vehicle industry (see 7.4.1 below) has been addressing the issue of fatigue management for many years. The Committee suggests road safety partners consider working in partnership with this sector.

RECOMMENDATION 32: That the Victorian Government determine the extent of fatigue as a contributing factor in road accidents and develop policies to reduce its impact.

RATIONALE: There is a gap in understanding the true extent of the problem fatigue poses in road safety. Understanding how fatigue affects drivers in Victoria would identify trends and enable road safety partners to develop effective countermeasures.

7.4.1 The heavy vehicle industry

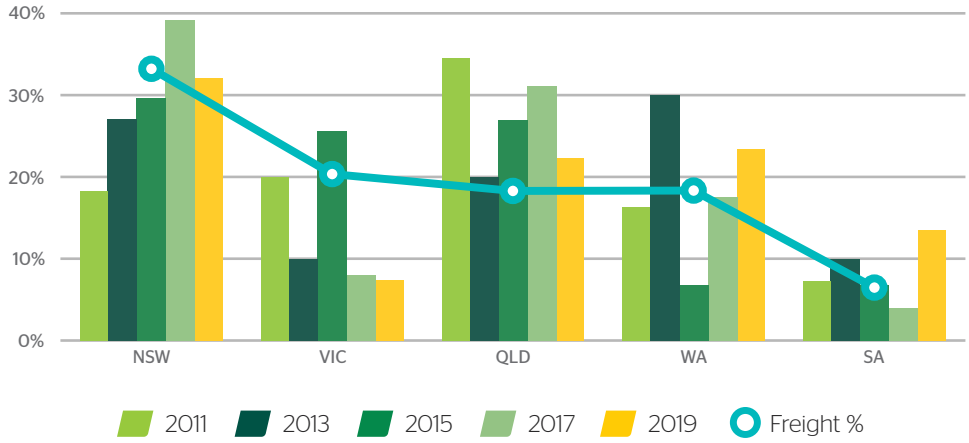
As part of this Inquiry, the Committee considered the issue of fatigue management in the heavy vehicle and commercial passenger industries. Ms Minogue explained that fatigue is particularly prevalent in heavy vehicles claims:

> We are particularly informed in that aspect through our strong relationship with the Transport Workers Union. [Fatigue] is certainly a central issue for them and it has been for some time. Certainly, for many of the clients we see, and particularly in the WorkCover space, fatigue plays a huge role in some of those injuries that we see, particularly in relation to truck driving.[68]

In a 2020 report by the National Truck Accident Research Centre, fatigue is identified as the leading cause of truck driver death across Australia. While fatigue-related incidents in trucks have generally decreased since 2015, 34% of fatigue-related crashes in heavy vehicles are fatal.

68 Ms Katie Minogue, *Transcript of Evidence*, p. 31.

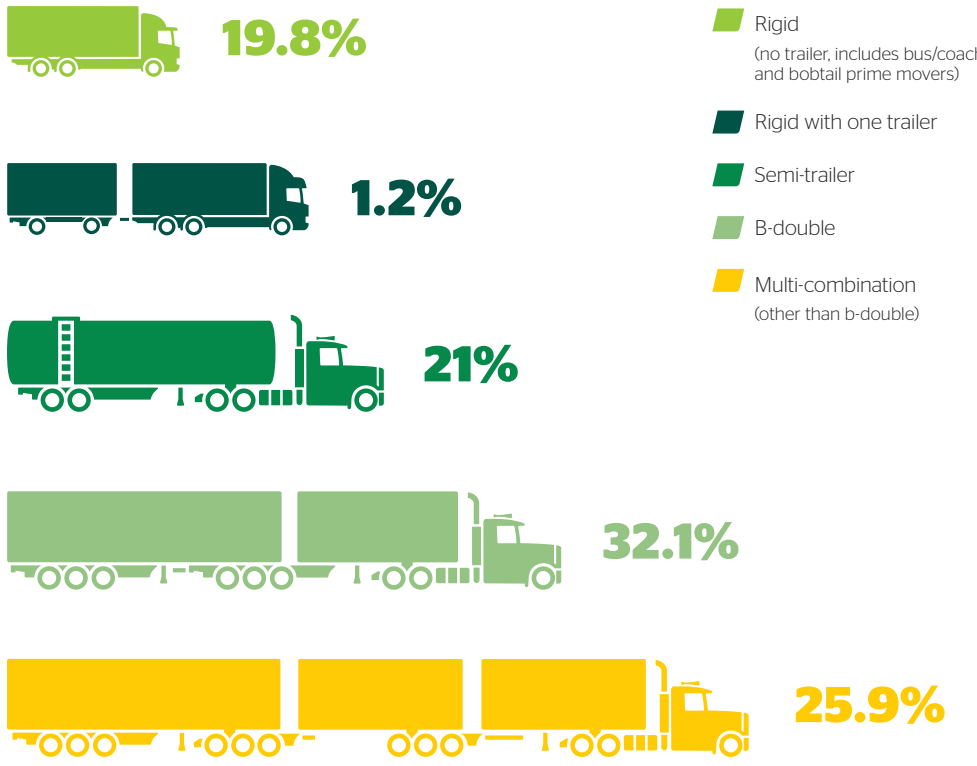
Figure 7.3 Fatigue-related truck driver deaths



Source: National Truck Accident Research Centre, *Major Accident Investigation 2020 Report, Covering major incidents in 2019*, 2020, p 25.

The size of the vehicle also contributes to the number of fatigue-related incidents as seen in Figure 7.4.

Figure 7.4 Fatigue-related crash incidents by heavy vehicle type



Source: National Truck Accident Research Centre, *Major Accident Investigation 2020 Report, Covering major incidents in 2019*, 2020, p 26.

The heavy vehicle sector is regulated differently to cars and motorcycles. The national framework is determined by the Heavy Vehicle National Law, which every jurisdiction adapts and implements. In Victoria, the *Heavy Vehicle National Law Application Act 2013* (Vic) adopts the national approach in full but appoints Victorian authorities to enforce the provisions.

Other ways in which the sector has addressed fatigue include:

- strictly controlled working hours
- electronic log books
- chain of responsibility legislation.

Driver licencing in the heavy vehicle sector is covered in section 6.8.1 of this Report.

The commercial passenger vehicle industry

The commercial passenger vehicle (CPV) industry is not as regulated as the heavy vehicle industry. Mr Peter Anderson, CEO of the Victorian Transport Association, told the Committee that in the CPV industry 'a person may hold a number of jobs in the sector and there is no responsibility on the employers to be accountable or manage the fatigue of drivers.'[15]

Further, CPV drivers are not required to maintain log books and there is also a greater prevalence of owner-drivers operating with no direct interaction with or oversight from management (including chain of responsibility legislation).

Ms Seymour informed the Committee that the Government has been working with WorkSafe and the TAC to collect data on the prevalence of fatigue-related accidents in the CPV industry and gig economy.[69] Again, no further information was provided to the Committee on how this data is being collected.

RECOMMENDATION 33: That the Victorian Government work with industry and regulators to align fatigue management legislation where appropriate across the heavy vehicle and commercial passenger vehicle sectors.

RATIONALE: Fatigue management legislation for professional drivers should be aligned to the greatest extent possible. This will increase safety in the commercial passenger vehicle sector.

69 Ibid.

7.5 International tourists

Overseas visitors can drive (including motorcycles) in Victoria if they hold a valid overseas licence for the vehicle type they want to drive. For licences in a language other than English, the individual must also obtain a certified translation. An International Driving Permit is a valid translation document that is readily available in all countries. Additionally, any restrictions attached to an oversees licence must be adhered to in Victoria, including probationary and learner driver restrictions.

International drivers who stay in Victoria for longer than six months must convert to a Victorian licence. Drivers with a valid licence from a recognised country do not need to undertake any testing in order to convert to an equivalent Victorian licence. All other drivers must have their licence verified and complete the relevant tests in order to convert to a Victorian licence.[70]

The Committee took evidence regarding international tourists driving in Victoria. Ms Seymour informed the Committee that DoT data does not indicate that international tourists are over-represented in crash statistics. She said that accidents involving tourists were more likely due to fatigue issues as opposed to high-risk behaviours such as speeding or drink-driving.[71] However, the Victorian Government did not provide the Committee with data related to international driver involvement in road trauma.

A 2014 study undertaken by the RACV indicated that:

- 0.7% of all road users killed in Victoria between 2002 and 2011 were international tourists
- most fatalities occurred on the Great Ocean Road and Princes Highway West
- visitors from non-English speaking countries may be under-represented in data as they may not submit a claim
- where an international tourist has been involved in a car accident, they are more likely to be at fault than Victorian licence holders.[72]

Mr Phillip Younis, an emergency services volunteer from south-west Victoria, also raised the issue of tourist fatigue in his submission. He said:

> The Ocean Road to the 12 Apostles is not an easy road to drive. To expect someone arriving at the airport in Melbourne to hire a car, drive on the opposite side of the road to the 12 Apostles, return to Phillip Island, see the Penguins and then return to Melbourne for accommodation all in one day is just so wrong on so many levels it's hard to know where to start. I have seen many packages put together by travel agents for overseas visitors which include this and other fatigue inducing travel plans.[73]

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70 VicRoads, *Overseas driver licences and permits*, (n.d.), <https://www.vicroads.vic.gov.au/licences/renew-replace-or-update/new-to-victoria/overseas-drivers>, accessed 21 January 2021.

71 Ms Robyn Seymour, *Transcript of Evidence*, p. 41.

72 Royal Automobile Club of Victoria, *Crash Risk of International Visitors to Victoria*, Research Report 14/02, 2014, p. 4.

73 Phillip Younis, *Submission 128*, p. 1.

Ms Seymour informed the Committee that in high tourist locations, such as the Great Ocean Road, the Government provides tourist safety signs in languages such as Mandarin and is looking for new ways to ensure international visitors drive safely.[74]

RECOMMENDATION 34: That Victoria's road safety partners work with Victoria's tourism industry to address the issue of road safety in south-west Victoria, particularly around the Great Ocean Road.

RATIONALE: Anecdotal and empirical evidence suggests that roads in parts of south-west Victoria, particularly around the Great Ocean Road area, are becoming increasingly dangerous because of international tourists who are affected by fatigue or unfamiliar with local roads, rules and conditions. Travel agents and car hire services must be responsible when informing tourists of the duration of journeys to tourist sites and whether they are suited to a day trip or not, including providing a copy of Victoria's Road Safety Road Rules.

74 Ms Robyn Seymour, *Transcript of Evidence*, p. 41.

8 Vehicle safety: standards and technology

8.1 Introduction

This Chapter looks at the role of vehicle safety in preventing road trauma. 'Safe Vehicles' was one of the pillars of *Towards Zero* and is a key component of the Safe System approach. As well, achieving major and sustained trauma reduction in the future through the uptake of safer vehicles was one of the aims of the *Towards Zero Action Plan*.[1] In Australia, vehicle safety is mostly determined nationally through Australian Design Rules and programs such as the Australasian New Car Assessment Program (ANCAP) and the Used Car Safety Rating program (UCSR). Victoria also has initiatives such as the 'How Safe is Your Car?' website.

The Chapter reports that state governments have relatively little influence on encouraging the update of safe vehicles. However, options open to the Victorian Government include:

- promoting public awareness of safety ratings through websites and education campaigns
- frequently upgrading the government fleet with safer vehicles.

Stakeholders also suggested current motor vehicles duties and taxation are an impediment to increasing the number of safer vehicles on the road.

The Chapter then addresses the growing influence of connected and automated/autonomous vehicles (CAVs), or 'driverless cars'. Current technology offers a range of automation—from no automation to full automation. The Committee heard that although it may be some time before fully automated vehicles have a presence on Victoria's roads, the Victorian Government must stay up to date with the infrastructure required to facilitate greater connectivity between vehicles and the road network and an inevitable, if not gradual, increase in automation over time.

The Chapter concludes with a brief discussion of technology designed to make motorcycles safer.

8.2 Vehicles in the Safe System

The Safe System guiding principle, building a safe and forgiving road system, requires system designers and operators (i.e. government and industry) to invest in and

1 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan,* 2016, p. 9.

strengthen all parts of the road system.[2] Among other things, system designers and operators need to take into account the design, build and regulation of vehicles.[3]

Vehicle design and safety technologies improve road user safety in two ways:

- Primary safety or crash avoidance, for example through technology such as electronic stability control (ESC), which senses when a driver is losing control of a vehicle.
- Secondary safety or reduced severity, through technologies, such as airbags, that reduce or absorb some of the crash forces.[4]

Research from the Monash University Accident Research Centre (MUARC) quoted in *Towards Zero* suggests that if each vehicle in Australia had a safety performance equivalent to the best vehicle in its market class, then safety could be improved by up to 26%.[5]

The age of a vehicle is one of the most telling factors in determining its safety performance. Newer cars are most likely to include the latest advancements in safe vehicle design and driver assist technologies, which are continuously expanding to include greater levels of monitoring, intervention and automation (a list of many driver assist systems currently in the market is set out in Appendix 4).

According to the Victorian Government's submission, in 2019 (as at 31 October) approximately 64% of vehicles in fatal crashes were 10 years old or older, and 74% of vehicle occupants killed in fatal crashes were in vehicles 10 years old or older. This is despite vehicles 10 years old or older comprising less than half of all registered light vehicles.[6]

8.2.1 Australian Design Rules

Mandatory vehicle standards for all new vehicles sold in Australia are detailed in the Australian Design Rules (ADRs). These are administered federally under the *Motor Vehicles Standards Act 1989* (Cth) and the *Motor Vehicle Standards Regulations 1989* (Cth). The ADRs, which generally align with the United Nations (UN) and European vehicle standards,[7] are a set of minimum safety and emission standards applied to new vehicles imported into Australia.

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2 Towards Zero Foundation, *The Safe System*, (n.d.), <http://www.towardszerofoundation.org/thesafesystem> accessed 8 January 2021.

3 National Road Safety Strategy, *Safe System principles*, (n.d.), <https://www.roadsafety.gov.au/nrss/safe-system> accessed 8 January 2021.

4 Victorian Community Road Safety Partnership Program, *Draft Guide for Understanding and Applying 'Safe System' Principles*, December 2010, p. 8.

5 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan,* p. 30.

6 Government of Victoria, *Submission 71*, p. 41.

7 Ibid., p. 44.

Most actions to mandate and regulate vehicle safety standards and technology are typically undertaken by the Commonwealth. The Victorian Government primarily works in cooperation with the Commonwealth and other Australian jurisdictions to ensure ADRs are consistent with European standards and implemented promptly as new safety technologies develop.

However, as noted by the Royal Automobile Club of Victoria (RACV) 'a State Government unilaterally mandating a technology ahead of a national requirement is not without precedent'.[8] The mandating of ESC as a registration requirement in Victoria was ahead of its incorporation in the ADRs (further discussed in Section 8.4 below).

