TRANSCRIPT

ROAD SAFETY COMMITTEE

Inquiry into serious injury

Sydney — 5 August 2013

Members

Mr A. Elsbury
Mr T. Languiller
Mr J. Perera
Mr M. Thompson
Mr B. Tilley

Chair: Mr M. Thompson
Deputy Chair: Mr T. Languiller

Staff

Executive Officer: Ms Y. Simmonds
Research Officer: Mr J. Aliferis

Witnesses

Ms M. Prendergast, general manager, policy and regulation, and

Mr H. Raisianzadeh, principal manager, information, Centre for Road Safety, Transport for NSW.

The CHAIR — On behalf of the Victorian Parliament's Road Safety Committee I would like to thank you both for coming here today. We appreciate your time and also thank you for your early work and contribution in liaising with the committee secretariat. Our inquiry is into serious injuries, the terms of which have already been provided to you. The proceedings today are being recorded by Hansard. You will get a copy of the transcript of today's proceedings. We invite you to correct any typographical or factual errors and return it to us. It is envisioned that that information will be placed on the internet. Should you seek to make any in-camera commentary, we can go into an in-camera mode. I do not necessarily envisage that that will be the case today. Ms Prendergast, I would now like to invite you to speak to the committee.

Overheads shown.

Ms PRENDERGAST — Thank you for the opportunity to appear today. Serious injuries are obviously a crucial part of the road safety equation. In New South Wales — and I will show you in a minute — we have been making incredible gains with fatalities but not so with serious injuries. We are also in a position where we have not been collecting serious injury data. We have sought to rectify that, which I will talk you through. I really welcome the attention in looking at the whole serious injury space, looking at the definition and even looking at a potential severity category that can better inform road safety planning.

As you know, road safety is all about the evidence, and our crash data provides our evidence for making decisions. Today I would like to just quickly — in 10 minutes hopefully — walk you through the fatality profile for New South Wales. Obviously we have come a long way. Last year was the second lowest year for fatalities since 1932. That is despite having 3 times the population, 16 times the number of licences and 20 times the number of vehicles. We reached a peak in 1978, with 1384 fatalities. Last year we had 370. That is a saving of about 1000 lives a year, which we are very proud of.

The CHAIR — I would just like to interpose a comment there. It would be interesting to overlay the Victorian data for the same period to work out when the Victorian toll peaked. My understanding is that that was about eight years earlier or thereabouts.

Ms PRENDERGAST — It may be related to RBT. If I can talk through the major policy markers that you see on this graph, 1971 was the first policy marker, compulsory seat belts, followed by 1982, when we introduced random breath testing. You can see the mark drop from 1982 to 1983. The introduction of RBT was almost a step chain for us. Then in the mid-1980s, around 1987, every police vehicle became an RBT. Once the awareness was out there that every vehicle had RBT capability we started making significant gains.

If we now look at the 2000s, the things we believe have made a difference are: safer vehicles, incredible road investment and also targeted safety works on our roads, and speed enforcement, because speed remains the no. 1 issue in New South Wales, and I will talk a little bit more about that in a moment.

In terms of where we are tracking with the rest of Australia, we acknowledge that we usually come second to Victoria in rates, and that is something that keeps up some healthy competition between us. This graph shows where we have tracked with fatalities — New South Wales is in red and the rest of Australia is in blue. Since 2002 we have decreased our fatalities by 34 per cent compared to 19 per cent for the rest of Australia.

Last financial year was probably our best year yet. We had a reduction of 39 fatalities and were sitting at 4.75 per 100 000. That is 4.75 fatalities per 100 000 population. We were second behind Victoria, which came in with nearly its lowest ever at 4.5 per 100 000. That is really quite an amazing result compared to other Australian states.

I am going to get into the serious injury space now. We effectively abandoned collecting serious injury data in New South Wales in 1997. As you are aware, we get all our crash data from the police. The police had their coding form or their tick-a-box that they took to the crash. They would tick that a person was taken to hospital; however, what we found was that the majority were not. The police would tick the box to say that they were taken to hospital and they either never got taken to hospital in the first place or they arrived at the triage point at the hospital and were turned away, so we were finding that that particular measure was a serious overestimation. That is really important when we are planning black spots and investment. We know that some other states still code like this — they will tick the box that people have been taken to hospital without verifying whether they really were.

To remedy this gap — and it has been quite a large gap, apart from some minor scale linkage studies done between 1997 and 2011 — we embarked upon a major linkage study in 2011 where we linked New South Wales crash data to all of the health records, emergency records and mortality data. This was our first serious look at linkage. In the first instance we linked 2001 to 2009, but as of last month — really just a week or two ago — we now have 2010 and 2011 done, so we have a complete set of linked data from 2001 to 2011. It is important at this point, or maybe a bit later, for me to talk about how we plan to go forward.

