ROAD SAFETY COMMITTEE

Inquiry into Safety at Level Crossings

Melbourne—3 March 2008

Members

Mr J. Eren	Mr D. Koch
Mr C. Langdon	Mr T. Mulder
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Witnesses

Mr T. Sargant, General Manager, Safety and Asset Management, Department of Infrastructure;

Mr H. Ronaldson, Secretary, Department of Infrastructure; and

Mr G. Liddle, Chief Executive, VicRoads.

The CHAIR—Welcome to the public hearings of the Road Safety Committee's inquiry into level crossings. All evidence taken at this hearing is protected by parliamentary privilege as provided by the Constitution Act 1975 and further subject to the provisions of the Parliamentary Committees Act 2003. Having said that, any comments that you make outside the hearing may not be afforded such privilege and we are recording, as you can see, the evidence and we will provide a proof version of *Hansard* transcript at the earliest opportunity so you can correct it as appropriate. Members of the committee here today are Terry Mulder, Craig Langdon, myself John Eren, David Koch who is the deputy chair, Sean Leane and Paul Weller; executive officer Alex Douglas and our research officer Laurie Groom. If you could start your presentation and if it is okay we will ask questions through your submission.

Mr SARGANT—No problem at all. I will introduce myself. I am Tom Sargant—Howard Ronaldson and Gary Liddle.

The CHAIR—Very good.

Mr SARGANT—Thanks for the opportunity to present today. This is a broad outline of what we wanted to cover and we are happy to take questions as we go through.

Overheads shown.

Mr SARGANT—There are a number of policies applicable to level crossing safety: *Growing Victoria Together*, *Meeting Our Transport Challenges*, and *arrive alive!* and I am sure you are well familiar with those documents. For level crossing safety a nationwide, system-wide approach is required. At a national level the rail level crossing working groups are considering a range of safety improvements at level crossings which are not inconsistent with recent Victorian initiatives, such as nationally consistent speed reductions in lead-up to crossing, advance warning systems on approaches to crossings and trialling of cameras.

In addition, through the Australian Transport Council, a number of proposals are progressing which will improve heavy vehicle safety. These initiatives are primarily directed at improving the roadworthiness of the driver and the road vehicle. A number of the proposals employ improved technology: compulsory anti-lock braking systems for heavy vehicles, electronic record-keeping devices capable of monitoring speed compliance in trucks and development of electronic maps that can be used by intelligent speed adaptation systems on major highways—all to be further investigated. The fourth proposal to consider: health checks for testing of drivers of heavy vehicles, and random drug and alcohol testing of drivers in the workplace.

Mr KOCH—A quick question there: a lot of focus there on road transport and highway usage, nothing on rail, but we will hear a bit more about that as we go on?

Mr SARGANT—Most certainly. This is putting level crossing incidents into context. What the slide in effect is saying that without any control of the sequence to the passage of vehicles, then the risk is increased and that is stating the obvious. Secondly, it is important to realise that the greatest benefit of rail is also its greatest weakness and that is its low rolling resistance. It takes a far greater time and distance to stop a train than a rubber tyred vehicle. I have detailed on the slide typical braking rates for trains, and without going into more precise details about resultant times and distance that trains are required to stop, it is suffice to say that a freight train travelling at 80 kilometres an hour or 22.22 metres a second will take by definition 41 seconds to come to a stop, assuming that the driver reacts instantaneously and that the brakes reach their full application immediately.

That is a very simplistic assumption and practically this will take longer. In this time—41 seconds—a train would have travelled 1.3 kilometres. In reality, of course, this will be more. A passenger train which is more agile in emergency will take over 26 seconds to come to a stop which is already in excess of the minimum warning time for a crossing which is 25 seconds. As a consequence this means that when a level crossing protection is activated, a train will enter the crossing, it cannot be avoided. The only way to prevent a collision is to ensure that a road vehicle or a pedestrian is not in the path of a train once the protection equipment is activated.

Mr LANGDON—It would also be true to say that with a passenger train, other than a freight train,

you have to look after the passengers on the train itself.

Mr SARGANT—Certainly.

Mr LANGDON—If you stop suddenly there is a sudden movement within the carriages which can also be dangerous.

Mr SARGANT—Yes. The braking rates that are designed for passenger rolling stock take that into account.

Mr LANGDON—They do take that into account?

Mr SARGANT—Yes. I thought I would also detail the scale of the issue in Victoria. As you can see there are a large number of crossings on the road network in this state, and given the grade separation of all these crossings is unaffordable in the near future. We need to bring to bear other tools to protect the road users from errors in judgment. While there has been a lot of discussion about how severe the problem is, this should be put into some context. Over the past 35 years, deaths from motor vehicle accidents between cars and trains have reduced by over 70 per cent nationally. This is more than twice the reduction in the road toll over the same period. While we are identifying an issue—and we still need to target zero collisions—significant gains have already been made.

Mr MULDER—Tom, do we have graphs that represent what is happening in Victoria?

Mr SARGANT—I am glad you asked, Terry.

Mr WELLER—Why didn't we get it past 99?

Mr SARGANT—That was from a published paper that showed that chart. I have more current information going right up to 2007 for Victoria on the next slide.

Mr WELLER—Right.

Mr SARGANT—The reduction in vehicle occupant deaths over the same period was 85 per cent on a comparison of two years between 69 to 76, 94 and 2001. You can see on the slide I have also included 2000 to 2007. These statistics were published by road and transport research in 2005. I have also included pedestrian fatalities that have reduced significantly while road vehicle occupants remain constant; this is despite increasing road and rail traffic volumes in the period. In the 1970s, an annual average of 22 motor vehicle occupants died at railway level crossings. Since 1990 the Victorian motor vehicle fatal accident rate at railway level crossings has been an annual average of 3.8 per annum. This largely reflects improvements in road safety and also rail safety. Level crossing motor vehicle fatalities contribute less than 1 per cent of the national and Victorian road toll. Continuing to reduce casualties will be exponentially harder and will require the help of new approaches to level crossing safety, together with a range of other new technology possibilities. Human factors research will also have a major role to play into the future.

Mr MULDER—Is that trending upwards now?

Mr SARGANT—No, you can see 2000 to 2007, this is road vehicle occupants at level crossings. In those statistics we have not included rail vehicle occupants. The data set is not that rich. There are lumps that occur throughout history but it is really a very small data set in aggregate.

Mr KOCH—So the 26 and 2000 to 2007 is 32 if we take in bicycle and wheelchair?

Mr LIDDLE—No, that is the line above that—1990, 2001.

Mr SARGANT—Yes. Now, moving to the management of level crossing safety, the Victorian Railway Crossing Safety Steering Committee is the peak Victorian advisory body, policy and planning committee, advising the Minister for Public Transport and the Minister for Roads and Ports; Public Transport

Safety Victoria, Department of Infrastructure, VicRoads and road authorities on all policy and planning issues relating to railway crossing safety in the state. All Victorian Railway Crossing Safety Steering Committee members are published in the government *Gazette* and are appointed by the minister for a three-year term. The chart shown above indicates the responsibilities for level crossing safety in Victoria and, as I mentioned before, the Victorian Railway Crossing Safety Steering Committee is the peak body with three subcommittees reporting to it.

I will now briefly take you through the roles and responsibilities of the three subcommittees. The program delivery group is responsible for state railway crossing control upgrade program. There was a significant upgrade to boom barriers in the early 80s and since 97-98 there have been over 200 upgrades. The technical group keeps a global watch on all potential new technology railway level crossing safety applications with a focus on research and development of new railway crossing safety technologies for implementation on the Victorian rail network, but also deals with all engineering and technical issues related to railway level crossing safety. The safety awareness group provides advice on railway level crossing safety public education awareness programs—the *Don't Risk* campaign, for example. It initiates research into railway level crossing safety user behaviour and human factors and coordinates the national railway crossing safety initiatives, for example, the National Railway Crossing Safety Week in July each year.

The Australian Transport Council, consisting of transport ministers from Commonwealth, state and territories in Australia and New Zealand is responsible for a national approach to railway crossing safety management in this country. There are strong attempts to rationalise the national structure so there will be a single body responsible for national railway crossing safety that reports to the rail and road modal groups. It is important to understand that a national approach for railway crossing safety in Australia is essential. In order to ensure that there is a consistent set of treatment options for each state or territory's railway crossing, the objective of the national strategy is to reduce the number, cost and trauma of crashes between trains and any road user by the most cost-effective means. Each state's strategy interfaces to the national strategy. The contemplated rationalisation will simplify the overall interface with the states into the future.