Under the *Towards Zero Action Plan*, the Victorian Government committed to working with national and international partners to accelerate the regulation of mandatory advanced safety systems in vehicles.[9]

8.3 Encouraging safe vehicle uptake

Australia and Victoria are comparatively small markets. This means they have very little influence on the sort of safety features manufacturers include in vehicles. Within Australia, the factors that influence new vehicle affordability are multi-faceted and often cross jurisdictional boundaries of responsibility.

However, the Committee notes that in the past Victoria has influenced the sorts of technological safety features included on vehicles. This is the case even with the demise of the local car manufacturing industry in Australia.

The RACV told the Committee that Victoria mandated ESC around one year before the Commonwealth. Its submission states:

> Such an approach was effective in expediting roll-out of ESC in Victoria and could be considered again with other technologies particularly in light of Australia no-longer having a significant local vehicle manufacturing industry. Since many safety features are now available on entry level vehicles, importing manufacturers may be encouraged by this approach to specify their vehicles to the most stringent requirements in the market, thus benefiting all states.[10]

Inquiry stakeholders also suggested other measures linked to vehicle registration as a means of improving vehicle safety. For example:

- Transport Alliance Australia (TAA[11]), a representative group for commercial passenger owners, drivers and other stakeholders, proposed mandating annual

8 Royal Automobile Club of Victoria, *Submission 53*, p. 24.

9 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan*, p. 24.

10 Royal Automobile Club of Victoria, *Submission 53,* p. 24.

11 Formerly the Commercial Passenger Vehicle Association of Australia.

roadworthy certification as a registration requirement for commercial passenger vehicles,[12] an initiative which also received support from some other stakeholders.[13]

- The Royal Australasian College of Surgeons and other stakeholders proposed introducing discounts on registration to incentivise uptake of safer-rated vehicles.[14]

The Victorian Government has ongoing initiatives to encourage and promote the uptake of newer, safer vehicles including:

- delivering vehicle safety education and marketing campaigns to inform the community of the road safety benefit of vehicle safety technologies, and to increase their acceptance
- fleet purchasing policies that include minimum safety technology requirements.

8.3.1 Australasian New Car Assessment Program

In Australia, car rating systems are the primary means of determining vehicle safety for new and used cars. ANCAP is an independent vehicle safety assessment program. It rates the safety of all new passenger, sports utility and light commercial vehicles sold in Australia and New Zealand based on crash test results and other minimum performance requirements.[15]

ANCAP performs tests in line with its Assessment Protocols and Policies,[16] which are aligned to European crash test standards (Euro NCAP).[17] It rates vehicles on a 0- to 5-star rating system measured against four main areas of assessment:

1. Adult Occupant Protection: the level of protection offered to adults in common serious crash types.
2. Child Occupant Protection: level of protection offered to children seated with appropriate child restraints in the rear seats (including ability to accommodate a range of child restraints).
3. Vulnerable Road User Protection: the design of the front of a vehicle in minimising injury risks to pedestrians and cyclists.
4. Safety Assist: the presence and effectiveness of safety technologies fitted to the vehicle to help drivers prevent or minimise the effects of a crash.[18]

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12 Transport Alliance Australia, *Submission 12*, pp. 4–5.

13 Gary Paul, *Submission 26*, p. 1; Lionel Woodward, *Submission 28*, p. 1; Allen Hampton, *Submission 50*, p. 2.

14 Royal Australasian College of Surgeons, *Submission 17*, p. 5; Transport Alliance Australia, *Submission 12*, p. 3; Streets Alive Yarra, *Submission 49*, p. 13.

15 ANCAP Safety, *Our Evolution*, (n.d.), <https://www.ancap.com.au/ancap_evolution> accessed 4 February 2021.

16 ANCAP Safety, *Technical Protocols and Policies*, (n.d.), <https://www.ancap.com.au/technical-protocols-and-policies#current-protocols> accessed 4 February 2021.

17 ANCAP Safety, *Our Evolution*.

18 ANCAP Safety, *ANCAP Safety Ratings Explained*, (n.d.), <https://www.ancap.com.au/safety-ratings-explained> accessed 4 February 2021.

MUARC's recently published study of serious injuries found that drivers in 5-star rated vehicles were less likely to suffer serious injuries (33.3% of the crashes studied) than drivers in 4-star (46.5% of crashes studied) and 3-star or lower (55.5% of crashes studied) rated vehicles. The report stated:

> While this analysis did not account for any differences in crash configuration and driver demographic characteristics that may exist, this finding points to the positive safety benefit of improved vehicle safety and the value of the ANCAP system in driving vehicle safety improvements.[19]

ANCAP is not a regulatory body. However, the ubiquitousness of its rating system can influence automakers to include non-mandated safety equipment to receive five stars, even if a feature isn't required under the ADRs. For example, Ford added standard active safety technology in its Mustang following the publication of a 2-star result.[20]

ANCAP works in partnership with and is supported by member organisations comprising automotive and road authorities across Australia and New Zealand, including the Victorian Government, the Transport Accident Commission (TAC) and RACV.[21] The TAC is a funding partner of ANCAP, including contributing toward promotional activities and investment in facilities and testing equipment.[22]

Ms Rhonda Armour, Secretary of the Australian Driver Trainers Association (Victoria), told the Committee that driver trainers should encourage their students to refer to car safety ratings when they buy a car. She said that an ideal scenario is one where:

> driver trainers—professional ones—are actively encouraging their learners to get into really good up-to-date and current vehicles that have all the technologies to protect them. Driver trainers often try to encourage parent supervisors that when looking at cars to look at ANCAP rating. It is a well-known fact that even for an older vehicle, if parent supervisors can access the best car they can at that time in that year group that is going to make their solo driver a safer person.[23]

Transurban expressed a similar view in its submission. It stated that the ANCAP car safety program had 'demonstrated the benefits of crash avoidance and occupant protection features and technologies' and that as 'the average passenger vehicle age in Victoria is around 10 years, it is important that investment be made in getting the most vulnerable into safer cars with new technologies'.[24]

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19 Michael Fitzharris et al., *ECIS Report 1: Overview and analysis of crash types, injury outcomes and contributing factors*, Enhanced Crash Investigation Study (ECIS), no. 1, Monash University Accident Research Centre, Australia, 2020, p. xxxi.

20 Car Expert, *ANCAP ratings: everything you need to know*, 2020, <https://www.carexpert.com.au/car-news/ancap-ratings-everything-you-need-to-know> accessed 4 February 2021.

21 ANCAP Safety, *Our Member Organisations*, (n.d.), <https://www.ancap.com.au/our-members> accessed 4 February 2021.

22 Government of Victoria, *Submission 71*, pp. 41–3.

23 Ms Rhonda Armour, Secretary, Australian Driver Trainers Association (Victoria), public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 3.

24 Transurban, *Submission 51*, p. 3.

8.3.2 Used Car Safety Ratings

The UCSR program enables consumers to compare the safety of individual vehicle models against each other. UCSRs are released annually based on statistical analysis undertaken by MUARC of real-world serious injury and fatal road crash data in Australia and New Zealand.[25]

The ratings cover the role of a vehicle in injury outcomes and the contribution of a vehicle's design and specification to crash risk. Ratings are based on a 1- to 5-star scale and are adjusted to account for factors such as who was driving at the time of the crash and particular crash circumstances.[26] Vehicles are awarded 'safer pick' status based on their ratings against the following criteria:

- Driver protection: indicates the relative safety of a vehicle in preventing injury to the driver in the event of a crash.
- Other road user protection: indicates how well the vehicle protects other road users in the event of a collision.
- Crash avoidance: considers vehicle design and included safety features to determine how well a vehicle can mitigate crash outcomes or avoid a crash completely.[27]

The UCSR program is an output of the Vehicle Safety Research Group, which comprises 16 road authorities and motoring clubs across Australia and New Zealand (including the Victorian Government, TAC and RACV).[28]

8.3.3 'How Safe is Your Car?' website

The 'How Safe is Your Car?' website is a TAC initiative designed to assist people to research the safety ratings of vehicles when looking to purchase a new or used car. The website provides both ANCAP and UCSR information for 80% of vehicles on Australian roads manufactured since 1990.[29]

A common anecdotal view expressed by some stakeholders to the Inquiry was that the price of new cars is a significant barrier for many people to access safer vehicles.[30] The RACV agreed this was a particularly important issue given younger and more inexperienced drivers, who are over-represented in crash statistics, tend to be the people with less to spend on a vehicle.[31]

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25 VicRoads, *Used Car Safety Ratings*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/buying-a-safe-car/used-car-safety-ratings> accessed 4 February 2021.

26 Monash University Accident Research Centre, *Used Car Safety Ratings 2020*, p. 4.

27 How Safe is Your Car?, *Ratings explained*, (n.d.), <https://howsafeisyourcar.com.au/ratings> accessed 4 February 2021.

28 Monash University, *Vehicle Safety Research Group (VSRG)*, (n.d.), <https://www.monash.edu/muarc/research/research-areas/transport-safety/injury-analysis-and-data/vsrg> accessed 4 February 2021.

29 Transport Accident Commission, *How safe is your car?*, (n.d.), <https://www.tac.vic.gov.au/road-safety/safe-driving/fleet-safety/how-safe-is-your-car> accessed 4 February 2021.

30 See for example Craig Gardner, *Submission 27*, pp. 1–2; Lionel Woodford, *Submission 28*, p. 1.

31 Royal Automobile Club of Victoria, *Submission 53*, p. 23.

However, the RACV submitted that awareness and not affordability was the main barrier to safe vehicle uptake. It informed the Committee:

> There are a wide range of vehicles 5-Star ANCAP vehicles available for less than $20,000. An even larger selection of 5-Star Used Car Safety Rating available for under $10,000. The Victorian Government is a partner in both these programs and may consider expanding its investment to increase their exposure particularly targeting lower income.[32]

This issue was identified as an area to target under the *Towards Zero Action Plan*. One of the stated actions was to accelerate demand for safer cars through consumer education to promote the idea of 'car safety' as top of mind for young people buying their first car.[33] This was primarily delivered via 'How Safe is Your First Car?'[34] as an additional resource for first-time car owners.[35]

Ms Samantha Cockfield, Lead Director, Road Safety, TAC, spoke to this issue at a public hearing, telling the Committee:

> Obviously, we would like everybody to be in the safest car possible, and we know the potential of that in terms of reducing serious injury and fatalities. In relation to young drivers specifically, we do have How Safe is Your First Car?—part of the How Safe is Your Car? site—so that is a searchable website in terms of looking at what your next car purchase is likely to be and the level of safety that that vehicle can offer. That part of How Safe is Your First Car? not only provides young people and their parents or supervisors with that opportunity to look for a safe car but does also filter out any vehicles that they are not actually entitled to be driving—so any restrictions on them. We promote that How Safe is Your First Car? part of the site primarily to parents because we know from research that they are the people that have the most influence on young people.[36]

FINDING 31: ANCAP and UCSR 5-star rated vehicles under $20,000 are readily available for purchase in Victoria.

FINDING 32: Public awareness campaigns, including through resources such as 'How Safe is your Car?', are key tools for the Victorian Government to encourage greater uptake of affordable, safer vehicles.

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32 Ibid., p. 23.

33 Towards Zero, *Towards Zero 2016-2020*: *Victoria's Road Safety Strategy & Action Plan*, p. 24.

34 This website has since been absorbed into the main How Safe is your Car? website, which includes the option to search and compare vehicles by budget and to limit results to P-plater approved vehicles.

35 Towards Zero, 'Getting Safer Vehicles on Our Roads', *News*, (n.d.), <https://web.archive.org/web/20200309220600/https://www.towardszero.vic.gov.au/news/articles/getting-safer-vehicles-on-our-roads> accessed 4 February 2021.

36 Ms Samantha Cockfield, Lead Director, Road Safety, Transport Accident Commission, public hearing, Melbourne, 6 October 2020, *Transcript of evidence*, p. 40.

8.3.4 Upgrading the Government fleet

According to 2020 used car ratings, the average risk of death or serious injury to the driver in a crash in a vehicle manufactured in 2018 is around 43% lower than in one manufactured in 2000, and 75% lower than in a car manufactured prior to 1970.[37] In short, the newer a car is, the safer it is likely to be.

A key action under the *Towards Zero Action Plan* was upgrading the government fleet to improve the safety performance of all fleet vehicles and encouraging the private transport sector to purchase/lease safer vehicles.[38] Under the Government's fleet policy, the majority of fleet vehicles enter the second-hand car market:

- when they reach 60,000km; or
- three years from the date of initial delivery, whichever occurs first.[39]

Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport (DoT), told the Committee that:

> one of the things that we have been doing under the current strategy and action plan is working through VicFleet and looking to ensure that the Victorian government fleet purchasers prioritise that sort of vehicle safety equipment that will mean that those vehicles will quite quickly then get into the second-hand car market and give us the best chance of getting that technology into the fleet as much as possible.[40]

The Committee was informed that annual sales volumes of ex-VicFleet vehicles since 2016 averaged just under 3,000 per year. According to an estimate received by the Committee, ex-government vehicles[41] make up around 5–6% of the second-hand market in Victoria.

The Government informed the Committee that DoT, working with VicFleet, has sought to improve the overall safety performance of the government fleet through improvements to the Approved Vehicle List (AVL)[42] selection process. It submitted that along with seeing safer second-hand cars on the road the new process will see safest-in-category vehicle models included in the AVL to:

- ensure public sector employees only drive the safest vehicles while performing their work
- influence manufacturers to offer a full suite of safety features across their model range if they want to be included in the AVL.[43]

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37 Used Car Safety Ratings 2020, p. 5.

38 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan*, p. 24.

39 Government of Victoria, *Victorian Government Standard Motor Vehicle Policy*, D20/128365, 2020, p. 28.

40 Ms Robyn Seymour, Deputy Secretary, Network Planning and Head of Road Safety Victoria, Department of Transport, public hearing, Melbourne, 6 October 2020, *Transcript of Evidence*, p. 40.

41 Including VicFleet, non-VicFleet (e.g. VicHealth) and local council vehicles.

42 Approved vehicle models must meet certain criteria to be included in the AVL. Government Departments and Agencies that manage their fleet through VicFleet can only purchase vehicles from the AVL (Government of Victoria, *Submission 71*, p. 43).

43 Government of Victoria, *Submission 71*, p. 43.

FINDING 33: In Victoria, ex-government fleet vehicles are a small part of the second-hand market. However, Approved Vehicle List requirements encourage vehicle manufacturers to include more safety features in cars purchased for the government fleet.

8.3.5 Motor vehicle duties and taxation

Some stakeholders in this Inquiry, noting that the latest safety technology first appears in the most expensive cars, identified duties and taxes as barriers that prevent this technology being available to the community.

In Australia, the Luxury Car Tax (LCT) is imposed at the rate of 33% for vehicles priced above the luxury car threshold.[44] The tax is paid by dealers that sell or import and individuals who import 'luxury' cars. In Victoria, an extra 7% tax is imposed on vehicles priced over $100,000 and an extra 9% for cars priced higher than $150,000.[45]

A comparison of vehicle taxes across Australia is found in Appendix E.

