COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON TRANSPORT AND REGIONAL SERVICES

Reference: Variable speed limits - a case study of intelligent transport systems

WEDNESDAY, 25 SEPTEMBER 2002

CANBERRA

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HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON TRANSPORT AND REGIONAL SERVICES

Wednesday, 25 September 2002

Members: Mr Neville *(Chair)*, Mr Andren, Mr Gibbons, Mr Haase, Mrs Ley, Ms Livermore, Mr McArthur, Mr Mossfield, Mr Schultz and Mr Secker

Members in attendance: Mr Andren, Mr Gibbons, Mr Haase, Mr McArthur, Mr Mossfield, Mr Neville, Mr Schultz and Mr Secker

Terms of reference for the inquiry:

To inquire into and report on:

The potential to apply variable speed limits on the F3 Freeway and the Hume Highway between Sydney and Canberra as case studies of the effectiveness of intelligent transport systems.

There are no specific terms of reference for this inquiry. The committee's inquiry may include, but not necessarily be limited to, the following matters:

- The potential to apply variable speed limits on the F3 Freeway and the Hume Highway between Sydney and Canberra as case studies on the effectiveness of intelligent transport systems;
- The benefits and costs of applying variable speed limits to the F3 Freeway and the Hume Highway between Sydney and Canberra;
- Any limitations on applying variable speed limits to the F3 Freeway and the Hume Highway between Sydney and Canberra;
- The role of the Commonwealth in fostering the development of intelligent transport systems on other sections of the land transport systems in Australia, in the light of the experience derived from the development of the F3 Freeway and the Hume Highway between Sydney and Canberra; and
- Whether the experience derived from the development of the F3 Freeway and the Hume Highway between Sydney and Canberra can be used to identify sections of the land transport systems in Australia that may benefit from intelligent transport systems.

WITNESSES

Committee met at 9.07 a.m.

AEUCKENS, Ms Danielle, Assistant Director, Technology Team, Department of Transport and Regional Services

EVANS, Mr Graham William, Assistant Director, Technology Team, Department of Transport and Regional Services

GOLDSWORTHY, Mr John, Project Manager, Safety Research Team, Australian Transport Safety Bureau, Department of Transport and Regional Services

GRIFFITHS, Mr Tony, Director, Technology Team, Department of Transport and Regional Services

MOTHA, Mr Joe, Director, Safety Research and Education, Australian Transport Safety Bureau, Department of Transport and Regional Services

CHAIR—I declare opening this public hearing of the House of Representatives Standing Committee on Transport and Regional Services in its inquiry into variable speed limits. In turn, that comes down to a study of intelligent transport systems. The inquiry arises from requests from the Deputy Prime Minister and Minister for Transport and Regional Services, John Anderson. Specific terms of reference were not provided for the inquiry. Apart from the application of variable speed limits to specific transport infrastructure, the committee has also been considering the broad issue of ITS policy.

Today we will be receiving evidence from officers of the Department of Transport and Regional Services, who are the first departmental witnesses to appear before the committee. As members of the department are now at the table, I welcome them to the committee's hearings. I am sure I do not need to caution you, but while the committee will not be placing you under oath, you should be advised that these hearings are formal proceedings of the parliament and consequently warrant the same respect that would attach to the parliament itself. It is customary to remind you that any false or misleading evidence is a serious matter and would be considered a contempt of the parliament. So who will be leading off this morning?

Mr Motha—I will be.

CHAIR—Would you like to give us a five- or 10-minute overview of your submission and then we might move to some interaction with the committee.

Mr Motha—Yes. I will give you a brief outline of our submission and reiterate some of the main points. The Department of Transport and Regional Services has, as its main objective, trying to achieve a better transport system for Australia. We see as an important part of achieving that objective the fostering and the support of intelligent transport systems. There is a wide range of these sorts of systems. They generally help in improving the efficiency of the transport system. They do that by, for example, reducing pollution, reducing fuel consumption, improving traffic flow, reducing congestion and improving safety outcomes.