We have obviously worked very closely with the department of health. We have looked at ways that we can reinstate data collection in New South Wales on an ongoing basis. We have decided, based on the resource intensiveness of the validation process and because of accuracy issues, that our preferred method going forward is to link with health data on a regular basis. We can talk a little bit more about that later, but we think we will potentially link monthly, acknowledging that injuries always lag — whereas we get fatality data within 24 hours, there is always a lag with linkage of injury data.

We got the Transport and Road Safety Research Group at the University of New South Wales to do this work for us. They have matched all our crash data to all the available health data. That has thrown up — and I thought you guys would find this quite interesting — what does not match and also some trends. Effectively we have had about a 52 per cent linkage rate. That is because where the injury was thought not to be serious, the injury crash was not reported to police, and this is becoming more and more common. We are finding that the two main groups who do not report to police are motorcyclists and cyclists. We did not really know that in evidential terms until we actually did this linkage.

The other issue that obviously happens to us is that it is outside the national guidelines that we apply for reporting crashes, so it might be on private property, for example, or indeed there is just differing spelling of a name, which then disables the ability to link, or there are insufficient details for the injured person.

As a result of that, we actually linked 68 383 cases over that 11-year period, which has given us what we call gold. It has given us an insight into serious injuries that we have not had before. Before I get into that, I suppose what we need to put on the table is that we are obviously similar to Victoria. We are following the National Road Safety Strategy that was released in May 2011. Part of that strategy requires us to have at least a 30 per cent annual reduction in both fatalities and serious injuries, so it became crucial when that was published for New South Wales to actually garnish serious injury data. We know we have about 26 000 injuries per annum or thereabouts, and we know that a quarter of those, shown by our linkage, are serious. When we talk about being serious, we are talking 'admitted to hospital', and I will talk a little more about the definition later. So we are talking 'confirmed admitted to hospital', as shown by the records.

What I am about to show you is just a four-slide overview of some of our serious injury data. It is a mix of data. Some of it goes from 2001 to 2011 — the ones that we could update in the last week or so. Some are just the period 2001 to 2009, acknowledging that we have just got the final report in, and if we do sample years we look usually at 2009. The other difference with our data that you will notice is that in New South Wales we collect contributing factors, so we record speed, fatigue, non-seatbelt wearing, alcohol and even distraction, albeit we know the distraction data is incomplete. If we look at our trend for serious injuries, it is slightly different to that of fatalities, and, as you can see, it is that quarter of about 26 000 that is still sitting at about 6000. It obviously increased to 2006, then we saw a dip, and then we have seen, in the last two years, a slight increase.

We also know that health data has improved in those last two years. So whether that is a real trend or a trend that has been enabled by improved health data, we are not sure. The graph shows the clear difference between fatalities and serious injury. So whilst fatalities since 2001 have decreased by 31 per cent, serious injuries have only decreased by 2.4 per cent. So if we are looking at that 30 per cent target that we have got to achieve by 2021, that really is setting the bar for us. We need to understand the serious injury data, and we need to look for countermeasures tailored to the serious injuries.

If we look at rates per 100 000 population, obviously with our absolute numbers we are always the largest, but if we then normalise that, we have come down from a rate of 95.6 per 100 000 population in serious injuries in 2001 to 84.4. So we are coming down but we have a long way to go.

This next slide is just a little insight in New South Wales into what are some of the characteristics of those serious injuries that we are seeing. You can see the blue bar is the driver, red is the passenger, green is the

motorcyclist, purple is the pedestrian and orange is the cyclist. So basically what this is showing is obviously the majority are drivers. Fifty per cent of our serious injuries are drivers. But the interesting trend you can see is that passengers came second all the way to 2008, when motorcycles started taking over, and I am sure it is a similar trend that you are seeing in Victoria. We know that in the last five years our regos are up 41 per cent for motorcyclists here in New South Wales, compared to about 8 per cent for all vehicles. So what you are starting to see is the growth of motorcycle serious injuries exceeding that of passengers, and given that they are only between 3 and 4 per cent of our regos, that is quite amazing.

If we look at the vehicle occupants with serious injuries — so we have taken out the motorcyclists in this slide — what you can see is that the overall decrease in motor vehicle occupants has not necessarily been experienced by older age groups. We can see that with young adults and people under 40 there has been a decrease but that older people are starting to increase. I think we will see more and more of that with the ageing population here in New South Wales. But then if we carve it back to pure serious injuries by age group, based on one year in 2009, what you can see is that nearly a quarter are 17 to 25. So the community cost of those serious injuries is quite significant.