In its submission to this Inquiry, the Victorian Automobile Chamber of Commerce (VACC) called for both these taxes to be scrapped. It wrote:

> VACC believes that the combination of both these taxes unfairly inflates the price of vehicles incorporating contemporary driver assist and safety technologies and this acts to limit the affordability of such vehicles for many consumers. VACC views these taxes as being unnecessary and discriminatory and recommends that they be abolished for the benefit of car dealers and consumers.[46]

Other stakeholders who opposed these taxes for similar safety reasons also argued that the Commonwealth LCT was designed to protect a domestic car manufacturing industry that no longer exists.[47]

The Federal Chamber of Automotive Industries' Mr Rob Langridge added the view that Victoria's graduated stamp duty scheme is another barrier to new safety devices becoming affordable through mass production. He made the point that consumer demand may lead vehicle manufacturers to include a luxury feature over a safety feature.[48]

It will always be the case that the latest technology is found in the most expensive products. This is not limited to motor vehicles. The Committee reiterates the RACV's observation regarding the number of new 5-star vehicles available under $20,000.

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44 2020–21 LCT thresholds are $77,565 for fuel efficient vehicles and $68,740 for other vehicles (ATO, *Luxury car tax rate and thresholds*, (n.d.), <https://www.ato.gov.au/rates/luxury-car-tax-rate-and-thresholds> accessed 4 February 2021).

45 State Revenue Office Victoria, *Motor vehicle duty rates from 1 July 2020*, <https://www.sro.vic.gov.au/motor-vehicle-duty-current-rates> accessed 4 February 2021.

46 Victorian Automobile Chamber of Commerce, *Submission 74*, p. 7.

47 Liberal Democrats Victoria, *Submission 143*, p. 5; Mr Robert Langridge, Director, Emerging Technologies, Federal Chamber of Automotive Industries, public hearing, Melbourne, 21 July 2020, *Transcript of evidence*, p. 31.

48 Mr Robert Langridge, *Transcript of evidence*, pp. 28–9, 34.

RECOMMENDATION 35: That the Victorian Government advocate for the Federal Government's Luxury Car Tax to be abolished.

RATIONALE: The Luxury Car Tax was introduced to protect the domestic car manufacturing industry. As this industry no longer exists the tax is an anomaly and its removal will make some safer cars more affordable.

8.4 Employer responsibility for safe work vehicles

Work-related accidents comprise a large part of road trauma in Australia. Evidence collected by the Committee in this Inquiry includes:

- The *Towards Zero* website stated that, on average, company vehicles travel more than twice the annual distance of private vehicles.[49]
- Studies show that one-quarter of all company cars are involved in a crash each year.[50]
- According to a report on work-related road safety commissioned by the RACV in 2014, it was estimated that work-related road crashes in Australia account for about half of all occupational fatalities and 15% of national road deaths.[51]
- The road transport industry[52] has been identified as a national priority under *The Australian Work Health and Safety Strategy 2012–2022* due to its high fatality rate.[53]

The Committee also heard:

- The road transport industry had the highest rate of fatalities at 13.2 deaths per 100,000 workers over 2015–2019; the five-year average across all industries was 1.5 deaths per 100,000 workers.[54]
- According to Safe Work Australia statistics, from 2015 to 2019 there were 183 work-related fatalities in the road transport industry, with 95% (174) occurring in the road freight transport industry.[55]
- MUARC submitted that with the national freight task projected to double by 2030, the magnitude of this problem is likely to worsen.[56]

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49 Towards Zero, 'Corporate Responsibility', *Safe Vehicles*, (n.d.), <https://www.towardszero.vic.gov.au/safe-vehicles/corporate-responsibility> accessed 20 November 2020.

50 Ibid.

51 Royal Automobile Club of Victoria, *Work Related Road Safety*, Research Report 14/01, 2014, p. i.

52 The road transport industry encompasses both road freight transport and road passenger transport. It is one of eight subdivisions of the transport, postal and warehousing industry.

53 Safe Work Australia, *Transport*, (n.d.), <https://www.safeworkaustralia.gov.au/transport> accessed 8 February 2021.

54 Safe Work Australia, *Work-related Traumatic Injury Fatalities, Australia*, 2019, pp 12, 14.

55 Safe Work Australia, *Transport*.

56 Monash University Accident Research Centre, *Submission 66*, p. 40 (with sources).

MUARC also pointed to research suggesting that the risk of road trauma in the light vehicle fleet is 'a significant public issue given that more than 30% of registered motor vehicles in Australia are work-related vehicles'. It added that evidence suggests 'there is an over-representation of work-related drivers in road traffic crashes compared with non-work-related drivers'.[57]

Industry-specific road safety risks include time pressures that can lead to fatigue, speeding and drug-driving. Fatigue can also be caused by shift work. Mr Peter Anderson from the Victorian Transport Association (VTA) told the Committee that '80 per cent of the freight task travelling less than 100 kilometres is not fatigue managed under the current law … and we believe there should be an amendment to that.'[58]

Fatigue and driver training were singled out as being of paramount concern in both the heavy vehicle and commercial passenger vehicle sectors. TAA observed a need for clear guidelines and a well-defined chain of responsibility around consecutive hours worked, especially for independent or self-employed drivers.[59]

Fatigue is covered in Chapter 7 of this Report, while occupational driver training is covered in Chapter 6.

In relation to vehicle safety and technology, the VTA argued that many recent advances in heavy vehicle safety technology are not mandatory, and that many operators will therefore not adopt them unless they bring productivity improvement or market advantage. It called on the Government to increase the cost of registration for older vehicles to encourage the uptake of newer, safer vehicles.[60]

TAA similarly argued for registration incentives based on vehicle age.[61] It also called for a 5-star ANCAP safety rating as a requirement for all private fleet vehicle purchases.[62]

8.4.1 WorkSafe Victoria

As stated in section 6.8 of this Report, employers have a legal responsibility to provide a safe workplace. This includes ensuring employees are safe on the road if driving is part of their job.[63] The Committee notes the important oversight role of WorkSafe Victoria in relation to work-related road safety. However, it was disappointed that WorkSafe opted not to provide a submission to this Inquiry.[64]

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57 Ibid.

58 Mr Peter Anderson, Chief Executive Officer, Victorian Transport Association, public hearing, Melbourne, 7 July 2020, *Transcript of evidence*, p. 20.

59 Transport Alliance Australia, *Submission 12*, p. 6.

60 Victorian Transport Association, *Submission 83*, p. 6.

61 Transport Alliance Australia, *Submission 12*, p. 4.

62 Ibid., p. 3.

63 WorkSafe Victoria, *Planning for safe work-related driving,* (n.d.), <https://www.worksafe.vic.gov.au/planning-safe-work-related-driving> accessed 8 February 2021.

64 Correspondence, Chief Executive, WorkSafe Victoria, 20 December 2019.

While work-related road safety was identified as an area to be addressed under *Towards Zero*[65]—for example, it encouraged employers to adopt the TAC fleet policy around mandatory and minimum safety features for their cars—there was very little in the Government's submission relating to workplace road safety. There was a brief reference to the changes to tracking the correlation between road trauma and workplace safety.[66] Ms Seymour elaborated on this at a public hearing, telling the Committee that:

> one of the things that we have not had good data on is actually work-related injuries where driving is a key part of your work. Some of the work that we have been doing is looking at WorkSafe and TAC forms and other data collection methodologies to start collecting this data so we actually can understand what is the scale of the problem. Is it a big or small problem, and therefore what does it look like and what kind of things would we need to do to address it?[67]

The Committee notes that a recent update to WorkSafe's reporting of work-related fatalities will see the inclusion of some work-related deaths caused by road accidents. WorkSafe's most recent annual report includes further detail:

> In 2019-20, WorkSafe completed a large piece of work to support the broadening of the workplace fatality definition to include workers who die on the roads. Effective 1 July 2020, work-related road fatalities … will be recognised in the WorkSafe toll. The change means a more accurate account of workplace deaths, while also ensuring those who are affected by workplace deaths can access WorkSafe's support. Programs are in development to ensure proactive inspections are taking place in the transport industry.[68]

This change is also noted on WorkSafe's website to have come into effect on 1 July 2020, although the downloadable data was current to 2019 at the time of writing this Report.[69]

The Committee believes that this is an overdue change to workplace incident reporting. More detailed information about what the new reporting regime entails, as well as how it is expected to effect positive change in both workplace safety and road safety outcomes, would have been a welcome inclusion in the Government's submission.

While the Committee considers this a missed opportunity for this Inquiry, there is considerable scope for road safety in the workplace to comprise a key aspect of future strategies and programs. It is in this context that the Committee believes there is significant potential for WorkSafe to play a more active role in road safety. This includes education, advice, promotion and public awareness of workplace road safety, and in relation to its compliance role as Victoria's workplace safety regulator.

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65 For example, the 2016 *Towards Zero Action Plan* (p. 18) noted that heavy vehicles were involved in 18% of road deaths and cause a significant risk of serious trauma for other road users; the Towards Zero website noted that, on average, company vehicles travel more than twice the annual distance of private vehicles and studies have shown that one-quarter of all company cars are involved in a crash each year, <https://web.archive.org/web/20200309201359/https://www.towardszero.vic.gov.au/safe-vehicles/corporate-responsibility> accessed 10 January 2021.

66 Government of Victoria, *Submission 71*, p. 24

67 Ms Robyn Seymour, *Transcript of Evidence*, p. 42.

68 WorkSafe Victoria, *Annual Report 2019-20*, p. 18.

69 WorkSafe Victoria, *Workplace fatalities*, (n.d.), <https://www.worksafe.vic.gov.au/resources/workplace-fatalities> accessed 8 February 2021.

A key point raised in MUARC's submission was that work-related vehicles represent a large proportion of the road traffic environment and should be managed through workplace and public health approaches to reduce the road toll.[70] The Committee agrees. It notes that approaching road safety as a public health measure, in the context of occupational health and safety and involving WorkSafe, has been successful in the past. Mr Anderson told the Committee about Victoria's previous Transport Industry Safety Group, which included groups such as the TAC, Victoria Police and WorkSafe. Mr Anderson said: 'I would be absolutely ecstatic if [the Committee recommend the TISG be reinstated]. It would be a real plus for the community and for the people of Victoria.'[71]

The Committee urges Victoria's road safety partners to do more to address work-related road safety through an occupational health and safety lens. This should cover both issues specific to the road transport industry and concerns related to work-related driving more generally.

RECOMMENDATION 36: That the Victorian Government consider expanding WorkSafe Victoria's role in relation to road safety, including:

- making WorkSafe Victoria a road safety partner
- amending the *Occupational Health and Safety Act 2004* (Vic) (and other relevant legislation and regulations) in relation to WorkSafe's role in workplace road safety
- increased collaboration between WorkSafe and current road safety partners to better address safety issues and improve outcomes in the context of workplace road safety.

RATIONALE: Employers have a legal responsibility to provide a safe workplace, which includes ensuring employees are safe when they are driving. WorkSafe Victoria has an important oversight role regarding work-related road safety.

8.5 Connected and automated/autonomous vehicle technology

Another stated action under *Towards Zero* relating to safe vehicles was the facilitation of trials of smart road infrastructure to support connected and automated / autonomous vehicles, or CAVs, sometimes simply known as 'driverless cars'. The trials are intended to inform the development and adoption of future vehicle automation technology.[72]

70 MUARC, *Submission 66*, p. 43.

71 Mr Peter Anderson, *Transcript of evidence*, pp. 21–2.

72 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan,* p. 24.

Connected vehicle technology allows vehicles to exchange data cooperatively through wireless communication. This can be with other vehicles and road users, road infrastructure, public transport systems, cloud-based services, or a mobile smart device. This technology can be used to warn drivers about road hazards or the presence of other road users.[73]

Automated vehicles are vehicles that can perform some driving functions automatically, without the input of a driver. Most new vehicles already have some level of driving automation, with aspects such as acceleration, braking or steering being performed by the vehicle part of the time. Examples include automatic parking assist and automated highway driving technologies.[74]

The Society of Automotive Engineers defines six levels of driving automation based on the level of driver versus vehicle control. These range from level zero, where there is no driving automation, up to level five, where the vehicle is fully automated (correctly known as 'autonomous'). An autonomous vehicle can drive itself anywhere on the road network.[75]

Victoria introduced an automated driving system permit scheme in 2018 to enable the on-road trials of vehicles with CAV technology.[76]

8.5.1 CAV trial grants program

The CAV trial grants program commenced in 2017 to support industry research and on-road initiatives that maximise road safety in emerging CAV technology.[77] Under the program, grants are provided to successful applicants to undertake trials in new or emerging technologies available in the market place that may help to improve the management of the road network.[78]

One of these trials is the Advanced Connected Vehicles Victoria trial conducted by Telstra and Lexus detailed in the case study below.

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73 VicRoads, *Connected and automated vehicles technology*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/automated-and-connected-vehicles/automated-and-connected-vehicles> accessed 14 January 2021.

74 Ibid.

75 Ibid.

76 VicRoads, *Automated Driving System (ADS) permit scheme*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/automated-and-connected-vehicles/testing-of-automated-vehicles> accessed 14 January 2021.

77 Department of Transport, *First automated vehicle trials to begin*, (n.d.), <https://transport.vic.gov.au/about/transport-news/news-archive> accessed 4 February 2021.

78 VicRoads, *Grants, trials and partnerships*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/automated-and-connected-vehicles/grants-trials-and-partnerships> accessed 14 January 2021.

CASE STUDY 8.1: Advanced Connected Vehicles Victoria trial

The Advanced Connected Vehicles Victoria (ACV2) trial is a partnership led by Telstra and Lexus Australia and funded by a $3.5 million grant from the Victorian Government's CAV trial grants program.

The trial allows cars to connect directly to each other and, through cloud servers, to traffic management centres and other services. The two Lexus trial vehicles use the 4G network to communicate with the cloud, and a new cellular technology for direct vehicle-to-everything (C-V2X) communications. The direct C-V2X communication enables the transmission of urgent safety messages without relying on mobile network coverage by combining both short range radios and wide-area 4G-based mobile communications when available.

The trial, which commenced in 2018, was scheduled for completion by 2020. It was approved for on-road testing in June 2019, with tests to be conducted on metropolitan and regional roads, following the 2018 trials on the Lexus test track in Altona.

Vehicle safety systems including emergency braking alerts, in-vehicle speed limit compliance warnings, right-turn assist for vulnerable road users, and warnings when surrounding vehicles are likely to run a red light are among the technologies being trialled. Other applications, such as how to securely send speed zone, traffic light timing, and other signals to cars so this information can be available 'just-in-time' and help prevent road trauma, are also being looked at.

In addition to helping understand the potential road safety benefits, the trial will also provide learnings around the use of C-V2X to enable Co-operative Intelligent Transport Systems (C-ITS) without the installation of roadside infrastructure. This technology has the potential to improve the safety and efficiency of the network and reduce congestion and vehicle emissions.