Variable speed limits are generally used to lower speed limits from legal or posted limits. They have been found to reduce congestion, improve traffic flow and improve safety. There is international evidence that this has been the case. DOTARS supports a case study of variable speed limits on the F3 and the Hume Highway subject to a proper analysis of the costs and potential benefits. We also think that appropriate locations would need to be identified by examining the accident history, the traffic volume and the weather patterns of the areas of road for which VSL is to be introduced.

We also suggest that other ITS applications—as I said, VSL is just one of many ITS applications—be included in such a case study, such as variable message signs and incident detection systems. There is also a lot of evidence that, if these ITS innovations are supported by enforcement measures, they tend to work better. So we would also suggest that enforcement mechanisms, such as radar, be introduced as a supplementary measure.

CHAIR—Do any other members of the team want to add an opening comment?

Mr Goldsworthy—I will just make one comment, if I could.

CHAIR—Certainly.

Mr Goldsworthy—You will note in our submission that we have devoted a reasonable amount of attention to the potential safety impacts of variable speed limits. Perhaps I can just briefly say that the reason for that is that there is an overwhelming amount of evidence to suggest that any kind of traffic intervention which potentially changes the speed profiles or the speed distributions of traffic can have very significant safety impacts. We simply highlight that as being one of the potential outcomes of any kind of VSL or ITS intervention which needs to be given a fair bit of scrutiny.

CHAIR—To get it clear and to get some background, the federal government, so to speak, has no control over roads other than the national highway, the roads of national importance and the black spots program. It has no direct control but it has provided money through the Roads to Recovery program as well. Coming back to those first three, they are the specific fields controlled by the Commonwealth. In practice, however, the state transport authorities, be it the roads authority or main roads or whatever it might be called in each state, effectively implements or supervises the construction of the national highway and oversees black spots implementation and the like. Could you outline for me the amount of rigour that you are able to put into the interstate system, or is your prime concern just the roads of Commonwealth interest? Are you taking a more holistic, umbrella view of the need for intelligent transport systems in the Australian road system?

Mr Motha—We take a national view. A lot of the research that John, for example, mentioned has national implications. So although we do not have control over the actual construction, as you mentioned, we have a large amount of input, for example, through the national road safety strategy. The Commonwealth, the states and territories are together committed to the national road safety strategy, for example, which aims to reduce the road toll by 40 per cent by 2010.

CHAIR—Let me be a bit more specific. How do you exercise your influence with the states? Within the ministerial council, is there an ITS committee that meets with the states? Do we have regular contact with the states at the ITS level?

Mr Griffiths—I can identify one committee that we are aware of in the Australian Transport Council structure. Graham may be able to suggest one or two others. There is a vehicle ticketing and tolling committee that operates under the ATC SCOT structure. I am aware that that is one mechanism by which the federal government is able to participate with the states in that particular application of ITS.

CHAIR—The Commonwealth as such does not have a direct feed into the states other than what you absorb through papers and colleague to colleague interface? We do not have a formalised linkage with the states in terms of what each is doing with ITS and putting our ideas into that regime?

Mr Griffiths—I think the formal structure is the Australian Transport Council and the Standing Committee on Transport, which—

CHAIR—But that is pretty broad, isn't it?

Mr Griffiths—It is quite broad. But at an officer level, I guess the contact and interaction are more informal.

CHAIR—I want to throw to my colleagues, but I just want to get this point clear. If this inquiry is going to have an outcome that works—it might need to be one of our recommendations—there are going to have to be channels for getting the Commonwealth's view into the states and getting the feedback from the states to us and then overlaying that with, if not a national policy, at least a national complementary policy. That is the purpose of the question. I think that has to be the starting point for this because, for the public anyhow, it is a relatively new field. We have been briefed in Sydney and Brisbane so far. There is quite a divergence of emphasis by those two states, albeit that they are doing some great cutting-edge stuff. In making our recommendations, we would like to have something cohesive rather than just pluck things out of the air.