The other interesting fact for us is that with our fatalities over two-thirds occur in rural areas. If we look at serious injuries we are seeing that 60 per cent are occurring in metro areas. However, in saying so, when we actually create a serious injury rate per 100 000 population, based on population, we know that it is actually a higher rate for rural than metro, but the divide is not as great as for fatalities.

We get the issue with metro and serious injuries because that is where our vulnerable road users are. That is where we get all the motorcyclists and intersection crashes, our pedestrians and our cyclists being here. This next slide is a bit different. It is just reinforcing behavioural factors. Last year with our 370 fatalities here in New South Wales, 39 or 40 per cent of those had speed as a contributing factor, 20 per cent had fatigue, 15 per cent had alcohol, about 9 per cent had non-restraint usage, and distraction is an incomplete dataset because it is just not coded correctly yet, although we know it is a prevalent issue on the roads.

This is just giving you that, mirrored almost to serious injuries. Fatigue has overtaken alcohol in New South Wales as the second major issue. In fact alcohol fatalities last year were the lowest we have ever had on record, with only 15 per cent and about 56 deaths. In fact there were more motorcyclists killed than those with contributing factors of alcohol, although you have to appreciate that your contributing factors do not add up to 100 per cent. You could be a motorcyclist who is fatigued, speeding and have a BAC level as well.

If we look at the motorcycle issue — and I think this is really important to understand, particularly as exposure is growing — what you can see is that the rate far outstrips it. What this is showing is that per 10 000 registered motorcycles, so per 10 000 registered vehicles, motorcyclists were 74.2 per that 10 000 figure compared to all other vehicles at 10.1. So the level of serious injury being sustained by motorcycles is quite significant.

If we turn that into economic cost — and we will talk a little more about the economic cost at the end — what you can see is that serious injuries have the highest community cost, even higher than fatalities. So red is fatalities, the mustard colour is serious injuries, other injuries, and at the very top of the pyramid in a tiny little speck is what we call tow-away crashes. So we know that serious injuries and fatalities are the largest economic cost, and last year the serious injury cost was even greater.

What has been really interesting for us, because we have not had the data in my time in road safety, is actually getting an understanding of what sorts of injuries are coming from what sorts of crashes, affecting what sorts of road users. This slide is what I would like to call ‘the power of the motorcycle helmet’ slide because you can see that motorcyclists are not experiencing head injury. We have an incredibly strong compliance rate of wearing motorcycle helmets, and you can actually see that motorcyclists do not get that many head injuries. Where they dominate is they get knee and lower leg, and a little wrist and hand and arm, but predominantly lower leg, and that has been proven in many studies.

What we know is that cyclists and pedestrians are getting serious head injuries, and of course they have high economic cost. We did spider diagrams showing the different injuries by different road user groups because we were excited because we have not had it for so long, and it just gives that other insight. It also starts helping us to look at the vehicle safety issues and what injuries are coming from what sort of crash in what sort of vehicle, so we can actually look at the difference vehicles are making.

The other interesting piece for us, from a cost perspective, is the average length of stay in hospital. What this shows is the average length of stay for the period for different classes of road user, and what you can see is that the severity of the outcome of a crash with a pedestrian is far greater. They will have the longest stay at 7.5 days. Motorcyclists are 5.7 days, followed by motor vehicle occupants, either driver or passenger, and pedal cyclists. What we know is that males stay in hospital longer than females too.

If we are going to cut to the chase about what you are analysing, I want to talk about some things that we need. What we really need is a well-defined agreed national definition of 'serious injury'. New South Wales has been seeking this for two years because we knew we needed to reinstate collection, therefore we needed the rest of the country to come on board and say, 'What are we going to reinstate?'. Two years ago we worked in the national group with all the other states and came up with 'confirmed admitted to hospital'.

In terms of validating, the Bureau of Infrastructure, Transport and Regional Economics has had a look at that and realised that there are anomalies in how each state collects. To some degree we are comparing apples with bananas. Our preference is to follow Victoria; as the second largest state it is really important that we look at Victoria as a model. At the moment we are just using 'confirmed admitted to hospital'. We know that other states use it by time frame — admitted for 24 or indeed 48 hours. Other states are doing what we used to do, which is to just tick a box on the front of a form and you do not really ever know how many injuries are truly serious unless you link them at the other end. Our aim is to get a definition, but in the interim we are just running with 'confirmed admitted to hospital' because there are other states that said they could not do the time period. We are really looking to the Department of Infrastructure and Transport in Canberra to help us broker a definition that will be acceptable to all states and give us a level playing field for comparison, and they are working on that.