Sources: Traffic Technology Today, *Australia starts first on-road test of cellular V2X technology in Victoria*, 27 Jun 2019, <https://www.traffictechnologytoday.com/news/connected-vehicles-infrastructure/australia-starts-first-on-road-tests-of-cellular-v2x-technology-in-victoria.html> accessed 14 January 2021; VicRoads, *Grants, trials and partnerships*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/automated-and-connected-vehicles/grants-trials-and-partnerships> accessed 14 January 2021; VicRoads, *Australia-First On-Road Connected Vehicle Trial Gets Green Light*, 26 June 2019, <https://www.vicroads.vic.gov.au/newsmedia/2019/australia-first-on-road-connected-vehicle-trial-gets-green-light> accessed 14 January 2021; Computerworld Australia, *Victoria prepares for on-road trials of connected vehicles*, 25 June 2019, <https://www.computerworld.com/article/3465752/victoria-prepares-for-on-road-trials-of-connected-vehicles.html> accessed 14 January 2021; Telstra, *Australian-first connected vehicle trial set to make roads safer*, 14 December 2018, <https://exchange.telstra.com.au/australian-first-lexus-connected-vehicle-trial-set-to-make-roads-safer> accessed 14 January 2021.

In its submission to this Inquiry, MUARC suggested that autonomous vehicles would be a reality in the next decade or so, meaning government involvement and leadership in this area was critical to ensure potential benefits, problems and issues are identified.[79]

MUARC also stressed the potential safety benefits offered by interactions between connected vehicles and infrastructure. It further submitted that while current trials were useful for highlighting potential benefits and problems, more research was urgently needed in terms of societal impact.[80]

Other stakeholders were of the view that autonomous vehicles were still a long way off. Mr David Anderson (a former VicRoads CEO), for example, considered autonomous vehicles unlikely to be in place 'in our grandchildren's lifetime'.[81] However, they all emphasised the need to ensure infrastructure and other support systems were developed and implemented to enable use of the technology as it evolves and becomes more commonplace.[82]

Ms Malin Ekholm, Head of the Volvo Cars Safety Centre in Sweden expanded on this point at a public hearing:

> But equally challenging is the development of support systems. So before we get to the fully automated cars there will be a situation where you have support functions, and then the challenge is making sure that you do not end up in a situation where there could be confusion as to who is responsible for the driving—'Is the car responsible or am I responsible?'—and that is why the human-centric research and human behavioural science is such an important new field for us. It is not completely new, but it is definitely escalating. So that the human behind the steering wheel understands what the car is capable of and where you need to still be responsible and own the task of driving—to me that is a very, very important research field. How do we do that in the best possible way?[83]

Notwithstanding the reality that autonomous vehicles are some years away, if Victoria is to be in a position to support such vehicles in the future, the Committee recognises that ongoing research, investment in, and trialling of CAV infrastructure and support systems – as well as the need for a flexible, technology-neutral approach to regulation – are essential.

The concept of technology-neutral regulation is discussed in Chapter 7.

FINDING 34: Although there is debate around the exact evolution of connected and autonomous vehicles, the Victorian Government should continue to support this technology in improving road safety.

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79 Monash University Accident Research Centre, *Submission 66*, p. 36.

80 Ibid., pp. 36, 39.

81 Mr David Anderson, public hearing, Melbourne, 10 August 2020, *Transcript of evidence*, p. 6.

82 Mr Robert Langridge, *Transcript of evidence*, p. 34.

83 Ms Malin Ekholm, public hearing, Melbourne, 23 September 2020, *Transcript of evidence*, p. 12.

8.6 Motorcycles

The Committee received a small amount of evidence on safety technology in relation to motorcycles.

Incentivising Anti-lock Braking System (ABS) uptake on motorcycles was a stated action under *Towards Zero*[84] and it has been mandatory for ABS to be fitted on all motorcycles and scooters sold in Australia since November 2019.[85]

In relation to the use of ABS on motorcycles, the RACV submitted:

> In effect, the new rules are harmonising with the current EU standards. MUARC studies suggest that Motorcycle ABS could reduce the risk of crashes resulting in death or injury by 31 per cent. This is encouraging for the future of motorcycle safety. However, there are many second-hand motorcycles that do not feature this life saving technology, even though some manufacturers have been routinely fitting it to large portions of their range for a decade or more. There is therefore scope for Government to increase efforts to make riders in the second-hand market, particularly novices, aware of the technology and to consider it in their purchase.[86]

The Victorian Motorcycle Council (VMC) submitted that while ABS has its place, it is unlikely to provide any significant lifesaving benefit. This is because braking and wheel lock errors are a feature of many crashes, but they are not a significant cause of rider road fatality.[87] It also expressed concern that the quoted statistical gains in fatality reduction resulting from ABS were overstated.[88] The VMC suggested a better approach to motorcycle safety under *Towards Zero* would have been to address areas such as improving rider competency, providing more motorcyclist-friendly environments, and targeting improved awareness of motorcyclists in car drivers[89] Driver and rider training and behaviour are covered in Chapters 6 and 7.

Notwithstanding the importance of promoting and incentivising continuous improvements to motorcycle safety technology such as ABS, the Committee did not receive evidence that the Victorian Government had done enough in this area. The Committee recognises that the majority of road vehicles are cars and this rightly necessitates a strong focus on car safety. However, the attention paid to car safety under *Towards Zero* was overwhelming, almost to the exclusion of other vehicles (and other vulnerable road users as noted in Chapter 3). This was particularly disappointing given the greater vulnerability of motorcyclists to adverse road trauma outcomes compared to car drivers.

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84 Government of Victoria, *Towards Zero 2016-2020 - Victoria's Road Safety Strategy & Action Plan*, p. 24.

85 VicRoads, *Motorcycle ABS and how it works*, (n.d.), <https://www.vicroads.vic.gov.au/safety-and-road-rules/motorcyclist-safety/how-abs-works-on-motorcycles> accessed 13 January 2021.

86 Royal Automobile Club of Victoria, *Submission 53*, p. 25.

87 Victorian Motorcycle Council, *Submission 56*, p. 16.

88 Ibid., p. 15.

89 Ibid., p. 16.

The Committee notes that the *Victorian Road Safety Strategy 2021–2030* refocuses the road safety partners' attention to the needs of motorcyclists and other vulnerable road users.

Adopted by the Legislative Council Economy and Infrastructure Committee
Parliament of Victoria, East Melbourne
9 March 2021

Appendix A
About the Inquiry

A.1 Submissions

1	Bruce Sutherland
2	Federal Chamber of Automotive Industries
3	Rhonda Rathjen
4	Stuart Willis
5	Name Withheld
6	Kieran Cummings
7	Gillian Williamson
8	Maxine Gibson
9	Peter Rickman
10	Gary Rykers
11	Neil Campbell
12	Transport Alliance Australia
13	Wyndham City Council
14	Charles Todd
15	Rail Freight Alliance
16	John Tserkezidis
17	Royal Australasian College of Surgeons
18	Main Roads Western Australia
19	Australian Driver Trainers Association Victoria
20	Hobsons Bay CC
21	Roadsafe Westgate
22	Helen Halliday
23	Paul Murray
24	Peter McCartney
25	Alan Hanson
26	Gary Paul
27	Craig Gardner
28	Lionel Woodford
29	Michael Moloney
30	Jordan Wilkes
31	Jeremy Venables
32	Jade Kennedy
33	Peter Jenkin
34	Bruce Watson
35	Rosalie Dows
36	Brian Ward
37	Peter Cox
38	Tim Fraser
39	Jim King
40	Yarra Trams
41	Road Trauma Support Services Vic
42	Council on the Ageing Vic
43	Victor Breadon
44	Ambulance Victoria
45	Eric Howard and David Anderson
46	Brian Duggan
47	Victoria Walks
48	Brunswick Residents Network
49	Streets Alive Yarra
50	Allen Hampton
51	Transurban
52	VSTORM
53	RACV
54	Ola Australia
55	Andy Nguyen
56	Victorian Motorcycle Council
57	Walk on Moreland
58	Elizabeth Ryan
a	Elizabeth Ryan
59	Mornington Peninsula Shire
60	Darebin City Council

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61	Driveschool Enterprises
62	Amy Gillett Foundation
63	John Trevivian
64	Name Withheld
a	Name Withheld
65	Greg Kelly
66	Monash ARC
67	Maurice Blackburn
68	Michael Whitty
69	La Trobe University
70	Victorian Farmers Federation
71	Victorian Government
72	City of Melbourne
73	Troy Parsons
74	VACC
75	Tim and Mandy Leary
76	Ian Whalley
77	Dr Michael White
78	Ian Jordan
79	Paul Kariotis
80	Darebin Information Volunteer and Research Service
81	Paul Brady
82	Moyne Shire Council
83	Victorian Transport Association
84	Avenel Action Group
85	Tim Connor
86	Public Transport Users Association
87	Darren Love
88	Ruth Leonard
89	John Shearer
90	Benjamin Cronshaw
91	Peter Scott
92	Robert Barnard
93	Damien Codognotto
94	Paul Barber
95	Christopher Baker
96	Neil Boxhall
97	Jamie Suratman
98	Ross Block
99	Les Bennett
100	Michael Czajka
a	Michael Czajka
101	Robert Morgan
102	Glenn Fazzino
103	Chris Noble
104	Jan White
105	Graham Holland
106	Denis Ackland
107	Rodney Brown
108	Mark Bartleman
109	Phillip Mickan
110	Juliet Beatty
111	John Ferguson
112	Paul Cole
113	Garry Boucher
114	Jill Stewart
115	Donald Creaves
116	Peter Nielson
117	Elizabeth Allen
118	Ian Townsend
119	Deans Marsh Lorne Road Safety Group
120	Stephen Bardsley
121	Chris Swalwell
122	Gerardine Eales
123	Paul McBride
124	John Doward
125	Anthony Fraietta
126	Wes Lawton
127	Peter White
128	Phillip Younis
129	Matthew Waite
130	Peter Eberbach
131	Daryle Bell
132	Nicola Muxworthy

133	Deakin University
134	Lynda Rodgers
135	Jonathon Riley
136	Jon May
137	Mal Peters
138	Tania Maxwell
139	Marion Attwater
140	Cate Hughes
141	The Motorcycle Riders Association
a	The Motorcycle Riders Association
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142	Slater and Gordon
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144	Andrew O'Brien
a	Supplementary submission
145	Safe Freight Networks Australia
a	Supporting evidence
146	Thomas Bishop
147	Bill Saggers
148	Vault IQ
149	Solomon Birch
150	Craig Waters
151	Peter Keays

A.2 Public Hearings

Tuesday, 7 July 2020

Via Zoom

Name	Title	Organisation
Peter Kartsidimas	Senior Manager Transport, Planning and Infrastructure	RACV
Elvira Lazar	Manager, Safety and Education	
Peter Baulch	Chair	Victorian Motorcycle Council
Rob Salvatore	Vice-Chair	
Mr Peter Anderson	Chief Executive Officer	Victorian Transport Association
Dr Ben Beck	Head of Sustainable Mobility and Safety Research	Victorian State Trauma Outcomes Registry Monitoring Group
Professor Belinda Gabbe	Head, Prehospital, Emergency and Trauma Research	
Janine Gregory	Principal Lawyer and Divisional Head of Personal Injury	Maurice Blackburn
Canda Glanville	Principal Lawyer in Road and Work Injuries Division	
Katie Minogue	Senior Associate in Road and Work Injuries Division	

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Name	Title	Organisation
Associate Professor Stuart Newstead	–	Monash University Accident Research Centre
Professor Brian Fildes	–	
Associate Professor Sharon Newnam	–	
Dr David Logan	Senior Research Fellow	
Dr Karen Stephan	Senior Research Fellow	
Professor Max Cameron	–	
Bernadette Nugent	Chief Executive Officer	Road Trauma Support Services Victoria
Karen Robinson	Volunteer	

Tuesday, 21 July 2020

Via Zoom

Name	Title	Organisation
Stan Gates	President	Australian Driver Training Association (Victoria)
Rhonda Armour	Secretary	
Lisa Skaife	Founder and Chief Executive Officer	Driveschool Enterprises
Julie-Anne O'Brien	TAC L2P Coordinator	Darebin Information, Volunteer and Resource Service
Troy Parsons	–	–
Peter Cox	–	–
Rob Langridge	Director, Emerging Technologies	Federal Chamber of Automotive Industries
Richard Smithers	Team Leader, Transport Planning, Urban Strategy Branch	City of Melbourne

Monday, 10 August 2020

Via Zoom

Name	Title	Organisation
David Anderson	–	–
Eric Howard	–	–
Damien Codognotto OAM	–	–
Robert Morgan	–	–
Robert Barnard	–	–
Dr John Crozier		Royal Australasian College of Surgeons
Mr Christian Kenfield		
Reid Mather	Chief Executive Officer	Rail Freight Alliance

Tuesday, 8 September 2020

Via Zoom

Name	Title	Organisation
John Baker	Chief Executive Officer	Mornington Peninsula Shire
Tom Haines-Sutherland	Team Leader, Traffic and Transport	
Davey Smith	Executive Manager, Infrastructure Strategy and Climate Change	
Cate Hughes	–	–
Dr Ben Rossiter	Executive Officer	Victoria Walks
Duane Burtt	Principal Policy Advisor	
Dr Andrea Bunting	Convenor	Walk on Moreland
Carmel Boyce	Social Planner	
Dr Jeremy Lawrence	Founder and Director	Streets Alive Yarra
Dan Kneipp	Chief Executive Officer	Amy Gillett Foundation
Dr Marilyn Johnson	Research and Policy Manager	
Andrew O'Brien	–	–

Wednesday, 23 September 2020

Via Zoom

Name	Title	Organisation
Dr Matts-Åke Belin	Director	Vision Zero Academy, Swedish Transport Administration
Malin Ekholm	Head, Volvo Cars Safety Centre	Volvo, Sweden
Arild Engebretsen	Senior Adviser, Traffic Safety, Transport and Society	Norwegian Public Roads Administration
Pauline Morgan	Head of Road User Safety Delivery Programme	Department for Transport, United Kingdom

Tuesday, 6 October 2020

Via Zoom

Name	Title	Organisation
Miguel Nasr	Chief Product and Data Officer	Vault IQ
Shaun Gray	Strategic Account Manager	
Peter Keays	–	–
Rob McInerney	Chief Executive Officer	iRAP
Bernard Carlon	Executive Director, Centres for Road Safety and Maritime Safety, Safety, Environment and Regulation	Transport for NSW
Alex Jannink	Managing Director	Acusensus

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Name	Title	Organisation
Stephen Leane	Commissioner	Road Safety Camera Commissioner
Professor Chris McConville	Pro Vice-Chancellor for Research, Strategy and Performance	Deakin University
Dr Ashim Debnath	Senior Lecturer in Transportation Engineering	
Professor Saeid Nahavandi	Director, Institute for Intelligent Systems Research and Innovation	
Professor Kon Mouzakis	Co-director, Applied Artificial Intelligence Institute	
Associate Professor Ben Horan	Director, Centre for Advanced Design in Engineering Training (CADET) Virtual Reality (VR) Lab	
Dr Jan Garrard	Senior Lecturer, School of Health and Social Development	
Rebecca Bartel	Co-director, Strategic Centre for Mental Health and Wellbeing Research	
Robyn Seymour	Deputy Secretary, Network Planning and Head of Road Safety Victoria	Department of Transport
Samantha Cockfield	Lead Director, Road Safety	Transport Accident Commission
Assistant Commissioner Elizabeth Murphy	Road Policing Command	Victoria Police
Corri McKenzie	Deputy Secretary, Police, Fines and Crime Prevention	Department of Justice and Community Safety

Appendix B
Department of Transport responses to Committee questions dated 10 March 2020 and 20 October 2020

Parliamentary Inquiry into Victoria's Road Toll

Road Safety Partnership responses

VICTORIA State Government | Department of Transport

Contents

We would first like to thank the Committee for providing an opportunity to respond to their questions, as well as their patience whilst we ensured the most up to date and accurate information was provided.