Mr Griffiths—I will point out the existence of one other very important part of implementation of intelligent transport systems, which is e-transport. It is called the national intelligent transport systems strategy, which the federal and state governments and Intelligent Transport Systems Australia all contribute to the development of. That is a national framework that we all work within and implement.

CHAIR—Do you have an annual forum? I opened a conference recently for Senator Alston on the Gold Coast. It was IT in general with a bit of ITS in it. While I was there, I wondered whether we did this at a transport level per se as distinct from a more generalised view of how ITS is applied in various forms of industry.

Mr Evans—There is the ITS world congress.

CHAIR—We do not have a national forum?

Mr Evans—No.

CHAIR—I would like to throw to my colleagues now.

Mr MOSSFIELD—I am getting down to the issues that we are really coming to grips with here. Take the Hume Highway as an example, between Sydney and Canberra. Are the witnesses aware of any locations in that stretch of road where the variable speed limits would assist in improving road safety?

Mr Motha—On page 12 of our submission we have indicated some possible areas. Examples are the areas between Wahroonga and Gosford on the F3 and Prestons and Narellan Road on the Hume. We have also mentioned the areas subject to fog along the Hume in the Goulburn-Southern Highlands corridor. They are possible locations that can be looked at.

Mr MOSSFIELD—So would the department be actively involved in implementing variable speed limits, or is that a role for the states?

Mr Motha—That would be a role for the states.

Mr MOSSFIELD—So you would make recommendations to the states?

Mr Motha—We have a body of research about this that can be drawn upon. That is one avenue by which the states could draw upon the expertise that is available.

CHAIR—Could you go a bit further. I have had some experience recently with roads of national importance where the Commonwealth has been mucked around, for want of a better expression, and has exerted some influence on getting the project up. It has taken 4½ years to get to fruition. The Commonwealth had to take a fairly strong hand in getting it moving. Especially in respect of what Mr Mossfield asked regarding the national highway system, when you are approving funding, do you have some overarching powers you can bring to bear so that, in insisting on that stretch of road in addition to the upgrade, you expect an intelligent transport response for a particular problem on that stretch? Can you demand that or is it by negotiation?

Mr Goldsworthy—As I understand it, it is essentially by negotiation. We do not have, to my knowledge, any mechanism for insisting on specific infrastructure requirements. My colleagues might be able to correct me, but that is my understanding.

CHAIR—But you can in the engineering aspects, can't you?

Mr Goldsworthy—I do not know. It is not my territory, so I cannot give a definitive answer to that.

Ms Aeuckens—I will add something. Under the proposed AusLink scheme, it has been flagged that ITS will be pushed as a solution there. Where appropriate, any roads funded would consider the inclusion of ITS applications in the future as an overarching national strategy.

CHAIR—Implicit in that is that the Commonwealth would exercise some influence?

Ms Aeuckens—Yes.

Mr SCHULTZ—I have a question about variable speed limits in the Southern Highlands. My electorate covers that particular section of the Hume Highway. What factors drive the need for variable speed limits on that section of the Hume?

Mr Motha—There is possibly the issue of congestion and accident rate. They are the two things that VSL would mainly target. The other variable would be weather conditions, of course. So weather, congestion and high accident numbers are the critical things that VSL would be able to help ameliorate.

Mr SCHULTZ—Is there likely to be congestion on that particular section of highway, given that we now have dual carriageway from Yass to Sydney?

Mr Goldsworthy—We have not carried out any study, to my knowledge, of that road. I personally would be surprised—that is an opinion—if you were to experience the levels of congestion on that section of road that you experience, for example, on the Sydney M4 and M5 areas, where New South Wales has implemented VSL systems to address those particular problems of congestion. Again, I cannot give a definitive answer because there has not been any feasibility work carried out, to my knowledge, to assess the viability of VSL or the appropriateness of it on any of those sections.

Mr Motha—This again highlights the need for a proper feasibility study, as I mentioned before.

