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REPORT OF PROCEEDINGS BEFORE

GENERAL PURPOSE STANDING COMMITTEE No. 3

INQUIRY INTO RAIL INFRASTRUCTURE PROJECT COSTING IN NEW SOUTH WALES

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At Sydney on Monday 21 November 2011

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The Committee met at 9.00 a.m.

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PRESENT

The Hon. N. Maclaren-Jones (Chair)

The Hon. J. J. Ajaka
The Hon. N. Blair
The Hon. C. Faehrmann
The Hon. P. Green
The Hon. P. G. Sharpe
The Hon. M. S. Veitch

CHAIR: Welcome to the first public hearing of General Purpose Standing Committee No. 3 inquiry into rail infrastructure project costing in New South Wales. Today we will be hearing from witnesses from the New South Wales Government, Evans and Peck, Jacana Consulting, Eco Transit and also Dr John Goldberg. The Committee will also hold a second hearing on Tuesday 6 December 2011. Before we commence I will make some comments about some aspects of the hearing. Copies of the guidelines for the broadcast of proceedings are available from the table by the door. Under the guidelines members of the media may film or record committee members and witnesses. People in the public gallery should not be the primary focus of any filming or photography. I remind media representatives that you must take responsibility for what you publish about these proceedings.

Witnesses and their staff are advised that any messages should be delivered through the attendants or the committee clerks. Committee hearings are not intended to be a forum for people to make adverse reflections about others. The protection afforded to Committee witnesses under parliamentary privilege should not be abused during this hearing. I request that witnesses focus on the issues raised in the terms of reference and avoid naming individuals. The Committee has also agreed that any questions taken on notice should be answered within 21 days of the date on which the questions are forwarded. Finally, mobile phones should be turned off.

CHRISTOPHER DECCAN LOCK, Deputy Director General, Transport for NSW and Chief Executive Officer, Transport Construction Authority,

LESLIE ROBERT WIELINGA, Director General, Transport for NSW,

ROBERT FRANK JAMES MASON, Chief Executive, RailCorp, and

PETER JOHN DUNCAN, Chief Executive, Roads and Maritime Services sworn and examined:

CHAIR: I understand that you wish to give a presentation?

Mr WIELINGA: Yes.

CHAIR: Do you want that to be taken as your opening statement?

Mr WIELINGA: Yes, if the Committee is in agreement. In order to give the Committee a bit of background we want to deal with two things in the presentation: our organisational structure and how that influences estimates, and the approach we take to estimates. It could take up to 15 or 20 minutes. Is that acceptable?

CHAIR: Yes.

Mr WIELINGA: Projects essentially go through four phases: identification, scoping, development and delivery. In a good organisational structure you try to get different people to define the scope of the project or to define what the objectives and requirements are so that the project does not get captured by individual interests in a particular mode, whether it is rail or road. You need planning people who are separate and who can deal with satisfying the transport need. It is about moving people. In recent months we have been bedding down the new organisational structure in transport. There are six core divisions: customer experience, freight and regional development, planning and programs, policy and regulation, transport projects and transport services. The customer experience division is a new division. Its role essentially is to get some insight into what the customers want from projects and services. It is a powerful division. It will be given a role to ensure that those outcomes are achieved and it will influence the outcomes of major projects. That in itself could have an influence on the scope and hence the cost of projects into the future as well.

Freight and regional development performs a similar role for freight. The role of this division is to look after the economy and the development of our freight networks. It is to be the client, as the planning and programs division is for all of the other matters but this is has a straight focus on freight. By this division specifying outcomes it has the potential to affect projects and to define projects. Planning and programs does our transport master planning. It determines the transport needs. It has a look at how the various modes work together as a system. It does our investment strategies and it develops our work programs to determine which programs will be happening over the coming year.

Policy and regulation is needed to support all of these systems. It has an indirect impact because the policies that are put in place have a significant influence on transport outcomes. The transport services division is our hard nose contract administrators, who administer the contracts we have with our service providers. Finally, in our projects division we have brought together all of the people in transport to create a centre of excellence for all aspects of project deliver, including estimating—Mr Lock will talk a little bit about that in a moment—cost estimating, project management, strategic procurement, engineering, community and stakeholder relations. For instance, the strategic procurement around our rail network such as rolling stock and major projects is being moved into this area. I now hand over to Mr Lock.

Mr LOCK: The Committee will see from the graph the volume of work in millions of dollars on the left-hand side that the Transport Construction Authority and Transport Infrastructure Development Corporation [TIDC] have done—the predecessors to Transport for NSW, Transport Projects Division—and the sorts of projects they have been working on. We have completed these projects since TIDC was first established, a very significant volume of work, and we are currently working either in construction or in planning and development as shown on that slide. I would like to pick up a couple of themes that I have seen through reading the various submissions that have been made public and to have a look at some of the things we see going on at the moment.

The first theme is to acknowledge that there actually is an issue around project costing. Estimating project costs is about predicting the future; it is inherently uncertain but it can be moderated. The integrated approach that Mr Wielinga mentioned earlier is moving towards a standardised approach to project cost estimating and creating centres of excellence. However, I should point out that New South Wales is not the only place in the world that has these sorts of issues. In 2003 a chap by the name of Bent Flyvbjerg, along with two of his colleagues, published a detailed examination of several hundred projects in 20 nations. In 2003 society was being confronted with a concept of billion dollar transport projects. Professor Flyvbjerg is now Chair of Major Program Management, Saïd Business School, University of Oxford. Professor Flyvbjerg's research indicates a long-standing worldwide history in cost overruns. He suggests that the first step in reducing those cost overruns is to acknowledge that there are substantial risks in developing these sorts of projects. To put New South Wales into perspective, these are the sorts of projects that were covered and their cost overruns as a percentage of the original budget. The Committee will see the projects on the left-hand side worldwide and the very significant cost overruns.

I turn now to talk about cost estimation and the process that we go through. It has a number of words associated with it: costing, cost planning, forecasting, budgeting and cost engineering. These are all terms that relate to the process of cost estimation. The Committee will have noticed from our submission that we spent a little bit of time talking about the project phases that we go through. We need to understand this in some detail because as we go through the life cycle of a project—and major transport projects, particularly rail projects last a very long time from inception through to revenue service—we have a whole bunch of inputs and we funnel down to a more detailed level of estimating. This is a graph of the uncertainty versus the time of a project. The degree of uncertainty is on the left-hand side of the scale and the timing of the project goes along to the right. As we start off with project definition we are in a place where we have most uncertainty, we do not know the scope, we do not know the dollars, we do not know when the project is going to be delivered and as we work through the phases of the project we get to a point where during construction we are pretty clear on what the end cost will be. So we do our cost estimation of rail projects on that basis: a high-level of uncertainty at the beginning and more finite position near the end.

In our submission we have given the Committee a copy of the best practice estimation manual. It will obviously depend on the phase of the project but we use the best practice estimation manual as provided by the Federal Government. That has been the basis of our estimation for some period of time and is now through almost every Australian jurisdiction. Consistent with that standard there are two sorts of estimates that we do: a unit rate estimate and a first principle estimate. A unit rate estimate is where we have little information and we use benchmarking from previous projects and multiply the length of the track or the length of the road by known rates, but as we go down the curve, as we get more detail and design, we go into a first principle estimate.

This is how a cost estimate structure looks, according to the best practice manual and one that has been done for many years now in New South Wales. We tried by the colours to show you how this sort of thing is made up. We have the dark blue box around the outside, the total out-turn cost. That is the total cost of the project to the Government, assuming the Government is the sponsor of the project. But it has a number of components. It has the contractor's direct costs, the indirect costs and the contractor's margin. Those go together to make the construction cost: what the Government pays to the construction entities actually building the project. Then we have the owner's project costs over the top of that. The sum of those two become the base estimate and then we have contingency and escalation.

This is a real-life cost estimate from one project, the South West rail. I do not expect the Committee to be able to do this; people go to university and study this for donkeys' years. This item here is from the South West rail. It is a 2007 cost estimate for one item called the "bored piles" and it is for $533,000. The amount of work that has gone into that one line calculation is quite significant. The sum of all those direct costs becomes the direct cost part of the estimate in the very top box. The contractor's indirect costs are the things that the contractor has to pay to run the project. That is his site supervision, his site establishment, if he has to provide insurances for the project, and the design if it is a design and construct contract. It also includes his head office overheads, his State and National office overheads and the profit that the construction contractor wishes to make on the project.

The middle part is the project owner's costs. This again is a real-life example of an early South West Rail project for the TIDC's owner's costs. What does that include? It includes the project management and the program management. It includes getting the planning approval. It includes the design costs and the reference design for delivering the project. It includes all the technical studies that we had to do to get to a place where we

can tender. It includes the legal costs, the costs of tendering and procurement, land acquisition and insurances. Those two things get added together and we then get to the place of having contingency for risk and escalation.

Let me talk a little bit about escalation because this is an area that has been of some concern, I think, over a number of years. Escalation is an allowance for increases in the cost of labour, materials and services between the date on which the estimate was prepared and the date on which the work is performed. The cost of escalation can be borne by the construction contractor if it is a fixed price lump sum contract or it can be borne by the owner, the Government, if it is a fluctuating price contract. This slide is a little small and I do not expect you to read it. It is a real-life escalation calculation back from 2007 for the South West rail. You can see of note the columns across the top are the numbers of years that we are forecasting forward escalation for. In this case we started in 2006 and ran through to 2011. It is an immensely variable calculation because you are looking at a crystal ball trying to work out what might happen in the future. There are two sorts of escalation.

The Hon. JOHN AJAKA: I assume that is not a fixed-price contract and that is why you are doing this?