1. Response to Road Safety Partnership Submission

The following are responses to questions posed by the Committee regarding the submission from the Road Safety Partnership.

Number	Question	Response
1.1	How do the road safety partners work together e.g. is there an official Memorandum of Understanding of responsibilities or informal understanding of roles? Is there any overall ownership of road safety?	• The areas of Government that have legislative accountability for road safety outcomes work together to ensure coordinated decision making. • A critical function is ministerial oversight of these road safety accountabilities to manage shared responsibilities and integrated deliverables, as well as to enable a collective road safety voice across Government and Cabinet. This includes the development of the Road Safety Strategy. • Within Departments and agencies, there are senior executives accountable for various areas of road safety. • In August 2019 – Road Safety Victoria (RSV) was established as the lead road safety body in the Department of Transport: o accountable for ensuring the partnership is always working in unison o is clear about the challenges o and is working to fulfil their accountability for road safety partnership outcomes. **Governance of the partnership:** • Road Safety Partners work based on the Terms of Reference for the Road Safety Partnership.

		• At the apex of the Road Safety Partnership sits the Ministerial Council for Road Safety. The membership of the Council consists of the Minister for Road Safety and the TAC (Chair), the Attorney-General, the Minister for Police and Emergency Services, the Minister for Public Transport and the Parliamentary Secretary for Health. However, the development and approval of the new Road Safety Strategy 2021-2030 was predominantly through both cabinet and the Coordinating Ministers Committee. • The Road Safety Executive Group are comprised of the most senior representatives from the partnership at Deputy Secretary, CEO and Deputy Commissioner of Police. They meet regularly to determine strategic directions to reduce death and serious injuries on Victoria's roads and to monitor and report progress on achieving objectives to Cabinet. • The Road Safety Leadership Group are a combination of Executive Director and senior staff from the partnership who support the work of the executive group, with strategic and tactical accountability for the strategy outcomes. • In addition to these groups, five subcommittees exist to support the work of the Road Safety Executive Group. These included a Strategy and Policy, Enforcement, Research and Data, Infrastructure and Communications and Engagement subcommittees. • Data and intelligence are shared through data sharing agreements to draw on evidence-based responses to emerging trends and to create long-term strategies.
1.2	Page 7 'An analysis of 2019 road trauma is also being undertaken to inform the development of a new road safety strategy post 2020.' What sort of information is this expected to reveal / what did the analysis involve?	• Using a broad range of data sources, the analysis provides a robust view of crash information, crash outcomes, risk and areas for prevention that links vehicles, road users, roads and speeds to inform decision making. This includes comparing the 2019 fatality road crash data against many factors such as historical trends in Victoria as well as a comparison against Australian and international jurisdictions. • The partnership's subject matter experts analyse a range of data sources and apply additional intelligence to observe and interpret trends. Further interrogation is done to identify immediate, medium and long-term interventions using a combination of evidence-based initiatives; and research to inform future innovation and trauma reduction measures. Examples of the valuable insights that the analysis provides, include: • Over the decades, Victoria has seen a sustained downward trajectory of deaths on our roads, which has occurred even as population growth and by extension, the number of vehicles on the roads have outstripped projections. However, Victoria, like many international jurisdictions have plateaued in recent years. • In the past five years, while there are some slight variations – in 2019, Victoria, like interstate and international jurisdictions remain consistent with this trend. • The highest number of fatalities per month were recorded in February and May; both with 33 fatalities.

		• The latter half of 2019 saw a slight trend reversal with an overall reduction in the number of fatalities per month. • The lowest number of fatalities per month was in August with 15 fatalities. • Particular sections of the community or types of road users can often be identified as experiencing higher rates of trauma, relative to trends and others in the community. A key example of this from 2019 was: ○ Where seatbelt status could be determined, not wearing a seatbelt was identified in approximately 30% of vehicle occupant fatalities. This is higher than the 5-year average (range 12-22%).
1.3	Page 9 'Police report (based on crash scene investigation) drivers and riders involved in distraction-related crashes accounted for 11 per cent of road fatalities (but road safety partners believe this to be considerably underreported).' Why is this underreported?	• It can be difficult to determine when distraction has contributed to a crash. Distraction is caused by many different things, such as mobile phone use, passengers, 'lost in thought', spiders etc. • The Australian Naturalistic Driving Study found drivers engage in a secondary task such as mobile phone use, every 96 seconds. • It is particularly difficult to determine whether distraction was a contributing factor when the crash involved a single vehicle or single occupant, and there were no other witnesses.
1.4	Page 9 'The National Transport Commission is currently leading a national review of Australian Road Rules relevant to driver distraction to ensure they keep pace with changing technology. Victoria is significantly contributing to this review to ensure any road rule amendments are fit-for-purpose in a Victorian context.' How is Victoria contributing to this?	• The Victorian Road Safety Road Rules 2017 are based on the model Australian Road Rules. • The National Transport Committee (NTC) is responsible for leading reviews of the model Australian Road Rules, with the support of all Australian States and Territories. • Victoria, alongside the other Australian jurisdictions, has contributed throughout the process that the NTC is undertaking, including the key stages of the business case, working groups, forums, provision of research, adhoc advice by subject matter experts, responses to papers etc. • This is in addition to the ongoing representation of Victoria, alongside the other jurisdictions on the Australian Road Rule Maintenance Group.

1.5	Page 11 'However, since 2016 an increase in maintenance funding has had a significant impact by lowering the average measured road roughness across the network.' What is 'average measured road roughness'?	• Road roughness is generally defined as an expression of irregularities in the pavement surface that adversely affect the ride quality of a vehicle (and thus the user). • Roughness is an important pavement characteristic because it affects not only ride quality but also vehicle fuel consumption and maintenance costs. • In Victoria, as like other state authorities, Austroads guidelines is followed for the roughness data collection. Traffic speed vehicles fitted with laser beams measures the road roughness. In DoT, the whole network has been surveyed over 2-year cycles since 1994 and stored in the RAS (Road Asset System).
1.6	Page 15 Towards Zero: How was the figure of less than 200 lives reached?	• As part of the development of Towards Zero 2016-2020, the macro-level modelling presented a mix of initiatives with an aim to deliver trauma savings that would reduce annual road fatalities to below 200 by 2020. • This strategy target was an ambitious goal to strive for the best outcomes, utilising macro-level modelling and a mix of initiatives that were predicted to deliver trauma savings to contribute to the reduction of road fatalities to below 200 by 2020. • In road safety – a back casting approach is often utilised to ensure that you set an ambitious target of what you wish to achieve; and work backwards to identify step changes required to achieve it.
1.7	Page 16 'Notwithstanding these external influences, Victoria's Road Safety Strategy possesses sufficient flexibility in its delivery to ensure it can readily respond to changing trends in, and contributors of road trauma.' What is meant by 'flexibility'?	• Flexibility is intended to reflect that the deliverables under the strategy were able to be adapted to reflect the complex and changing nature of road trauma. For example, the impact of mobile phone use on road trauma has emerged rapidly since the previous strategy was released in 2016, as did the increase in fatalities where no seatbelt was worn. • The road safety partners have sufficient flexibility under the strategy to realign resources and develop appropriate measures to address these types of emerging challenges.
1.8	Page 24 'The government has separately funded 3,135 additional police, with 53 already deployed on highway	• Speed may not always be the cause of a crash however, speed will always have a profound impact on the outcome of any crash. • The effectiveness of speed camera enforcement in reducing speeds and saving lives is undisputed. The Victorian Government has committed to increase mobile camera enforcement operational hours

	patrol work. Based on the modelling, it is expected Victoria will see the tangible road safety benefits of these adjustments over the next two years.' What benefits does the modelling predict?	by 75 per cent – which will result in monthly enforcement hours rising from 9,300 hours to approximately 16,300 hours. • Subsequently the modelling predicts an estimated reduction of up to 60 fewer fatalities on Victorian roads, once fully implemented by 2021, as determined by Traffic Enforcement Resource Allocation Modelling (TERAM). • Victoria Police has overall responsibility for the determination of locations and operating times of all mobile road safety cameras. The allocation of hours is an operational decision by Victoria Police and focuses on eliminating high-risk behaviour and poor driver attitude, targeting speed related problem areas and serious injury collision locations. • Mobile speed cameras create general deterrence across the entire road network by an 'anywhere, - anytime' operational mode. • To create a high level of perceived risk of detection, marked vehicles, which include highway patrol vehicles, are used significantly on high volume roads to ensure the greatest exposure generating greater driver compliance and longer-lasting effects on behaviour than covert operations. • Best practice speed enforcement includes a mixture of covert and overt strategies, on road policing initiatives and the use of speed camera technologies, including point to point cameras. A mixture of integrated measures is used to address speeding. Adopting measures in isolation do not address the issue.
1.9	Page 28 'Under section 49 (1)(bb) of the Road Safety Act 1986, it is illegal to drive with the presence of the prescribed concentration of drugs in a driver's oral fluid or blood.' Where are the prescribed concentrations for drugs listed?	The prescribed concentration in the case of illegal driving with the presence of the prescribed concentration of drugs in a driver's oral fluid or blood is any concentration more than zero. Referring to the definitions in s 3(1) of the Road Safety Act: S. 3(1) def. of prescribed concentration of drugs inserted by No. 111/2003 s. 4(1). **prescribed concentration of drugs means**, in the case of a prescribed illicit drug, any concentration of the drug present in the blood or oral fluid of that person; **prescribed illicit drug means**— (a) methylamphetamine; or (ab) 3, 4-Methylenedioxy-N-Methylamphetamine (MDMA); (b) delta-9-tetrahydrocannabinol;

	Page 33	
1.10	‘In 2016, DoT (formerly VicRoads) evaluated the effect of these sanctions and found that licence bans from speeding offences had a positive road safety effect both while drivers were banned from driving and once re-licensed after a ban.’ Are licence bans more effective than fines?	• There are a range of penalties that can be imposed for road safety purposes – demerit points, fines, suspensions and bans. Each have their place, with risk being a key determinant in considering what is appropriate and effective. • The research that examined the effectiveness of the licence ban on speeding drivers did not consider the monetary fines drivers receive. • There are many considerations in determining sanctions such as monetary fines in safety and behavioural terms, given the importance of it leading to greater deterrence, reducing recidivism among offenders and/or reducing crash/injury risk.
	Page 48	
1.11	‘Some Victorian assets are requiring renewal earlier than expected (before they have reached their expected design lives) due to unprecedented population growth and correlated demand on the network.’ Will we see changes to / lowering of design life periods for assets in the future?	• Roads are designed to standards current at the time to provide for the safe and efficient movement of goods and services over their expected design life. Maintenance programs are designed to ensure that the road is kept in a safe and serviceable condition so it can achieve its life expectancy. • In designing roads, factors like the quality of in-situ and locally sourced materials, weather and the number and type of vehicles that will use the road, are taken in to account. • In some parts of Victoria, we have seen a significant increase in the number of heavy vehicles, including agricultural vehicles, using roads. This increase in demand can result in more pot holes and the maintenance program is changed accordingly.
1.12	Page 49 ‘Overall funding for pavement maintenance activities on rural roads significantly increased in 2017/18 and 2018/19 to $466 million and $422 million respectively.’ Is there funding for road inspections?	• Safety inspections form part of the regional maintenance program and they occur on a regular basis and in accordance with the Road Management Plan (RMP). • In accordance with the provisions of the Road Management Act, the road authority made the Road Management Plan in November 2004. • The primary purpose of the RMP is to provide a safe and efficient State arterial road network for use by all members of the public. • Schedule B of the RMP is Road Maintenance Standards that also set out the policies and procedures adopted by DoT to achieve its road maintenance standards. This includes describing the inspection frequencies and condition standards adopted by DoT for various traffic conditions.

		• In addition to the routine maintenance inspections, DoT has been collecting pavement condition on the Victorian network since 1994. The condition data helps DoT to understand the pavement deterioration and thus helps in developing robust statewide pavement maintenance strategies. The two types of condition data collected by DoT are;
		  ○ Manual Surface Inspection (SIR) which supports short term renewal planning
		  ○ Automated vehicle data collection inclusive of pavement strength data through Traffic Speed Deflectometer (TSD). This data is used to support short and long term renewal planning
		• Safety inspections and the collection of pavement condition data are funded as part of the State road maintenance program.

1.13	Page 52 'Evaluation of Road to Zero Education Complex is currently underway.' Any updates on these evaluations?	• The Road to Zero Education Complex was temporarily closed due to Covid-19 restrictions so the evaluation has been delayed. • However preliminary indicators show that during its first full year of operation, over 70,000 people have visited, and 7,800 students have completed curriculum-based programs. • The education programs were developed using best practice road safety education principles and adopted a co-design approach with teachers. • Feedback from students, teachers and visitors has been overwhelmingly positive. • Numerous learnings from the development of Road to Zero have been identified and have application for future education and community engagement programs. Teachers and students reported that the interactive nature of Road to Zero has meant that the program's overall experience is highly engaging. • Most teachers also report undertaking pre or post visit lessons and integrating the program into their health, science or VCAL curriculums.

1.13 (cont.)	Page 52
	'Evaluation of myLearners and Road Smart is currently underway.'
	