Mr SCHULTZ—I make the comment because I drive the road very frequently. I am not aware, apart from an unusual accident occurring and the current construction going on with the replacement of the bridge in one section, of any problems related to traffic except in conditions where that area is subjected to very heavy fog from time to time. That leads me to the next question. If that was one of the contingencies that would stimulate the variable speed program in that area, what would the frequency of those speed limits be? Would it be on the basis of those conditions and the speed limit changing because the conditions disappear at certain times of the year?

Mr Goldsworthy—Certainly the international experience, particularly in Europe, has been that VSL systems have been found to be cost-effective on roads where there is fairly high traffic volume and where there are frequent periods of extremely adverse weather conditions like heavy fog. Obviously, the combination of high traffic density and heavy fog, for example, is the kind of situation that will lead to severe traffic problems. In those kinds of circumstances, it appears to be a very cost-effective treatment. I do not personally know whether a similar case could be made on the Hume.

Mr SCHULTZ—But you couldn't compare 3,000 vehicles going north or south on the Hume Highway to the traffic loads carried on European highways of a similar nature?

Mr Goldsworthy—I would think that is true.

Mr ANDREN—You say in your submission that it is hard to argue that a 110 kilometre per hour speed limit is safe on the two-lane Newell Highway if this is the maximum allowed on the divided sections of the Hume Highway between Sydney and Melbourne. For all the VSL and ITS technology we can talk about, to my mind, a lot of this comes down to what I would call IDB, which is intelligent driver behaviour. To facilitate that, I can recall years ago in Scandinavia on major country routes there was an extra half lane on both sides. The drivers flick their lights as they come up behind a truck and it just shifts across. There is no crossing of the centre line. It strikes me, given our vast distances and low resources to pay for roads and so on that, while we may be able to put these systems on to our major routes, on something like the Newell that would be, to my mind, perhaps a more efficient way of delivering the outcomes we all want, which is a safer trip between Melbourne and Brisbane. Has this been considered as an option, or are we just going to try to get as many passing lanes as possible every five kilometres? You say, 'Hey, I'm behind three semitrailers and it's eight kilometres to the next passing lane. We'll give it a go on the next straight stretch.' Many do not make it for want of this little extra bit on each side. Has this been looked at?

Mr Motha—One of the points we made in the submission is exactly that—that VSL is not necessarily the only answer to these things. There are a number of things that can be looked at. It is a good point you are making because it is important to look at these things in totality, in an overall sense. There might be other measures that could improve safety for a particular stretch of road other than VSL. I guess it is not that we are looking at VSL only but looking at the other options you mentioned and looking at the relative cost-effectiveness or cost-benefit of those different options and choosing what is most appropriate. Of course, in the instance you mentioned, it would involve additional construction costs. You would have to weigh that up against the benefits you get from that.

Mr ANDREN—Are you aware of that process in Europe or on some of the European roads? Some of them are worse than ours, too. In Greece, there is nothing that duplicates that. It seems to me to be a fairly cost-effective way, particularly over big distances, of achieving the desired safety parameters.

Mr Goldsworthy—I am not aware of any particular studies that have looked at that specific arrangement. But I know that there are a number of different kinds of relatively simple traffic management arrangements that have been used, particularly in Europe, to achieve improvements in both efficiency and safety. One of the interesting systems that has been used I think in Sweden—I might be wrong—is where you actually use flexible barriers on a road which has, I think, three lanes. They change it periodically from being two lanes one side and one lane the other side to one lane one side and two lanes the other side. So within a relatively confined or relatively narrow overall width of carriageway, you are able to provide frequent opportunities for vehicles to pass in relatively safe situations without engaging in very high-cost engineering treatments to achieve that. They are the kinds of things that are probably worth exploring and which probably have not been looked at seriously enough. Again, that is a personal opinion.

Mr Motha—You also mentioned the issue of intelligent driver behaviour. In our submission, we have made the point that there is another intelligent transport system, and that is variable message signs, which are related to variable speed limit signs. The use of these variable messaging signs is quite powerful and has a fairly significant impact on driver behaviour

because it also provides the rationale for the lowered speed limit. It tells the driver why the lowered speed limit is necessary. As a result of that, it improves compliance. So that is another option in improving driver behaviour.