The other issue that we are interested in is determining severity. The University of New South Wales applied the survival risk ratios, or what they call the injury severity score rating, to our data. There are a couple of issues with that. We also use other measures of severity. We look at length of stay. We look at admission to intensive care. There are other proxy figures, such as long bone fractures, which actually give an indication of time, so we are using that.

The other thing that is problematic for us with severity in New South Wales is that we have a lifetime care scheme, whereby a severe disability, usually quadriplegia or paraplegia, will be put into that scheme. The problem we have in using that data is that it becomes identifiable because the numbers are so small, so we trip up on privacy considerations in trying to isolate that small number. It is identifiable to actual people and that therefore becomes an issue for us. As you can see we have had a little touched-on process with our linkage. We de-identify the whole way. We create a project code that then becomes the proxy for the name. We are matching anonymous records. That is really important from the Privacy Act perspective. I will further take questions on that.

I will quickly get into the willingness-to-pay approach. Obviously the traditional way of costing road trauma has always been the human capital approach. That is what New South Wales has traditionally used. In the human capital approach you estimate the cost of medical provision, the funeral, loss of income, insurance, repair costs and travel delays. We found that this was not truly identifying what the community actually costs a death at. It fails to capture the actual value that individuals place on their lives and those of others, over and above current and future earnings. There was a concern that pure life fatality values were undervalued compared to what was developing, particularly in the SUN countries in northern Europe. There were concerns that projects with really good road safety benefits were missing out on funding because other projects could derive larger benefits that did not really reflect the true cost to the community of road trauma.

Back in about 2007 or 2008 we engaged PricewaterhouseCoopers and the Hensher transport group to develop a willingness-to-pay methodology for us. Basically it sets plausible values of what the community is willing to pay in exchange for a reduction in either the probability of serious injury and/or death from a road crash. This was recognition that road safety is a public good but is not traded in conventional markets and therefore you cannot easily put a value on it. It was based on the value that the New South Wales community would be willing to pay or forego in exchange for a reduction in the risk of a crash-related injury or death.

It was developed through detailed surveys in which we asked drivers a series of questions regarding trip purpose, travel time, which roads were used, perceived road safety, details of the vehicle, stated choice

experiments where they were asked to decide different costs for different things, questions on their experience regarding road trauma, and some socioeconomic data. The example on this slide walks you through how our stated choice preference survey was conducted. In this example you are asked to assume that you have to drive somewhere, and they look for you to select a route which is lower risk or higher risk in your perception.

I am not going to even try to walk you through all the calculations, but it is a discrete choice model and respondents trade off between income and the risk of a fatality. Our values came out at about $6 million per fatality. That was based on the willingness-to-pay methodology. That is compared to $2 million using the traditional human capital approach. It compares the value of statistical life in other states and other studies to try to come up with some figure. Effectively the average statistical life value is about $6 million with a range from $5 million to $7.1 million. When we translate that by applying it to our fatalities it comes up to about $5 billion per annum.

We know that some of the values used in other places vary. We are looking to review this. Treasury actually did a third-party review of this prior to implementation. This was instituted in Treasury's economic evaluations in 2009. We are running the human capital and willingness-to-pay methodologies in parallel. We would do both in an evaluation — only because the willingness-to-pay methodology was so new.

We will review our values as time goes on, in the next year or two. In the interim, Austroads picked up this methodology and recommended that all states adopt it late last year. There has been a study. It has been built into the project evaluation part 4. States can undertake their own calculations or they can use ours as a guide, knowing that we will regularly review ours in the future. That is the formal part of my presentation. I am happy to take questions.

The CHAIR — Thank you very much.

Mr TILLEY — The Chair has prepared some questions for you, so I will read straight off the sheet and then ask a couple of other things.

Ms PRENDERGAST — No worries. Go for it.

Mr TILLEY — Just very quickly, in some of the statistics where we have seen some changes, what is the policy in New South Wales in relation to drugs and substances?

Ms PRENDERGAST — Obviously we invest heavily in roadside drug testing. We spend about $3.6 million a year on that. We currently do not have drug data, but by the end of the year we will. We are currently working through it now. We had to get a whole lot of privacy and health clearances to unlock it. We have been testing for drugs since December 2007. Not only have we been testing roadside; we have been testing when people are involved in a fatal crash. The data that we are about to get is the fatal data. When we test for recreational drugs — and we all have money on this — we think that what is going to show up is prescription drugs.