Mr LOCK: No, because for an owner's budget we have to take account of all these costs, whether it be the construction contract or us paying a variable price contract. In fact, on the South West Rail Line—I will come to that in a moment—we have both sorts of contracts. There are two sorts of escalation: systemic, which is just a CPI-type escalation, and then other types of escalation, for example, fuel shocks or a sudden increase in the cost of steel or something like that. As I said earlier, we are going from 2007 through to 2011, 2012, 2013 in this case.

Because we are putting forward a Government budget here, we had to make allowance for uncertainty and risk. That is often called contingency. Some contingent risks that we have are inclement weather, unexpected geotechnical conditions, industrial disputes, technical issues becoming evident during the design, unanticipated conditions in the planning approval, a legal challenge and those sorts of things. Project managers and other project personnel are often overly optimistic in estimating project costs. Sometimes we find a circumstance where contingency is set too low. That is called optimism bias. You may have seen that referred to in some of the submissions to this Committee.

Transport for New South Wales manages this concept of optimism bias through a rigorous process of development and review of estimates, including using external reviewers. Just a little side comment, if the contingency that is used and put on a project budget is too large the project may not go ahead. If the contingency is too small, the consequences when the project goes ahead are cost overruns. It is rather like mamma bear, papa bear, baby bear: not too little, not too much, just right.

The Hon. PAUL GREEN: Is there a set contingency that industry works with?

Mr LOCK: No. In fact, what we do is a Monte Carlo analysis. We list every risk that might occur on a project, and it is individual for every project. There is no standard risk analysis. It could relate to time or environmental conditions, whatever. We put the model so that we can look at what is the best case we have and what is the worst case we have and we iterate maybe up to 5,000, 10,000 times in a computer model to try to determine what is the most likely outcome that we will get on a project. This one here is an arbitrary version. It is the probability of getting the number as the out-turn cost that you are estimating. The thick grey line at the top is what is called a P90: there is a 90 per cent probability of the number that you have calculated being the end cost of the project nine times out of 10. One time out of 10 you are going to come in more than this amount. Treasuries around Australia have a preference of P90. Construction contractors when they are tendering might be using P50 because they want to win the work. Different people will have different amounts of money. You can see here that if you have a base estimate, in this case it is $10 million, there is a contingency calculated there to get P90 and your risk exposure over and above the project budget is that 10 per cent number there.

If I can move on to tendering, we have a rigorous process of tendering projects. Our starting position is that we set a delivery strategy: How are we going to deliver the project? What are the things we need to review whilst we are delivering the project? We select a packaging strategy at number three and then we look at contracts within packages. What does that mean? It is a bit of a complex circumstance. We go round a number of iterations. This is a real-life example again, the South West Rail link. Many of the Committee, I am sure, would be familiar with the South West Rail. You can see here it contains a number of pieces of work. On the right-hand side there is a piece of work in what is called the brownfield section. The loop going to the left-hand

side is what is called the greenfield section. So we have different packages of work that are let to different construction contractors to deliver the project in an appropriate way.

What does that look like? The Glenfield Transport Interchange on the right-hand side is only 2.4 kilometres long. It goes from the northern flyover through Glenfield station to the southern flyover. From the southern flyover to the far left at the stabling facility we have the greenfield Glenfield-Leppington rail line. You can see on the bluish sort of colour on the right-hand box the number of construction contracts that have been let on the South West rail: from an alliance contract, which is the top one; through to a second alliance contract, the Glenfield rail works; a design and construct contract; and a construct-only contract. On the left-hand side, because it is in greenfield, we have a single design and construct contract for the whole of the works. So we have a range of delivery models that work for a major project.

If I might end up with some observations about issues and what goes wrong, because this is an immensely complex matter and things do go wrong. In no particular order, one thing that happens is that we get announcements too early on projects when the detail has not been done or we have changing government priorities. This is again a real-life example, the South West Rail link. You can see across the top in the dark blue the sections of the project. These are the bits of the project that are currently being delivered, but it was not always so. Down the left-hand side you can see a time graph of the various announcements and parts of the project that have happened. When the South West Rail first started back in December 2004 it had an estimated total cost of $688 million. But, importantly, it was only for the greenfield section; it was only for the piece going out to Leppington. By June 2005 that number had changed to $500 million and by 2008-09 in the State budget the total had changed to $1.365 billion. Now, importantly, it not only included the Glenfield to Leppington greenfield but it actually included works in the Junction as well.

By November 2008 the greenfield part had been deferred to be done later and the Glenfield Junction section had been expanded in scope quite significantly and now included a full upgrade of the station, a whole bunch of commuter car parking and other activities within the Junction. It also included two new projects which previously had not been in the South West Rail, which for convenience we bundled with the funding package: $200 million for the Auburn stabling project and $40 million for the airport line power upgrade. Interestingly also, at that time the date of completion moved to 2013 because the project had been delayed over its early development stages. The current position is that the Glenfield to Leppington rail line has come back on, the greenfield part, the Glenfield Junction, is now still being done, as is Auburn and the airport, at the same dollar values as they were previously. But the completion date has gone out to 2016 for the first revenue service on the Glenfield to Leppington rail line. You can see that one of the things that happens that the Government changes priorities and things move around.

Another issue that we can face is unclear scope. This is a real extract from the 2005 due diligence report for a project called Quakers Hill to Schofields. When this was done in 2005 the amount of information we had was a site walk and a few photographs. We had a little bit of design but not very much to speak of at all. Our preliminary design was what you might call a stick diagram. Quakers Hill is on the left and Schofields is on the right. The project at the time was simply duplicating the line from Quakers Hill to Schofields, including putting an extra platform face onto the existing Schofields station. That is pretty much upon which we based the first estimate. That is what it became: a major new railway station, a duplication of the rail track and a whole bunch of extra works while we were there at the time to produce stations and public transport for the North West Growth Centre.

Another issue to bring to your attention, if I may, is that we sometimes get a change in government policy around Treasury areas. This is in August 2001, the Government announced that the Epping to Chatswood rail line was going to cost $1.6 billion and it was going to be completed by the end of 2008. The right-hand side of that is the budget paper for the time, Budget Paper No. 4. If your eyesight is good you can see $1.6 billion. This is the first time that Epping to Chatswood was actually fully funded. It is the first time it appeared in budget papers. The change of policy that I want to bring to your attention is that Treasury made a change of policy. That was in dollars of the day, dollars of 2001, excluding escalation. Shortly after this was published there was a change in the way that Treasury reports figures and we are now talking about out-turn costs. So the very significant amount of escalation that the project was going to suffer from 2001 to 2009 had to be included.

The last thing that can go wrong is working in a complex live rail environment. If the Committee will bear with me for a minute, this is a time lapse of a bridge. You can see we are working 24 hours. The rail track has disappeared. We have to dig away underneath. If your eyesight is good you can see on the left-hand side a freight train just came in. As I said, we have to work 24 hours, put in the beams for the bridge, lots of people,

lots of equipment because you cannot possibly get this wrong. You cannot fail to put the railway back into place at the end of the day. You can see we are putting the beams in there, we are putting the deck on, finishing it off, last deck units going in and by Sunday night we have to have the tracks in and the trains ready to go.

This is not a cheap operation because you have to pretty much double up on the amount of plant and sometimes the men so that if something goes wrong you have the capacity to finish it. And there we have now the first trains running first thing on Monday morning. I will take a couple of minutes to finish off. It is not all bad, and I would not mind taking a couple of moments about exploding some urban myths that are kicking around. Epping to Chatswood actually achieved almost everything it set out to achieve; in fact, I would say it did achieve everything it set out to achieve when the project was first funded in 2001. In fact, if you add the escalation on to the funding it actually came in at round about $100 million less than the escalated budget allowed. It was completed on time. TIDC handed over the project to RailCorp in 2008 as the 2001 announcement said.

We do a fair bit of benchmarking in Transport for NSW. In December 2010 we asked Ernst and Young to have a look around Australia at the cost of delivering projects. They collected data from the Roads and Traffic Authority, TCA, the Public Transport Authority in Western Australia, Main Roads Western Australia, the Department of Transport in Victoria, VicRoads and the Department of Transport and Main Roads in Queensland. We asked them to determine how client costs, estimates, contingency and escalation compare across Australian jurisdictions. They did not look at all projects; that would have been too big. They looked at projects over $50 million. They looked at projects that were in the transport sector and projects that had been completed within the last five years. Some of their information is interesting.

I am not able to tell you, because I do not know, which projects these are, but the yellow projects are New South Wales projects and the grey projects are everybody else's projects across the nation. These are roads projects where the total construction cost has been expressed as a dollar per kilometre and you can see there that New South Wales projects sit pretty much in the middle of Australia's road construction costs. This is rail construction costs across Australia on a basis of a track kilometre in millions of dollars. You can see the bulk of the New South Wales costs sit in the middle of the graph. The one on the right-hand side, I do know and that is the Epping to Chatswood rail line, which is the only tunnelled rail project in the survey.

One issue we often face is that somehow our client costs, our owner's costs, in New South Wales are more expensive than elsewhere in other jurisdictions. The study suggested that that is not so. These are the client costs in yellow of road projects, compared to all other jurisdictions in grey and the Australian national average in green. And the same for rail projects: New South Wales in yellow, all other jurisdictions in grey and green for the whole of Australia. So you can see from that, I hope, that New South Wales is pretty much on the ball when it comes to client costs. We also do internal benchmarking, and this chart seeks to show you the costs on some sort of uniform basis of actually delivering real projects. The first group is rail projects in CBD areas or in tunnels. The first one is Epping to Chatswood, $84 million a track kilometre; package F in the Perth Mandurah railway line, $89 million.