	Any updates on these evaluations?
		These evaluations have been delayed by Covid-19 restrictions related to learner drivers and in-school programs. Further details of what is expected from the evaluations are included below.
		myLearners program evaluation
		• Deloitte have been commissioned to undertake both the process and outcome evaluations of Victoria's app and website for learner and supervising drivers designed to help learner drivers form safe driving behaviours and prepare them for solo driving.
		• It is focused on the myLearners app and website's overall performance, its implementation to date, and inform future product development. The evaluation includes the following factors:
		  ○ The reach and uptake of MyLearners
		  ○ Technical performance of the myLearners app, website and related interfaces.
		  ○ Impact on VicRoads business operations, including resource demands
		  ○ Usefulness of the data generated from myLearners e.g. to inform future road safety strategies

		○ Effect on the learn to drive process for learner drivers and supervising drivers ○ Identification of improvements to myLearners **Road Smart program evaluation:** • As per Department of Treasury and Finance requirements, a lapsing program review is underway for the Road Smart program; a road safety education program developed for beginner drivers in Victoria, funded by the TAC and delivered to year 10/year and 10 equivalent students. • The review is evaluating the appropriateness, reach, fidelity, efficiency, effectiveness and value for money of the Road Smart program. • It includes an analysis of the performance of individual program components and also an evaluation of the Road Smart program's contribution and alignment with Victoria's road safety priorities and other state funded road safety education programs.
1.14	Page 54 As most Victoria's road safety data collection systems and processes are managed by and within the Government road safety partnership; it facilitates timely access to relevant data, with a high level of confidence that the data is the best available. Is there an overall approach to data collection i.e. is there an overarching approach to collecting specific data for a specific reason e.g. to guide policy?	• Victorian crash and injury data are considered among the richest road safety data in the world, having been developed in a long-standing partnership between Victoria Police, VicRoads (DoT), the TAC, Department of Justice & Community Safety (DJCS) and the Department of Health and Human Services (DHHS). • For Victorian crash data, the TIS (Traffic Incident System) is the primary dataset used to collect road crash information by members of Victoria Police. This data is managed by an interagency committee of road safety partners (DOT/TAC/VicPol/WorkSafe) who report to a steering committee. • Historically, linked datasets have proven difficult to achieve largely due to legislative and privacy impediments in setting up appropriate data sharing agreements. • In order to optimise road safety crash datasets, Victoria's road safety partners have been working on consolidating crash and injury data while protecting the privacy of Victorians involved in crashes. • The collection of information and data that informs future road safety management plans is a vital use case for a linked road safety data system and an area we are continually working to improve.
1.15	Page 55 'Challenges for road safety data collection' Are there one or two things that should be done better that we could recommend?	• Victorian data was instrumental in proving the value of Side Head-Protecting Airbags, leading to the adoption by the United Nations of a new Global Technical Rule requiring their fitment in passenger vehicles. • However, data is challenging and ever evolving. It requires significant time and investment at a high level to obtain wholesale change. Continued investment in data and coordination across the partnership will support the ongoing improvement of road safety data and enable many of these challenges to be addressed. • As noted in the submission, a challenge which is largely beyond the control of road safety partners is that people injured in road crashes are not always reported to Victoria Police or the TAC. This

		therefore presents a gap in data collection, which can only be rectified through interrogation of hospital datasets. This data gap seems to be particularly prominent for vulnerable road users such as cyclists and motorcyclists. The road safety agencies are constantly working to remediate these data quality and completeness issues.
		• Some areas that are being explored as part of the partnerships commitment to continuous improvement but are currently not part of the committed work program:
		  ○ to improve the reporting of road fatality data; where toxicological information is linked to a deceased person's crash record. This would ideally incorporate toxicology information of those who were killed or seriously injured in crashes, as well as toxicology information of people involved in crashes.
		  ○ to invest in further enhancements to systems and processes that improve, and where possible automate the collection, integration, analysis, and sharing of trauma and related road safety data. This will improve the availability of robust and timely data such as in the area of data linkage across different datasets and validation of data. An example of a recent enhancement that will benefit data collection was the issuing of mobile and tablet technology to Victoria Police members.

1.16	Page 56 'Another challenge which is largely beyond the control of road safety partners is that people seriously injured in road crashes are not always reported to Victoria Police or the TAC.' Why not? How can this be fixed?	• This issue seems to be particularly prominent for vulnerable road users such as cyclists and motorcyclists. This is often because the injured person presented at hospital, without police attending or being notified of the crash; and without a TAC claim being lodged. • Reasons for this can include not being aware of TAC service offerings or concerned about police getting notified if at fault or doing something else illegal. • The road safety agencies are constantly working to remediate these gaps in road safety data. This gap in data collection can be improved through the interrogation of hospital datasets and greater community awareness.
1.17	Page 56 'Extending upon this initial work, the Technical Working Group is working to establish formal information sharing arrangements between road safety partners to link ten years of road safety data, while additionally including data from the Road Crash	• Sharing arrangements between road safety partners to link ten years of road safety data will be an ongoing arrangement.

	Information System, relevant Ambulance Victoria data, and Births Deaths and Marriages data for further validation.' Will this be a permanent arrangement into the future?	
1.18	Page 57 It is also considered that information technology limitations and variations between relevant stakeholder agencies may impact on road collision data collection. This can be a challenge, particularly where multiple data sets may be required to interpret serious injury collisions. There is scope to improve these processes/systems in order to obtain more accurate and timely trauma data.' Can this be done easily? Could we make a helpful recommendation here?	• Data is challenging and requires significant time and investment at a high level to obtain wholesale change. • Strong data and insights underpin existing activities and ongoing strategies, as well as inform investment in various areas of the entire road safety system and partnership to drive down trauma. • The development of a long-term road safety data and insights plan to complement the Road Safety Strategy would ensure that all datasets and systems are improved in the short and longer term. • This plan would help to ensure that appropriate investment was made available to allow existing systems to be improved in the short term; as well as provide the framework for longer term initiatives to be invested in to continuously uplift the data and insights available to the road safety partnership.

2. Response to Department of Transport appearance at hearing

The following are responses to questions posed by the Committee following the appearance of the Department of Transport at the hearing.

Number	Question	Response

2.1	What was the reasoning behind restructuring VicRoads and the Department of Transport, including the creation of Road Safety Victoria?
	
	Could you provide a breakdown of the key responsibilities of each agency?
		• Public Transport Victoria, VicRoads and the Department of Transport were brought together to deliver the integrated planning, delivery and management of transport in Victoria. This change was driven by the desire for:
		  ○ A user-centric approach to network design and delivery
		  ○ Improved performance and operational efficiency within the transport portfolio
		  ○ An integrated, holistic and long-term view on network planning and management
		  ○ Embedding a culture of collaboration and integration.
		• Integration of transport policy, planning, networks and operations is world best practice and provides one public face dedicated to making travel easier and safer.
		• Road Safety Victoria (RSV) was established on 1 August 2019 as a dedicated office of road safety within the Department of Transport to focus the state's efforts on tackling Victoria's road toll. Road Safety Victoria merged the road safety functions of VicRoads and the Department of Transport and centralised the work previously undertaken by these agencies.
		• The role of Road Safety Victoria is to strengthen Victoria's road safety capability and ensure road safety is a priority within the new integrated Department of Transport.
		• While Road Safety Victoria reports to the Minister for Roads and Road Safety, the intent is of RSV to provide a macro-view of road safety strategy, and the policies and initiatives required across the partnership to maximise the state's investment.
		• This provides strong coordination of road safety across the Road Safety partnership and of key department functions including Licensing policy, Vehicle safety, On-road behaviours, Infrastructure and speed, Road safety strategy and data and Community programs.

2.2	MUARC submission is estimating 22.5 fatalities saved and 172 serious injuries crashes saved if the new mobile speed cameras were installed at new rural sites.	• The difference is because MUARC were commenting on the impact that new mobile speed cameras could have if they were installed at only **rural** sites; whereas the Department of Transport response focussed on an increase of mobile camera operations in **both rural and metro** areas.

	Your submission is quoting 60 lives and 260 serious injuries saved, based on MUARC modelling. Can you explain the difference?	
2.3	Page 50 of your submission refers to quite significant increases in funding for road maintenance from 2017/18. Has that maintenance program begun?	• The 2017-18 budget for maintenance management activities as outlined in the submission has been fully expended. • In 2017/18 this included $216.8 million in regional Victoria to replace damaged road surfaces with a new waterproof layer as part of the Regional Road Restoration and Road Surface Replacement Program. Also included were ancillary works that help preserve the pavement, protecting the underlying pavement structure and prevent further deterioration, delaying expensive road rebuilding.
2.4	One criticism you receive regarding wire rope barriers is access to rural property. How do you manage that?	• Regional Roads Victoria (RRV) undertakes consultation with local residents and stakeholders regarding planned works. Consultation is undertaken through a variety of mechanisms including 1:1 visits to talk through designs. • DoT attends the local Municipal Emergency Management Planning Committees (MEMPCs) arranged by the relevant council, which have representation from all emergency services including the Country Fire Authority. The meetings cover a range of topics including advice on planned works and to identify any issues and risks in relation to emergency service access points and any other factors that may influence the design and delivery of projects. • Legal access points to rural properties are assessed before road side barriers are installed. The width and sight line visibility are considered in the design process and tests are undertaken to ensure that the design of the barriers doesn't impede visibility. Barriers are also installed in consideration of properties where heavy vehicles or agricultural machinery require entry. The gap between barriers is always wider than the existing culvert width. However, the width may vary slightly depending on the length of the barrier run on each side of the property entrance. • While we endeavour to provide gaps in centreline to every property entrance, this is sometimes not possible due to a range of factors including previously mentioned sightline concerns and also the number of property access points along a road. Farm gates may occasionally only be provided with left in / left out access only, if the number of gaps in the barrier becomes too many. These centre access points may need to be closed as when the barrier run is too short, or there are too many gaps in the centreline barrier, the risk reduction for head on crashes is much less effective. • Access points that has not been legally approved and permitted by RRV are generally not recorded in our systems and will not receive the same level of engagement or access to breaks in barrier that legally permitted access points receive.

2.5	How many years have you been working with MUARC? Is this an exclusive relationship or do you go to market for each piece of research?	• The Victorian Government commissions projects from a range of research organisations across Australia and internationally to investigate and present independent findings to inform decision-making. The role of research is not to endorse government policy, but to challenge it through the production of independent scientific evidence. • The Monash University Accident Research Centre (MUARC) is one of many universities and research organisations that government commissions projects to investigate and present independent findings to inform decision making. • We do not fund MUARC or any other research organisation as an entity. We fund independent scientific research. • The Monash University Accident Research Centre initial mandate was to undertake research into issues relevant to Victoria's road safety policy development and critique. This was instigated by Monash University and the Victorian Government in 1987. • The Baseline Road Safety Research Program (BRSRP) is a long-standing arrangement between the road safety partners and MUARC to assist in informing an evidence-based approach to addressing road safety in Victoria. The research program is funded by co-contributions from the TAC, Department of Justice and Community Safety and Department of Transport (DoT). • Governance arrangements for the BRSRP are managed through a Memorandum of Understanding between the road safety partners and MUARC. The management of the BRSRSP is under the overall governance arrangements for road safety. • The current BRSRP ends on 31 December 2022. A review of the program, including testing the market for provision of road safety baseline research will take place prior to the next program being initiated.
2.6	Did the data analysis you undertook last year to help with the next strategy shed any light on why/where the strategy will not meet targets?	• The State of Victoria has grown substantially since the Towards Zero Road Safety Strategy was introduced, and the modelling didn't fully account for the population growth we've seen since 2015. That means there have been more vehicles on the road and licensed drivers than we predicted – fortunately we have not seen that translate into an increase in fatalities per capita. This remains relatively constant in recent years. • Whilst the data analysis we undertake is critical, it alone doesn't tell us everything we need to know. We need to ensure we utilise the data, verify it, combine it with our expertise and intelligence to interpret and gain insights and then use this evidence to build stronger policies, strategies and initiatives to effectively address trauma in the long term. • Victoria's new Road Safety Strategy 2021-30 takes a long-term approach, with delivery through shorter-term actions plans; allowing for a responsive and agile method of implementation and monitoring.

Additional materials provided

For the benefit of the Committee and to ensure completeness, we are enclosing some additional information.

Firstly, included is an updated version of the presentation shared during the Department of Transport and TAC hearing appearance. Statistics in the presentation has been updated based on clarification sought by the Committee regarding TAC data on slides 15 and 16, as well as minor adjustments on slides 7, 8 and 9 where an editing (copy paste) error was not picked up at the time.

Also enclosed is the Road Safety Strategy 2021 – 2030 launched toward the end of 2020. The strategy seeks to embed a strong culture of road safety within the community, supporting road users to make safe choices as we progressively reduce fatalities on our roads.

The strategy's objectives are to:

- ensure all Victorians are safe and feel safe, on and around our roads.
- halve all road deaths by 2030 and put us on a strong path to eliminate all road deaths by 2050, while also reducing serious injuries on our roads.
- encourage a culture of road safety within the Victorian community.
- deliver a suite of initiatives that have an impact in the short-term while preparing us for the future opportunities.

The strategy will be implemented via short-term action plans of key initiatives. This approach allows us to be agile in response to road safety now and into the future.

Appendix C
Comparison of road trauma datasets in Victoria

	TAC Statistics Search	TAC–iRAP Road Injury Dashboard
Fatalities	✓	
Claims involving hospitalisation		
Stay of 14 days or less	✓	
Longer than 14 days	✓	
Gender	✓	✓
Age range		
0 to 4	✓	✓
5 to 15	✓	✓
16 to 17	✓	✓
18 to 20	✓	✓
21 to 25	✓	✓
26 to 29	✓	✓
30 to 39	✓	✓
40 to 49	✓	✓
50 to 59	✓	✓
60 to 69	✓	✓
70 and over	✓	✓
Unknown	✓	
Road user		
Driver	✓	✓
Passenger	✓	✓
Motorcyclist	✓	✓
Pedestrian	✓	✓
Bicyclist	✓	✓
Unknown	✓	✓

C

	TAC Statistics Search	TAC–iRAP Road Injury Dashboard
Crash type		
Pedestrian	✓	✓
Adjacent direction	✓	
Opposing direction	✓	
Same direction	✓	
Manoeuvring	✓	
Overtaking	✓	
On road	✓	
Run off straight road	✓	
Run off road on a curve	✓	
Passenger	✓	
Miscellaneous	✓	✓
Train		✓
Head on		✓
Intersection		✓
Other		✓
Rear end		✓
Run off road (general)		✓
Turning		
Injury type		
Amputations		✓
Brain injury (mild)/Head injury		✓
Burns (severe/moderate)		✓
Concussion		✓
Contusion/abrasion		✓
Degloving		✓
Dislocation		✓
Fatal		✓
Fractures (limb)		✓
Fractures (other)		✓
Internal injuries		✓
Loss of sight/eyes		✓
Nerve damage		✓
Other injuries		✓
Other spinal		✓
Paraplegia		✓

	TAC Statistics Search	TAC–iRAP Road Injury Dashboard
Injury type (*continued*)		
Quadraplegia		✓
Severe ABI		✓
Sof tissue (neck/back) whiplash		✓
Sprains/strains		✓
Location		
Melbourne	✓	
Rural Victoria	✓	
Local Government Area	✓	
Region		
Barwon South West		✓
Gippsland		✓
Grampians		✓
Greater Melbourne		✓
Hume		✓
Loddon Mallee		✓
Unknown		✓
Speed zone		✓
30km/h		✓
40km/h		✓
50km/h		✓
60km/h		✓
70km/h		✓
80km/h		✓
90km/h		✓
100km/h		✓
110km/h		✓
Off road		✓
Unknown		✓
Crash Period	Any date ranges from 1 January 1987 to date	Yearly data from 2006-07 to 2016-17
Day of the week	✓	
Hour range	✓	
Location map	✓	
Cost category		✓

Appendix D
Examples of driver assist technologies

Intelligent Speed Assist

Intelligent Speed Assist (ISA) systems alert drivers with both visual and auditory warnings when the driver exceeds the speed limit. Using global positioning (GPS), the location of the car is cross referenced with a digital road map containing speed limit information. Some ISA systems, known as Active ISA, can physically prevent the driver from exceeding posted speed limits.[1]

Automatic Emergency Braking

Automatic Emergency Braking (AEB) enables a vehicle's brakes to be applied without driver input where there is an impending collision in order to lessen the severity of an impact, or even avoid it altogether. AEB works by alerting a driver to take corrective action and supplementing the driver's braking to avoid a crash. If there is no response from the driver the AEB automatically applies the brakes.[2]

Electronic Stability Control

Electronic Stability Control (ESC) helps drivers to avoid crashes by reducing the danger of loss of control of a vehicle due to over-steering. ESC uses sensors to detect loss of control and activates individual brakes to bring the car safely back into the centre of the lane without further danger. ESC can assist to:

- correct oversteering or understeering
- stabilise a vehicle after an evasive manoeuvre
- enhance vehicle handing on unsealed surfaces (gravel roads, road shoulders etc)
- improve traction on slippery, icy or wet roads.[3]

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1 NSW Centre for Road Safety, *Intelligent Speed Adaptation*, 2016, <https://roadsafety.transport.nsw.gov.au/research/roadsafetytechnology/isa/index.html> accessed 2 February 2021.