Mr TILLEY — Absolutely.

Ms PRENDERGAST — We have seen research. We are going to have that by early next year. That is going to create a whole new piece of work for me looking at drug countermeasures in New South Wales.

Mr TILLEY — Owing to the presence of alcohol and other substances, what processes are you using at the moment? Are you collecting both? In prosecutions in Victoria, particularly owing to the presence of alcohol, they go down the path of testing for alcohol over drugs and substances.

Ms PRENDERGAST — We know that the drug data is used in court. Alcohol and drugs are recorded separately, so they will look at both issues.

Mr TILLEY — Terrific. I had better get back to the work. What was the motivation behind the former New South Wales government's Roads and Traffic Authority undertaking the pilot willingness-to-pay study?

Ms PRENDERGAST — That was on the slide I showed before. The human capital approach could not be readily compared to other road projects that had really sound, well-known factors, like X travel time saving. We knew that it was being understated. We were looking at how the most advanced countries in Europe were doing

it. That led us to initiate the willingness-to-pay work — knowing that the cost of road trauma was being undervalued.

Mr TILLEY — I think you have probably already answered the next question in relation to Treasury figures. In what other policy areas is the New South Wales government using the willingness-to-pay costing methodology?

Ms PRENDERGAST — In all our evaluations. They are starting to use them in the major road development projects as well. Obviously a road development project may be done on the basis of congestion or traffic relief, but it will also have significant road trauma benefits as well.

Mr TILLEY — Terrific. Following up on that, what are the ramifications, if any, of the willingness-to-pay approach being used in the road safety area if it is not used across other policy areas — for example, when determining the allocation of funds to policy areas that use willingness to pay compared to other policy areas that employ other cost methodologies?

Ms PRENDERGAST — That is starting to happen. As I said, willingness to pay is now starting to infiltrate other economic evaluations for major road projects et cetera in recognition that road trauma is a real cost that needs to be in any evaluation of any new project in New South Wales.

Mr TILLEY — That is great.

Mr PERERA — It has been noted both in submissions and in published research that, while the WTP approach is the most appropriate costing model conceptually, it has a number of methodological issues that require redress. Associated issues include the significant costs involved in undertaking a WTP survey, the time taken to complete a study and issues associated with the ability of survey participants to assess risk. What are your views on these methodological issues? How were they addressed when conducting the New South Wales pilot WTP study?

Ms PRENDERGAST — Obviously we did invest the significant cost to do that detailed survey and to do the study because we knew this was leading edge and willingness to pay was really important. We have undertaken all of that work and, as I said, we will refresh that in years to come. The way we mitigated any potential risk of that methodology was by running it in parallel with human capital. When we do an evaluation we are looking at the traditional human capital approach and the willingness to pay in the decision making. That is how we have mitigated the risk, but we will have ongoing review of those values. I think that is why Austroads, knowing there was a significant cost around the survey et cetera, recommended that short of a state doing their own they can use the New South Wales values, which have been third-party tested, but acknowledging that we will review them over time.

Mr PERERA — The committee understands that some WTP values comprise both the direct costs of crashes — that is, hospital treatment costs, property damage et cetera — and values stated by survey participants relating to what they are willing to pay to reduce their relative risk of injury or death. Was this approach employed when developing the New South Wales values?

Ms PRENDERGAST — Yes.

Mr PERERA — What are the issues, if any, around the potential double counting of costs?

Ms PRENDERGAST — Obviously that was essential when we did the original study in looking at any potential duplication or double counting. The way the survey and the study were composed was to remove any duplication and incorporate the traditional income lost, cost of hospital et cetera of the injury itself together with those stated choices about what you would trade off to avoid being in a crash in the first place or losing someone to injury — or death of course. That is how it was developed in the first place, with those considerations built in, and the insurance policy we have is to run both methodologies together. In case there are any warts on one you are showing both — the traditional and the new.

Mr RAISIANZADEH — Can I also add that the duplication that you are going to see with WTP methodology is not as great as something you may have under the human capital methodology. For example, you may have an injury where the person gets injured on the way to work and there is a compensation part to it.

There is a motor vehicle injury damage component, a CTP component and indirect costs as well which overlap. When we engaged PWC to do the study we tried to minimise the overlaps, which in my opinion are less than with the other methodology.

Ms PRENDERGAST — And we feel comfortable because not only has Treasury done a third-party review but effectively Austroads did a third-party review last year as well. But we will review as time goes on.

Mr PERERA — Is WTP always a higher value?