Perth Mandurah is often spoken about as being a cheap or inexpensive project, but if you look at the detail inside the project—I had the opportunity to go to Perth and look at this—you will see that the actual cost of the tunnelling part of Perth Mandurah is almost exactly the same as the tunnelling part of the Epping to Chatswood rail line. In greenfield works, we know the costs of the South West Rail Link now. It has been fully tendered; it is $51 million a track kilometre. The regional rail link in Victoria, which is currently being tendered—a similar project—is estimated to cost $48 million. The tender boxes have yet to determine whether or not that number is right.

In brownfield rail you can see a whole bunch of brownfield rail projects there, three from New South Wales, one from Queensland and one from Victoria. You will see the startling similarity between those benchmark numbers. Three commuter car parks, just to close this off, down the bottom, the top and bottom ones in Sydney and the middle one in Perth, are very similar. That concludes my part of the presentation, except only to say that I cannot get to the end without talking about safety performance because that is key to everything we do in Transport for NSW. Touch wood we have an absolutely fantastic safety record. It does not come without some cost, but overall it is value for money and it is an important part of everything we do in Transport for NSW.

Mr WIELINGA: I want to finish off by saying that when you are looking at estimating on rail projects it is not about the calculation of the numbers and all that sort of thing. It is much more than that. It is about how

you get the right project in the first place, how you then control the scope of that project through its project life cycle, how you get the right delivery strategy into place. Estimating is just a part of that package. To give you a practical example of what Mr Lock is talking about with that uncertainty, when you are standing at day one and you are trying to put a price on a project you then ask yourself, "What do I need to be confident about the price on that project?" You need a design; you do not have it. You need a detailed site and technical investigation; you do not have it. You need a detailed program to deliver the project; you do not have it.

You need prior knowledge of the conditions that will apply many years down the track when the project is being delivered. What will be the state of the contracting market at that time? What will inflation be? What will your labour supply be like? What are the specific cost increases in raw materials that you will have to deal with at that time? What are the specific cost increases in manufactured components at that time? What are the land prices going to be? Foreign exchange rates, weather conditions, design standards. What community expectations will come out the project as you progress to deliver it, and how will that change the scope of the project? What sort of legislative and regulatory changes can you expect along the way? When we say that doing estimating is inherently uncertain it is that because it is difficult to predict the future.

The Hon. PENNY SHARPE: We have a lot of material before us and in your submission. I am interested in the role of Treasury as you are developing your projects. Can you step us through at what point Treasury becomes involved in the process you have just outlined?

Mr WIELINGA: There is what is called a Treasury gateway process. Earlier I mentioned the particular phases, project identification and into scoping, then into development. When key decisions are made along the way there is a gateway process and they are involved in working with us on that. Treasury is very focused on the benefit cost ratios associated with a project, looking at the project benefits and costs and that particular ratio to make sure that there is an adequate return to the community in delivering a project. These days they are virtually part of our project teams through steering committees and working parties and all of those sorts of things.

The Hon. PENNY SHARPE: Are there any significant differences in the way that they analyse a project to the way that you put them forward that cause conflict?

Mr WIELINGA: I said they tended to have a focus on the economic issues. I think that is correct. They tend to make sure that the project is financially and economically sound. We tend to get broader involved in some of the social and equity issues associated with a project, and through the community input, particularly in the project development phase when environmental impact assessments are being done.

The Hon. PENNY SHARPE: Obviously there is a very large project currently being undertaken in the North West Rail Link. I am interested in your submission in that it does not really mention the North West Rail Link. What is the role of TCA with the North West Rail Link and how is it different to how you have delivered things previously?

Mr WIELINGA: We have set up a separate project office called the North West Rail Link. That project office draws on engineering resources and other resources from the projects division within Transport for NSW. But given the size of the project, we have set up a dedicated team to deliver it.

The Hon. PENNY SHARPE: So TCA will not be running that project?

Mr WIELINGA: No, they will not be.

The Hon. PENNY SHARPE: How does that interact with Infrastructure NSW?

Mr WIELINGA: There is regular interaction with them in talking to them about what we are doing with the project and how we are going about delivering it, but responsibility for delivering the project is with the Department of Transport.

The Hon. PENNY SHARPE: So the Department of Transport, not the TCA, is delivering the North West Rail Link—

Mr WIELINGA: The TCA is no longer there. We have the major projects division.

The Hon. PENNY SHARPE: Yes, sorry, the major projects division. Can you give me more detail about how the interaction between Transport for NSW and Infrastructure NSW will operate? Obviously Infrastructure NSW is developing 20-year plans, and obviously you will be prioritised into the five-year plan. It has unclear about whether the North West Rail Link goes through that process or not. Obviously it would have to be included, given the amount of money that it involves. Can you explain to the Committee how the North West Rail Link will be delivered within that framework of Infrastructure NSW's five-year and 20-year plans?

The Hon. JOHN AJAKA: Is this from a costing point of view?

The Hon. PENNY SHARPE: Yes.

Mr WIELINGA: The way it is working in practice, I mentioned the Treasury gateway process. Instead of just inviting Treasury along, we have been inviting both Infrastructure NSW and Treasury as part of those gateway processes. I thought that was the most practical way to deal with it. It is a good forum for us to exchange ideas and views about aspects of the project, and it seems to be working fairly effectively.

The Hon. PENNY SHARPE: You talked about the standardised model, the Evans and Peck model, and it talked about moving towards a standardised process. It may be my reading of it that the old Roads and Traffic Authority pretty much worked within that but it has been different for rail. Can you explain how it has been different and how it is changing?

Mr LOCK: On the major projects it has not been different. The RTA and TIDC, TCA, TPD have always used that process. On some of the minor projects in rail it has not been so, so the comment about standardising it is that all rail projects will be done on that basis.

Mr WIELINGA: The methodologies are essentially the same but there are some differences. When you are building a rail project obviously you have a different schedule of work packages to what you have for a road project, but the essential methodologies are the same.

The Hon. PENNY SHARPE: We have a number of submissions that are highly critical of the department's costing process and costing outcomes. It has been suggested—I am sure you have had a look at some of them; probably the EcoTransit one outlines some of this in more detail—why the costings in New South Wales are higher than for similar projects elsewhere? You gave us a little bit of that around the Mandurah line. Are there any particular reasons why you think it seems to be much more expensive in New South Wales than anywhere else?

Mr LOCK: As a starting proposition, it is not more expensive in New South Wales than elsewhere.

The Hon. PENNY SHARPE: You basically reject that.

Mr LOCK: I basically reject the assertion.

The Hon. PENNY SHARPE: Are you able to give the Committee a copy of the benchmarking report you referred to?

Mr LOCK: Yes, we can.

The Hon. PENNY SHARPE: Have you read the EcoTransit submission?

Mr LOCK: Yes, I have.

The Hon. PENNY SHARPE: Obviously they attack the Mandurah line issue, basically saying that the Mandurah line cost $17 million per kilometre, one-tenth of the New South Wales estimate, comparing the south-west. I suppose I am asking you to take me through your criticism of their suggestions around that line.

Mr LOCK: I think it would take a very long time to go through all the criticisms of that suggestion—

The Hon. PENNY SHARPE: The key ones you think are missing from their analysis.

Mr LOCK: The key things that are missing from the analysis are, it is rather like comparing an apple and a pear. They are not the same projects. In broad terms, Perth Mandurah compared to Epping to Chatswood or even North West Rail are quite different projects. To start with, Perth Mandurah is what is called a narrow gauge railway; it is not a standard gauge railway. It runs off 25,000 volts AC, not 1,500 volts DC. The circumstances of its construction were quite different. Aside from the part through the Perth CBD, which I showed in my presentation, where the costs of Perth Mandurah and the costs of Epping to Chatswood are almost identical, once you get outside that area in Perth Mandurah, generally speaking you are running a lighter gauge railway down the middle of a freeway.

A lot of the work that had been done had not been included in the project costs for the construction of the freeway. There are significant construction differences and market differences. At the time that the Perth Mandurah project was tendered there was a lack of work in Perth and very competitive tenders were produced. I could go on and on. We are trying to compare apples and pears. With all our benchmarking we are saying, "Try to get these projects, wherever they are in the world or in Australia, on a level playing field", and we then compare the actual costs.

The Hon. PENNY SHARPE: Will you respond to their comparison of costs between the South West Rail Link and the M7?

Mr LOCK: No, I do not have a comment to make on that issue.

The Hon. PENNY SHARPE: Do you agree with them?

Mr LOCK: Could you refer me to the page?

The Hon. PENNY SHARPE: EcoTransit, on page 12 of their document, talk about the difference between the South West Rail Link estimate compared to the $1.8 billion paid for the M7. They refer also to 40 kilometres.

Mr LOCK: We are talking about a road and a railway, which are quite different types of projects. It is true to say—and benchmarking would suggest that it is the case—that the costs of the earthworks, be it road or rail earthworks, would be pretty much the same as each other. There is no difference. There is little difference in bridges for roads and equivalent bridges for rail, but rail has added costs on top of it. When you get to a kilometre basis, be it a track kilometre or a road kilometre, it increases the costs of rail. There is the cost of the track, the overhead wiring and the power to provide for trains and substations. There is the cost of the signalling and also the physical stations. All these things add to the costs of a rail project when compared to a road project of a similar nature.

The Hon. PENNY SHARPE: The submission notes that Transport for NSW engages expert cost planners from the private sector to prepare cost estimates for its projects and there is a review by your senior management team. Several submissions suggest that there are issues around in-house technical expertise relating to costing, planning and developing the projects. Would you respond to that issue?