Mr ANDREN—Of course, there are bigger trucks—your B-doubles and the triples technology that is around the corner. Adjusting lanes in a short space to get two one way and then one the other way and then reversing it is more for handling peak hour stuff. When you have a constant flow of trucks in both directions and you have bigger rigs to get around, it seems to me that basically you almost need a permanent passing lane. That is what I am talking about. It would be half the cost to have half a lane. You straddle your outside white line and leave enough space to go through. I have just thought there is eminent logic in that as a cost-efficient alternative.

Mr Evans—Obviously, because of the nature of the inquiry, the submissions concentrate on variable speed limits and other intelligent transport systems solutions. As we have advocated, it all comes down to costs and benefits in the end. Variable speed limits are usually employed, as John said, in the high traffic volume areas where they are going to get a lot of benefit. Whilst the data has been reasonably limited, all indications are that they are very expensive to implement, particularly in areas where it is difficult to get power to, such as stretches on the Hume Highway. Especially in remote parts of Australia, it is going to be a very expensive solution. Certainly options such as those you were talking about, Mr Andren, are likely to be more beneficial with respect to cost.

CHAIR—One thing that came through very clearly, especially in Brisbane, was the cost of these signs. The message signs were great, but I think we were quoted a figure of about $130,000 each. I see what Mr Andren is saying. In some areas, the widening of the road might be a better solution than to have a sign that perhaps does not have a lot of impact in that area. In Mr Schultz's case, if you knew the particular part of the highway that was prone to fog, you could have one of those on each end of that. It would read 'Fog next 10 or 20 kilometres' and you would take the speed down to 80, or whatever it might be.

Mr GIBBONS—Do you think the department takes the concept of intelligent transport systems seriously? With respect, there does not appear to be a very senior person from the department here to address the committee today. So do you think it is a concept that is being taken seriously within the department?

Mr Motha—The reason that a senior person could not attend is that he had another commitment interstate. The department does take ITS very seriously. It has been manifested in a number of ways. For example, ITS is part of the national road safety strategy. It is one of the strategies in the national road safety strategy. As Tony mentioned earlier, we are involved in a number of ways. We funded the e-transport national ITS strategy. We have links with ITS Australia. There is an entire branch in the department that is devoted to looking at ITS applications and technology. So there are a number of ways in which we express our commitment to ITS.

Mr HAASE—A very brief question I would like answered is: for these displays, approximately what power level do they require? Is it possible to use battery and solar banks?

Do you know what power you require for a typical highway display? You mentioned the remoteness and the problem of powering up.

Mr Evans—I cannot say for sure but, from some of the discussions we have had with the New South Wales Roads and Traffic Authority, my understanding is that they do need mains power. They cannot be run off solar power, for example. It would take more power than that.

Mr SCHULTZ—There are quite a number of them operating. Some of them are driven by small petrol engines. Others are solar powered.

CHAIR—They are the temporary ones when they are doing road servicing.

Mr SCHULTZ—They are reasonably significant signs. I am not quite sure whether a sign that is 10 times bigger than that is required.

Mr Evans—I think there are two different types. There are the permanent installations and the temporary ones. In a typical variable speed limit application that is truly integrated, it is normally linked with a host of other incident management systems. So it has to have linkages with weather detection systems, loop detectors in a road and things like that.

CHAIR—The temporary ones are taken back to base and charged up at night? I have noticed them on the Bruce Highway.

Mr Griffiths—Of the ones I have seen in trips, some are battery powered, some are solar powered and some are with diesel generators.

CHAIR—But you don't think solar power would be appropriate? The bells are ringing in the House. We have to attend the chamber for a division. We will suspend the proceedings.

Proceedings suspended from 9.38 a.m. to 10.01 a.m.

ACTING CHAIR (Mr Gibbons)—We apologise for that. We thought there may be a series of divisions. Do other members have questions?