Ms PRENDERGAST — Yes, always. That is why in a way it is so important, because we know it was being grossly understated in human capital, and therefore significant road safety projects that truly could save injury and fatality were not getting across the line in traditional evaluation. We have now adopted a different sort of evaluation for some projects whereby we do not even do the pure economics, the old BCR. We do 10 per cent or 20 per cent BCR and 80 per cent or 90 per cent of the reduction in the totality or injury, and we do that based on a detailed crash reduction matrix. There are other ways to do it, and what we will find over time is that those projects that were selected using that will truly impact on road safety and reduce the level of injury and death.

The CHAIR — Just a point by way of clarification: does any project have to pass both the human capital and willingness-to-pay costs?

Ms PRENDERGAST — I would have to take that on notice, to be quite honest.

The CHAIR — If you would not mind, thank you.

Ms PRENDERGAST — I will have to take that one on notice and just come back with a specific answer.

The CHAIR — Thank you.

Mr ELSBURY — The committee understands that the New South Wales willingness-to-pay study aimed to estimate the value of a statistical life in terms of the value of risk reduction for death or injury on a route for individual car occupants and pedestrians. What was the rationale behind using only two road user groups in the survey? Are there any issues with extrapolating the results from these two road user groups to other groups, such as heavy vehicle drivers, cyclists and motorcyclists?

Ms PRENDERGAST — I would have to take that on notice. That is a level of detail that I do not have on hand today.

Mr ELSBURY — Okay. We also note that the willingness-to-pay values derived in New South Wales were based on survey participants responding to reduction of risk questions in relation to 'serious permanent injuries'. How was this defined, and what injury scale is this definition based on?

Ms PRENDERGAST — Again, I will have to take that on notice; that is subject to the detailed report.

Mr ELSBURY — Okay. Just one last question. By providing us with those answers would you be able to provide the committee with a copy of the 2007–08 willingness-to-pay study and any survey copies and other material that would assist the committee in its investigations on willingness to pay?

Ms PRENDERGAST — I would be willing to provide a copy of the willingness-to-pay study. I am not sure about all the survey documentation et cetera.

Mr PERERA — What were the key methodological lessons derived from conducting the New South Wales WTP study?

Ms PRENDERGAST — I will have to take that on notice. You have to understand that the economists built this for us. We are the road safety people. I did not manage this study firsthand, so I do not have this level of detail.

The CHAIR — You have been doing a great job.

Ms PRENDERGAST — It will have to be on notice. I will have to get the economists to address that.

Mr PERERA — That is okay.

The CHAIR — All is well.

Mr TILLEY — In relation to the willingness-to-pay study the committee is aware that Austroads has proposed that a national willingness-to-pay study be conducted — —

Ms PRENDERGAST — No, they have adopted our values.

Mr TILLEY — Okay.

Ms PRENDERGAST — They have incorporated the New South Wales WTP approach and values into the project evaluation part 4 model, which is the guide for all project evaluation for road authorities.

Mr TILLEY — Okay. So it has proposed that a national study be conducted to determine a national willingness-to-pay value and that until this has been completed, other jurisdictions — —

Ms PRENDERGAST — It is proxy, yes.

Mr TILLEY — Yes, it could use the New South Wales willingness-to-pay value model in the interim. Aside from this, the committee is also aware that the Western Australian government is adopting the New South Wales model for its own road safety purposes. What are the issues associated with jurisdictions using a willingness-to-pay value that was specifically designed for New South Wales, including network size and population?

Ms PRENDERGAST — There are those characteristics, but still the cost of a life is the cost of a life in terms of what someone is willing to pay and in terms of lost earnings or the hospitalisation costs. That is not going to differ that much between states.

Austroads has looked at our work and has obviously gone through it and republished half of the willingness-to-pay study as part of the study they did to recommend, so we have no issue with other people using it, acknowledging that over time it probably needs to be reviewed nationally, and indeed we would review it to refresh it is well.

Mr TILLEY — Earlier in the piece you gave a definition about the New South Wales 'admitted to hospital' definition — —

Ms PRENDERGAST — That occurred at a meeting with all states and the commonwealth in June or early July 2011 before we started the linkage study, because we had to get the definition to start the linkage work. We had a meeting in Canberra, and the proxy that was almost the best median between all the different definitions was 'confirmed admitted to hospital'. You could have 'admitted to hospital', but unless you can confirm it, it is not true data. That is why the 'confirmed' went in front. Other states are saying that 'confirmed' is even difficult to validate, so it could be 'admitted to hospital' or 'confirmed'; we are running with 'confirmed'. That just lends itself to the linkage approach, where we are using actual health data.