Mr LOCK: Yes, I am happy to do so. The model we have in Transport for NSW—and this was previously so in the Transport Projects Division and the Transport Construction Authority—is to use private sector consultants and private sector contractors to do the body of work that is required to be done with peer review and internal review by what is now the Transport Projects Division. We do that by having key in-house competencies around all these areas. For example, my general manager, engineering is well over 60 years old and has spent his entire life doing rail projects from the United Kingdom and Australia. I am not yet 60 years old but I am a chartered quantity surveyor and my profession is in rail costing. In our environment and planning teams we have years and years of experience.

In establishing costs we apply that experience when reviewing the work that our private sector partners do for us. It would not be economic for government to maintain full-time engineering designers or cost engineers because the volume of work that is going through is not sufficient to ensure that they would be kept gainfully employed. We want the private sector to bring a range of experiences from around Australia and New South Wales that will inform the cost planning and engineering process of best practice from elsewhere. For a number of reasons we think we have got the model right but we are always happy to improve it if that is possible.

The Hon. PENNY SHARPE: For the benefit of Hansard, TPD is now the Transport Projects Division. Is that the new title of the Transport Construction Authority?

Mr LOCK: Yes, it is the Transport Projects Division.

The Hon. PENNY SHARPE: Do you charge government bodies such as RailCorp a fee for your services? How does that operate?

Mr LOCK: No, we do not charge a fee.

The Hon. PENNY SHARPE: So you just exist; you do not charge a fee?

Mr LOCK: That is correct.

The Hon. PENNY SHARPE: Like any other government body?

Mr LOCK: Correct.

The Hon. PENNY SHARPE: On the issue of safety could you give me some idea of the packages you choose and the way in which those projects are developed? Are there different costs relating to safety? Could you unpack that issue and give me the costs relating to safety?

Mr LOCK: I cannot tell you how much safety costs but I can tell you how we deal with it. As the controlling mind, if you like, for a project we have legal obligations to ensure that projects that the Government has asked us to deliver are delivered safely. So we start off with a safety policy. We have a safety management plan—which was rolled out previously for the Transport Construction Authority and which is now rolled out for the whole of Transport for NSW—which sets benchmarks, standards, processes, forms and so on. When our construction contractors tender we require them as a minimum to fully comply with our safety management system. They may have their own system which may have more control and it may have higher standards than we set, but our standards are the absolute base minimum that we are prepared to accept and they have to proceed along that basis. We manage safety in that manner through our contractual relationship with our construction contractors.

Depending on the construction contractor with which we are dealing, if it is a tier 1 construction contractor we will be less rigorous in our day-to-day management because they will have their own safety management system and a track record of how to deal with safety. But we will audit and we will seek reports from them. As we go down the tiers of construction contractors and we get to the tier 3 or tier 4 contractors on some of our smaller projects, for example, car parks, we would perhaps require or provide a safety superintendent on the project to ensure that safety is being appropriately managed. There is also the issue of safety and design. We require our designers to design to certain codes and to provide safety in the design and not just in the bridge structure. The project has to be safe in the manner in which it is being built, safe in the way in which it is used and safe for those who are maintaining the project after the bridge is finished. We have to ensure that it is safe to demolish at the end of its life because we cannot have an unsafe demolition.

The Hon. PENNY SHARPE: Basically you are saying that the level of safety, no matter how you end up packaging the development of the works, is no different. You are saying that the level of safety is the same whether it is a public-private partnership, a development and construction or only a construction?

Mr LOCK: I argue that it should be the same. In fact, I state absolutely that is the same in the sense of a benchmark position. No-one wants to have anybody on an unsafe work site. We have obligations as employers—it does not matter whether we are construction contractors or government contractors—to ensure that people come to work and go home in the same condition, or preferably better.

The Hon. PENNY SHARPE: When you are dealing with safety costs are there cheaper ways of delivering those projects?

Mr LOCK: I cannot answer that question because we do not have a line item that states how much safety costs.

The Hon. MICK VEITCH: My question relates to the impact of prequalification and hurdle criteria on achieving a competitive tender. In your view does the prequalification process limit competition when obtaining a tender price?

Mr LOCK: No, I think it ensures that we get best value for money when taking the project as whole. We will put hurdle criteria onto prequalification processes that are appropriate for the level of the project that is being done. If it is a small project we will have relatively low criteria with the intention of ensuring that that work is done by the most appropriate contractor for the project being delivered. As we go up the scale through to larger projects we require better systems, better quality assurance and better safety management systems in place, and we require a level of experience from our construction contractors. So the benchmark hurdles will go up.

Mr WIELINGA: I would like to add to that. In a prequalification scheme there is a gradation or scale of different size firms. There is an obligation on government to ensure that a number of projects of different sizes are available to help to develop the industry. We certainly try to do that. But for very large projects the problem is not the prequalification scheme; the problem is the consolidation of the construction industry and the processes that we need to put into place to deal with that. We have put in place processes to maximise the degree of competition. It is not about prequalification.

The Hon. MICK VEITCH: I might explore that issue in detail later.

The Hon. CATE FAEHRMANN: I will continue to explore that issue. It is my understanding that the prequalification relating to some projects is that companies have to have had some experience in New South Wales.

Mr LOCK: It depends on the project. It used to be the case but it is much less the case now.

The Hon. CATE FAEHRMANN: Can you be specific? Are there any guidelines?

Mr LOCK: On big projects such as the South West Rail Link, for example, which has been awarded, we did not require New South Wales experience from potential tenderers. Nonetheless, it is necessary for people to be able to demonstrate that, somewhere within their team, they have human beings who understand the New South Wales railway system. But it is not a company requirement that they be experienced in New South Wales.

The Hon. CATE FAEHRMANN: Referring to contingencies, can you again go through the typical contingent risks that you mentioned earlier in your presentation?

Mr LOCK: Sure. There are two sorts of risks at which we look at various stages during the life of the project. They are called TCA-TPD inherent risks and the other category is contingent risks. Inherent risks are the risks that you can see in a project for activities that you know you are going to have to do. For example, on a rail project it is almost certain that we are going to have to put sound barriers down the side of the railway line so when we come to prepare an estimate first up, we might take off—sorry, that is the expression—we will quantify the length of the sound barriers that we need, but early in the project we really do not know as we have not had the technical reports to know how tall the sound barriers are.

We do not really know what the sound barriers are going to be made of; earth walls or concrete walls lining the motorways, so we have an inherent risk; that is we know we are going to have to do it but we are not quite sure exactly what quantity and we are not quite sure what cost it might be. There is an inherent variability around those numbers, so we will quantify that in our risk model by saying, "Well, the quantity might be 90 per cent of the quantity we have got or it might be 120 per cent of the quantity". The height might be variable and the rate, the dollars for the amount might be $600 a metre or it might be $1200 a metre and so on. Those are the inherent risks. Contingent risks are the things that could happen but they are not inherently in the base estimate.

The Hon. CATE FAEHRMANN: Just to clarify, inherent risks are included in the base estimate?

Mr LOCK: No, there is a base amount included in the base estimate. For example, we might have priced the sound walls I mentioned. Say we put 1,000 metres in at $600 a metre but the variability, the contingency is to cover the variability that it might not be 1,000 metres, it might be 2,000 or it might not be $600 it might be $1,000. That is inherent.

The Hon. CATE FAEHRMANN: And that variability is in the base estimate or not?

Mr LOCK: No, the base estimate is the base estimate for what we assume. The variability is in the risk.

The Hon. JOHN AJAKA: So it is an add-on to the base?

Mr LOCK: Yes. Then contingent risks are events that might happen during the life of a project that are incredibly difficult to forecast, so inclement weather—you asked me to read the list—geotechnical additions that are different to that which we expected, the concept of delays due to industrial disputes, technical issues that in the stage of the design at which the estimate was prepared we did not know about that come to life, legal challenge, changes in the scope of a project due to the planning approval process requiring more or less or different construction to be undertaken; a famous one is the removal of services—most places around New South Wales the rail corridor has been used to put utility services through because it is a convenient corridor and every time we go into a brownfield part of the railway we have to move those utility services but trying to find out what they are, where they are and how much it is going to cost to move them is very difficult—delays during the course of the project, contamination on the site and so on.

The Hon. CATE FAEHRMANN: Thank you. You said there project scope definition changes, however in the Evans and Peck best practice document it does say that typical contingent risks should not be expected to cover project scope definition changes as these may also bring a change in project benefits. Could you please explain?

Mr LOCK: Yes, that is absolutely correct. It is sort of like having small "s" scope and large "S" scope. The example I gave you earlier of the Richmond line, when we did the Quakers Hill to Schofields estimate in 2005 we were unsure of the scope of exactly what we needed to do to deliver the project and the risk allowance included all those sorts of scope changes that I have spoken about. Those are the sorts of small "s" scope. The large "S" scope are things like, "Here is a whole new station that you did not know you had to do" and the best practice manual is clear that that should not be in included within the estimate and in fact is not in our case.

The Hon. CATE FAEHRMANN: I will ask a question now about alliance contracting. In the document you provided to the Committee, which was very useful, thank you, under delivery strategy guidelines various contract models are outlined. No. 43 on page 19 in the delivery strategy guidelines outlines the commercial framework for an alliance contract involving non-owner participants which are from the private sector not the Government. It outlines that the commercial framework for an alliance contract is that non-owner participants are rewarded on top of their usual fee to cover corporate overheads and they are rewarded on top of normal profit. This is defined as the gain share or pain share regime where the rewards of outstanding performance and the pain of poor performance are shared equitably among all reward participants. Is there a usual percentage that is allocated as a rule of thumb for rewarding non-owner participants in alliance contracts on top of their usual profit?

Mr LOCK: Not to my knowledge.

The Hon. CATE FAEHRMANN: What does pain share mean then? Does that mean that they do not get their usual profit, that the pain eats into their usual profit or is it just smaller than the gain share on top of their normal profit if they do not do well?

