STAYSAFE INQUIRY INTO INQUIRY INTO SPEED ZONING AND ITS IMPACT ON THE DEMERIT POINTS SCHEME - QUESTIONS (5 JUNE 2014)

ADDITIONAL QUESTIONS (5 JUNE 2014)

1. The submission does not provide any data about the reasons motorists speed.

- **Do you have any data indication the primary reasons for speeding?**
- **Has there been any research carried out into the primary causes of speeding by motorists in NSW?**
- **Do you think such data should be collected?**

Most drivers are supportive of speed enforcement, with recent attitudinal research showing that over 70% of drivers 'strongly' or 'slightly' approve of all of the speed enforcement measures in NSW. Approval for speed cameras was highest in school zones (90%).

In NSW the majority of drivers do not speed. More than 70% of licence holders in NSW have no demerit points, and about 99% of drivers who drive past a speed camera are compliant and are not infringed for speeding. However, research shows that speeding behaviour remains prevalent in certain circumstances, particularly on roads with higher speed limits. Self-reports of the prevalence of speeding are supported by observations of actual speeding behaviour in NSW, with 28% of vehicles detected speeding by up to 10km/h above the posted speed limit in 100km/h speed zones. These data are based on speed surveys that are conducted annually by the Centre for Road Safety at locations covering all speed zones across NSW.

An attitudinal study conducted by the Centre for Road Safety in 2013 found that in NSW, 31% of drivers reported speeding 'mostly' or 'every time' they drove in 2013, and this figure was highest for younger drivers (17-29 year olds). Research consistently shows that younger drivers and males are more regular speeding offenders, are less likely to see the seriousness of speeding, are more accepting of speeding, and are more likely to exceed speed limits by higher levels (by more than 50km/h at times).

Drivers report that they are comfortable speeding when they feel they are in control of the vehicle and also that speeding is most acceptable on high speed roads.

Speed enforcement is a key modifier of speeding behaviour. In 2009, 29 per cent of drivers agreed that they tend to drive faster than the speed limit when they believe it is unlikely they will be caught. Family is another key modifier of speeding behaviour, with 90 per cent of participants agreeing with the statement that 'I stick to the speed limit when I have family in the car'.

2. In evidence provided to the Committee, you state that RMS regularly reviews speed limits on the NSW road network.

- **How often does this occur?**
- **Is this a regular periodic review process, or are there factors that prompt the review?**

Roads and Maritime Services (RMS) regularly reviews speed limits on the NSW road network in accordance with the *NSW Speed Zoning Guidelines* and assesses a number of factors including road environment and traffic characteristics, crash profile and community concerns. Transport for NSW is responsible for the development and maintenance of the *NSW Speed Zoning Guidelines* and other speed zoning policies.

As noted in the NSW Government submission, in addition to the Top 100 review conducted in 2011, RMS conducted over 400 speed zone reviews in 2012 and 2013.

A number of factors can lead to a speed zone review being initiated, including a request from the public, review of crash risk and other safety factors, or a change in the road or roadside environment. Many speed zone reviews arise due to land use change, such as residential or other development on the periphery of cities and towns, which may alter the intersection and parking arrangements along a route.

In order to ensure that community views are considered in review of speed limits, the Safer Roads NSW website (www.saferroadsnsw.com.au) enables the public to record concerns with existing speed limits and signs. Community members can also nominate to receive emails notifying them of changes to permanent speed limits within nominated areas.

3. The submission further states that 'over the past decade, NSW has outperformed the rest of Australia in terms of fatality reductions (p.6).

- **What is NSW's international ranking in terms of fatality rates?**
- **Which countries are considered as leaders when it comes to reducing fatality rates?**
- **What can we learn from these countries?**
- **What strategies do you use to monitor best practice when it comes to reducing fatality rates, and in particular, effective speed enforcement?**

A comparison of NSW's international ranking in terms of fatality rates for 2013 and 2012 shows that NSW performs favourably against OECD countries and other Australian jurisdictions. Great Britain, Denmark, Sweden and Norway had the lowest fatality rate per 100,000 population in 2012, as shown in Figure 1 below.

Figure 2 below, comparing fatality rates across Australia, shows that the NSW fatality rate improved to 4.6 per 100,000 population in 2013.

In June 2014, the Bureau of Infrastructure, Transport and Regional Economics (BITRE) released its report, *Road Deaths Australia 2013 Statistical Summary* presenting numbers and rates for fatal road crashes and fatalities over the decade between 2004 and 2013.

All jurisdictions achieved reductions in fatalities per 100,000 population (see Table 1 below). The strongest falls were seen in Tasmania followed by NSW and Victoria. NSW experienced a 40 per cent reduction between 2004 and 2013.

Table 1 - Annual fatalities per 100,000 population by jurisdiction

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Australia
2004	7.67	6.96	8.12	9.1	8.99	12	17.27	2.74	7.94
2013	4.59	4.22	5.82	5.87	6.43	7.02	15.37	1.83	5.16
Change	-3.08	-2.74	-2.3	-3.23	-2.56	-4.98	-1.9	-0.91	-2.78
%Change	-40.2%	-39.4%	-28.3%	-35.5%	-28.5%	-41.5%	-11.0%	-33.2%	-35.0%

Transport for NSW undertakes extensive reviews of international best practice prior to developing new road safety policies and programs, including in relation to speed enforcement measures.

In their speed enforcement review, the Organisation for Economic Co-operation and Development (OECD, 2006) states that there are a number of enforcement strategies that may help to maximise the effects of speed enforcement. The OECD is the leading international organisation for promoting policies to improve the economic and social well-being of people around the world, and their work is based on continued monitoring of events in member countries as well as outside OECD area. Guidelines for speed enforcement in Australia have been published by Austroads (2001), and these recommendations are directly consistent with those made at an international level by the OECD (2006).

An international review of best practice speed enforcement was conducted when developing the NSW Speed Camera Strategy, which was announced in June 2012 and incorporates best-practice principles for effective speed enforcement identified by both the OECD and Austroads.

Currently a range of speed management initiatives exist in NSW to address speeding, including police and camera enforcement, speed limit reviews, public education campaigns, 40km/h speed limits in both school zones and areas of high pedestrian activity, and a 50 km/h general urban speed limit. These are all proven strategies for ensuring compliance with speed limits that are recognised internationally by the OECD (2006) as being best practice for improving road safety.