Mr HAASE—I can pursue a matter, Acting Chair.

Mr Motha—Before we continue, Acting Chair, with your permission, I would like to correct a statement I made earlier. I said that the department has a branch devoted to ITS. The department has a team devoted to ITS. I apologise for the mistake.

Mr HAASE—So the correct answer is that you have a—

Mr Motha—A team.

Mr HAASE—Consisting of how many people?

Mr Griffiths—The technology team, of which three of us are members, consists of seven people. Not all of us are devoted full time to intelligent transport systems. Graham Evans is full

time in intelligent transport systems. Several others in the team cover ITS as a component of their work on electronic commerce, satellite navigation and other technologies. A lot of those technologies are intertwined.

Mr HAASE—Okay. I guess from a personal perspective I am wanting some indication as to where it is going and when it is going there. Will you excuse me, Acting Chair; I have to leave. I would have liked to pursue that last question.

Mr MOSSFIELD—I was looking at a general question before we had the break. I was interested in the speed limits. What range would you reduce down from the maximum? What would be the minimum, utilising your variable speed limit system?

Mr Motha—There has been some experience on the M4. On the M4, the experience has been that the limits have been varied down from 90 kilometres per hour, which is the normal limit, to 40. That gives you an indication of the sort of range that we use. Of course, the limits that will have to be used would be very dependent on a number of things, notably traffic conditions, weather conditions and the road condition itself.

Mr MOSSFIELD—So 110 kilometres per hour is the maximum, isn't it, on most roads?

Mr Motha—That is right.

Mr MOSSFIELD—How is that arrived at? Is there a scientific formula?

Mr Motha—The fixing of speed limits is a fairly complex exercise. To the best of our knowledge, there are a number of things that go into it. One factor is what is called the 85th percentile speed. This is the speed which 85 per cent of the drivers are comfortable with on a particular road. That is generally regarded as a reasonable speed. Another factor is the design speed of the road and the engineering factors that go into the speed. There are then things like time savings—the amount of time and so forth. So there are a number of factors that involve certain trade-offs. All of these factors are taken into consideration in setting a speed limit.

Mr MOSSFIELD—I am particularly interested in page 5 of your submission and the reference to speed limits. The final remark states that significant risk reduction was found for speeds below the mean. I am wondering whether part of the solution would be to reduce the speed limit in total.

Mr Motha—That is a very important question. Perhaps we should elaborate on this and on the role of speed in crashes. There are two ways in which speed impacts on crashes. One is the reaction time. That is the time that a driver notices or observes a dangerous situation and takes some kind of evasive action. The reaction time is, on average, about 1.5 seconds. The reaction time translates into a reaction distance. That reaction distance is directly proportional to the speed. But there is another thing, and that is the braking distance. The point from which the driver takes that action or applies the brakes to the time of stopping is the braking distance. The braking distance is not linearly related to speed. It is a squared relationship. That is one thing. That factor influences the likelihood of the risk of crashes or the frequency of crashes.

Once a crash has occurred, the outcomes of that crash are also dependent on speed. The kinetic energy that is dissipated in a crash is proportional again to the square of the speed. It is not a linear relationship. Now these two factors combine. The fact that they are squared relationships both for the braking distance and for the energy dissipated in a crash means that very small changes in speed can result in relatively large outcomes both in terms of the frequency of crashes and in terms of the severity of crashes and the injury outcomes. That explains why you have small changes in speed resulting in significantly larger impacts in terms of crash frequency and crash outcomes.

Mr MOSSFIELD—So would it be more cost-effective to simply reduce speed limits rather than simply go into a very sophisticated, very expensive variable speed limit program? Is there any comment on that?