Mr LOCK: Yes. To answer that question it is probably helpful to have an understanding of how the alliance contract is built up. When the price of an alliance contract is determined—and it is called the target out-turn cost [TOC]—there are generally speaking, and not all alliances are the same, what are called three limbs to the contract. The three limbs are the cost of doing the work, which is pretty much akin to the diagram I showed you earlier, which is the direct costs and the indirect costs, and that is limb one. Limb two is the contribution to the non-owner participants [NOPs], their off-site overheads, their corporate overheads and their profit, and limb three would be their profit and any gain share or pain share that came, so let us just imagine a project that is actually going on. If the target out-turn cost comes in less than the forecast was going to be, there would traditionally be an arrangement where some of that saving was shared between the private sector who achieved the saving and the Government who is paying the bill.

The Hon. CATE FAEHRMANN: Could I clarify one thing? You just said that limb one was cost of doing work, so direct costs and indirect costs, whatever. Limb two is the contribution to NOPs in terms of covering their overheads and their work, then you said limb three was the profit plus—

Mr LOCK: Can I just go back on that? Limb two has got the profit in it.

The Hon. CATE FAEHRMANN: That is right and I think you might have said limb three. Okay, so limb three is the—

Mr LOCK: The gain share-pain share

The Hon. CATE FAEHRMANN: So limb three is the bonus?

Mr LOCK: Yes.

The Hon. CATE FAEHRMANN: Okay, keep going.

Mr LOCK: Where did I get to?

The Hon. CATE FAEHRMANN: You were saying that if they came in under budget?

Mr LOCK: Yes, under cost. We have an agreed TOC, target out-turn cost and we then have a place where the project has been delivered and the actual cost is less than the target out-turn cost. In that case the saving would be shared between the non-owner participants in proportion to their contribution to the project and the Government, so the saving would be part-paid as, in your language, a bonus but it is predetermined the amount that is paid, so it is capped. If it comes in a lot less than the estimate it is no benefit to the private sector; the amount they get as, in your language, a bonus is limited; it has a top cap on it. Different alliances have different amounts of cap. Equally so the reverse is the case. If the actual cost comes in more than the estimate cost, the TOC cost, then the private sector loses, again subject—

The Hon. CATE FAEHRMANN: Loses from where?

Mr LOCK: Loses from limb two.

The Hon. CATE FAEHRMANN: It does?

Mr LOCK: Yes.

The Hon. CATE FAEHRMANN: It eats into the profit from limb two that they would ordinarily have made?

Mr LOCK: Yes.

The Hon. CATE FAEHRMANN: Can you give an example for the benefit of the Committee of recent alliance contracts where that has taken place?

Mr LOCK: There are three current TPD alliances. All three are in pain territory.

The Hon. CATE FAEHRMANN: What are those three?

Mr LOCK: Richmond Line Alliance, which is Quakers Hill to Schofields, Kingsgrove to Revesby Quadruplication and Glenfield Junction alliance. Mr Wielinga has just pointed out to me that the Committee ought to be aware also that the Federal Government has produced a series of guidelines on alliances which COAG has endorsed across Australia and the State is now looking at how to best implement those guidelines. I think it would be fair to say that all current TCA alliances would be entirely compliant with those guidelines.

The Hon. CATE FAEHRMANN: The alliance contracting bonus, for want of a better word, the gain share, is included in the original estimates of a project then? For example, with the $8 billion North West Rail Link, hypothetically, if all the companies involved in an alliance contract do their jobs well, could $1 billion be divided up between the non-owner participants and the Government, for example?

Mr LOCK: I cannot speak for the North West Rail Link, although my limited understanding is that it is not an alliance, so it does not matter.

The Hon. PENNY SHARPE: Could you take that question on notice and get back to us.

Mr LOCK: What, that the North West Rail Link is not an alliance?

The Hon. PENNY SHARPE: Well, the proportion—

Mr LOCK: I am pretty sure it is not.

The Hon. CATE FAEHRMANN: To use another example—

Mr LOCK: If I took Glenfield Junction alliance.

The Hon. CATE FAEHRMANN: Hypothetically when the Government announces a project costing $2 billion and if it is going to be built under an alliance contract, could, for example, $400 million of that be allocated to rewarding the alliance NOPs?

Mr LOCK: No, the reason being is that it is a reward, a bonus in your language, to achieve something that is greater than the TOC, better than the TOC. If there is a saving, the estimate would have been on what is the cost, as I demonstrated earlier in the presentation, of delivering this project and that estimate was done perhaps before it was even decided it was going to be an alliance or not; it is just a project cost. Then in determining the strategy you would not go down an alliance process unless there was a reason for doing so, one of which might be it was going to be cheaper, so you do not need to include in an estimate the bonus part because the bonus is for achieving more than, that is, making more cost savings than we first thought.

The Hon. CATE FAEHRMANN: Is it at all possible that some of the people or companies involved in estimating the cost of a particular project could be, in the end, in that alliance contract, yes?

Mr LOCK: No, I was nodding to your question, not to the answer. No, we are very careful to make sure that the people that we may have used in the early stage of a project, including the project estimating group, would not be involved later in one of the projects as anybody other than our side of the fence.

The Hon. CATE FAEHRMANN: Could you explain how you risk manage that or what protocols are put in place to ensure that does not happen? You say the individuals involved in cost estimating procedures for projects are not involved in bidding—

Mr LOCK: No, companies—

The Hon. CATE FAEHRMANN: Yes, companies.

Mr LOCK: Individuals might be slightly different. I will give you an example without mentioning any names. We did have a circumstance where somebody left the employment of the TCA to join one of the construction companies who was tendering.

The Hon. CATE FAEHRMANN: I hear there is quite a revolving door between construction companies and consultants working for the Government but I will ask questions about that later.

Mr LOCK: I am not conscious of that. Certainly we had a circumstance where a TCA employee left TCA to join a construction company that happened at the time to be tendering. The protocol we put in place was that we required the construction company to guarantee to us in legal documentation that that individual would have nothing to do with the preparation of the tender that was coming from that company back to us.

The Hon. CATE FAEHRMANN: What is the role of Treasury in costing rail projects? What is the role of Treasury in rail projects cost estimations?

Mr WIELINGA: My experience is they generally rely on the stuff that we create but they have some rule of thumb costs that some of their analysts use from to time. I am not sure where they get them from.

The Hon. CATE FAEHRMANN: It is surprising that that was a very short answer to what was the role of Treasury in terms of rail cost estimations—

Mr WIELINGA: We mentioned that we bring in people from outside to do detailed estimates for these projects. Treasury get exposed to the project as I discussed with the Committee earlier on in this presentation. They sometimes form a judgement about the costs of projects when they get involved in our benefit-cost ratio calculations. I am not aware of them separately engaging people to do estimates but they may have done so, I do not know.

The Hon. CATE FAEHRMANN: The Committee has heard that Treasury undertakes quite an important role in critiquing the costing prepared usually and that that could include things such as assessing the adequacy of contingencies, looking for omitted cost items, looking at the cost escalation approaches. Is that a correct assumption that they look at projects in that detail? Have you ever put something to Treasury and Treasury has added costs onto it, for example?

Mr WIELINGA: Not in my experience. We are not aware but we will take that question on notice and check and come back to you.

The Hon. NIALL BLAIR: Mr Lock, to the question: "Does the Transport Construction Authority charge a fee?" you said "No". Is there any future intent to get some cost recovery in those terms? It is not unusual for local government to have cost recovery in job numbers across departments within councils. Is there any future to do so? If not, why not?

Mr LOCK: It is certainly not my understanding there is any future intent. Mr Wielinga might be able to add to that.

Mr WIELINGA: I spoke before about the model that we are putting in for Transport for NSW. We have a group of people determining the right project—whether it is light rail, rail, bus services or a road project to meet the particular transport need. We then have a group of people who do our investment strategies and allocate the money in a program. Then we have people delivering the project. When you look at the transport projects model they are essentially a project management office working for government to do the project. Many of the packages are put out to the private sector for competitive tender. That management function is an in-house function and it is budgeted for.

The Hon. NIALL BLAIR: Your submission states at page 3 that the Transport Construction Authority has taken a number of steps to maximise competition in tendering. On the other hand your submission also states on page 15 that there is a concentration of major construction companies in Australia with two companies owning five of the major contractors. To what extent does the prequalification process effectively limit competition only to those contractors that are owned by the two major companies?

Mr LOCK: In a prequalification process our position is that we want to get the maximum number of contractors capable of doing the work interested in doing the work. We will have a prequalification process that says to the widest possible industry—advertised in the press, sometimes internationally—"Here is a project we would like you to become interested in." We do not put any barriers to entry around that. Once we get to a short-listing process for the construction companies who are actually going to tender, we do put some barriers to try to ensure that we have competition. For example, on a design and construct project we will have a limit of three tenderers generally speaking. Why three? Because design and construct contracts are immensely expensive to tender for the tenderers, particularly the large projects. As Government we do not want to put the industry to an expense unnecessarily but we do also want to make sure that we get the best possible competition.

To mitigate against the issue that Mr Wielinga mentioned that there is a concentration, if we have a short list of three we will never allow more than two from the same stable to be tendering the same project. If there is a holding company with three or four subsidiaries under it and we are short-listing three to tender, a maximum of two can be from the one stable, ensuring that we do not have an issue with one particular holding company controlling all the strings.

The Hon. NIALL BLAIR: Can you provide any examples of rail projects undertaken in the past 10 years, which have been undertaken by construction companies outside this group?

Mr LOCK: Yes, the one I mentioned earlier: the Glenfield Transport Interchange, Glenfield Junction Alliance is actually an alliance between Bouygues, which is a French company, and I think I am right in saying the largest construction company in the world, and McMahon, which is a Western Australian based—it started off in Western Australia and is now an east coast organisation—and that is a recent project.