Overall, the Safe System approach underpins the road safety framework adopted in the NSW Road Safety Strategy 2012-2021 and National Road Safety Strategy 2011-2020. The approach guides the development of countermeasures to reduce death and injury on NSW roads. The Safe System approach is consistent with policy approaches adopted by international road safety leaders and is a central theme of the 2008 OECD report, 'Towards Zero: Ambitious Road Safety Targets and the Safe System Approach', and the United Nations Decade of Action for Road Safety 2011-2020.

Transport for NSW representatives support Austroads activities and participate in national and regional research and policy conferences to obtain regular information regarding emerging road safety issues and best practice approaches to improve road safety.

Figure 1 - International Fatality Rates

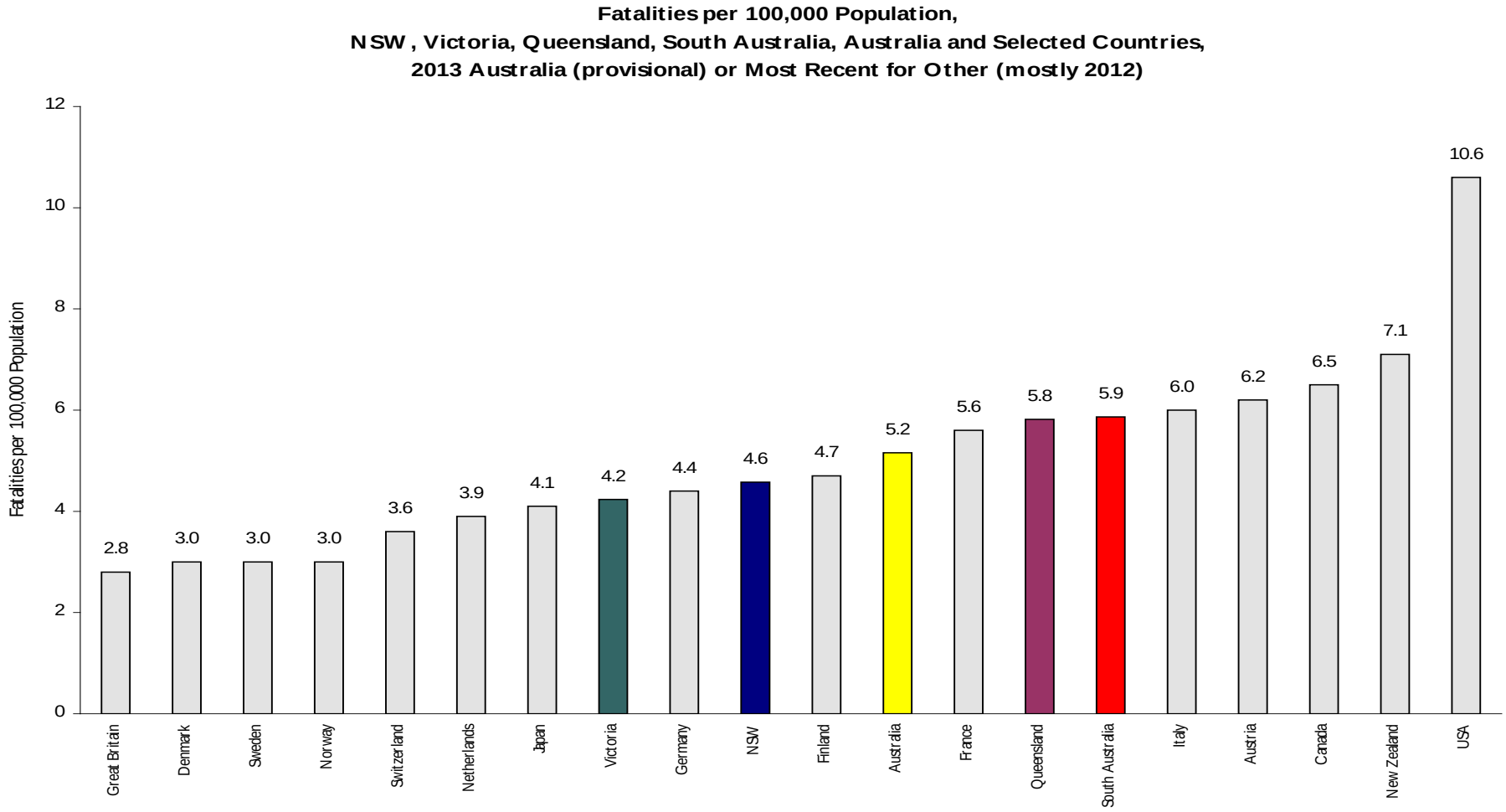
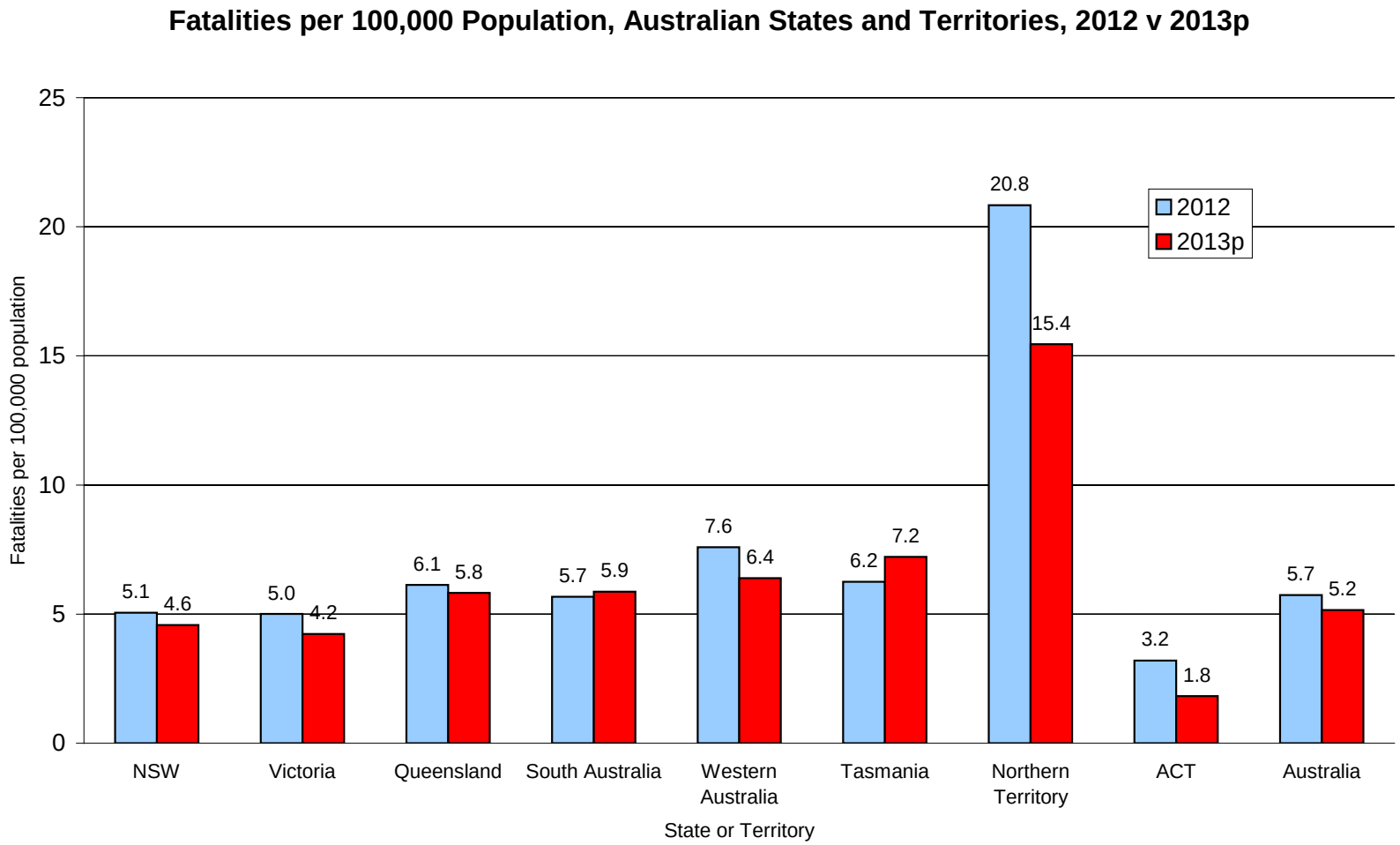