Given the issues at hand, what are we currently doing about it? Firstly, there is a significant capital upgrade under way with an increase in the level of active control being applied to crossings in the network. As I mentioned before, since 1999 over 200 upgrades in control have been applied to the network. The RFR project had a big role to play in this. Since that time the program to upgrade control has continued. In fact growth in the upgrade program is more clearly demonstrated by this table which indicates a commitment to upgrades that has grown from previous levels. From these numbers the commitment to improving safety is clear. The upgrade of railway crossings to active control, including boom barriers, of course, there is no absolute guarantee of preventing rail crossing fatalities or accidents. Statistics show that over 60 per cent of railway crossing fatalities in Victoria this century have been at actively controlled level crossings.

Mr MULDER—Can I ask a question: those targets you have there—07, 08, 09—they upgrade from passive to full boom barrier protection or flashing lights, or do they also include pedestrian upgrades, a figure of 45?

Mr SARGANT—They also include pedestrian upgrades.

Mr MULDER—How many are actual upgrades to level crossings then and how many are pedestrian?

Mr SARGANT—I would need to go through—would you like me to stop and go through it or can I—

Mr MULDER—You can provide that information to us at some stage down the track if you could.

Mr SARGANT—It generally depends. Last year or the year before there were 11 pedestrian crossing upgrades out of 37, plus the 20.

Mr MULDER—Out of?

Mr SARGANT—Well, it depends. Some years there are only two pedestrian crossing upgrades. There have only been two, with the majority being road level crossing upgrades. Programming upgrades is a function of how difficult the problem is of the particular site. We have a level of risk that we are trying to reduce and a set of priorities and we try to address them in rank order. There will be a number of road level crossings in an area that we will upgrade.

Mr KOCH—We understand and accept that, Tom. Could you supply the figures to the committee for 2007-2008, 2008-2009.

Mr SARGANT—On a breakdown of what the current—

Mr KOCH—On a breakdown.

Mr SARGANT—Yes, certainly.

Mr LEANE—Tom, on that, as a side issue, going by that figure it was really about 50 per cent of deaths on rail crossings were pedestrian and bikes, if you go back, but the thing I wanted to put to you, you said 60 per cent of the deaths were at controlled—

Mr SARGANT—Yes, actively controlled crossings.

Mr LANGDON—How do you account for potential suicides in all those?

Mr SARGANT—The fatality numbers exclude suicide.

Mr LANGDON—How do you define that?

Mr SARGANT—Based on what the coroner informs. There has also been initiatives announced, shortly after the incident at Kerang. The initiative looks at three aspects, namely, engineering, education and enforcement to improve level crossing safety. As far as the engineering is concerned there are active advance warning signs that have been introduced at 53 crossings around the state, and rumble strips have been deployed at 200 crossings around the network; education with the refocusing of the *Don't Risk It* campaign. This campaign uses a variety of tools to target different audiences in regional and metropolitan Victoria to highlight and reinforce the dangers and misuse of level crossings to road users and, finally, enforcement with the modifications that have been made to legislation to better define offences and to introduce tougher penalties for offenders with fairly severe consequences; this, together with the trial of enforcement cameras at Bagshot and Nunawading.

Mr WELLER—Tom, the first two there, the 53 sites and the 200 sites, what time span are they meant to be rolled out over?

Mr SARGANT—Two years for the active advance warning signs, and the 200 sites for rumble strips should be complete in—

Mr LIDDLE—Largely by the end of this year.

Mr WELLER—How are we going on target for achieving that?

Mr LIDDLE—The rumble strip sites, the first 20 which trial the technology have already been done, and a contract for the other 180 sites has already been awarded.

Mr KOCH—What is the length of contract?

Mr LIDDLE—I can confirm that but my recollection is the end of this calendar year, but I can confirm the date.

Mr MULDER—It is about 1440 passive level crossings. Do they include the occupational crossings?

Mr SARGANT—No.

Mr MULDER—How many of those are there, do you know, private crossings?

Mr SARGANT—We do not know. I do not have that figure in front of me.

Mr MULDER—Can you get it for us?

Mr RONALDSON—It would be hard data to get.

Mr MULDER—Why is that?

Mr RONALDSON—We do not keep a data set of the tracks for private crossings on private land and there are lots of them.

Mr MULDER—No-one knows in the department how many private crossings there are on railway tracks throughout the state?

Mr RONALDSON—I will check it but it is not just on farms.

Mr MULDER—No, I know, they are occupationals.

Mr RONALDSON—Occupationals. There would be plenty around the wharves and suchlike. I am not sure whether we keep that data set but I can certainly check.

Mr MULDER—The occupational crossings, as I understand it, include farms as well as, as you say, around the wharves as well.

Mr RONALDSON—That is right.

Mr MULDER—What you are saying is we do not know how many there are at this point in time.

Mr RONALDSON—I do not know whether we have a data set that brings them all together in the one place. If you go down to the port authorities—and I am sure they will tell you how many crossings they have within each individual port—and if you go to some of the land agencies in our regional offices, they might be able to tell you—they might—region by region know how many private farm crossings, formal and informal, there might be on farmland. I am not sure, we have the data set in one place, but I will ask.

Mr MULDER—Can I ask another question on that: did the [ALCAM] auditing cover all of those private crossings, as well as crossings that have been identified here today?

Mr RONALDSON—No.

Mr LANGDON—I have a question on that. You said formal and informal. If someone wants to set up a private crossing do they have to seek permission with somebody or they can just do?

Mr RONALDSON—They certainly should seek permission.

Mr LANGDON—To seek permission with someone, why isn't that data kept in one place?

Mr RONALDSON—Well, you keep data in one place if there is a point in aggregating it.

Mr LANGDON—You are saying the regions would have that, possibly.

Mr RONALDSON—Maybe, and there would probably another data set in V/Line—maybe—and so on. I am unaware, as I said—I might be wrong. But I am unaware that in the department there is one place

where we have aggregated all the data sets to accumulate all private crossings everywhere over a railway line in Victoria.

Mr LANGDON—If accidents occurred on such crossings obviously there would be a database of that, or do they report those accidents?

Mr RONALDSON—Yes.

Mr LANGDON—To your knowledge have there been many accidents that involved those sorts of crossings?

Mr RONALDSON—Very few, and Tom can correct me, certainly less than there have been in this data set.

Mr SARGANT—I cannot recall one.

Mr MULDER—The owners of these private crossings, I understand, have train control numbers to call to find out if there are trains in the area so that they can use them to move livestock from one side of the crossing to the other.

Mr SARGANT—For the licensed ones, yes.

Mr MULDER—The licensed ones, yes, which I would imagine there would have to be a database somewhere.

Mr SARGANT—Yes.

Mr MULDER—Is it a fact at the moment that a lot of the private crossings, the owners of these private crossings, or whose land they are on, are being asked to pay for the cost of upgrade of these crossings that is going out in the department at the moment.

Mr SARGANT—Depending on the conditions of their licence.

Mr KOCH—If they have a licence.

Mr SARGANT—Yes.

Mr MULDER—I understand those letters are going out to private landowners who have a private crossing where they have property on either side of the railway crossing and are being asked to pay the full cost of upgrade.

Mr RONALDSON—I am unaware of that. Who is sending out the letters?

Mr MULDER—I was advised this week that there were some letters had gone out.

Mr RONALDSON—Who did you say is sending out the letters?

Mr MULDER—I did not say. I am not going to tell you who. I am asking you a question. It is not for you to ask me a question, I am here to ask you the questions.

Mr RONALDSON—I am trying to clarify your question. You said letters were sent—

Mr MULDER—Yes, I am asking you.

Mr RONALDSON—and I am asking if you knew who had sent out the letters.

Mr MULDER—You are saying it is not happening?

Mr RONALDSON—No, I am saying I am unaware.

Mr MULDER—Okay.

Mr LANGDON—We obviously cannot put you on the spot but can we find out some of these details, ie, whose data, where it is kept, who keeps it, and if there are letters going out et cetera.

Mr KOCH—Also if people wish to put these crossings in is there a process for them to make application to get a permit to do so, versus they should endeavour to do so.

Mr LANGDON—You also use the expression 'depending on their licence'. What is the difference between a licensed crossing and obviously an unlicensed crossing?

Mr SARGANT—A licensed crossing is one that generally exists and there has been a licence permit to do so; there are people that cross the railway illegally or otherwise.

The CHAIR—If we can get back to the presentation.