The Hon. NIALL BLAIR: Mr Lock, you said the Government does not want to put the cost burden onto companies for a design and construct tender system. Should it not be up to whether companies want to take on that cost and enter into that tender process? Or is it the case that you are concerned that they would add that cost onto the actual price at the other end?

Mr LOCK: No, my concern, our concern is that we have a serious set of tenderers. What we do not want to see is that people put in things known in the trade as cover prices—that is, they simply put in a price which is a tender but they have no expectation of winning it. We want to get three serious tenderers actually tendering with a one-in-three chance of winning, and getting the best value for money for the Government when it is a very, very large expense. I understand that in relation to one of the regional rail projects in Victoria, for example, the Victorian Government is refunding the tender cost, albeit an alliance, not a design and construct. The Victorian Government has determined that it will pay each of the alliance teams $6 million each, which it says is about half the cost of preparing the alliance proposal.

The Hon. NIALL BLAIR: With that system in place and the fact that we have got this concentration within the construction industry, what other things is the Government doing to try to encourage competition in the larger end of the market, with alliances and other examples like that? What is New South Wales doing to try to encourage that competition?

Mr LOCK: We are trying to make New South Wales a place where people want to come and do business, where there is a pipeline of projects. The Transport Plan is working towards that and the work that Infrastructure NSW is doing is working towards that place. We are trying to make this a place where the private sector can make a buck, not an unreasonable buck but can make a buck, where there is certainty of delivery and it is a place where competition is free but people are not expected to waste money on things that they have not got a chance of winning.

Mr WIELINGA: There are a number of things that are going forward we spoke about early. The first criterion is to develop small and medium companies in Australia. Many of the larger companies that come from overseas tend to buddy up with an Australian firm because they understand the occupational health and safety regime and the industrial relations regime that apply in this country and that is valuable stuff to bring on board. So we are trying to encourage the growth of those companies. The second thing we are doing now with these larger projects is more industry briefings and longer lead times into setting up and getting the projects going. We are inviting input about the model for delivering the larger projects whether it is in packages or one big package, those sorts of things.

The truth is that Australia is not a very large construction market compared with others, but there is a lot of interaction going on with the big construction companies and rolling stock providers and other things at the moment to get an insight on how we can invest the system to get into these markets. At the end of the day it is about lining up our future works program, giving them the lead time, talking to them about the type of delivery model that suits the maximum number of players in it. We keep encouraging them to get involved.

The Hon. NIALL BLAIR: I refer to capping of bonuses to which Hon. Cate Faehrmann referred. I think you mentioned that the cap is there against the estimated cost of the project. In your view if the bonus is capped and if a company was coming well and truly inside the estimated costs, does that provide a disincentive for them to actually come in as hard as they can under that cap because the bonus will be capped? Or do they allow the cost to be a bit higher, knowing that they will still get the same bonus?

Mr LOCK: Potentially and in theory, yes. I would love to be in that place but it is not a circumstance that has actually arisen for us.

The Hon. NIALL BLAIR: Obviously that could occur?

Mr LOCK: I think most construction people would say that they are very much driven by minimising the dollar and go for it.

The Hon. JOHN AJAKA: Clearly priorities must be matched. On the one hand you want a project delivered on-time and on-budget and, to use the word, "built" properly, on the other hand you want the best possible cost-saving factors, and they have to be balanced. I am still uncertain about the tendering process in that by limiting it to the three tenderers with some barriers we are still excluding other players from the market. For example, one of the barriers I have been told is that you look at providing additional points if they have already built in New South Wales and if they have a good record there. Is that correct?

Mr WIELINGA: All of the big projects in which I have been involved in have taken overseas experience into account in the same way as they have taken Australian experience into account.

The Hon. JOHN AJAKA: The fact that they have built in New South Wales or built overseas really has no bearing on the final tendering process?

Mr WIELINGA: Yes, some of the technology that goes into tunnel projects and major bridge structures we bring that all from overseas.

The Hon. JOHN AJAKA: The assertion has been raised that it seems to be almost the same five players that continually win the tenders and, in fact, some of those five players are cross-owned by each other. In other words, one major player has shares in other companies. I think you mentioned McMahon, which comes from overseas, and I think as the director general mentioned earlier, one of the Australian companies in fact may have a small shareholding in that company. Is dealing with the same five major players limiting the tender process?

Mr LOCK: There is an issue because of the size of the market in Australia about the consolidation of expertise, skill and particularly items like expensive pieces of plant and equipment that are needed to build railways, that is a problem. However, we are trying to ensure that that does not affect us in our actual delivery and our tendering prices. An example is, as the Director General said, by encouraging overseas interests. I understand that in the registration of interests for the Wynyard Walk project, which is an associated rail project, three Spanish companies have applied to tender for that project. So, particularly with the results of the global economic crisis and so on, Australia is becoming a more attractive place for the international construction companies in which to do business.

Mr WIELINGA: There is no doubt that if we had more players at all levels of contract, it would assist the competition process. It is the law of supply and demand.

The Hon. JOHN AJAKA: But building a railway is not like building a house. You have to know who has the experience when building a railway. There is always a fear, is there not, that taking on a contractor who has no real history in this game is a risk far too great to be taken?

Mr WIELINGA: There are a number of criteria that they need to satisfy. They need the financial capacity to handle the cash flows for these large projects. That is important. They need the technical capability to be able to build, and to take responsibility for the infrastructure they are building. And they need to want to compete in our market.

The Hon. JOHN AJAKA: My final question has been touched on by other members of the Committee. It is the issue of incentive. Clearly, the greater incentive is to bring in a project at low cost to the contractor. If there is a saving to government and the contractor is earning more money, clearly that is the way to go. So should we be looking at greater incentives to the contractors?

Mr WIELINGA: Everything is dependent on scale. For these big projects these companies are wearing overheads of $250,000 to $300,000 a month. I can tell you, they do not want to be there one minute longer than they have to be.

CHAIR: We are running out of time, but I want to ask one question. How many contractors are operating in New South Wales? And of those, how many have common shareholders? If you are not sure, I am happy if you take the question on notice.

Mr WIELINGA: We would like to take it on notice and come back to you.

CHAIR: Thank you.

The Hon. CATE FAEHRMANN: I wanted to clarify something in your submission. It states that it has been prepared by the Department of Transport, and that it represents the positions of all New South Wales government agencies. Has Treasury signed off on this submission?

Mr WIELINGA: They have had a look at it. I have not seen a signature on a page. We could take that on notice and check for you. I think it was signed through to the Committee by the Premier's Office, was it not?

Mr LOCK: Yes, it was.

Mr WIELINGA: They facilitate concurrence to these submissions, so I will check with them for you.

The Hon. CATE FAEHRMANN: That would be great. Thank you.

CHAIR: Unfortunately, we have run out of time. Are you happy to table your presentation?

Mr WIELINGA: Yes.

CHAIR: If there are any further questions from the Committee in addition to the questions that you have taken on notice, I would remind you that the answers need to be submitted within 21 days. I note you are attending another hearing on the 6th for another hour and a half.

Mr WIELINGA: We will see you then.

CHAIR: Thank you very much for your attendance today.

(The witnesses retired.)

(Short adjournment)

PETER GRAHAM TRUEMAN, Principal, Sydney Manager, Evans and Peck Pty Ltd,

BRIAN NEIL McCLOY, Principal, Evans and Peck Pty Ltd, and

PAUL JOHN FORWARD, Principal, Evans and Peck Pty Ltd, sworn and examined:

CHAIR: Thank you very much for coming along today. Would you like to commence by making an opening statement?

Mr TRUEMAN: Yes, we would. I am the Principal and Sydney Manager of Evans and Peck. I advise government and industry on the delivery of infrastructure projects, including costing. With me is Brian McCloy, Principal and head of our cost engineering practice, and Paul Forward, Principal and adviser on infrastructure and businesses and projects, and former chief executive officer of the Roads and Traffic Authority. We have made a submission to this inquiry and we are pleased to appear here to assist. Before answering questions, I thought it may be useful to focus on the key issues and recommendations that we have raised.

Firstly, a little bit about us. There are many consultants who assist the New South Wales Government with the costing of its rail and road infrastructure. Evans and Pecks has contributed to the costing and/or provided commercial advice in the vast majority of major road and rail infrastructure projects in New South Wales and around Australia over the last 25 years. We tend to be more involved when the projects are larger, more complex or are experiencing more difficulty in delivery. This is because our people tend to join from senior positions in industry, such as Brian McCloy, or government, such as Paul Forward, bringing deeper insight and broader perspective to complement quantity surveying, estimating and risk analysis techniques. Led by Brian McCloy, Evans and Peck prepared the Federal Government best practice cost estimating standard for publicly funded road and rail infrastructure. We are a standalone business providing independent advice. We do not benefit and do not seek to benefit from taking positions on costings. We are here as technical experts to assist to improve rail project outcomes for better transport services.

We understand that the real objective here is to get more and better rail services, particularly in Sydney. In our view, there is considerable potential to do so. This is about addressing the causes of high costs, not the costing process so much. The key causes of high costs include the following. In our view, often service uplift sought through a project is not well defined or not well communicated and can be provided in much less capital intensive ways. Often the project requirements evolve significantly after commitment to delivery, and road agencies are generally better at this than rail. The operating constraints, particularly here in Sydney, are extremely restrictive and these include many brownfield projects that could possibly be done all or partly greenfield. The one-off bespoke nature of Sydney systems and rolling stock adds significantly to cost.