Figure 2 - National Fatality Rates 2012 vs 2013



4. In your submission you state that there have been few investigations into the effectiveness of the Australian demerit points scheme.

- **Do you think it is timely to conduct an investigation into the operation and effectiveness of the Australian demerit points scheme?**
- **Would this also entail an examination of similar schemes in other jurisdictions?**
- **What aspects of the DPS model do you think need to be examined in more detail?**

The NSW Government submission to the Staysafe Inquiry provided a review of the evidence concerning the effectiveness of demerit point schemes.

As outlined in the NSW Government submission, Transport for NSW undertakes reviews of the impacts of significant changes to the demerit point scheme, such the change to speeding demerit points on 1 July 2009. Furthermore, research is regularly undertaken as part of general speeding research to examine the attitudes of drivers towards the demerit point scheme. The findings of this research provide insights into the effectiveness of demerit points as a deterrent to speeding behaviour.

The NSW Demerit Points Scheme is based on the national demerit point scheme implemented in March 1999 as part of the National Transport Commission (NTC) Policy Principles for a National Driver Licensing Scheme (NDLS). It replaced a similar scheme that operated in NSW since 1969.

As the NSW scheme is based on the national scheme, any reviews of the effectiveness of the Australian demerit point scheme should take place at a national level through the Austroads Registration and Licensing Taskforce.

Transport for NSW does not recommend that additional evaluations of the demerit point scheme are necessary at this stage.

5. Your submission refers to the NSW Auditor General's 2011 report and recommendations in relation to road safety speed cameras. The Speed Camera Strategy was finalised in 2012.

- **What are the key components of the Strategy?**
- **Can you provide us with an update on the implementation of the Strategy?**
- **What have been the key deliverables and benefits?**
- **Has any further consideration been given to the extended use of point to point cameras on NSW roads?**

The NSW Speed Camera Strategy provides the strategic framework that guides speed camera enforcement in NSW. The NSW Government submission to the Staysafe Inquiry outlines the details of the Strategy and key findings from the most recent Annual Speed Camera Performance Review that was undertaken. All key actions outlined in the NSW Speed Camera Strategy have been completed, and Transport for NSW will continue to implement initiatives consistent with the direction of the Strategy. It can be accessed via the following link:
http://roadsafety.transport.nsw.gov.au/downloads/nsw_speed_camera_strategy.html.

As outlined in the NSW Speed Camera Strategy, point-to-point speed camera enforcement addresses speeding along travel routes with a demonstrated history of heavy vehicle crashes. Point-to-point enforcement in NSW targets heavy vehicles as they are overrepresented in crashes on known heavy vehicle routes and is suited to the longer distances travelled by these vehicles. As outlined in the Strategy, Transport for NSW will continue to monitor point-to-point enforcement in other jurisdictions.

6. In your submission you state that 'research studies have found that many driver education courses are not effective in improving or changing road safety behaviour. However, targeted courses that focus on identifying risk and developing strategies to manage such risks have been shown to be effective' (p.41).

- **Is this based on research conducted in Australia? Can the Committee have a copy of the relevant report?**
- **How successful have driver education courses conducted in NSW been?**

An Austroads report was recently finalised, 'Summary of Literature of the Effective Components of Graduated Licensing Schemes for Car Drivers', Austroads Project SS1707. The authors conclude that one-off formal training or education programs for learners or provisional drivers focused solely on knowledge of risks, changing attitudes towards risks and/or providing basic vehicle handling skills are not generally effective in reducing crashes.

A systematic review of post-licence driver training, looking largely at remedial education courses in the United States, came to the same conclusion as novice driver training reviews; there is no strong evidence that such interventions reduce crashes, and only very weak evidence that they reduce re-offending[1].

Rather than skill development, obtaining sufficient experience in a wide range of targeted driving conditions is a key to learner drivers becoming low risk solo drivers, and is supported by adolescent cognitive development principles. The amount and variety of supervised driving undertaken by a learner strongly influences their subsequent crash risk as a provisional driver.

An example of a targeted course that focuses on identification of risks and practical experience of relevant driving conditions in NSW is the Safer Drivers Course. The course aims to provide learner drivers with driving strategies such as speed management, gap selection, hazard awareness and safe following distances so they are more prepared when they drive unsupervised on their provisional licences. The course also aims to help learners identify situations that will put them at greater risk of a crash and consider strategies that will help avoid them.

The course was developed by a board of independent road safety experts that considered the latest research in young driver safety and is specifically designed for young learner drivers. An extensive review of international best practice was undertaken to ensure that the Safer Drivers Course is based upon elements of young driver education programs that have been identified as effective.

The Course is currently being rolled out across NSW and a comprehensive evaluation will be undertaken by the Centre for Road Safety to assess its benefits in reducing the number of crashes and casualties involving young drivers.