Mr Motha—There certainly would be benefits. For example, there was a study that the ATSB commissioned. This was done, I believe, in urban Adelaide. It was found in that urban situation, which was a 60 kilometre per hour area, that every five kilometres above the 60 resulted in a doubling of crash risk. So from 60 to 65 was a doubling and from 65 to 70 was a quadrupling and so forth. So there was an exponential rise in crash risk with speed. As you know, in suburbs in Canberra there has been a reduction from 60 to 50. There is a very considerable body of research evidence, empirical evidence, that suggests that when speed limits have been lowered, there have been very meaningful crash reduction outcomes.

ACTING CHAIR—We hosted the world congress for intelligent transport services. The next one is in Chicago. Is the Commonwealth represented at that function?

Mr Griffiths—I think I can answer that. Our department is going to be represented there by one officer. In the last few days, we have learnt that it is the division head of the transport programs division. We understand also that the Australian consul is going to be there. We did hear some suggestion last week that the chair of this committee may be asked to attend, but we are not aware of what has developed there.

ACTING CHAIR—It seems to me that we really need to have a presence there given that we hosted the last one. If we have one representative from a Commonwealth department, I do not think that would be very acceptable. I realise it is not your decision.

Mr SECKER—I have to say that I have always been somewhat dubious about these sorts of results. You talk about a reduction in speed limit reducing the number of crashes. I think that is fair enough. It happens on a squared basis. It is Nilsson's rule or something like that. But if you went back to zero, obviously you would have no crashes at all. Surely we do not want to go down to that level. As regulators or legislators—of course, it is nearly always the state government—do we actually find a mean or do we go back to 10 kilometres an hour or 20 kilometres an hour, where you would probably have no accidents as well? Do we try to use some common sense and say that 50 or 40 kilometres an hour might be right during peak periods? At two o'clock in the morning, 70 kilometres an hour would be quite sensible because there is very little traffic on the road. It can be very frustrating, especially for country travellers, when they are meant to slow down to 80 kilometres an hour at two o'clock in the morning for a one-horse town that has no shop or anything. So how do we actually work it out? I know it is

very hard to legislate for common sense, but how do we work out a system that can suit the conditions of the road? We are all taught to drive according to the conditions.

Mr Motha—Again, as I said before, the setting of speed limits involves a certain amount of judgment and common sense. There are a number of trade-offs with this. As you rightly said, if you lower the speeds to zero, you would have no accidents. Society tolerates a certain level of safety for a certain level of speed. There is a trade-off because of the time savings that speed provides.

There is another aspect also. We have been talking a lot about safety, but there are other things. For example, when you increase speeds, you also have an increase in fuel consumption. You also have an increase in greenhouse gas emissions. You have an increase in noxious emissions like NOx, which is an indirect greenhouse gas, and an increase in noise. You have all those other things that you have to consider. So it is a balancing act; you are quite right. One thing that variable speed limits can do in this situation is address those issues and suggest optimum speeds for the conditions at a particular time of day and to suit the road conditions as well.

Mr SECKER—So you are actually in favour of variable speed limits?

Mr Motha—We have absolutely no objection to it. We think it is a very useful tool for traffic management and speed management and for achieving better safety outcomes.

Mr SECKER—You do not see that there is a great cost in setting up these systems?

Mr Motha—We do. It is important to consider these things from a cost point of view, from a cost-effectiveness or cost-benefit angle. So it is not a matter of adopting these things at any cost. It is a matter of looking at the feasibility in terms of its cost as well as, as I said earlier, looking at these things in relation to other things that can achieve similar outcomes.

Mr SECKER—What would it cost to set up a system on a main road that might be, say, 10 kilometres long that goes through a city? It might be 70 kilometres an hour at one end, but when the traffic gets heavier, it might be 50 kilometres an hour. It would have big signs up saying that the speed limit has changed. Is there any basic cost we are looking at here? I know it is a pretty hard question.

Mr Motha—There are some figures on page 8 of our submission.

Mr SECKER—That is $1 million per kilometre?

Mr Motha—The American figures are between $US0.4 million and $US1 million per kilometre. Page 9 of our submission gives some numbers for the M4—$12 million.

Mr SECKER—What page was that, sorry?

Mr Motha—That is paragraph 3 on page 9 regarding the M4.