Mr SARGANT—Yes. Other initiatives include a review of all level crossings to ensure that they accommodate the safety requirements for heavy vehicles, implementation of hazard warning systems that would automatically reduce speed limits at high-risk locations, and also systems that would provide in-vehicle alerts, undertaking public education campaigns to improve public awareness of level crossing safety, incorporating new laws and penalties; increasing penalties for level crossing infringements and introducing new offences of speeding to cross ahead of trains when lights and bells are activated, and manoeuvring around boom gates that are down.

We must not forget that pedestrians also must cross the railway safely, and this is a particularly interesting area and one that I will not go into too much detail, but pedestrians are far more inclined to put themselves in the path of a train than cars. There are countless examples where the community bypass safety equipment only to realise they have made an error in judgment when it is too late. While we have a significant upgrade program focused on extending the deployment of active protection, we also have a significant program to make pedestrian crossings more usable for the disabled with visual aids, tactile tiles and better paving, particularly making the flangeway easier to traverse by wheelchairs. We have recently surveyed all 2927 road and pedestrian crossings using the Australian level crossing assessment model. The model is in the early stages of development and will requirement some modifications. However, ALCAM will for the first time use overall risk as a means of determining the priority for upgrades. The model also uses other factors that are the responsibility of the road managers to determine what are the best set of mitigations to reduce overall risk at a crossing. ALCAM is not a silver bullet, as there are none, but it will be another tool to help guide the best set of initiatives to reduce the overall risk of crossings and hence the network.

Mr LEANE—Tom, can I ask, in the ALCAM process were there any crossings identified that should be simply separated, as in not be used any more?

Mr SARGANT—That is not what ALCAM is designed to do.

Mr LEANE—Okay. The reason I am asking, Tom, is the best way to make them safe is to separate them as far as—

Mr SARGANT—Ultimately grade separation eliminates the risk of a train colliding with a vehicle.

Mr LEANE—Yes.

Mr SARGANT—Pedestrian crossing, however, are a different kettle of fish. People may bypass a bridge—

Mr LEANE—Just go.

Mr SARGANT—In terms of research, aside from participating in a number of national programs, I would like to mention three initiatives in particular: the first, following the incident at Kerang, the Minister for Public Transport asked the Department to investigate the possibility to broadcast to GPS units located in vehicles to enunciate to the driver if the driver is approaching a level crossing. The preliminary findings of this work is scheduled to be completed in late March and, if successful, this could provide one means of improving road user behaviour.

Mr LEANE—Can I touch on a few issues with that—

Mr SARGANT—Certainly.

Mr LEANE—that come out of the conference, and speaking to previous people, is the power supply for the repeater that is going to be sending out the signal could be the biggest cost as far as—and the question that we tried to flesh out in recent times is because a train already has a power supply, can that be utilised to send out the signal vehicle to vehicle, as far as an FM signal to block your radio? Can that be used instead, because I would be saying if you had to put a fully-fledged power supply as in putting a trannie on the HV and all that, to get a repeater out, you might as well put in the active control for the extra cost, because the cost of the power supply is usually 80 per cent of the cost anyway. I wanted to ask you that but another thing I wanted to flesh out which, Gary, you might be able to help us with—because I could not find anyone at the ITS conference that could tell me this—as far as Melway and Tomtom, the people that sell the GPS units that you put in your car, is it an Australian company that makes the software for them? I know the hardware is imported, but the point I was trying to get at with people was, when you ask directions, 'I want to go to Bendigo,' and the thing talks to me and tells me to turn left, tells me to turn right, in their next version of software can they look at saying to me, 'Within half a K you are about to come to a level crossing'? I imagine it would be only a few lines of code. I do not know who makes the software for those units in Australia and I do not know if you would know.

Mr LIDDLE—I honestly do not know, Sean, but I assume that that could be done. If an intersection location is put in, I assume that could be done, but I honestly do not know where the software comes from.

Mr LEANE—Yes.

Mr SARGANT—It depends on the power of the unit and how much power it would draw and whether it could be accommodated and robust enough to withstand it but, theoretically, yes, I do not see a reason why something could not be—

Mr LEANE—Yes, and switch between, that is the problem, is it not, because you do not want to—

Mr SARGANT—You then need to provide detection or some device—

Mr LEANE—Could the train driver enable it like he does his horn?

Mr SARGANT—Yes, that is something that could be linked to the horn or whether you have something—a token or something on the track.

Mr LEANE—That gets to failsafe. This is not failsafe but it is an enhancement of the system it already has. Am I right in saying that the rail network people are starting to think about enhancement and growing a little bit away from the stringent failsafe policy?

Mr SARGANT—It is something we are looking at, but the big hurdle we have to get over is if protection equipment is installed at a crossing and people are relying on that information. If it does not operate and someone encounters a crossing and then collides with a train, they are going to be pretty annoyed.

Mr LEANE—Yes.

Mr MULDER—Tom, can I ask you a question in relation to the ALCAM. As I understand it,

information has already been sent out to road authorities, rail operators and to local government about some of the information that has been gathered on ALCAM which, I imagine, is their responsibility as part of the ALCAM audit, what the department or government is expecting of them?

Mr SARGANT—It is their obligation under the Rail Safety Act.

Mr MULDER—Yes. Have they gone out as costed packages to them or is it simply for them to determine how they are going to fund their requirements?

Mr SARGANT—No, what has gone out are issues that are associated with the level crossings that are in their jurisdiction and their view of those of what the survey has found.

Mr MULDER—So they are deficiencies on their behalf in terms of what they have not done up to this point in time?

Mr SARGANT—Amongst other things, yes. Well, things that they have or have not done is not necessarily correct. It has identified issues associated with a particular crossing.

Mr MULDER—Have they gone out to all councils now?

Mr SARGANT—Yes.

Mr MULDER—Is that information available to the committee?

Mr SARGANT—At this stage it is still in its—we have done an initial survey and they are checking the information associated with each.

Mr MULDER—In terms of our deliberations it would be very important for us to be able to look at that information and get an understanding of exactly what the situation is out there.

Mr SARGANT—I would need to take that on advice to see how practical it is to get all that information.

Mr MULDER—Okay.

Mr SARGANT—In terms of research, I have mentioned the GPS units. The second piece of research is participation in a behavioural study that has been led by the ARA. The purpose of the study is to determine road user behaviour and the effects of enforcement and awareness campaigns on that behaviour. The findings of this will help inform the strategies to improve railway crossing safety into the future. This will be on top of the findings from the evaluations of the rumble strips and active advance warning sign projects.

Finally, there is a trial under way at Centre Road, Bentleigh, where many pedestrians continue to take risks crossing the railway. There has been over $1 million of improvements that have been on trial here and the evaluation will be used to determine what improvement, if any, there has been to pedestrian crossing behaviour.

Mr MULDER—Going back to—Alex, we are getting the [ARA] to give us—they will be able to tell us. Their behavioural study showed that a stop sign at a level crossing, there was an amazing percentage of people that did not slow to something like 20 K's and I do not think anyone stopped.

Mr SARGANT—When the police were there it reduced the average speed from 80 to 70 kilometres an hour going through the crossing.

Mr WELLER—The police are not always going to be there though.

Mr SARGANT—No. That was the preliminary finding. There is still more information to be gathered as part of that study and I am not full bottle on it.

Mr LEANE—There have been similar studies. VicRoads—road crossings.

Mr LIDDLE—Road to road intersections?

Mr LEANE—Yes.

Mr LIDDLE—Not that I am aware of, Sean. I am not aware of any study of behaviour at stop signs.

Mr LEANE—It would be interesting to compare, would it not?

Mr LIDDLE—Yes. I am not sure whether there has ever been such a—

Mr KOCH—Tom, I understand you to say that in relation to Centre Road from a pedestrian point of view, $1 million to date has been expended?

Mr SARGANT—Yes, on various trials of different—

Mr KOCH—When we are starting to talk of these amounts of money has consideration been given for walking over or walking under railway lines?

Mr SARGANT—Yes.

Mr KOCH—We are starting to talk a lot of money, are we not, to achieve very little? To get that separation for a few extra dollars is probably going to be the outcome.

Mr SARGANT—I mentioned a little bit earlier about grade separations in pedestrian behaviour. Where grade separations are provided, people are as likely to walk around it and go straight across.

Mr KOCH—If they have an alternative. If there is a tunnel—

Mr SARGANT—No, I can point to examples like Koornang Road, Carnegie, where people have to go out of their way to walk onto the road and put themselves in danger, rather than go straight ahead and walk under the underpass, and people do it—30 per cent of people do it. That is why I say, grade separation for pedestrian crossings is not necessarily the key because of that.