[1] Ker K, Roberts I, Collier T, Beyer F, Bunn F, Frost C. Post-licence driver education for the prevention of road traffic crashes: a systematic review of randomised controlled trials. *Accid Anal Prev*. 2005 Mar;37(2):305-13.

7. In your submission you state that 'campaigns that use powerful emotive messages will be employed in combination with other messages, to ensure that drivers recognise that road crashes place a large burden on the community, and that speed cameras are there to reduce this burden' (p.65).

- **Can you elaborate on the use of emotional, as opposed to factually based information in education campaigns?**
- **What other behavioural strategies are under consideration to improve compliance with speed limits on NSW roads?**

The Safe System approach recognises that road user behaviour is critical. Road user behaviour, including speeding, can be addressed through varied strategies, including education, engineering and enforcement. Sanctions, such as the accumulation of demerit points, operate in combination with education initiatives and police enforcement to help deter road users from speeding.

To decrease community acceptance of speeding, Transport for NSW develops public education and awareness campaigns using behavioural insights obtained through attitudinal research. Road safety campaigns undertaken by Transport for NSW are based on international best-practice principles. International recommendations for speed enforcement (OECD, 2006) state that supporting public education is one of four key enforcement strategies that can help to maximise the effects of speed enforcement activities. Guidelines for speed enforcement in Australia are directly consistent with these recommendations (Austroads, 2001).

These recommendations for speed enforcement state that supporting public education campaigns are important for several reasons. First, it increases awareness of enforcement and the subjective chance of apprehension. Second, it is important to use publicity and information to explain the reasons for speed enforcement and highly desirable to give feedback on the safety effects and benefits achieved. Third, it encourages public acceptance of speed enforcement and makes the effects more sustainable.

Public education campaigns may employ one of several approaches to change community attitudes and behaviour. A combination of approaches is used to address road safety issues in NSW, and the role of emotional messaging in road safety campaigns is an important tool for influencing behavioural change. Approaches range from higher-fear messaging based on the threat of serious consequences (e.g. emphasising the likelihood of being caught by police or being killed in a road crash) to lower-fear messages (e.g. incorporating humour to raise awareness of an emerging behavioural issue).

An effective and wide-reaching public education campaign is likely to broaden the road safety benefits achieved by existing enforcement activities and other road safety initiatives. Emotional messaging is used to create this more general deterrence effect. Key road safety statistics are consistently used to create powerful and emotional messaging that emphasise the need for safe driving behaviour amongst NSW motorists. Additional factors considered during campaign development include determining appropriate message content to motivate safe and compliant behaviour, delivering the message in a way that reaches and appeals to as broad a range of the target audience as possible, and is easily understood by the target audience.

To complement these road safety campaigns, Transport for NSW has developed school-based education programs and the Safer Drivers Course, which aim to provide the NSW community with the knowledge and skills that are required to drive safely.

Additionally, the Speed Adviser smartphone app was released by Transport for NSW in 2014, which provides free access to accurate speed zone information and warnings across the NSW road network. This is based on a general deterrence approach, where the aim is to deter drivers and riders from speeding, rather than covertly catching and penalising illegal behaviours.

QUESTIONS ON NOTICE (5 June 2014)

1. Vertical and horizontal alignment issues that were raised.

- **What is the effectiveness of the speed zone north of Brooklyn that is changed from 90 to 100, depending on weather conditions?**
- **Is that unique?**
- **How effective is it?**
- **What facts do you have in regard to its effectiveness in bad weather?**

The M1 Motorway northbound from Hawkesbury River to Mt White has a wet weather variable speed zone that is enforced with a fixed speed camera at Bar Point which was introduced concurrently with the variable speed zone. Speed cameras are reviewed annually by the Centre for Road Safety. Results in the 2013 annual review found that the camera has been effective. When comparing the pre installation period to the most recent five year period, the review found that there has been a 28 per cent reduction in the annual average number of crashes. Results also show there was a 12 per cent increase in the annual average number of total casualties however given the reduction in fatalities from one to zero and also the reduction in crashes, this camera was found to be delivering the expected road safety benefits.

The only other weather adjusting permanent variable speed limit location in NSW is on the Bells Line of Road. The 6.5 kilometre length of Bells Line of Road between 540 metres east of Darling Causeway, Bell and 500 metres north of Mount Wilson Road, Mt Wilson is currently signposted with a dual speed limit of 80 km/h during wet weather and 100 km/h at other times. The new dual speed limit was installed on the 18 June 2014.

On the F6 fog warning displays advisory speed limits for foggy conditions.

2. Have you done any research on or evaluation of the double demerit system since 1 April 2011?

Recent results show that since Double Demerits Points system (DDPs) began (up to and including the 2014 Easter Holiday Weekend) over the 92 holiday periods (526 days) in which double demerit points have applied, there have been 667 fatalities, 343 (34%) fewer fatalities on the number of fatalities for the same holiday periods immediately prior to the introduction of DDPs. Similarly fatal crashes were down by 284 (32%) for the same comparison.

Whilst the road toll over this period has significantly improved, the improvements during the holiday periods (when DDPs have applied), in terms of average daily fatalities, have been greater than the rest of the year. Compared with daily fatality rates pre DDPs (1994 to 1996) and under the current DDPs arrangements (from 2001 to 2013) average daily fatally rates in holiday periods are 31% lower, compared with a 26% reduction for the other times of the year.

ADDITIONAL QUESTIONS

1. Evidence to the Inquiry has questioned the reliability of the available data and the involvement of speed as the primary cause of road crashes, citing driver distraction, fatigue and alcohol and drug involvement as other contributors.
   - Are you satisfied with the current collection of data at crash sites and the attribution of speed as a primary cause of crashes?
   - How would you improve the quality of data systems for vehicle crashes used in NSW?

There are sound methods of judging the involvement of speed in crashes Skid and yaw tire marks, witness statements, vehicle damage, injuries sustained by drivers and vulnerable road users, and black box evidence in later model vehicles, etc. (see Grzebieta R.H., Rechnitzer G., and McIntosh A.S., 2013. Chapter 140 of Expert Evidence by Ian Freckelton and Hugh Selby entitled, Traffic Crash Investigation, Analysis and Reconstruction, in print, Thompson Reuters.)

When there is no evidence of braking, it is reasonable to suspect that the driver may have fallen to sleep or was impaired or distracted prior to or during the event. This however does not diminish the contribution of speed in the crash and crash severity. It just means that there are additional risk factors to address. For example, rumble strips are installed to warn drowsy drivers that they are drifting across a lane, this gives the driver a chance to slow down and correct and for the driver to consider taking a power nap. There is also technology that can detect pedestrians and trigger automatic braking.