Mr SECKER—So $12 million for how many kilometres?

Mr SCHULTZ—That is between $US0.4 million and $US1 million per kilometre.

Mr SECKER—That is for the US. In New South Wales, it says it costs approximately $12 million to implement. But how long is the M4 motorway?

Mr Motha—We do not have data for that, but it is very easily obtainable. There are 45 VSL signs. So it is $12 million for the 45.

Mr SECKER—If there is room for expansion, you are talking about $US1 million per kilometre, or half that, just to be fair. It would be $A1 million per kilometre. You could actually build probably four lanes of M4 extra space for that and make your traffic conditions safer anyway.

Mr Motha—That is quite right. It is a very expensive solution, and therefore it has to be well considered.

Mr Goldsworthy—The New South Wales Roads and Traffic Authority has the most experience in this area in Australia. Their policy is that VSL is only an effective option on high volume motorways with restricted access, typically tunnels. So it is quite specific circumstances where they regard them to be a cost-effective measure.

ACTING CHAIR—My final question is: what is your relationship with other Commonwealth departments? Is there good cooperation, for example, in the implementation of traffic information and ticketing systems, or do each of the departments go their own way? How much cooperation is there between departments?

Mr Griffiths—Before I answer that, I will add something to the answer I gave to your previous question about attendance at the Chicago ITS congress. We understand that Invest Australia is also sending two officers. They were very much involved with us in the Sydney ITS congress. With regard to other Commonwealth departments, there is not a lot of action that I am aware of in other federal government departments. There is a little in the industry department and with Invest Australia. We have a good relationship with those agencies.

With regard to tolling, the relationship is more with the state transport authorities. That relationship is conducted through the committee I mentioned before that comes under the Australian Transport Council—the ticketing and tolling group. We do have a reasonably good relationship there. We in the department are trying to become more active in that group to try to exert greater influence on the compatibility of systems between states. Our relationship with agencies in the Commonwealth, such as with Invest Australia, is pretty good. We recently met with them to talk about Australian participation in the Chicago ITS congress. Another agency that has some involvement is NOIE, the National Office for the Information Economy. We do not work very closely with that agency, but we do work cooperatively as necessary.

Mr ANDREN—I have a question about intelligent transport systems related to that crash on the Newcastle expressway the other day. I think it was in fog. It was a minor accident. A car and truck pulled over and then another semi, I think it was, went up the tail of the whole lot. What is

available in the UK and other places that may indicate accidents? Is there anything like those flashing blue lights for ice that we have on the Great Western Highway to indicate a kilometre either side of an accident that a collision has happened? Is this on the horizon? Where are we?

Mr Griffiths—I am not sure that this is directly relevant to your question but I think it is. In the UK, there is a stretch of motorway they are developing as a pilot or a test bed for all of these things. I think it is the M43 or M34 that runs up towards Birmingham. I have seen information on the UK Ministry of Transport web site and a video presentation about that. They are developing that as a test bed for variable speed limits, messaging signs and, I am only guessing, accident warning systems. That is as much as I am able to say.

Mr ANDREN—At the moment, we have the solar panelled signs, but they take half an hour or whatever to get in place. It strikes me that there must be some technology or something that requires a button to be pushed or something which sets off a series of centre line flashing red dots.

Mr Griffiths—This may well be part of the technologies that they are using on this stretch of motorway.

Mr ANDREN—But there is nothing at the moment?

Mr Griffiths—We could research that some more and provide the committee with details.

Mr Evans—I understand that somewhere on the M4 or M5, where there are variable message signs in place and there are incident management systems and cameras monitoring the road, if an accident were to occur on a stretch of road like that, for example, the control centre could feasibly put up a sign well before the accident warning drivers of congestion up ahead.

ACTING CHAIR—Thank you very much for appearing.

Resolved (on motion by **Mr Schultz**):

That this committee authorises publication of the evidence given before it at public hearing this day.

ACTING CHAIR—On behalf of the committee, I would like to thank you for your evidence.