The design, construction, approval, accreditation and commission processes by the operator caused by shortage of skilled resources but also inefficient structure adds to costs significantly. When brownfield, the possessions available for doing the work are limited and they change. Environmental requirements are imposed with little consideration of cost versus benefit in the urban environment and the state of corridors, particularly existing services. These issues reduce productivity, add scope and therefore add delivery costs. They also add time, which attracts further cost. Coupled with an uncertain pipeline, these issues have significant impact on market appetite, further increasing cost.

Road projects, on the other hand, are simpler, more flexible, easier to build and therefore cheaper, albeit for potentially lower long-term wider economic benefit. There are similar issues faced with urban rail projects everywhere in the developed world, although in our view the costs are higher here for similar rail service uplift, particularly in relation to scope and scope growth. Apples for apples benchmarking is useful and to the extent further might be needed it is recommended. As I said, costs are high and the causes for those costs being high should, we think, be the key issue.

The costing methodologies are not really the problem. In the past, the quality of costing has varied considerably. It has always been better for larger projects notwithstanding major scope changes such as those experienced early on the Epping-Chatswood Rail Link [ECRL]. In the recent past, government estimates have generally been reasonable estimates of actual costs, particularly for larger projects, accounting for the heavy scope and constrained delivery. As noted in other submissions, the costing concept, estimate or otherwise needs to properly reflect the forecast costs and needs to be a range, not a single number, accounting for scope, constraints, delivery method and uncertainty, which is of course higher earlier. There must be complete

construction, planning, design and other owners' costs including acquisition of land and management. It must include risk; it is a fundamental part of early estimates. Material omissions, particularly early in the lifecycle of a project, are inevitable and material differences will exist between the worst case, the expected cost and the best case. As above, escalation is material to the out-turn cost of major projects. A best practice standard based on international best practice has now been adopted by all road and rail agencies around Australia. The rail estimating process and quality of outcome is similar in road projects in our experience.

Cost estimates do need to be properly used. Major infrastructure projects are of long duration, and are complex and risky. For fixed scope timing delivery methods there will be, particularly early, a large difference between best case expected cost and worst case. The worst case, such as the 90 per cent confidence figure or P90 as it was referred to, may be appropriate for financial provisions at agency or central government level. Expected costs, which are materially less than the 90 per cent confidence figure, should be used for forecasting. A cost plan should be prepared so that contingencies are appropriately governed at agency level and managed at project level. Contingency can be inappropriately used as a source of funds for additional scope. The budget should be based on—not drive—the project scope.

Finally, some recommendations: First and foremost, reduce and control scope. There should be robust business cases to define the service uplifts sought through user requirements, scope definition, performance criteria and standards. They should be clear and they should be fixed in advance, as they are for major road projects. In particular, a lowest capital investment solution project should be used, that is, the project should be de-scoped. The project should be delivered greenfield, where possible, such as by closing lines. The gateway review process should be used to ensure that the business case does not creep. Secondly, reduce costs by removing unnecessary constraints, particularly be reforming and properly resourcing the design construction approval and accreditation, and also potentially the commissioning processes, perhaps by separating those from the operator. It is not in our report, but certainty of project pipeline, appropriate size of projects and appropriate risk allocation will provide better competition and lower cost. Thirdly, continue to improve costing and cost management, recognising that we think they are comparatively minor compared to reducing costs; use the Federal best practice estimating standard; properly manage budgets to improve cost planning, contingency management and governance; and thoroughly benchmark and use existing benchmarks to understand and address the reasons for differences.

To provide more effective rail projects, the priority should be reducing costs. We have a diagram, which Brian McCloy will hand out, with your permission. The diagram illustrates areas of high cost consistent with our submission and this opening statement. Hopefully, that will assist you with your questions and the inquiry.

Document tabled.

The Hon. PAUL GREEN: It has been suggested that the estimated costings for rail projects in New South Wales are higher than for similar projects elsewhere. Can you clarify the reasons for this, what your experience is and why you made that comment?

Mr McCLOY: The diagram we handed out gives you a framework of the sort of key issues in this whole debate about costs. I think the framework of that question can be answered here. We have scoping issues, delivery constraints and a high cost base, and I have put a multiplication sign there because they compound. We do have a high cost base in this country, and we can talk about it in some more detail, but it gives you a high cost of rail projects. Relevant to other States I think some of the issues here would give a pointer to that, if that is a correct assertion. I think in some cases it may have some issues that could be improved; in other cases I do not think there would be a substantial difference. To say it across the board in all projects is possibly a bit misleading but there is no doubt we can make cost improvements if we focus of these sorts of three areas.

The Hon. PAUL GREEN: If you were building rail in Perth and we have the Sydney sandstone here, for instance, and you were trying to build a tunnel, the costs are going to be different depending on where you put the rail. I think it is fairly harsh to make those comparisons.

Mr McCLOY: That is correct. A lot of these comparisons that I do see publicly available have not really been done on an equitable apples-for-apples basis.

The Hon. PAUL GREEN: I wanted to know if it was apples-for-apples or apples-for-oranges.

Mr McCLOY: Yes. I am a detailed sort of person and if I had the information that could be done more objectively and equitably.

The Hon. PAUL GREEN: I think you draw really well and very quickly on the fact that it is not all the same; that every job will have its challenges and unforseen issues. Therefore a conclusive result cannot be drawn in terms of outcomes and overall cost. Can you tell me what the cost comparisons are for road tunnels compared with rail tunnels? Are they 10 times more expensive or less expensive?

Mr McCLOY: It is largely a function of the volume of the tunnel. A road tunnel is generally a larger tunnel, maybe 12 or 13 metres in diameter, where as a rail tunnel—as we see at the ECRL link—might be 6.5 metres or half the diameter. It has a single train through it, whereas a road tunnel would definitely have two lanes plus maybe some safety margins and exit allowances.

Mr TRUEMAN: Can I add to that?

The Hon. PAUL GREEN: Yes.

Mr TRUEMAN: One of the reasons that rail tunnel projects can cost a lot is because, unlike cars and trucks, rail rolling stock cannot climb and descend at the same grade. That has an impact on the diameter and so forth of tunnels and it particularly has an impact on length and that then has an impact on things like the depths of stations. All of those costs add materially overall to the cost of a rail project compared with a road project going from the same point A to point B.

The Hon. PAUL GREEN: So is it five times more or is it 10 times more? Is there some sort of guesstimate that you can put on it?

Mr McCLOY: That is always a hard one.

The Hon. PAUL GREEN: I know it is but if it is A to B, the same rock, the same thing—

Mr McCLOY: For the same distance and the same rock there is a fairly reasonable relationship with the volume of the cross-sectional area of the tunnel because that relates to the lining and the finishing of the tunnel.

The Hon. CATE FAEHRMANN: Referring to your Best Practice Cost Estimation Standard did you have a peer review before submitting it to the Federal Government? Was there a process of peer review in the standard?

Mr McCLOY: Absolutely.

The Hon. CATE FAEHRMANN: I am aware that you had a lot of consultation, I am also aware that you consulted with agencies, and I have read the process in terms of getting to the document so we do not need to repeat that, but was there a peer review process after that?

Mr McCLOY: The preparation of the first standard in 2008 resulted in, as you said, consultation prior to the standard. So there was a lot of expectation about what would be put in there. It then went through a release process in Adelaide, as I recall, in 2008 I think it was, where all agencies, including specifically the rail agencies in New South Wales, attended the Adelaide briefing and were given an opportunity for feedback at that point. That initial standard was released in 2008. There is now a revised one, some three years down the track, and it takes into account some ongoing feedback. The standard was the first time something like this had been done in Australia so it is early days. It is an initiative by the Commonwealth Government—because it had its own issues with funding, reliability of estimates—and it has been an opportunity that, from my personal experience, most agencies have embraced quite positively and said, "At last we have something to align with because we too want to have this sort of information to share with others."

The Hon. CATE FAEHRMANN: But not technically a peer review from anyone else in the field other than the agencies commenting on it?

Mr McCLOY: The agencies were given an opportunity to comment and we also had internal peer review at Evans and Peck.

Mr TRUEMAN: If I can just add to that? The document was prepared by us on commission and with and for the department and its successor. So some of those questions in terms of peer review by the department for at least the standard for use need to be directed to them too I think.

The Hon. CATE FAEHRMANN: I turn to the estimate presentation that I believe is contained in your Best Practice Cost Estimation Standard—it might be at page 8.

Mr McCLOY: I have probably got the later version here.

The Hon. CATE FAEHRMANN: No, it is not on page 8.

Mr McCLOY: Will you show me the document?

The Hon. CATE FAEHRMANN: It is the work breakdown structure.

Mr McCLOY: Yes.

The Hon. CATE FAEHRMANN: In terms of contingencies, from my first look at this the taxpayer essentially is being charged contingency upon contingency. There is contingency applied on the base estimate of every single line. For instance, utility adjustments, 40 per cent; pavements, 20 per cent; bridges, 25 per cent; and noise barriers, 25 per cent, so there are contingencies on every single cost. Then there are further contingencies. If you go to contractors' direct costs of $27.5 million, then the contractors put their indirect costs there, $6.5 million, and contractors' offsite overhead and margin, $4.4 million. So with that contingency you have a figure of $38.5 million. Then we have all the different contingencies I have just talked about. The total of those contingencies is $8,700,000. So the base estimate plus contingencies is roughly $47 million. Then you have got more contingent risk placed on top, so about $8,785,000.

You have got base estimate and contingency—I know you are quite aware of this document and the Committee members can look at it later—and then you have got escalation applied to base estimate and contingency of another $11,787,000. So the final figure—remember that the initial total construction cost included contractors' offsite overhead and margin—$79 million from $38 million. Why the contingency upon contingency? If you are looking at this from the perspective of pure value for money for the taxpayer it would seem there is a lot of money floating around and, ultimately, it is very unclear for the taxpayer where exactly it goes in the end. I am sure in the end the taxpayer was probably charged $79 million for that project. How do you account for charging contingencies upon contingencies?