Another recommendation that could improve the quality of data collection from crash investigations is to require all registered vehicles (after a certain date of manufacture) and to also require that any vehicle that have a black box, police must automatically download the data and store it as part of the COPS crash filing system.

Police investigate most significant motor vehicle crashes, i.e. when injuries occur. Police Accident Reports (in NSW COPS report) provide basic data on the drivers and vehicles, the crash location and conditions, personal injury, property damage, and more. COPs reports are typically one or more pages. Often witness statements are taken and sometimes attached though not always. The states generally agreed on their basic form decades ago. However, most such Police reports provide limited information about crash details and injury severity to the extent that we can carefully analyse the circumstances leading up to the crash and provide good crash mitigation strategies. Unless the crash will potentially result in a fatality, where Police are seeking to charge someone, the Crash Investigation Squad is not engaged to do a careful data collection and reconstruction of the crash.

Some of these issues have already been discussed in our submission to the Victorian Parliamentary Road Safety Committee on serious injury data, i.e. what information is available from Police and other sources – see
http://www.parliament.vic.gov.au/images/stories/committees/rsc/serious_injury/submissions/33_TARS_WEB.pdf

and

http://www.parliament.vic.gov.au/images/stories/committees/rsc/serious_injury/transcripts/5_August_2013/5_AUGUST_2013_-_TARS_-_TRANSCRIPT.pdf

In recent years, technological advances have substantially advanced police programs and practices. Many police officers have laptop computers and use Internet and cell phone based communications. Virtually all new vehicles are equipped with sophisticated crash recorders that can provide extensive detail about a crash. Digital cameras continue to prove that “a picture is worth a thousand words.” Yet these technologies are

not as widely used as they could be in police crash investigation and reporting. Training of Police cadets is also limited because of budget constraints and hence unless a police officer desires to advance their career and train via the Crash Investigation Squad they usually have very limited knowledge of how to collect the data in a manner that would assist researchers at a much higher level of inestigation.

There is a continuous struggle with how to improve state and national crash data systems. These systems are all based on Police reports to provide data directly such as the NSW COPS system or for fatalities the National Coroners Information System - NCIS). These systems are often stymied by the lack of detail about crash and injury severity and lately the hugely burdensome recent privacy laws. Trying to obtain ethics approval to investigate injury data is often akin to wading through molasses and for little good reason.

There are five technologies among a number that could dramatically improve data quality and detail:

- Laptop Computer software could support electronic data input and provide assistance to investigating officers on how to collect data and report on crashes.

- Digital Photography can provide pictorial evidence of vehicle damage and other crash conditions that could be downloaded into the NSW COPS system.

- On-Board Crash Recorder data on pre-crash speed, belt use, and braking should be easily downloadable by investigating officers with a laptop-based app or even mobile phone based app.

- Satellite Images of a Crash Scene can be easily downloaded from the Internet which, with drawing tools, would enhance scene diagram quality.

- Internet Communications can support timely transmission of electronic crash data to prosecutors, state data bases, and NCIS investigators.

Adoption of these technologies by traffic Police and other investigating Police, along with appropriate training and awareness programs at cadet level, would provide dramatically improved COPS information and databases of crashes for a variety of uses including law enforcement; assessment of road safety challenges; and evaluation of new safety programs, vehicle safety improvements, and driver behavior. Databases assembled from these enhanced data would provide a rich, timely source of information on state regulated roads.

Since most officers are familiar with these technologies, they would have little difficulty applying them to crash investigations and reporting. Adoptions of these technologies would add little, if any cost or time to conduct police crash investigations while the improvements could save time, money and lives. Any cost for equipment and training could easily be covered by traffic fines, considering NSW is now hypothecating camera and speed fines to road safety.

2. Do you have any information as to the most effective method for setting speed limits?
   - Which countries have implemented this model?
   - To what extent could NSW learn from those countries?

Sweden has applied the safe system approach to setting speed limits across the country. This model takes into account all possible crash types for a stretch of road and the limit is determined by how these crashes could be made survivable. We don't have the specific details on how this can be done, but we can investigate this. Sweden, in many ways is a good model for NSW. NSW could learn a lot about how to introduce lower speed limits with less public resistance from the Swedes.

The UK and Netherlands are also 'best practice' countries with the lowest fatality rate in

the world alongside Sweden (less than 3 per 100,000 population and Australia is roughly double with around 5-6 per 100,000 population). It must be said that we already learn a lot from these countries. Professor Fred Wegman from the Netherlands and Swedes regularly visit Australia and present their research and discuss their strategies.

3. In evidence presented to the Committee you cite the evidence from *Transport for NSW* 2013 that country residents have a road fatality rate that is more than 4 times than metropolitan residents (p.6).
   - Do you have evidence suggesting why this may be the case?
   - How would you propose to address this issue?

   We would need to do some research to be confident of advising on this, but from the research that we are aware of, there are a range of additional risk factors in country areas of NSW that are different to urban environments (see below).

   We also have access to the crash link data. See link below

   http://www.parliament.vic.gov.au/images/stories/committees/rsc/serious_injury/submissions/33_TARS_WEB.pdf

   We could investigate this in detail but we would need permission from Ethics and the Centre for Road Safety to carry out the work as well as funding. Unfortunately, at this point in time it is doubtful we would be granted permission from the Centre for Road Safety or be able to secure funding to analyse the data for this task.

   Another means of investigating what the differences are between rural and urban fatalities is to collect a copy of one year's case files from NSW Coroners courts (around 300 cases) for one year and carefully analyse what the root causes are and compare them. However, again funding from some source would be required to carry out such an analysis.

   As we stated in our submission we have lost our core funding from Transport for NSW and hence no longer have the capacity to explore such issues.

   Nevertheless, there are already a number of reasons why the difference is so large between rural versus urban fatality numbers. The main obvious difference is the greater exposure to fatigue and high severity crashes by country residents traveling longer distances at higher speeds compared to urban residents. Run-off-the-road, median crossover and intersection crashes at high speeds, typical on rural roads are more likely to result in fatal injuries. Rural "run-off-the-road" crashes are the largest killer of Australians (around 40% of occupant deaths). When a run-off-the-road crash occurs, the vehicle either crashes into a hard object (usually a tree) or rolls over.

   The enforcement and medical resources are also spread more thinly. If injuries are serious it can take more time in remote areas to retrieve and transport from country locations to level 1 trauma centre for treatment. Rural hospitals are usually not as well equipped as urban hospitals and lack the specialist commonly available in Sydney.