2 US National Highway Traffic Safety Administration, *Driver Assist Technologies*, (n.d.), <https://www.nhtsa.gov/equipment/driver-assistance-technologies> accessed 2 February 2021.

3 Transport Accident Commission, *Howsafeisyourcar?*, 'Electronic Stability Control', (n.d.), <https://howsafeisyourcar.com.au/safety-features/electronic-stability-control> accessed 2 February 2021.

Lane Departure Warning/Lane Keep Assist

Lane Departure Warning systems use cameras and sensors around the vehicle to warn drivers with audible, visual and tactile warnings when a vehicle wheel is about to drift over the lane markings. Lane Keep Assist systems include further assistance technology, which can proactively steer the vehicle back into the lane in addition to the alert.[4]

Seatbelt Reminders

Seatbelt Reminders are audible and visual alerts deployed in a vehicle when the engine has been switched on using weight sensors in seats and clip-in sensors to detect if a seat is occupied and the seatbelt has not been buckled.[5]

Drowsiness/Driver Attention Detection

Drowsiness detection systems, or driver attention detection systems, currently monitor a vehicle's movement, the steering wheel angle, lane deviation, time driven and road conditions. They alert a driver with visual and audible alerts when there is a change in pattern that is consistent with drowsiness or a lapse in concentration. New technologies are also in development that can monitor the posture, eye movements and heart rate of the driver in order to identify driver fatigue, drowsiness or distraction and alert the driver.[6]

Blind Spot Detection

By using cameras and sensors built into side mirrors, Blind Spot Detection (BSD) can detect when another vehicle comes alongside the driver's vehicle and alerts the driver that it's not safe to change lanes.[7] Some vehicles also come equipped with Active BSD, which can steer a vehicle back into the lane if it detects another vehicle changing lanes in proximity.[8] Some aftermarket Dash Cams and GPS units have similar safety alerts.

Forward Collision Warning

Forward Collision Warning (FCW) uses a sensor to detect the distance between the driver's vehicle and the one in front. The system alerts the driver with both audible beeps and flashing lights in the driver's field of vision if a crash is imminent; it may also apply the brakes where that capability exists. Some FCW systems can also detect pedestrians and cyclists.[9]

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4 Transport Accident Commission, *Vehicle Purchase Policy*, (n.d.), <https://www.tac.vic.gov.au/road-safety/safe-driving/fleet-safety/fleet-policies/vehicle-purchase-policy> accessed 2 February 2021.

5 Royal Automobile Club of Victoria, *Emerging Vehicle Safety Technology*, RACV Research Report 14/03, 2014, p. 7.

6 Royal Automobile Club of Victoria, *The car technology keeping you safe*, 2021, <https://www.racv.com.au/royalauto/moving/news-information/car-safety-systems.html> accessed 2 February 2021.

7 Transport Accident Commission, *Howsafeisyourcar?*, 'Blind Spot Warning'.

8 How Stuff Works, *How are cares making the blind spot less dangerous?*, (n.d.), <https://auto.howstuffworks.com/car-driving-safety/safety-regulatory-devices/cars-making-blind-spot-less-dangerous1.htm> accessed 2 February 2021.

9 US National Highway Traffic Safety Administration, *Driver Assist Technologies*, (n.d.), <https://www.nhtsa.gov/equipment/driver-assistance-technologies> accessed 2 February 2021.

Active/Adaptive Cruise Control

Active / Adaptive Cruise Control systems automatically adjust the speed of a car to maintain a safe following distance to the vehicle ahead. The distance can usually be set manually but is typically one to two vehicles in length. Active cruise control can be equipped with stop and go technology and it is capable of functioning at very low speeds, including coming to a complete stop.[10].

Collision Avoidance Assist/Autonomous Emergency Steering

Collision Avoidance Assist is an automatic steering system that assists the driver in steering the vehicle out of the way of an oncoming object in order to avoid a collision.[11]

Night Vision Assist

Using thermal imaging, Night Vision Assist displays objects giving off heat in the road ahead such as animals and pedestrians that are difficult for human eyes to spot in low light or darkness.[12]

Adaptive Front Lighting and Automatic High Beam

Adaptive Front Lighting systems adjust the direction of a vehicles' headlights when turning corners/curves or on hills.

Automatic High Beam uses forward facing sensors to switch vehicle headlights to low beam when an oncoming vehicle approaches and return them to the original setting once the other vehicle has passed.[13]

Active Rollover Protection

Active Rollover Protection utilises the anti-locking braking system, traction control and yaw control[14] of a vehicle to selectively apply the brakes when the electronic stability control system recognises the conditions that signify an impending rollover in order to centre the vehicle, reduce speed, and prevent, or reduce the severity of, the vehicle rolling.[15]

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10 Royal Automobile Club of Victoria, *Emerging Vehicle Safety Technology*, p. 8.

11 Nissan Motor Corporation, *Autonomous Emergency Steering System*, (n.d.), <https://www.nissan-global.com/EN/TECHNOLOGY/OVERVIEW/autonomous_emergency_steering_system.html> accessed 2 February 2021.

12 Royal Automobile Club of Victoria, *Emerging Vehicle Safety Technology*, p. 10.

13 ANCAP Safety, *Understanding Safety Features*, (n.d.), <https://www.ancap.com.au/understanding-safety-features> accessed 2 February 2021.

14 Yaw systems control the driving and braking forces between the left and right wheels by judging driver operation and vehicle behaviour.

15 ANCAP Safety, *Understanding Safety Features*.

Alcohol Interlock

An Alcohol Interlock is an electronic breath testing device installed in a vehicle that prevents the engine from starting if it detects alcohol on the breath of the driver. Drivers of a vehicle fitted with a device must give a reading of .02 BAC or under for the vehicle to be started. The device records all tests and attempts to drive and records the alcohol level on the driver's breath. As of 30 January 2015, all devices are fitted with a camera that captures pictures when a breath test is undertaken.

In Victoria, if a person loses their licence after a drink-driving offence, an alcohol interlock device will be installed in the vehicle as part of the Victorian Alcohol Interlock Program for a period determined by the factors of their offending.[16]

Mobile Phone Blocking Device

Car manufacturers are currently developing systems that are designed to block telecommunication, Bluetooth and wi-fi signals in order to prevent the use of smart phones and devices while the engine of a vehicle is switched on. These systems, known as 'Signal Shields', are storage compartments in the vehicle where devices can be placed during travel to prevent them causing distraction.[17]

Some technology companies have also begun development of 'driver mode' software updates for their mobile devices.[18]

Airbags

All new vehicles must be equipped with airbags that provide protection to the body and head in the event of crash. The types of airbags in a vehicle will depend on the year, make and model of that vehicle. They may include:

- curtain airbags that deploy from the top of the door rails above the side window[19]
- thorax airbags with head protection that activate from the seat or deploy from the door[20]
- front airbags on the passenger side of the vehicle[21]

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16 VicRoads, *Installing and using the alcohol interlock*, (n.d.), <https://www.vicroads.vic.gov.au/licences/demerit-points-and-offences/drink-driving-offences/installing-and-using-the-alcohol-interlock> accessed 27 November 2019.

17 Nissan Motor Corporation, *Nissan Signal Shield concept uses 180-year-old invention to tackle smartphone distraction behind the wheel*, 2017, <https://global.nissannews.com/ja-JP/releases/release-a9c16664943acea5d01d0abc1400c07c-nissan-signal-shield-concept-uses-180-year-old-invention-to-tackle-smartphone-distraction-behind-the-wheel> accessed 27 November 2019.

18 Apple, *How to use Do Not Disturb While Driving*, (n.d.) <https://support.apple.com/en-au/HT208090> accessed 27 November 2019.

19 Transport Accident Commission, *Howsafeisyourcar?*, 'Curtain Airbags', (n.d.), <http://www.howsafeisyourcar.com.au/Safety-Features/Safety-Features-List/Curtain-Airbags> accessed 27 November 2019.

20 Transport Accident Commission, *Howsafeisyourcar?*, 'Thorax Airbags with Head', (n.d.), <http://www.howsafeisyourcar.com.au/Safety-Features/Safety-Features-List/Thorax-Airbags-With-Head> accessed 27 November 2019.

21 Transport Accident Commission, *Howsafeisyourcar?*, 'Front Airbags Passenger', (n.d.) <http://www.howsafeisyourcar.com.au/Safety-Features/Safety-Features-List/Front-Airbags-Passenger> accessed 27 November 2019.

- driver and passenger knee airbags[22]
- dual stage airbags that inflate to an optimised level to suit the severity of the collision.[23]

22 Transport Accident Commission, *Howsafeisyourcar?*, 'Drivers Knee Airbag', (n.d.), <http://www.howsafeisyourcar.com.au/Safety-Features/Safety-Features-List/Drivers-Knee-Airbag> accessed 27 November 2019.

23 Royal Automobile Club of Queensland, *Airbags*, (n.d.), <https://www.racq.com.au/cars-and-driving/safety-on-the-road/car-safety-features/airbags> accessed 27 November 2019.

Appendix E
Jurisdictional comparison: new light/passenger private motor vehicle duties

Jurisdiction	Calculation method	Vehicle	Rates	Examples[a] of duty costs based on vehicle value				
				$25,000	$55,000	$80,000	$110,000	$155,000
Victoria[b]	Based on dutiable value and type of vehicle	'Green' and 'primary producer' passenger car	$8.40 per $200 or part thereof	$1,050	$2,310	$3,360	$4,620	$6,150
		Non-passenger vehicle (including motorcycles)	$5.40 per $200 or part thereof	$675	$1,485	$2,160	$2,970	$4,185
		All other passenger cars:						
		• Up to $68,740	$8.40 per $200 or part thereof	$1,050	$2,310			
		• $68,741–$100,000	$10.40 per $200 or part thereof			$4,160		
		• $100,001–$150,000	$14.00 per $200 or part thereof				$7,700	
		• >$150,000	$18.00 per $200 or part thereof					$13,950
New South Wales[c]	Based on greater of dutiable value and purchase price and whether it is classed a passenger vehicle	• Up to $44,999	$3.00 per $100 or part thereof	$750				
		• $45,000+	$1,350, plus $5 per $100 or part thereof (excluding motorcycles)		$1,850	$3,100	$4,600	$6,850
Queensland[d]	Based on dutiable value and type of light vehicle	Hybrid and electric:						
		• Up to $100,000	$2.00 per $100 or part thereof	$500	$1,100	$1,600		
		• >$100,000	$4.00 per $100 or part thereof				$4,400	$6,200
		1–4 cylinders/2 rotors/steam powered:						
		• Up to $100,000	$3.00 per $100 or part thereof	$750	$1,650	$2,400		
		• >$100,000	$5.00 per $100 or part thereof				$5,500	$7,750
		5–6 cylinders/3 rotors:						
		• Up to $100,000	$3.50 per $100 or part thereof	$875	$1,925	$2,800		
		• >$100,000	$5.50 per $100 or part thereof				$6,050	$8,525
		7+ cylinders:						
		• Up to $100,000	$4.00 per $100 or part thereof	$1,000	$2,200	$3,200		
		• >$100,000	$6.00 per $100 or part thereof				$6,600	$9,300

Jurisdiction	Calculation method	Vehicle	Rates	Examples[a] of duty costs based on vehicle value				
				$25,000	$55,000	$80,000	$110,000	$155,000
Western Australia[e]	Based on dutiable value	• Up to $25,000	2.75% of dutiable value					
		• $25,000–$50,000	R% where R = [2.75 + ((dutiable value – 25000)/6666.66)]	$687.50				
		• >$50,000	6.5% of dutiable value		$3,575	$5,200	$7,150	$10,075
South Australia[f]	Based on dutiable value and whether vehicle is classed as commercial or non-commercial	All light vehicles:						
		• Up to $1,000	$1.00 per $100 or part thereof (minimum $5 applies)					
		• >$1,000–$2,000	$10.00, plus $2.00 per $100 or part thereof in excess of $1,000	$490	$1,090	$1,590	$2,190	$3,090
		Non-commercial vehicles:						
		• >$2,000–$3,000	$30.00, plus $3.00 per $100 or part thereof in excess of $2,000					
		• >$3,000	$60.00, plus $4.00 per $100 or part thereof over $3,000	$940	$2,140	$3,140	$4,340	$6,140
		Commercial vehicles						
		• >$2,000	$30.00, plus $3.00 per $100 or part thereof in excess of $2,000	$720	$1,620	$2,370	$3,270	$4,620
Tasmania[g]	Based on dutiable value and type of vehicle and dependent on whether subject to manufacturer's fleet discount	New light vehicle with fleet discount	$3.50 per $100 or part thereof (minimum $20 applies)	$875	$1,925	$2,800	$3,850	$5,425
		Passenger vehicles:						
		• Up to $600	$20.00					
		• $600–$35,000	$3.00 per $100 or part thereof	$750				
		• $35,000–$40,000	$1,050, plus $11.00 per $100 or part thereof in excess of $35,000					
		• >$40,000	$4.00 per $100 or part thereof		$2,200	$3,200	$4,400	$6,200
		Motorcycles	$3.00 per $100 (minimum $20 applies)	$750	$1,650	$2,400	$3,300	$4,650