Mr TILLEY — In relation to the Victorian jurisdiction, would you be aware when Victoria started exactly? I suggest that it was 2008 when they changed to those goalposts.

Ms PRENDERGAST — Yes, but Victoria has always collected serious injury data, unlike New South Wales, which fully abandoned it. We fully abandoned it. We have had no serious injury data from 1997 to the linkage study we have just done.

Mr TILLEY — What does concern me is that when we did the motorcycle inquiry previously we took evidence from a Victorian hospital on the border of New South Wales and Victoria, the Albury Wodonga Health Service, and the data collection comment was, 'What's that?'. That was only last year.

Ms PRENDERGAST — We are going through the department of health, and we can see it by the matching rates, because we are matching actual records. So we are knowing where there are little pockets of any issues with the health data and we are also knowing who is not reporting, and the rest of it we are estimating was not serious injury.

Mr TILLEY — I represent a local border area. What concerns me directly is that although it is a hospital in New South Wales it is a Victorian hospital, and the concern is whether there is information sharing, because a lot of the people from New South Wales are presenting.

Ms PRENDERGAST — Totally. We have the same at Tweed and the ACT. We have three major borders, and the Victorian border is quite long; it is from Albury right through to Mildura and all the others. Tweed is obviously the biggest issue. That is a huge population centre for us, plus we wrap around ACT, and 50 per cent of the fatalities of people from Canberra occur on New South Wales roads, so we say that they understate their road toll by half.

The CHAIR — Can you tell the committee how you measured fatigue — that is, how did you identify fatigue as being an issue in terms of crash factors?

Ms PRENDERGAST — Absolutely. Fatigue is done in two ways. It is done through witness documentation and the police report and the narrative itself, where police are actually garnering different elements at the crash scene, but it is also done on traditional manoeuvres or what we call RUM codes. So there are traditional RUM codes and manoeuvres that lend themselves to run off road, because there are predominantly two fatigue crashes. One is run off road on a curve or a straight or it is head on. What we often find happening is that they actually run off to the left and then they overcorrect and end up in a head-on.

Mr TILLEY — Is that heavy vehicles you are talking about?

Ms PRENDERGAST — No, it is not. In fact I will talk about heavy vehicles in a minute. It is light vehicles predominantly — we have seen that happen with heavy vehicles — but they drift off to the left and they overcorrect. They almost wake up. It is why we are investing in investigating fatigue detection devices. There is a range, and my technology unit is looking at those now. Obviously there is the work with the National Heavy Vehicle Regulator in that whole fatigue space, but we are also about to embark on a major fatigue campaign for light vehicle drivers. We have done heaps of attitudinal work that shows that people just do not know that they are fatigued. So there is no magic measure. We have 'Wake up to the signs — look for yawning, drowsiness' or whatever, but they simply do not wake up to the signs. It is a scientific calculation about manoeuvres, based on RUM codes, coupled with the police commentary. That is how we do fatigue.

The bottom line is our contributing factors measures have been consistent through time, so we are always comparing apples with apples here in New South Wales. Even with the figures it is not a precise science, but what we have is consistent measurement. For example, we know that speed has increased, and that includes both excessive speed and inappropriate speed for conditions.

Mr TILLEY — You were talking about run-off crashes with overcorrecting. In those countries where people drive on the opposing side of the road, is there any comparative data where they are not run-offs but would be head-on crashes?

Ms PRENDERGAST — No. I have not really looked at that. What we know is that the wire rope barrier makes a difference, and we have seen the Swedish 2+1 scenario. For example, we installed some wire rope barrier in our Western region near Wagga at Christmas. Three weeks later a truck obviously hit it really severely, but much to our joy there was no crash recorded. So what you had was a truck drift off, potentially come back and hit the barrier, and rather than it being a head-on it has bounced onto the roadway and got away.

Mr TILLEY — I am familiar with the area. Which highway was it?

Ms PRENDERGAST — I would have to come back to you with that. I think it was the Sturt, but I could not be sure. It was a brand-new piece of work, but it just shows the power of barriers.

You touched on heavy vehicles. We have been trying to dispel a myth here in New South Wales about some of the heavy vehicle crashes. What we know is that about two-thirds of our heavy truck involvements involve two vehicles. So about 20 per cent are single vehicle with a truck, about 16 or 17 per cent are truck and pedestrian and the rest are two-vehicle crashes. What we know is that in that space more than 65 or 70 per cent are the light vehicle crossing into the path of the truck, and that is really important. Whilst we do still see the odd fatigue crash with a truck, drifting into the path of another vehicle or off-road — and obviously the single vehicle is the classic of speed and fatigue crashes — what we know is that there is a real light vehicle fatigue issue.