   Also research has found that non-compliance with a range of road safety legislation is more widespread in rural areas, including speeding, drink driving, and non-use of seatbelts and helmets. One of the barriers to effective policing may be a reluctance by local Police in small communities to issue infringements to people they know. The NSW Police used to arrange 'task forces' to go from the city into country areas to conduct special operations. (They may still do this.)

   In a rollover crash usually survival of the occupants heavily relies on the vehicle's roof

strength and whether they are wearing a seat belt. Currently there are no Australian laws governing the strength of vehicle roofs. Recent work by TARS has shown that around 50% of occupants aren't wearing a seat belt during a rollover crash (despite a 96% wearing rate for Australia in general) and are being ejected as a consequence with consequential severe injuries if not death. There is a major Australian Research Council study being carried out at TARS on rollover crashworthiness of vehicles with reports and published papers, etc.

Moreover the standard of road features in rural areas is far from the level that would enable survival in crashes even within the high legal speeds permissible in many areas. (See our submission and comments on the NSW Speed Zoning Guidelines.) Most roads are undivided and set at 100 km/h speed limit which is usually not survivable in most median cross-over crashes or run-off-the-road crashes.

4. To what extent would data, which distinguishes between speed as contributing factor versus speed as a casual (causal?) factor in crashes, be useful in developing better policies to contribute to safety on the roads of NSW?
   - Are you aware of jurisdictions where this distinction is made and has led to greater safety on the roads?

We are not aware of any jurisdictions that make this distinction and cannot think of why or how this would improve road safety policies. In nearly all cases, there are a number of contributing factors to crash related injuries to do with the vehicle, the road environment, and human factors. It would be counterproductive to single out one specific factor and label it as "the cause". Just as in occupational safety, ideally a root cause analysis would identify all individual and systemic factors contributing to the injury event.

Speed is a pivotal factor in injury crashes. It literally makes the difference between life and death, and injury or non-injury in any road crash.

5. What other speeding deterrence strategies can be employed to improve road safety in NSW?

Ultimately, all vehicles should be fitted with non-voluntary intelligent speed adaptation. This would result in vehicles being unable to exceed the legal limits. Until this happens there is much that can be done. The most important thing to do is to step up enforcement, including covert speed enforcement so that drivers believe that they can be booked anywhere at any time. However this should be done together with an appropriate communication strategy similar to what occurs in Victoria. As low level speeding is such an endemic problem, enforcement tolerances should be as low as the technical tolerance permits.

Consideration of doubling demerit points for speed offences should be brought in and applied all the time – not just at holiday periods. And points should be increased by 1 point for all other offences during holiday periods – not double. Speed fine revenue, at least from fixed cameras should fund a road safety facility that is managed by a board with community members and an independent chair (not just government) similar to that of Western Australia.

As mentioned at the hearing, the Government should consider introducing compulsory fitment of non-voluntary intelligent speed adaptation (ISA) devices, at the driver's expense for repeat offenders. Drivers who lose their licenses from excessive speeding can regain their license if they allow their vehicle to be interlocked to an ISA device (similar to the alcohol interlock program for repeat and first time offenders)

Finally, we need to find a way to make speeding socially unacceptable. This requires a

concerted communication strategy. See our paper (attached). The response to our recent commentary piece in the Sydney Morning Herald punctuates the need for a stronger road safety voice/pro-safer speeds in the community.
See http://www.smh.com.au/comment/for-safer-roads-we-need-to-lower-the-speed-limit-to-30kmh-20140527-zrpn5.html .

We changed social attitudes to some extent with drink driving (by criminalising it and random breath testing.) Austroads is commissioning a project to develop ways of creating and sustaining a demand for safer speeds. The project has just recently been awarded.

National Motorists Association of Australia (NMAA) Response

to Additional Questions from the Staysafe Committee

The NMAA submission criticises the review process for changing speed limits and the lack of consultation in the process.

Q1. Outline your suggestions on how to improve the speed limit review process.

The NMAA makes the following recommendations:

Recommendation 1

The setting of speed limits in NSW should be based on the 85th percentile principle.

The US Institute of Transportation Engineers recommends the 85th percentile method for setting speed limits. Source: http://www.ite.org/pdf/spd_limits.PDF

State governments in Australia often deliberately set speed limits too low. Setting speed limits too low results in increased crashes.

States in the USA typically have a clearly expressed speed limit policy. An example is the state of Washington. It explains the 85th percentile in its policy and provides these details:

"Speed limits that reflect the behavior of the majority are determined by what engineers call the '85th percentile speed', or the speed that 85 out of 100 vehicles travel at or below. This method is based on the principle that reasonable drivers will consider road conditions when selecting their speed of travel."

Studies have consistently demonstrated that there are no significant changes in the 85th percentile speed following the posting of a revised speed limit. Statistics show that **roadways with speed limits set at the 85th percentile speed have fewer accidents** than roads where the posted speed limit is above or below what the majority naturally travel."

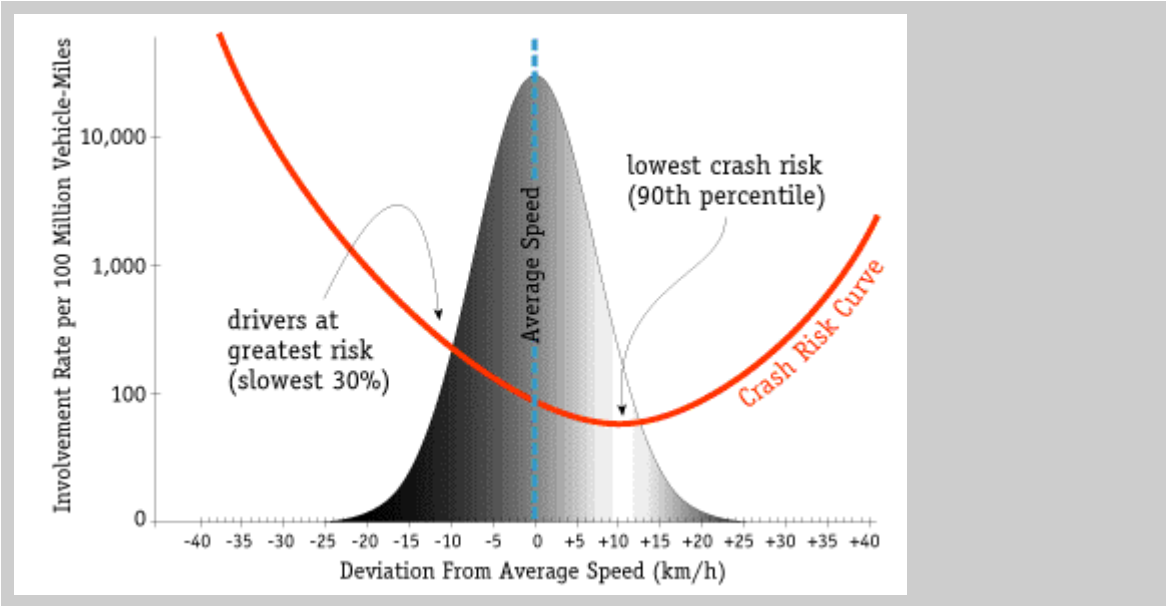
Source: http://www.wsdot.wa.gov/biz/trafficoperations/traffic/limits.htm