Mr KOCH—We may have to modify how we get the separation, if it must be more work to be done in that area.

Mr LANGDON—Because pedestrians are like as the crow flies—

Mr SARGANT—Exactly. I take my son for walks regularly and I do not know how many times I say, 'Look at that naughty person,' either walking across the road or—so grade separations are major projects constructed to improve traffic flow on arterial roads, such as Middleborough Road, Box Hill. There are to be no new level crossings without ministerial improvement and there is a DOI committee which investigates potential level crossing upgrades.

Now, moving on to technology, the committee is probably already aware of the current forms of control at crossings, active and passive control. We have also highlighted in our submission some of the advance warning devices that have been used, most notably the recent deployment of active advanced warning signs. Other initiatives that are currently being trialled are rumble strips and traffic signal protection. Other items we have also mentioned in our submission that have either been examined by the technical group or will examine, I will not go into those in detail, as our submission details them and their limitations.

In conclusion, railway level crossing crashes are relatively small in number but are of concern because—aiming for zero—where there are mass transit and large moving bodies there is potential for crashes to be catastrophic with multiple fatalities. We are very active in our endeavours to improve safety. New initiatives

are being introduced and we are trialling a range of measures. There is a role for new technology as part of our overall treatment, using the three Es—education, enforcement and engineering. Thank you.

Mr MULDER—Can I ask a question in relation to V/Line Corporation. I note at Southern Cross Station they are starting to repaint their trains light grey. What is the approval process for that and what is the actual process they have to go through to go down that pathway? It seems to me, coming from the country, that those trains will blend perfectly into a winter sky in terms of visibility.

Mr SARGANT—From my understanding they have tested the scheme and it meets the conspicuity standards.

Mr MULDER—So they have no reporting role to Public Transport Safety Victoria in terms of that? Where does the actual approval come from?

Mr SARGANT—For the need to alter the livery colour?

Mr MULDER—Yes.

Mr SARGANT—They have obligations to comply with standards and if they comply with the standards then there is no approval required in terms of the colour. As long as it conforms to their safety management system, the standards detailed therein.

Mr MULDER—Okay.

Mr KOCH—Tom, does your committee make recommendations for—are you empowered to implement some of your findings in your own role?

Mr SARGANT—Depending on the things that we find, my normal role as general manager, safety and asset management, through managing the Connex lease and V/Line lease we have means to implement things that come through; similarly VicRoads as well.

Mr KOCH—Can we have an example?

Mr SARGANT—Deployment of yellow box marking at various locations. We have arranged that through the—

Mr KOCH—Is that about the limitation or can you go through quite some distance further than that? I am interested to know where the opportunities prevail and where they do not. Does the committee have greater power than, as you have suggested, in relation to the yellow box as an example, or does it have to go back through the umbrella organisation, back to DOI before it gets implemented?

Mr SARGANT—We have clear authority levels in our normal roles. We could not mandate a grade separation of a level crossing, for example. That would have to go through the normal government investment process.

Mr KOCH—Yes, right.

Mr WELLER—Tom, most of the things you have spoken about here are what are available now. Is your department doing any research on new technologies that can be used?

Mr SARGANT—Yes. I covered some of those off in the presentation briefly and also in our submission of the things that we have either looked at or are continuing to look at, and it is not like we have an idea every day. We have had a fairly thorough research of all the technologies that are available and either dismissed them or sought to implement.

Mr LEANE—Have there been any accidents due to the technology failing?

Mr SARGANT—Not that I am aware of. I have only been involved in the industry since 2000 and during that time I am not aware of an incident. My memory of incidents in my life I have never come across one where the protection equipment has failed to work.

Mr MULDER—Gary, in relation to the rumble strips, what is the life expectancy and the maintenance of those?

Mr LIDDLE—The initial work that we did, we did a trial and that initial trial was not all that successful, so we have changed the technique now of doing them and they are now being constructed out of a block of asphalt so the rumble strips and the pavement are one, and the life expectancy of that is about the same as a normal pavement which will be around the 10, 12 years. The initial trial was not proving all that successful in terms of its longevity and needed some extra work done.

Mr MULDER—Is there a template approach in terms of the distance away from a railway line to the actual—

Mr LIDDLE—Yes, there is, in terms of assigning layout and the location of the rumble strips is all part of a standard that has been developed.

Mr LEANE—On the ALCAM report, the size of the report, did the report take into account accidents on each particular site and variables like weather and all that sort of thing?

Mr SARGANT—To my knowledge it takes into account the local geography and prevailing weather conditions, amongst other physical factors. I do not believe it takes into account accident history.

Mr LEANE—It takes into account how many level crossings? How big is the report?

Mr SARGANT—Every level and pedestrian crossing. It is not private.

Mr LEANE—Not occupational.

Mr SARGANT—No.

Mr WELLER—In the past, how much have we spent on upgrading level crossings and what is budgeted for the coming years to be spent on upgrading level crossings?

Mr SARGANT—Off the top of my head I cannot give you that figure but I can get it for you.

Mr RONALDSON—We are happy to provide that data. Back, what, five years?

Mr WELLER—Back three years anyway so we know what has been happening in the past and what is budgeted.

Mr LEANE—In our initiative have we ever taken away road separations? I know Centre Road used to have pedestrian—that was taken away?

Mr RONALDSON—Yes. Way before my time.

Mr SARGANT—It was in the 90s.

Mr LEANE—Right. There would not be many more incidents of that that we know of?

Mr SARGANT—The pedestrian grade separation you are talking about?

Mr LEANE—Yes.

Mr SARGANT—Centre Road is a fantastic contrast between that and the next station on the up

which is McKinnon. Centre Road obviously had the grade separation taken out. McKinnon, the grade separation coexists with a DDA compliant at-grade crossing. If you sit there for an hour, as long as you like, and count how many people use the at-grade crossing versus how many people use the grade separated crossing, the only people that use the grade separated crossing are the ones going to the carpark, and the only reason they use that is because it is the only way to get there, otherwise everyone—everyone—uses the at-grade crossing.

Mr KOCH—Tom, is there anything that can be done within the rail infrastructure—and that is the mobile rail infrastructure—in relation to further braking capacity, or is it only through the slowing of trains? There is a great emphasis on the road user but not a great deal of emphasis on the rail user. I am wondering is there something we should be giving consideration in relation to rail usage first as its speed approaching crossings?

Mr SARGANT—Rate of braking capacity.

Mr KOCH—Seeing that the train has complete right of way, the onus is really on the road user and we should be focusing a little bit more the other way.

Mr SARGANT—I am not aware of anywhere in the world where train braking is—

Mr KOCH—Can be improved.

Mr SARGANT—No.

Mr KOCH—So it comes back—

Mr SARGANT—It is a physical limitation of steel on steel and it is one of rail's great benefits in why it is economic to use, but at the same time, braking is an issue. Even if we were able to address it on passenger rolling stock, which would be your best chance, you still have a big problem with freight trains.

Mr KOCH—Then is there further consideration being given to crossing approach speeds at the cost of the journey being a little bit longer?

Mr SARGANT—For trains?

Mr KOCH—For trains, yes.

Mr SARGANT—Again, not—

Mr KOCH—I am concerned with some of our trains that are travelling at 130 K's. We have been fortunate enough on our recent field tour to be party to this. I do not think that the road travelling public can visualise how fast the train is going. They probably realise between 80 and—

Mr LEANE—Unless you jump into the front like we did.

Mr KOCH—Yes. I do not think until we were given that opportunity we were quite aware of what is going on either. It concerns me—I am not worried about in the no crossing scene—that where there are crossings and multiples of crossings, I wonder whether there is something there that should be looked at in relation to rail speed?

Mr LEANE—Going by your formula—to supplement David's question—about how long the speed to distance, if you back off 20 K's you are still pulling up, still taking you 800 metres, isn't it, to stop? Do you know what I am saying?

Mr SARGANT—Yes.

Mr LEANE—By backing off a certain amount does not gain you as far as—you come around a bend

and there is a level crossing and someone is there, you still need that a long distance, don't you?

Mr SARGANT—If you do start slowing trains down you are going to run into capacity issues on the rail network and it then really does become ineffective if we are addressing—

Mr KOCH—It has not been looked at. There seems to be a dedication to look at the road highway movements but not the rail movements.

Mr SARGANT—That is because it is where the easy gains can be made.