Jurisdiction	Calculation method	Vehicle	Rates	Examples[a] of duty costs based on vehicle value				
				$25,000	$55,000	$80,000	$110,000	$155,000
Northern Territory[h]	Based on dutiable value	All light vehicles	$3.00 per $100 or part thereof	$750	$1,650	$2,400	$3,300	$4,650
ACT[i]	Based on dutiable value and green vehicle rating	Environmental leading-edge models	$0.00					
		Models with significantly above-average environmental performance						
		• <$45,000	$1.00 per $100 or part thereof	$250				
		• $45,000+	$2.00 per $100 or part thereof		$650	$1,150	$1,750	$3,100
		Models with average environmental performance/non-rated vehicles						
		• <$45,000	$3.00 per $100 or part thereof	$750				
		• $45,000+	1,350, plus $5.00 per $100 or part thereof		$1,850	$3,100	$4,600	$6,850
		Models with below-average environmental performance						
		• <$45,000	$4.00 per $100 or part thereof	$1,000				
		• $45,000+	1,800, plus $6.00 per $100 or part thereof		$2,400	$3,900	$5,700	$8,400

a. Quoted examples were sourced from government-provided online calculators in respect of each jurisdiction, all accessed 23 February 2021.

b. <https://www.sro.vic.gov.au/motor-vehicle-duty-current-rates> accessed 23 February 2021.

c. <https://www.revenue.nsw.gov.au/taxes-duties-levies-royalties/motor-vehicle-duty> accessed 23 February 2021.

d. <https://www.qld.gov.au/transport/registration/fees/duty/rates> accessed 23 February 2021.

e. <https://www.wa.gov.au/organisation/department-of-finance/vehicle-licence-duty> accessed 23 February 2021.

f. <https://www.revenuesa.sa.gov.au/stamp-duty-vehicles/rates> accessed 23 February 2021.

g. <https://www.sro.tas.gov.au/motor-vehicle-duty/rates-of-duty> accessed 23 February 2021.

h. <https://nt.gov.au/employ/money-and-taxes/taxes,-royalties-and-grants/stamp-duty/examples-of-duty-and-rates> accessed 23 February 2021.

i. <https://www.revenue.act.gov.au/duties/motor-vehicle-duty> accessed 23 February 2021.

Source: Legislative Council Economy and Infrastructure Committee.

Extract of proceedings

Legislative Council Standing Order 23.27(5) requires the Committee to include in its report all divisions on a question relating to the adoption of the draft report. All Members have a deliberative vote. In the event of an equality of votes, the Chair also has a casting vote. The Committee divided on the following question during consideration of this report. Questions agreed to without division are not recorded in these extracts.

Mr Quilty moved, That in Chapter 4, Recommendation 14 the words 'Identify unsafe roads with low traffic volumes where speed limits should be reduced and reduce them accordingly' be omitted.

Question—put.

The Committee divided.

Ayes	Noes
Mr Quilty	Mr Erdogan
Mr Finn	Mr Barton
	Ms Watt

Question negatived.

Minority report

Road Toll Enquiry – Minority Report

I concur with the majority of the findings and the recommendations contained in the committee report. As such I don't propose to write an entire separate report, only to address the points that I do not support.

Chapter 1- Introduction: The Towards Zero strategy and Victoria's approach to road safety

The report largely takes as a given that reducing the road toll – getting towards zero - is an end in and of itself. Of course, it is acknowledged by everyone that an actual road toll of zero is not practicably achievable. We could get close by ridiculous measures such as lowering speed limits to 5km/h, but that largely defeats the purpose of roads and vehicles, which is to move people and goods from one place to another.

In the real world of scarce resources, every decision requires weighing alternatives and making choices. With every decision comes opportunity costs of other things that could be done. This might sound "hard" and "rationalist" in a society where feelings are becoming the drivers of behaviour. However one might suggest that this is the primary role of government – to make hard choices about scarce funding decisions. Every time a hospital bed is not funded or ambulance service upgrades are not supported, life and death decisions are being made. The unspoken assumption behind the "Towards Zero" mantra is that there are no other values that are more important than saving lives, and therefore, ultimately any measure can be justified towards this end.

While it is undeniable that there is an increasing trend within our society to embrace security as the most important thing, an altar upon which any other value can be sacrificed, these values are not universally held. The tolerance for risk within the population varies by gender, age, socio-economic status, education levels and, importantly when talking about roads used to move people around, by geography. While our university educated, city based ruling classes may hold it to be unarguably true that the only goal that matters is to save lives, this is a value judgement, it does not make those with differing views wrong.

Freedom and personal choice matter. This includes the freedom to engage in activities that raise personal risk. It is not the government's job to protect us all from ourselves – the logical ultimate conclusion of the alternative – the ultimate goal of the public health lobby - finds us all encased in gel, fed nutrients through a tube, unable to engage in any activity whatsoever. Safety alone cannot be the only guiding factor in decisions about roads.

Fortunately, public health advocates have no legislative power.

The Monash University Accident Research Centre is one of the key research agencies providing the data underpinning the Safe Systems approach. While we would never wish to cast aspersions on the academic work produced by MUARC, there is a clear potential conflict that this research that is produced by an agency that was set up with the sole goal of driving down the road toll, funded for the purposes of driving down the road toll, and staffed with academics who believe they have a mission to drive down the road toll, might focus on driving down the road toll to the exclusion of all other considerations.

We heard evidence that in order to produce economic modelling showing that raising the speed limits imposed net costs on society it was necessary to not only include in the figures a range of private economic costs such as fuel and vehicle repair costs, but that it was necessary to redo the modelling and assign much higher arbitrary values to lives lost than were initially proposed. However, to make this work, it is also necessary to apply a different discount rate to the value of time lost to driving as time lost to death. If time lost due to driving is valued at the same cost as time lost due to death it is suggested that lowering speed limits becomes harder to justify economically.

Chapter 3 - Road Standards: design and maintenance

Wire rope barriers (WRB) have been seized on with enthusiasm by our road safety experts as a low cost way to make roads safer. There is no doubt that on roads where, due to geography or roadside

vegetation we do not have safe runoff areas, wire rope barriers can prevent serious accidents. However, as well as being particularly dangerous for motorbike riders, there are significant and ongoing costs to repair them after every encounter with a vehicle. It appears that we have not yet quantified the ongoing costs to keep these barriers in place. And this doesn't include the private costs of motorists who find their vehicles written off after even minor encounters with the barriers, which in many cases would not have been accidents at all without them.

Location of the WRB has also been questionable – in many places removing the ability for cars to pull off the road in case of trouble, and setting them up for being rear-ended in collisions from passing traffic. We heard that in some jurisdictions WRBs are being abandoned as a solution. However, having embraced the barriers with such enthusiasm, there would appear to be a reluctance on the part of road authorities to acknowledge that there is any justification behind the criticism of the rollout and the safety of WRBs.

Recommendation: That VicRoads continue to evaluate the efficiency and effectiveness of wire rope barriers, including cost effectiveness and safety for all road users. Sunk costs should not be a barrier to abandoning them if they prove to be less valuable than expected.

In general, throughout the enquiry, we heard from what might be dubbed the "road safety establishment" that nothing was more important than saving lives. However, when the discussion turned to roadside vegetation, we discovered, most remarkably, that this could be qualified to (and I paraphrase, perhaps cruelly) "Nothing is more important than saving lives, except for roadside vegetation, which is obviously of more value." When considered in line with the rest of the evidence given to the committee, it was really quite extraordinary.

There is an opportunity, by clearing roadside vegetation on the approaches to intersections and on sharp turns on regional roads, to reduce the road toll on these roads. It is all a question of priority.

Recommendation: Roadside vegetation blocking visibility should be cleared around country intersections. Roadside vegetation is less important than the lives of drivers.

Chapter 4 - Speed and road safety

Victorian roads are divided into two categories – urban and rural – and each category faces different challenges in addressing road safety. Within the cities and towns, reducing speed limits on short stretches of road will have minimal impact on quality of life. When you spend large parts of your driving time stuck in traffic, creeping along below the speed limit, a small change to the speed limits may seem like a little thing. However, for those who routinely drive hundreds or thousands of kilometres in a week on country roads, the situation is different.

It is undeniable that the poor quality of many rural roads raises risks for drivers. However, dropping speed limits on rural roads from 100 to 80 will be devastating to rural communities. A drop of this magnitude will make people's travel times 25% longer. With many people daily or routinely making trips of 100km or longer in each direction, such a move will have significant impacts on the economies of these areas. Fatigue will become a bigger factor in travel. Costs will rise. Isolation will become more of an issue. Partners who would otherwise work off-farm will find this becomes unviable, making moving, staying or returning to these areas less attractive. This becomes another weight around the neck of rural Victoria.

We heard that local councils should have more say in adjusting speed limits. This should apply to raising limits, not just lowering them. In a letter from the Corangamite Shire to the Roads Minister we found the following quote. It really relates the problem to a real-life and understandable scenario, and counters the 'only adds seconds to journeys' narrative.

> *"Of concern to the Council is the impact that the 80 km/h speed restrictions would have on rural residents and businesses. By way of example, a resident living in Vite Vite and using country roads to access Skipton would have to spend an extra 30 hours a year in their car just to do the school drop off and pick up."*

The headline figure of a decline in the road-toll will hide everything else that lies underneath. When all our road safety experts live in the city, catch the tram or the trains to work, and the closest they ever come to rural Victoria is when they fly over it on their way to a conference in another city or overseas, it is easy to overlook the unintended consequences of a policy like dropping speed limits on the impacted communities.

People from rural Australia understand that it is impossible to operate in that environment at zero risk. Risks can be reduced, but they cannot be eliminated, and at some point, there is a divergence of risk tolerance between those who live in the city and those who are left in the regions. Nobody wants anyone to die or be injured on the roads, but, push-polling surveys aside, it is likely that a majority of regional communities will reject these changes, as many currently reject the existing speed limits as too low for these roads.

Recommendation: Speed limits should only be dropped on rural roads in the most extreme cases, and then only with extensive community consultation and acceptance, not just sham surveys and hand-picked focus groups. No communities should be left isolated at the end of slow speed roads.

Victoria has a number of dual lane divided freeways, such as the Hume Highway. These roads are the best roads in the state, meeting the Safe Systems 4 or 5 star standards. The system allows for speed limits to be raised on high quality roads where traffic travelling in different directions is separated. We heard evidence of roads overseas including countries with similar road safety systems, such as Sweden, where this has worked very successfully.

Higher speed limits reduce travel times, and reduce driver fatigue. They will be of significant benefit to regional economies. We heard evidence from Road Safety Victoria that the Hume Highway was not constructed to a necessary standard to be raised to speeds of 130 or 140 km/h along the entire length. This might be technically true as there are a number of intersecting roads that cross the highway, and some merging lanes have not been constructed to a sufficient length, but the vast bulk of the freeway has been designed for these speeds. Higher speeds are also safer in situations where the traffic flows are lighter.

Recommendations: Trials of higher speed limits should be conducted on Victoria's 4 and 5 star roads on stretches where it is safe to do so. Future construction works on these dual lane freeways should be to a standard of a 140 km/h road, with the intent that the entire roads will have their limits lifted in future. Variable higher speed limits should be trialled for low traffic volume times on these roads. Speed limits should also be less strictly enforced when traffic loads are light.

The committee heard that speed cameras are not about raising revenue, and that every cent raised through speeding fines goes back into road safety. We were told that, should everyone finally comply fully with the road rules and infringement revenue dry up, the authorities would be very pleased to pay for road safety from the general budget. In reality, this argument is spurious - money

is fungible. A dollar from consolidated revenue not spent on road safety is a dollar that can be spent by the government somewhere else. Road infringements are a significant source of revenue for the government, it is perfectly justified for motorists to perceive them as such, and no amount of advertising to the contrary will change the underlying facts.

To prevent road infringements being seen as merely about revenue raising, the government would need to not use the fines for raising revenue – fines would need to be revenue neutral. A policy where every dollar raised in infringements was used to reduce government revenue in another area would achieve this. If for example, all infringement revenue was used to reduce the cost of vehicle registration for all Victorians, the impact on the budget of any additional fine would be neutral, and this argument would be, finally, put to bed. Failing that, many motorists will continue to regard fines as a cash grab by government.

Recommendation: That all revenues from traffic fines be used to offset other costs to road users such as registration costs, to keep fines revenue neutral and avoid giving governments revenue incentives to increase them. This will address the concerns among motorists that fines are just about revenue raising.

Chapter 5 - Data

An ongoing concern during the enquiry was about the quality of data collected, and whether it was sufficiently detailed - "granular" - to enable researchers to identify the true, narrow causes of accidents. It is easy to say that accidents happen on country roads, but much more data is needed before you can determine that wildlife entering the road on sharp blind corners where there are large trees close to the road are significantly more important than potholes and broken verges or vegetation obscuring vision at isolated intersections. If data is spotty in initial collection and then smoothed and homogenised for easier analysis, it is easy to lose the detailed information that might drive more targeted interventions, and fall back on general, one size fits all solutions.

Recommendation: That more detailed data be collected about causes and location of crashes, and that the unhomogenised data be made available for research purposes

Chapter 6 – Driver training and licencing

The committee heard a call made by the professional driving instructors for restrictions to be placed on who could become accredited driving instructors. Professional standards are all well and good, and we have seen them proliferating throughout our economy – but when a call goes out to restrict access to a given profession, it is always important to ask "Cui Bono" - Who benefits. Professional Licensing is all too often used as a way to restrict supply, limit competition and drive up prices and profits. And provide opportunities for professional associations to "clip the ticket" and keep a share of the rents extracted from consumers. Governments should be very careful when moving in this area and ensure there is actually a significant problem needing to be addressed - and that the costs will not exceed the benefits – before they act.

Recommendation: That analysis of the extent of the problem around underqualified driving instructors be investigated before any action is taken to regulate entry into the field.

Chapter 7 – Driver Behaviour

7.5 – International tourists

The committee recommends that Victoria's road safety partners work with the tourism industry to address the issue of road safety in south-west Victoria, particularly around the Great Ocean Road.

While accepting Recommendation 7 and the accompanying rationale, we feel that a stronger onus should be placed on travel agents and vehicle hirers not just to distribute the Victorian Road Safety Road Rules, but to establish that their clients are capable of understanding them.

Chapter 8 Vehicle Safety: standards and technology

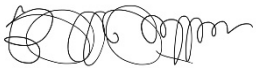
The Victorian state government imposes its own luxury car tax by imposing higher rates of stamp duty on more expensive cars. While we fully support the calls for the federal government to reduce these taxes, the same rationale applies to Victoria. Making safer cars more expensive costs lives at the margins.

Recommendation: That the Victorian government cut the stamp duty rates on Luxury cars, as this will make them safer and more affordable.

Tim Quilty MLC

Member for Northern Victoria

12th March 2021



Beverly McArthur MLC

Member for Western Victoria

12th March 2021