In summary, the 85th percentile method is used throughout the USA and Canada by engineers in the road safety field. The Final Report on "The Effects of Raising and Lowering Speed Limits" was issued by the USA Federal government in 1992 - over twenty years ago.

The U-shaped graph of the relationship between crash rates and vehicle speeds was revealed originally in research by D. Solomon, published as “Accidents on Main Rural Highways Related to Speed, Driver and Vehicle”, Bureau of Public Roads, July 1964.

Many Australian motorists are not aware that there is a “U”-shaped curve depicting risk of accident versus vehicle speed. Such a graph is depicted on the Canadian (Road) Sense site and shown below.

The graph depicting risk of accident versus vehicle speed is a "U"- shaped curve:



Source: Canadian (Road) Sense at http://www.sense.bc.ca/research.htm

This graph depicts that the 85th percentile is a much safer travelling speed than the lower speeds that the public has been told is safer by ideologists. Speed limits should be set at the 85th percentile to achieve improved road safety.

Recommendation 2

The NMAA submission recommends a "road users road safety advisory panel" set up to include final approval of speed limit settings, including a review of the process and applicable standards. Ideally such a committee would conduct an oversight of the work of the Centre for Road Safety with the objective of ensuring that there are appropriate checks and balances. The suggested composition of the committee is stated in our submission.

Where the 85th percentile speed is different from the posted limit there should be an immediate assessment rather than immediate enforcement.

The three ‘E’s of road safety are Engineering, Education then Enforcement in that order. The engineering aspect of setting speed limits is to use the 85th percentile. No amount of education and/or enforcement will create a safer situation if the speed limit has not been set correctly. A function of the "road users road safety advisory panel" would be to maintain this perspective on road safety.

Q2. Do you consider the current speed enforcement strategies in NSW are effective?

Q3. Do you have any suggestions as to how these can be enhanced.

NMAA Answer:

The enforcement of speed limits has gone beyond the saturation point for public tolerance.

If the focus on speed enforcement prevented every vehicle from exceeding the posted speed limit, the maximum reduction in fatalities would be only 8 per cent.

Research by Monash University Accident Research Centre (MUARC) determined that, if all vehicles were fitted with a satellite controlled system that prevented every vehicle from exceeding the posted speed limit, the maximum potential reduction in fatal road crashes would be 8 per cent.

See MUARC report #253 'On-road evaluation of Intelligent Speed Adaptation, Following Distance Warning and Seatbelt Reminder Systems: final results of the TAC SafeCar project' at http://www.monash.edu.au/muarc/reports/muarc253.html.

Quote: "Based on the logged data, the ISA system by itself is expected to reduce the incidence of fatal crashes by up to 8 percent and serious injury crashes by up to 6 percent."

In NSW, enforcement of road rules needs to focus on the causes of the other 92 per cent of fatalities if the government is to have a meaningful effect on road safety.

The number of NSW highway patrol police has declined steadily over the past twenty years. However, speed detection technology has enabled a large increase in the revenue stream from the emphasis on speed enforcement. The decline in the number of NSW highway patrol police should be reversed.

Speed cameras cannot detect drunk drivers, the drugged drivers, thieves or other illegal activity. Only a live police officer making a traffic stop can do this. Taking the broader approach rather than the very narrow position of numerical enforcement by a remote device means that opportunities for more effective law enforcement are missed as there is no direct on the spot interaction. A discussion with a police officer can be very effective in changing driver behaviour. A speeding ticket arriving in the mail more than ten days later is not effective in changing driver behaviour. Camera enforcement is inefficient in the broad approach to general law enforcement.

Traffic police should not be measured for performance solely on easy catches but on their general activities. Traffic policing activity should be regarded as a "Public Good" rather than a numerical or financial operation.

The NMAA makes the following recommendation:

Recommendation 3

A more visible police presence enforcing ALL of the road rules, not simply speed enforcement. The marked police vehicles need to be patrolling the roads, not hiding at the side of the road to increase the 'catch rate'. The markings at the front of vehicles should be clearly visible and reflective, similar to the sides and rear of present police vehicle markings, instead of designed for stealth to increase the 'catch rate'.

An issue that most road safety organisations agree on is that the most effective means of improving driver behaviour on the roads is via marked police vehicles patrolling the roads. Their mission should be the enforcement of all of the road rules, consistently, every day and night of the year. Selectively enforcing one or two road rules is ineffective. Issuing

infringement notices for minor breaches of a speed limit set below the 85th percentile speed is very easy with the technology available. We need more highly visible highway patrol vehicles to patrol the roads and enforce all road rules, not simply the one rule for which technology allows the greatest number of tickets to be issued per hour.

Submission by the City of Sydney

Staysafe Committee

Inquiry into Speed Zoning and its impact on the Demerit Points Scheme

Response to request for additional questions.

June 2014

Prepared by *Len Woodman, City of Sydney - 25 June 2014.*

TRIM REF: 2014/185465-01

File No: S108560

Question 1. What are the City's views on the contribution of speed to crash rates and the methodology used to determine this?