Mr KOCH—I appreciate that, yes. We might have to go past the easy ones in some cases and investigate. That investigation is something that does not appear to have a lot of time or resources spent on it at this stage.

Mr LEANE—Are there any identified impediments to the implementation of some of the technologies that have been talked about to improve safety at level crossings?

Mr SARGANT—Not that I am aware of, the key criteria being, however, that if we do implement new technology it has to be properly tested so that it does not interfere with any of the existing safety systems on the network. It needs to be reliable and robust enough to survive in that environment and if it is safety critical, be failsafe, unless we can make the community aware that something is not failsafe and then get them to behave appropriately, irrespective of the status of the equipment. But other than that there is no—

Mr LANGDON—With all the crossings, pedestrian and no crossings, who is ultimately responsible for them and the safety of them? Is it yourselves or VicRoads?

Mr SARGANT—It is the road authority and the rail authority, depending on the crossing. In the metropolitan area it would be Connex, and either the local council or VicRoads, depending on which road the crossing existed in, and when you talk about crossing safety, it is not just at the crossing itself, the approaches as well. In the country it would be either V/Line or ARTC and the local council or VicRoads.

The CHAIR—If there is a conflict into what action is to be implemented—and on occasions there may be some conflict in terms of which jurisdiction it falls into—how do you go through that, an implementation process, the situation of local government, VicRoads and obviously the rail authority? If you have identified a specific area that needs some action, is there any impediments in terms of bureaucracy that occurs?

Mr RONALDSON—I am unaware of conflict. You go a long way to try to make sure who is responsible for what. The Road Management Act makes it quite clear who is responsible for what road. The Rail Safety Act and other acts makes it very clear within the confines of the rail corridor who is responsible for conduct in that corridor. We have not run across a situation where there has been a significant difference of opinion as to how a particular crossing is to be treated.

Mr MULDER—Can I ask a quick question. There has been a significant discussion in relation to public education. I know there are a number of advertising programs running. How much are we spending on advertising in terms of level crossing safety? Is it ongoing?

Mr RONALDSON—Once again, Terry, off the top of my head I do not have the figures but I am very happy to give them to you.

Mr MULDER—Okay.

Mr LANGDON—When you go up to country Victoria you often see a sign, 'This highway has been adopted'—I cannot exactly remember the expression—'by the Lions Club'—or something—'to keep it clean and tidy.' Has there any thought been given to that with some of the railway crossings?

Mr SARGANT—Not, not that I am aware of, but that would be a novel approach.

Mr KOCH—Tom, legislation has been put through the house recently that gives the managers of rail reserves the opportunity for vegetation clearance. Is there a statewide plan in place to execute that now or what has been the result of that legislation? Are plans or strategies in place to remove vegetation to give far more visibility for existing crossings?

Mr SARGANT—Part of the ALCAM survey will identify areas where vegetation is—

Mr KOCH—'Will'? It is yet to—

Mr SARGANT—The survey has been completed and the results are being analysed.

Mr KOCH—Right.

Mr SARGANT—As part of the ongoing responsibilities of the rail organisations, the clearance of vegetation that is obstructing the safe operation of level crossings will be—

Mr KOCH—We appreciate that is pretty sensible legislation because in the past it has been very reactive. If an accident has taken place the site is clean within 24 hours, so I hope there are strategies being put in place that do affect what that opportunity offers.

Mr SARGANT—Yes.

Mr KOCH—Is that all ALCAM or is that part responsibility of your steering committee to see that that is undertaken?

Mr SARGANT—It is part of the steering committee's role and it is also part of my role—my substantive role as general manager, safety and asset management, and administering all the infrastructure lease.

Mr KOCH—Who audits the whole process?

Mr SARGANT—With the ALCAM surveys we will continue to have an ongoing survey of all level crossings so that we are covering each one every five years.

Mr KOCH—Is that going to be enough?

Mr SARGANT—I believe so.

Mr KOCH—The native growth that can take place on your reserves in five years time I do not think certainly is enough.

Mr SARGANT—We are not assuming that we are going to wait for the five years. The cyclic audit will be to verify that the actions have been implemented and continue to be.

Mr KOCH—So inspections will be ongoing on a quarterly basis?

Mr SARGANT—That is right.

Mr LEANE—Can I ask something that is close to my heart, being an ex-traffic signal technician. When the railways were state-owned there was a big onus on training people and obviously when it went to the franchises there might have been a different onus and we find that a lot of the people that are skilled to work on the network and install the equipment we would like to installed are few and far between. Is that going to impede the roll-out with the commitments we have and if we can find new technology that will be helpful? Is that going to impede the time that we can get it out?

Mr SARGANT—I do not believe so. Signalling resources are not—you do not just pull them off the

street but again it is a fairly tight industry. The resources that used to work in the old Victorian railways either work for Connex or V/Line or for a number of contractors that contract into the railway. There is an ongoing program to bring in apprentices and things like that that are being done by Connex and V/Line. Notwithstanding that, the skills we are looking at—that you are looking at—are not traditional railway skills. We are looking for new technology, and the IT industry, in combination with railway guys who can say what can and cannot be done to the signalling equipment, will need to bring in newer technology.

Mr LEANE—Is there a concern with the age group that we have now, seeing that it is a fair time since privatisation and people that have come through that system must be pushing 50 plus.

Mr RONALDSON—This is an observation: I am not sure the franchising is the major force here. The major force is the increasing size of the capital ask on railways in Australia, particularly if Sydney starts its big projects that it has been talking about for some time. You could expect the things you are talking about to engage a lot of the resources around Australia in signalling, particularly. With only two or three companies, signalling resources are difficult to get. This is the highest priority, this work. Safety work always goes to the top of the pile. It is broad engineering expertise across the rail sector is becoming harder to acquire. That is another way of saying it is becoming more expensive.

Mr KOCH—How much of your resources have been put into failsafe and where are the limitations? Failsafe seems to have its own sensitivity. Is it about resources? Why is it such a sensitive issue?

Mr SARGANT—Why is failsafe so sensitive? That is a fundamental principle which the whole railway safe working system is based upon. It is not a skills limitation. Failsafe is built into the design. It is not a skills limitation at all.

Mr KOCH—Is it a resource limitation? Why does failsafe not go further? What are the limitations on failsafe?

Mr SARGANT—I am not sure what you mean.

Mr KOCH—With failsafe technology what are the limitations within failsafe? I know it is part of the technology you employ, but can that be further expanded?

Mr SARGANT—Yes. For something to failsafe means that if it fails—the lights continue to flash, for example, at a level crossing, the signal goes to stop. If I am understanding your question, provided you can have that philosophy in the design then it is not a constraint or a limitation.

Mr KOCH—Can it be used to a greater effect?

Mr SARGANT—Sure, if you want to enhance something, yes.

The CHAIR—Tom, are you aware of any measures, policies, programs, technologies that may be currently operating elsewhere other than Victoria, and how can we implement some of those here in Victoria?

Mr SARGANT—We have detailed a fair few in our submission that we are aware of and that we have trialled and what we are looking to further develop. Some of the things that we saw on Friday which Sean was at, we might be able to learn from that as well.

Mr MULDER—Tom, could I ask, the road safety committee in 2002 report on rural road safety and infrastructure noted VicRoads and VicTrack had established a project to develop a cost-effective alternative to address the 1500 or so crossings that are low volume crossings and are still untreated. Are we talking here about the—

Mr SARGANT—Low cost level warning device.

Mr MULDER—We are talking about that? The exact status of that at the moment?

Mr SARGANT—It is still being trialled at present, trying to address liability concerns.

Mr MULDER—Early testing indicated a high degree of reliability, did it? We talked about that some time ago.

Mr SARGANT—Yes, but from what I understand there are still issues that need to be resolved.

Mr MULDER—Would that require legislative support to put something like that in place, given that it is not failsafe?

Mr SARGANT—That I do not know. It would certainly require a rock solid communication process to make sure that everyone is absolutely aware that whilst the light might flash or the bells might go when a train is coming, there is the odd chance that it might not.

Mr KOCH—Legislation will not do that.

Mr LEANE—Is the biggest problem in train detection?

Mr SARGANT—Train detection, no, because there are simple things that you can use to detect a train, but if the equipment fails, making sure that the machine activates. That is where the trick is.

Mr LEANE—If the detection fails?

Mr SARGANT—If any component fails. That is the beauty of track circuits. If a track circuit fails a crossing activates; whereas we have technology now with treadles or something like that that a train would detect, but if the treadle fails and the train goes through, the crossing will not activate.