Because we are between yourselves and Queensland, we know that we are midpoint for where fatigue crashes do set in. So we have done all this attitudinal work and we are about to embark on a major campaign, trying to raise awareness about the whole fatigue space.

Mr TILLEY — That is good. I was formerly in the highway patrol.

The CHAIR — We are running short of time. I have one question. You alluded before to technology and your technology unit. Is there anything you would like to canvass about what you are looking at on the radar, as one of our briefs is in relation to countermeasures?

Ms PRENDERGAST — Absolutely. Technology predominantly comes in two forms in a vehicle. It comes as preventive technology: electronic stability control, crumple zones, all those physical characteristics of the car. We think that the future holds autonomous emergency braking, which for us could actually address congestion here in Sydney by removing some of the rear-enders in the morning, with people on their mobile phones, probably. We know that that is a real future, so it is that avoiding a crash in the first place.

What we actually believe is that there is this collision avoidance technology, so your lane departure warnings and things that increase visibility. There are simple systems like Mobileye that are infrared and actually make it more discernible, so that people can see a cyclist or a pedestrian. We think that that will become more important with an ageing population. We are obviously still very much in the intelligent speed adaptation space. We did that major trial in Wollongong, the largest trial in the Southern Hemisphere of that. We are looking at promulgating that as an advisory tool in this space. We are looking at fatigue detection.

Our technology unit is very much moving into the vehicle-to-vehicle space, as in vehicles talking to vehicles and vehicles talking to infrastructure. There are two projects that we have just secured federal funding for. One is what we call the city project, where we are going to run 60 trucks between Port Kembla and south-western Sydney, talking to each other and talking to traffic lights. The trucks will never know that they are talking to each other until something happens and a warning is set off. It could be a warning that there is a collision ahead and that there is a traffic delay. Indeed it can warn that the traffic light is about to change, and in time you could green phase that traffic light to let the trucks go through, for example. That is the sort of technology.

We are also running a smart rest area project, where we will have trucks talking to rest areas to see if there are vacancies.

Mr TILLEY — TRAVIS.

Ms PRENDERGAST — Yes, basically. We are testing the technology, the logistics of the technology, and we are doing that on the Newell Highway. Basically, we will have a suite of trucks that can call up the circumstances at the approaching rest area. If it is full or if there is some issue, they can make another choice and still fit within their fatigue guidelines. So we are doing lots in technology, but it really is this vehicle-to-vehicle, vehicle-to-infrastructure space that we believe is probably the secret — and just the proliferation or promotion of anti-collision avoidance technology.

Mr TILLEY — On what you were referring to before, over the last six months I was reading some of the works of Professor Arnold McLean from the University of Wollongong. He talks about suspension systems, particularly the airbag suspension system. I was interested in your commentary before about run-offs. Some of the stuff that he has found in his accident research suggests that airbag suspensions particularly have a propensity to lead to that overcorrection that you were talking about. So it is about adapting and overcoming the vehicle itself and the vehicle design. All too often we hear about two-vehicle crashes with a smaller vehicle versus truck, and it is great to hear that you are doing some work on that. Arnold McLean has done some good research down there.

Ms PRENDERGAST — We are aware of his issues on suspension. I am not sure that my engineers necessarily agree with everything. The issue is that recently we have published a heavy vehicle safety features guide. Basically that guide highlights what you should look for when you are purchasing a truck and also what you can add on to improve safety. For example, I know that Victoria is actually adapting that to roll out as well. We like to share. We have just got all our rollover stuff from Victoria, and I have my technology guy rolling that out in Bega, for example, for the forestry trucks et cetera, because the rollover WorkSafe Victoria did was quite exceptional. It is good to trade. We do not want to duplicate anymore; we want to complement each other.

The other one that we have adapted from Victoria recently is the *Making Roads Motorcycle Friendly* guide. I just had to get rid of all those Great Ocean Road shots and replace them with New South Wales shots, but that is fantastic. We look to do that more so with the other states. It just makes really good sense, with limited resources.

The CHAIR — Ms Prendergast and Mr Raisianzadeh, thank you very much for your contribution today. It has been an outstanding presentation. We are very grateful for the time that you have allocated and for the preparation that you have undertaken for today.

Ms PRENDERGAST — If you issue me with those questions on notice, I will get the economists to look for and return those answers. Good luck with your inquiry. We welcome it.

The CHAIR — Thank you.

Witnesses withdrew.