The Criteria for determining speeding as published in *CrashLink Reports* - NSW Centre for Road Safety; Roads and Traffic Authority NSW, 11 July 2008 is quoted below:

> **Speeding**
>
> The identification of speeding (excessive speed for the prevailing conditions) as a contributing factor in road crashes cannot always be determined directly from the police reports of those crashes. Certain circumstances however suggest the involvement of speeding. The Roads and Traffic Authority has therefore drawn up criteria for determining whether or not a crash is to be considered as having involved speeding as a contributing factor.
>
> Speeding is considered to have been a contributing factor to a road traffic crash if that crash involved at least one speeding motor vehicle.
>
> A motor vehicle is assessed as having been speeding if it satisfies the conditions described below under (a) or (b) or both:
>
> (a) The vehicle's controller (driver or rider) was charged with a speeding offence; or the vehicle was described by police as travelling at excessive speed; or the stated speed of the vehicle was in excess of the speed limit.
>
> (b) The vehicle was performing a manoeuvre characteristic of excessive speed, that is:
>
> - While on a curve the vehicle jack-knifed, skidded, slid or the controller lost control; or
> - The vehicle ran off the road while negotiating a bend or turning a corner and the controller was not distracted by something or disadvantaged by drowsiness or sudden illness and was not swerving to avoid another vehicle, animal or object and the vehicle did not suffer equipment failure.

In the City's submission to this Inquiry (Appendix 1) it was indicated that this criteria does not capture many low speed, but still speed related, crashes.

The City of Sydney believes that these criteria should be expanded to consider whether a driver was driving at a speed from which they could stop under control if a pedestrian, a bike rider, or other vehicle moves into their path. If a collision does occur it should be considered that the driver was going too fast to stop, therefore too fast for the conditions. This means that a driver would be a major contributor in a collision and at the very least blame for that collision should be shared if, for example a pedestrian stepped suddenly into the vehicles path.

This must be considered on the basis that cities and urban areas are places where drivers must expect activity by pedestrians and bike riders.

We also suggest that driver education, particularly the Driver Knowledge Test and the Hazard Perception Tests for all classes of licence be revised to include greater emphasis on drivers' responsibilities and safe driving practices relating to pedestrians and bike riders.

Question 2. Areas such as shared paths and car parks have a high potential for road user conflict. Do you have any recommendations as to how such areas should be treated in relation to speed limits?

The City will be introducing an advisory speed limit for bike riders on Shared Paths of 10 km/h, following a trial in 2013. The Centre for Road Safety is also undertaking research into speeds on Shared Paths.

The City believes, again for consistency, that all public car parking areas should be designated Shared Zones with a 10 km/h speed limit. A prime example of this is in Neutral Bay, North Sydney where a public parking area on Grosvenor Lane is a designated Shared Zone and accommodates Woolworths and many other local shops.

Question 3. Can you provide a recent example of how the City's Local Pedestrian, Cycling, and Traffic Calming Committee has contributed to and influenced the views of the City and Roads and Maritime Services, with regard to reviewing the speed limits?

The Local Pedestrian, Cycling and Traffic Calming Committee (LPCTCC) is not the City's Committee. It is a Committee separate of Council that advises on traffic and parking matters.

The LPCTCC has four voting members; the City, the RMS, State MPs and NSW Police. It is a technical review committee that endorses traffic-related matters to be referred to Council. Proposals endorsed by the LPCTCC must be formally approved by either the elected Council or authorised Council staff – depending on the nature of the proposal.

Both the City and RMS are essential members within this technical committee. In general it is the City officers and the RMS officers that have the necessary skills to make the technical decisions. Therefore, to state that the LPCTCC has contributed to and influenced the views of the City and the RMS is not correct.

The City is not delegated to approve speed limits, and speed limits do not go to the LPCTCC. Speed limits are approved separately by the RMS, at the request of the City, without any involvement of the LPCTCC.

An example of the RMS and the City having different opinions on local street speed limits was at Harold Park. Persistence by City staff eventually got the RMS to agree to and approve a 40km/h speed limit in the precinct.

A second example of differing opinions was the proposed 10km/h shared zone on Bridge Street, Erskineville. RMS initial rejected the shared zone but eventually approved the shared zone after persistence by the City.

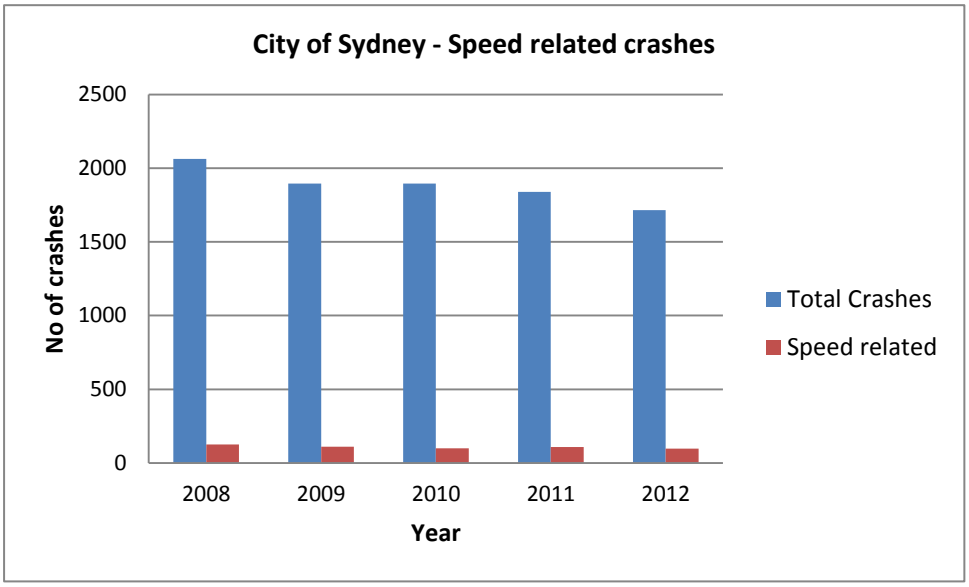
Question 4. Does the City of Sydney have an effective working relationship with Roads and Maritime Services in this regard?

The City and RMS do have an effective working relationship. The LPCTCC tends to get most (if not all) of the agenda items endorsed unanimously at each committee meeting. As with any working relationship, there are differences in opinion but open negotiations tend to get proposals approved.

Appendix 1 – From the City of Sydney submission to Staysafe:

The contribution of speed to crash rates on City of Sydney (NSW) roads

Reported speed related crashes represent around six per cent of the total crashes on the City's roads *(CRS CrashLink Data)*.



It is difficult to determine accurately what the contribution of speed has on crashes within the City of Sydney. Many crashes occur below the current speed limit and are not reported as speed related. This is even though the speed the vehicle was being driven meant that a crash could not be avoided. Put simply, a driver/rider who is unable to stop safely within the road space available is not driving/riding to the conditions/environment. All crashes include excessive speed for the conditions as a contributing factor.

The City Centre of Sydney has a high concentration of people walking and riding, comparatively to other parts of NSW, which means that a low speed environment within this area is critical to reducing fatalities and injuries.