Mr MULDER—If I can ask a question in relation to how much is being spent on research and development in the last two budget periods, and do we have a forward budget?

Mr SARGANT—I would need to take that on notice if that is okay.

Mr MULDER—Okay.

The CHAIR—In relation to the question about crash investigators, after making some recommendations, is there any follow-up action in relation to those recommendations?

Mr SARGANT—Yes, every action is assigned, tracked and, if it is accepted, implemented.

The CHAIR—In relation to Gary, what additional measures in relation to VicRoads can be introduced to prevent crashes at active crossings?

Mr LIDDLE—At actively controlled crossings. We have been talking about potential speed reductions on high-speed rural roads. We are probably picking up on that, so we have certainly been talking about speed reductions, and as Tom said in his presentation these active warning signs at 53 crossings where those are to be installed. The rumble strips and all the things we have talked about are those things being done but we are working with Tom's group to look at things like the GPS in particular which would give some advance warning to motorists when a train is approaching.

Mr KOCH—Are VicRoads looking at that rail corridor traffic speed or do you see the onus is all with VicRoads? I am a little bit curious because there seems to be an infliction from my point of view on the road user, not the rail user, and where does VicRoads sit in some of this stuff? I am sure you have discussed it heavily, but is it seen that rail has the right of way at every opportunity irrespective of what speed it is doing; whether it is coming through—and we had a look at Creswick, as Tom has alluded to now, whether that impediment is a VicRoads responsibility or a rail. What are some of those areas that VicRoads would be pushing on their behalf to try and put some of that onus back into the rail corridor off the road users?

Mr LIDDLE—When we are looking at the ALCAM results we are looking at what is the most appropriate risk mitigation measure. We are not talking about introducing speed restrictions on all roads. We are looking at those roads where we think it is the most appropriate risk mitigation measure. Certainly we are looking at the ALCAM results and trying to make judgments around where speed reduction would be an appropriate action. There is—I am trying to remember, Tom—around 52 or so sites where that is being looked at.

Mr RONALDSON—There are a range of measures, a whole range of measures, around heavy vehicles on roads.

Mr KOCH—As there must be.

Mr RONALDSON—As there must be. Any reasonable discussion of a safety risk at these intersections has to be within that context.

Mr KOCH—Some of your large transports, for instance, Howard, are paying huge registration as a right to use the roads. That has to be reflected the other way too.

Mr RONALDSON—They pay relatively large registrations in relation to the formula set out nationally and agreed to by all governments, the previous governments, in relation to the damage they are doing to the road surface. That is the principle underlying it.

Mr KOCH—I thought it was about safe movement. Sure, road surface is one part of it, but there are lots of areas within the breakdown of the given dollar in relation to the road user.

Mr RONALDSON—Certainly a huge budget is going into safety on the roads for heavy vehicles, and it is heavy vehicles that have potential to cause real trauma at these intersections. It is worthwhile pointing out that the worst accidents that happen on roads in relation to heavy vehicles are away from these intersections—that is road-rail intersections—at least in recent times. The safety—certainly in a policy context to some degree—environment around these intersections is largely impacted by the general safety environment on roads in relation to heavy vehicles. Indeed, since my time there what has really happened—and I cannot talk about individual accidents—is that something has happened to the decision-making process of the driver that has caused an accident, advertent or inadvertent, and those policy measures around those circumstances at these crossings and more generally are a large part of the safety picture. I am not saying these are neatly a subset, they are not; they are stand-alone for a number of other policy reasons, but there is a big intersection between the safety environment of the drivers of heavy vehicles on the roads in general and these particular circumstances.

Mr KOCH—There is a behavioural issue certainly in there.

Mr RONALDSON—Certainly there is a behavioural issue and, yes, trains do approach quickly but so do other vehicles on the road, a million times a day literally. You get 100-kilometre traffic passing each other. There are particular circumstances, I grant, with level crossings but—at least the major trauma is, everyone is afraid of, where a big road vehicle hits a train and certainly a large part of understanding that is the general provisions or the safety provisions around heavy vehicles on the roads, country roads or elsewhere.

Mr KOCH—Do B-doubles, Gary, have the same braking capacity as an ordinary articulated vehicle with one trailer? A lot of the collateral damage now is due to the specific position of the collision. Whereas a motor car might get broken in half and pushed down the track, with the heavy impacts, of course, a train is derailed and obviously—especially if it is a passenger train involved—loss of life is exacerbated in many cases. Is the braking capacity of the B-doubles the same as the single trailers, and what is going to be the position if we have B-triples?

Mr LIDDLE—I am not sure about the actual length a B-double takes to brake, relative to an articulated, but the braking systems on a B-double are much better than the braking systems on an articulated. They must have ABS is my understanding. The braking performance with a B-double is greater. Yes, it has

greater mass. I am not sure in terms of specific distances, no.

Mr MULDER—Gary, with the information that has gone out on ALCAM to VicRoads and gone out to local government, is there a collaborative approach between VicRoads and local government in terms of—you would no doubt have a great deal more expertise within your department than what some of the smaller municipalities would be—signage, technologies and so forth. How is this being approached?

Mr LIDDLE—Terry, I know we have had conversations when we meet with the Municipal Association of Victoria about what needs to be done. I have certainly made the offer that if local government would like some assistance we are happy to do that. With respect to individual regions I would have to honestly say I do not know whether there has been contact between municipalities and regions, but I can say that at the MAV level we have said we are happy to help out.

Mr MULDER—Has there been a costing put on the work that is required from VicRoads?

Mr LIDDLE—From VicRoads point of view it is still early days. We are still going through the results that have been given to us, so I would have to say at this point in time, Terry, we do not know what costs are involved.

Mr WELLER—Gary, whose role is it at level crossings for the sighting and visual if there are impairments? Whose role is it? Is it your role or DOI's role?

Mr LIDDLE—If the vegetation is within the road reserve, that is our responsibility; if it is on the rail, as Tom was stating before, it is the rail operators.

Mr SARGANT—Yes.

Mr LIDDLE—But certainly if the vegetation is on our road reserve, it is our responsibility.

Mr WELLER—What about when it is in the farmer's paddock?

Mr LIDDLE—To be honest I am not sure.

Mr SARGANT—My understanding is that the rail organisation has the right to request the trees or foliage be removed.

Mr LANGDON—One of the rail crossings we needed to investigate in Ballarat, the council or farm or somebody had planted trees as a windbreak and they went basically to the corner of their property which made it difficult to see a train coming. Who would initiate such action to have those trees brought back a bit?

Mr SARGANT—If indeed that is going to be the right mitigation of that particular location, then that would be council.

Mr LIDDLE—You say it is on private property?

Mr LANGDON—I am not sure.

Mr SARGANT—Yes, it was on private property.

Mr LANGDON—It was on this side of the fence.

Mr SARGANT—No, it was on the road reserve.

Mr KOCH—It was on both sides. Didn't it go around the corner too?

Mr SARGANT—I thought it was on the road reserve, from memory.

Mr KOCH—I thought it went back around the corner to east-west and north-south. Yes, but the stuff where we stopped was on the road reserve.

Mr SARGANT—Yes.

Mr KOCH—In relation to a crossing such as Trawalla, whose vegetation liability is it there where you have a shared reserve?

Mr LIDDLE—A shared reserve?

Mr KOCH—You have the Western Highway, no fence, a rail corridor.

Mr LIDDLE—Under the Road Management Act we have effectively agreed with every municipality exactly where the lines of responsibility are. Generally on a highway—

Mr KOCH—The rail easement has a specific width?

Mr LIDDLE—Yes, that is right.

Mr LEANE—Gary, on the advance warning signs, they are at active crossings, you said. Is that right?

Mr LIDDLE—Yes, all the advance warning signs are at actively controlled crossings.

Mr SARGANT—The active advance warning signs.

Mr LEANE—Yes. They are triggered from the detection of the train.

Mr SARGANT—Correct.

Mr LIDDLE—Correct.

Mr LEANE—Is there any solar powered advance signs?

Mr LIDDLE—I do not believe so, but—

Mr SARGANT—Not proposed under this program.

Mr LEANE—Not proposed. There is no research and development around?

Mr SARGANT—There is an opportunity there to do that.

Mr LEANE—Yes. The problem you would have would be that you would still have to get—you could use the solar for the power supply but you still have the detection.

Mr SARGANT—You already have power there.

Mr LEANE—I am thinking about the passive one. It could be, maybe, triggered by remote from the train as far as a signal from the train.

Mr SARGANT—We only have them at active crossings at the moment.

Mr LEANE—Okay.

Mr MULDER—In relation to those advance warning signs, where does that technology come from? We have a submission whereby it is claimed that that technology is unproven, could in fact be proven to be less safe than the current situation.

Mr SARGANT—I do not know exactly where it comes from off the top of my head but—

Mr MULDER—Is it a road technology or is it a rail technology?

Mr SARGANT—Again I do not know that off the top of my head. I can get that information. The detection though is certainly coming from the rail network and that is failsafe.

Mr LIDDLE—We have had one operating for maybe 12 to 18 months—

Mr SARGANT—At Warncoort, yes.

Mr LIDDLE—without any problems that I have been made aware of.

Mr LEANE—I thought there was in Frankston for years. Hasn't there been—

Mr LIDDLE—Not that I am aware of, Sean. I am only aware of one in this state.

Mr SARGANT—Not at a rail level crossing.

Mr LIDDLE—We use them regularly at the lead into traffic signals that are on the outskirts of Melbourne.

Mr SARGANT—Yes.

Mr LIDDLE—But there is only one that is linked to a rail level crossing is my understanding.

Mr SARGANT—Even in the in-skirts of Melbourne.

Mr LIDDLE—Yes, sometimes in the in-skirts.

Mr LEANE—There is one at Somerville, and I do not know if you deem it in the same category, that has a fibre optic sign which flashes a train at you and then says 'Train ahead' around a bend that has been there for a period of time.

Mr LIDDLE—I am not aware of that one, Sean.

Mr SARGANT—We can get more detail on that for you.

Mr LEANE—Okay.

Mr MULDER—Is there any research in relation to the issue of motorists becoming sign-blind with the amount of information that is available on the roadside that causes people to perhaps switch off in relation to—

Mr LIDDLE—I am not aware of any research, Terry, but certainly one of our objectives is to minimise the number of signs on the roadside, but I am not aware of any research that says people ignore them if there are too many. Certainly in terms of managing the roadside we are trying to reduce the clutter.

Mr KOCH—The MAV certainly canvassed that 10 years ago, Gary.

Mr LIDDLE—Okay.

Mr MULDER—Has the government set any targets? Are any targets set within the departments in terms of reduction of level crossing accidents?

Mr SARGANT—Zero—zero tolerance.

Mr KOCH—Any achievable target?

Mr SARGANT—Zero is achievable in the long run. I do not believe you can have a target of anything other than zero.

Mr KOCH—Without grade separation.

Mr WELLER—The question is if the target is zero, how are you progressing towards that?

Mr RONALDSON—For many years there have been very low numbers. They are unacceptable but there have been low numbers. Statistically if you only have two or three incidents a year that is very hard to get a trend, as opposed to general road trauma where you have thousands, and you can talk about trends. Furthermore, you have a number of years where you have two or three deaths like we have, and then you have a Kerang which you cannot call a trend, it is just another incident. It is very hard to do any serious analysis on such low numbers, but I do point out there have been a number of years where there have been very few fatalities at these intersections.

Mr WELLER—On the Swan Hill line, which is where the Kerang was on, in the last two months we have had one at Dingee and one at Mitiamo which is on the same line.

Mr RONALDSON—That is right but it is still very low numbers. I am not saying that we do not have an issue here, we have, but they are very low numbers compared to the number of incidents you have, for instance, on road to road every day. They are very low numbers. If you are having continually very low numbers and very little trauma associated with them it is hard to do serious statistical analysis. That is not to say we have not got a problem but the sorts of exercises that VicRoads regularly does on road trauma data, you cannot just pick up that database analysis and translate it only to this incident. The numbers are not there to do it. The best you can do is to ensure that you have a continually progressive program around all major trauma incidents on networks, both road and rail, and indeed it is truly progressive. There is privatisation within that and hopefully you get your risk profiles right and match your programs with it. It is a hard matter to go around and talk about—the first one here you have two or three instances that will show some trend line for future works.

Mr KOCH—In saying that, how is zero tolerance possible? I think you are describing that it is very unlikely.

Mr RONALDSON—Based on past history we have a relatively low—compared to road trauma—annual rates and it would be a reasonable expectation to assume that we would hope that would occur or better.

Mr KOCH—Past history, that is right; recent history, that is not the case.

Mr RONALDSON—As I said, I am not understating the problem—I always have to say that. You can have the odd instance that is catastrophic, where there is multiple loss of life, both in these intersections and indeed other intersections. They do cause you to stop and generally reassess what you are doing because of their very nature.

Mr WELLER—Then how do we benchmark other states when it comes to rail crashes in Australia?

Mr RONALDSON—We can certainly get you the raw numbers. In terms of risk profile I suspect the issues would be somewhat greater. I suspect it is because of our density of population and the nature of our networks as we have a lot more road-rail intersections than other states, both on public and private land, and we have great volumes of traffic moving through a lot of these. The issue of road-rail intersections is the nature of the issues is the same across the states but it is a fair statement to say that we might have a slightly higher risk profile than other states based on the geography of the networks.

Mr LEANE—Can I ask is the booms and the bells the best technology we have available now, other

than grade separation?

Mr RONALDSON—Yes.

Mr LEANE—How many accidents have we had at those sites, a percentage?

Mr SARGANT—As I said in my presentation it was 60 per cent.

Mr LEANE—With the best technology we have, which has not failed, we have people doing this stuff, getting around, yes.

Mr RONALDSON—You talk about the road emphasis but it is true that we have bad incidents at very safe intersections by any measure, ALCAM or any other measure, we have—this is the basic fact—very bad incidents at very safe intersections where there is no dispute that any part of the intersection is safe and that previously there has been a few million movements of traffic through that intersection without trauma. That is not to say that all this work should not go on; it should. But that is the nature of these occurrences.

Mr KOCH—Have traffic cameras been employed at any of the greatest problem crossings and, if not, is it anticipated they will be; if it has been, what are the results?

Mr RONALDSON—In relation to all that we will have to go back to our minister because it calls for a prediction. I can say there is a discussion but I cannot talk about whether there will be further camera technology and what type will be spread across the road network.

Mr KOCH—Has it ever been used currently?

Mr RONALDSON—There are trials.

Mr SARGANT—Two trials have been agreed at Nunawading and Bagshot.

Mr KOCH—Have we any early results that you are able to report on?

Mr SARGANT—No, not at this stage.

Mr RONALDSON—We have not seen any.

Mr SARGANT—Bagshot is still being deployed.

Mr MULDER—In relation to actual targets for crash reduction upgrading, compliance with the Australian standard, its closure of level crossings, are there any targets set or dates, put some of these into line?

Mr RONALDSON—Sorry, Terry, I do not know that I can answer your question, but with capital works we have targets, we have a budget and our time period and we hope to complete those capital works in that time period. There are some instances where we have money set aside for particular works like grade separations in the forward estimates going forward. On some occasions the government is still to decide which particular intersections it will treat with and that is done in association with other capital works programs. For instance, if you are upgrading a particular line and you are going to be there anyway, and for a number of policy and engineering reasons you might decide to go on and do some grade separations at the same time, you might, but there are a number of decisions yet to be made about the particular locations of the particular grade separations because they are very expensive things. The state can only afford to do relatively small numbers of them.

Mr MULDER—In relation to the crossings there is a program where municipalities were asked to look at level crossings within their area and identify them for closure and there was a supposed fee offered to councils who were successful in closing them down. There might be one in my electorate near Winchelsea that may have been the subject of a closure. Has it been successful or have any others taken it up, do you

know?

Mr SARGANT—There have been none yet but there are a number that we are talking to at the moment.

Mr MULDER—Okay.

Mr SARGANT—Council have probably said on the one hand they would like to see them closed but on the other there is a reluctance as well. We need to make sure that their needs are accommodated as well.

Mr MULDER—There is one that I looked at near Buckley where I would have identified a farmer would have then had to take heavy machinery down to the Princes Highway which could have a counter-effect of closing a particular crossing.

Mr SARGANT—Yes.

Mr LANGDON—You said before that some of the very safe intersections or railway crossings where a lot of the motorists and perhaps even pedestrians were defying everything. Is there a commonality amongst those? For example, is it the road, or a certain number of cars, or in the middle of a shopping centre or anything like that or is it random?

Mr RONALDSON—I do not know whether 'defy' is the word but there have been a number of bad incidents we all know about where, for whatever reason—some of these are very hard to find out—certainly the road user has not acted in the way that many previous road users have acted when crossing that intersection. What you can say in a lot of them is clearly for whatever reason there has been bad decision-making on behalf of the road user, or poor decision-making on behalf of the road user.

Mr LANGDON—There have been reported incidents whereby it has been claimed that people have been trying to race trains. I am trying to get my head around, how do determine whether someone is trying to race a train or whether they have seen a train too late and tried to stop or it means they are going to hit the side of it. Do you have any idea where that was coming from, those claims, or anything to substantiate them?

Mr SARGANT—Near-miss data.

Mr RONALDSON—Certainly the police go out and investigate these and that would be a matter for ultimate prosecution, I should imagine. They try and get evidence particularly from eyewitnesses, the evidence that they can gather. But certainly since the year 2000 you can say that it would seem that a lot of the trauma, for whatever reason, is caused by bad decision-making on behalf of road users. If you want to get down to the causal factor, there are many causal factors, but the one central causal factor would seem to be bad decision-making for whatever reason by road users.

Mr LEANE—Linking into what Howard said and a lot of our conversation, Gary, do you think we are at a point where we need to put more onus on the driver education as in the learning process, in the learner's test or whatever, on rail safety?

Mr LIDDLE—Yes. What you do at level crossings is certainly part of the existing driver handbook, and there are questions—they are random questions when you get asked—in there already. Some of it is about doing a bit more in education but enforcement is an important part of it as well as judgment.

Mr LANGDON—Gary, I asked a question previously of Tom regarding ownership of railway crossings and how on the roads—VicRoads have done it with particularly regional or rural roads having Lions Club, for whatever reason they are there for. Does that work and could that be transposed to a railway crossing?

Mr LIDDLE—Certainly it has been terrific in terms of people having ownership of a section of road and taking pride in a section of road. The problem we are having at the moment is under the new Road Management Act there is more onus put on traffic management around people doing that; managing the

people on the road reserve doing the work that do not necessarily have traffic training has become quite an issue for us to ensure that it is done in a safe way. Even for us doing it on the road system now is quite difficult in terms of people having the right traffic management skills and ensuring they are doing it in a safe manner. The comment I would make is that if it were to be translated to the rail network you would need to think through all those safety management issues. I would think it would be harder in many ways than even on the road network but, yes, you would need to think that through.

Mr SARGANT—Limit the scope of work that they are able to deal with.

Mr LANGDON—Even if they were monitoring it and saying to the local council or to VicRoads or the department, 'This is overgrown, what are you doing about it?' that sense of ownership may be at one starting point at least.

Mr LIDDLE—Yes. As I say, from our point of view on the road users that has been a terrific part of it where people take pride, because they are usually on the entrances to towns. People take a real sense of pride in that piece of road leading into the town which has been terrific, but we need to make sure it is done in a safe way.

Mr KOCH—It is disappointing to hear you say that—wind the opportunity down for that voluntarism method. They make a fantastic contribution to our road reserves. To make it more difficult and to train these people further is an absolute loss, especially to rural communities—

Mr SARGANT—David, can I say—

Mr KOCH—and that really concerns me when I hear that.

Mr SARGANT—that we do have a significant volunteer workforce on the stations in upgrading and improving the surrounds of stations. It is something that I am certainly an active supporter of. If we are going to use volunteer labour we need to make sure that is done safely. That is my only reservation.

Mr KOCH—I take it that it was disregarded.

Mr SARGANT—Not disregarded at all, no. Please, I did not mean to convey that it was disregarded.

Mr KOCH—I might have picked it up the wrong way.

The CHAIR—The last question is, when are we going to see some outcomes for all the undertakings that are taking place at the minute, improved technology, be it VicRoads, be it DOI or from your own committee, Tom, and the rail's point of view? When are we going to see some of these unfold to the point where we will realise some greater benefits. I know we have our ripple strips going down. When is it likely, Gary, we will have an outcome on their performance? I know that most of them hope to be rolled out by Christmas time.

Mr LIDDLE—I will confirm the date but that is my understanding.

The CHAIR—That is fine. Are we going to have a report on the effectiveness of them within 12 months? When are we going to have some idea, Tom, in relation to GPS and that technology, when is it likely to be implemented and when will we have some results in relation to that? This morning's opportunity has not reflected a lot on many of these time frames of opportunity that hopefully your organisations are going to put in place so we can reflect on that in possible recommendations on the back of this reference.

Mr SARGANT—Our submission is, what you see is a snapshot in time.

The CHAIR—I appreciate that.

Mr SARGANT—We are continually looking at evaluating new ideas as they are presented and if they pass the test and are able to be implemented, we will implement them for a field trial and then report on

that basis. Depending on the initiatives, the ones we have dismissed we will not take any further, but with the GPS, for example, depending on the report we are expecting in March, we will decide what that will take for further development and then ongoing evaluation—

Mr KOCH—That comment is saying that if that is shown in March to be an effective passage to take, we have no window of opportunity when that may be implemented from your own point of view.

Mr SARGANT—I cannot answer that at the moment without seeing what the report says.

Mr RONALDSON—Can I say there are other measures—and I support Tom—that are ongoing around this issue. I can mention one: there are national measures to upgrade the fatigue management around heavy vehicles. That is being rolled out now. That is central to behaviour of heavy vehicle movements on roads. If we can get a better system to regulate the hours that truck drivers—in particular heavy vehicles drivers—

Mr KOCH—You have those? They have gone through the parliament?

Mr RONALDSON—They have. Now it is a matter of rolling out though in terms of feedback and results. I would say that is a key piece to getting better truck behaviour on the roads. There are continual processes going on—I want to stress this again—which the behaviour around these particular intersections runs into. The ministers met on Friday and there were a number of measures that the transport ministers around Australia looked at on Friday in relation to regulations of heavy trucks; to do with technologies on trucks; to do with electronic devices that some trucking companies want to install on trucks; to do with fatigue management and driver behaviour.

Mr KOCH—Howard, taking that further, some of the larger truck operators are leading in the technology they are putting in their trucks. Do you see in the foreseeable future it will be the owner-operator or contractors with a lesser fleet that will need a lot more work done with them than the larger operators who have gone down the path of the technology now, but of course they do not own and control every truck on the road.

Mr RONALDSON—I think you are right. Often for reasons of economics the bigger fleet owners, do introduce these things—hopefully if they are introduced in a way that is not cost prohibitive, they will spread. Particular allowances are made for smaller operators, or the farmer that has a stock crate or two out the back. They have self-regulating systems, often big truck companies, that look progressive. But you are right, one of the real challenges is to get the involvement of all the fleet in such measures.

Mr KOCH—At the smaller end.

Mr RONALDSON—Particularly at the small fleet end, that is right.

Mr LANGDON—It would be a trickle down approach, for example, when you are talking about other measures in cars, we hope the fleets take them up and then it trickles down when they are resold on. Again most of the big fleets, their trucks are sold to owner-operators X number of years down the truck.

Mr RONALDSON—Yes. It is predictable for many of these things. I say it is predictable but there is always a debate about whether you mandate these things or you let the market act, and the big manufacturers take it up and the fleet turns over and there is a so-called trickle down effect, or whether you go ahead and you say it is important that we ought to mandate. There are always debates over this, depending on the cost and the benefits you want to get out of it. It is the same in the car world as the truck world. Predictively though my reading of the Australian ministers is that they are looking towards more progressive regulations in relation to the behaviour of heavy vehicles on roads, and they are doing that largely because there is a productivity pay-off; that is if they are convinced that heavy vehicles on the roads are safer and that the economics are there to have more productive vehicles, ie, bigger vehicles, if those two preconditions exist then predictively the use of, in some parts of Australia, bigger vehicles will go forth, but there has to be a productivity-safety pay-off that has to be looked at first.

Mr MULDER—My final question is, the issue I raised before ALCAM and the information surrounding ALCAM being dispensed to councils and road authorities and rail operators, the committee are expected to come forward with a well-informed decision at some stage in terms of a series of recommendations to the government. I understand the sensitivities around that information, I am wondering at some stage if the committee could get some form of a briefing that would give us some indication as to what we are facing out there and what ALCAM is saying, because we do not know.

Mr RONALDSON—Can I take that under advisement and have a discussion with the minister?

Mr MULDER—Sure.

Mr RONALDSON—It is a work in progress and it is meant to be a relative system, that is, the most risk down to the least, so it is a way of ranking and prioritisation.

Mr MULDER—I understand.

Mr RONALDSON—With your indulgence, if I have a quick word to the minister and see if that is possible.

The CHAIR—Thank you very much for your time.

Witnesses withdrew.

Hearing suspend