Mr McCLOY: There is quite a long answer to that question. This is a sample that was included in the first proposal. You are referring specifically to the inherent risks, which I think was quite well explained in the first session this morning, versus contingent risks. So the 20 per cent, 30 per cent and 40 per cent that you mentioned towards the top of that sheet relates to what we call the direct costs, which is really the scoping of the project and what our certainty and understanding of the project is at that early stage. There is a need to generate a reasonable contingency for the uncertainty around those direct costs.

The Hon. CATE FAEHRMANN: It is fair to say with those inherent risk contingencies that they probably are pocketed at the end of the day by the contractors? So if they are seeing a certain cost they will put another 20 per cent on, for instance. At the end of the day when they go to charge the Government for their services that 20 per cent conveniently becomes part of the final invoice?

Mr McCLOY: This is the makeup of a budget on that particular example sheet—it is an example only. Any estimate is treated with the strictest confidence by the agencies—I am quite confident of that. That information is not available to the market. The philosophy in us preparing an estimate—and there has been further refinement of that in the latest standard; however, the principles have not changed—is we are very strict at looking at the direct costs of a job in its raw state and then looking at what it will take to do the job, how long it is going to take, working out all of the actual input costs to the job, and then going back to look at the inherent risks on a variability basis and what the contingent risks are that could affect the particular project—as was well explained in this morning's session. In best practice you would run it through the probabilistic model and you would come out with a range of result of certainty, of confidence level. I do not believe there is a doubling up of contingency.

The Hon. CATE FAEHRMANN: There is a doubling up of contingency. You are literally charging contingent risk on top of inherent risk. You are charging contingent risk on the total. It does look like companies are providing a very healthy buffer.

Mr McCLOY: I think statistics show that a very healthy buffer is required at an early stage in our research. I will defer to Mr Trueman.

Mr TRUEMAN: The idea of preparing a cost estimate is to forecast what the project is going to cost and the way of doing that depends on how advanced the planning is for the project. If it is just a stick diagram—as the previous presenters said—there is no detail and it is necessary to supplement what can be directly costed based on an imagined and assumed solution, with allowances for things that are not in that solution. That is what the risk modelling is for. The ultimate proof of whether or not the estimate is right will be what it actually costs. I did make the point before, and it is included in our submission, that the cost estimates prepared should not be driving the cost; they should be used to reflect the cost. Good cost management involves using the various aspects of risk analysis to drive the right sort of outcomes and that certainly includes using the expected cost, not the worst case, to understand what by definition you would expect the project to cost.

There needs to be provision for worst case and that does not prevent people from targeting lower costs by removing some of that contingency and driving for a lower cost for the same solution. There are numerous benchmarks around the world for the sorts of contingencies that do need to be applied to projects. Some of them come from the Department of Transport in the United Kingdom. The ninetieth percentile according the Department of Transport in the United Kingdom uplift guideline is 68 per cent—that is what they say based on statistics needs to be applied.

The Hon. CATE FAEHRMANN: Is it your experience that by including such high contingencies upfront when initially calling for tenders that that is what companies obviously bid for and internalise that contingency so ultimately that is always what the taxpayer pays at the end? For example, in the $8 billion for the North West Rail Link some $2 billion is for contingency. Would it not be nice if in the end that project came in at $6 billion and the $2 billion was not needed? Is that ever a scenario?

Mr McCLOY: The figure you just mentioned for the North West rail—we are not currently involved in that particular estimate but I am aware of that order—that is termed as a P90 or a 90 per cent probability. That is advice that has proven over time to be useful to governments to know what their worse position is. However, good budget management would target something lower than that, for example, P50. In our latest standard we have swung some more emphasis on the P50 result; not to talk about what appears to be high contingencies but to focus more on the likely outcome.

The other point that you said about the early high contingency going to tender, the period between those early high contingencies and at the time we go to tender is possibly 18 months, two years. By the time we have got to tender those ranges have come down considerably, and it is through all the reasons that happen on projects. There is a scope creep. Sometimes just stuff that gets missed out; other times unfortunately—and we are against this—by invoking some additional scope into the project which provides maybe some more benefit, in which case it might be justified, but a new benefit case should be run. In other cases the additional scope might not bring any benefit, in which case that is not good use of public money.

Mr TRUEMAN: Assuming the competition is used for the various parts of the North West Rail Link, the competitors should be, and in our experience would be, focused on what the other parties will put in their bids, not how much money the Government might have to splash around.

Mr FORWARD: From my experience, when tenders are received there is quite a range in the tender prices. If there are three contracts, for example, bidding for a job, it is not unusual to see vast variations between the prices that come in, and often that has to do with the experience of the contractor but in particular how they value the risk and what amount they actually put on the risk.

The Hon. MICK VEITCH: In the opening comments there was a comment made around a need for better competition. I see in the documentation that has been circulated in the high-cost base there is a bullet point that says, "limited competition is an issue". Do you think there is an issue about the competition that is available in Australia to bid for these projects?

Mr TRUEMAN: I think we pretty much echo the comments that were made in the previous discussion here. Yes, there is, for the reasons that they said. It is a limited market, especially in the larger projects. There are signs of increasing interest from overseas competitors. Acciona, for example, from Spain is participating in the northern link in Brisbane. Bouygues is on a couple of projects here, one in Brisbane and one in Sydney at the greenfield junction. In Sydney in rail there is a non-aligned competitor, if you like, Laing O'Rourke, which is doing a reasonable amount of the more major rail projects here in Sydney. It certainly could be worse. I suppose in the grocery sector we could have Woolworths versus Coles.

The Hon. MICK VEITCH: We are getting pretty close to that, though, are we not?

Mr TRUEMAN: I would suggest that if anything it is doing the other way with the introduction of Acciona and Bouygues from Europe showing more interest in Australia and also with Laing O'Rourke. That is particularly so in rail and particularly in New South Wales.

Mr FORWARD: In the road sector, as Mr Wielinga said this morning, one of the issues is to break contracts up into smaller packages to enable some of the middle-size firms to compete. At the moment, from memory, there are four contracts let on the upgrade of the Great Western Highway. They are each being undertaken by a different firm. There is a fifth one to be let soon. The last project that was undertaken that has been completed was the upgrade from Leura to Katoomba, and that job was also undertaken by a totally different contractor. So on that particular area, because the contracts have been broken up into bite-sized chunks, you do get quite a degree of competition, enough that you do get value for money because there is risk there, particularly risk because it is very sensitive environmentally area that they are working in. Nevertheless there is a reasonable degree of competition on those sorts of projects.

The Hon. MICK VEITCH: One of the issues around the bundling of tender sizes, one issue that people will raise, and have raised in the submissions, is the pre-qualification requirements and the hurdle criteria that are imposed. What do you think are the benefits of having the pre-qualification process and the hurdle criteria? Do you think they work towards being an impediment to competition, particularly for rail projects?

Mr TRUEMAN: I think in essence no, they do not act as an impediment. Once again, without ducking the question, the comments from the previous presenters were pretty much on the money. You want to have an efficient industry and making sure that only parties that have the technical and financial capacity and capability bid for a job so that their time and effort is not wasted and those costs are not added to their cost base; that then comes back to the parties that contract with them through other jobs, because that is what happens. They are in business; they have to make profits. Having three tenderers means that there is not too much effort put in on a broad base, for example, if there is a large amount of finance involved in very large projects, which there often is, even if they are not PPPs, each of the bidders, which might be consortia, must go out and secure finance separately. So that can attract costs as well, cost and effort. We would typically say three contractors for major contracts is about the right number, especially provided that there is genuine competition and that they are not subsidiaries of the same parent company competing with each other.

Mr FORWARD: I guess one of the points the Committee should note is that the pre-qualification process is a living process. That is, contractors can get downgraded and they get upgraded from time to time. I have been involved in a process where a contractor was downgraded because of poor performance. So agencies do take the pre-qualification process very seriously. Of course, contractors are frequently approaching the agencies to be upgraded, to move through the ranks, and that does happen quite considerably as well.

Mr TRUEMAN: As I understand it, at the moment there are eight RX contractors that RTA have pre-qualified at the highest level.

The Hon. CATE FAEHRMANN: RX?

Mr TRUEMAN: Yes, RX and BX I think—

The Hon. CATE FAEHRMANN: What does that mean?

Mr TRUEMAN: RX is for road building generally; BX is for bridges. That is certainly more than just the companies that are in the Leighton Holdings and Lend Lease stables. Not that it is necessarily applicable to any particular project in Australia, but in the United Kingdom for example they are certainly taking a project management view of some of their major rail projects to break those projects down into smaller pieces. There

are over 100 contracts, for example, on the cross-river rail project in the United Kingdom at the moment. Another thing we advocate and have observed is that the agencies are sometimes restricted from having programs of work where there can be efficiencies realised through deliver of one project rolling onto the next. For example, TIDC in its previous incarnation could not generally do that.

The Hon. PENNY SHARPE: Are you able to give us an example of any projects in Australia that have come through at the P50 level rather than the P90 level in terms of final cost? You can take it on notice if you cannot off the top of your head.

Mr TRUEMAN: There are many, and it depends relative to what point in the life cycle, but relative to approved budgets a number of TIDC's clearway projects are coming in closer to the P50 than the P90 figure.

Mr McCLOY: The introduction of the standard has now given a framework on which to monitor this type of performance. I know in our professional work we have done analyses for a few of the agencies, looking at projects from their early inception and the amount of contingencies used and to see how the analysis of contingency transforms into the all-work of the project and the escalation gets consumed as the time goes out. On a good project it has come in at the P50, but we have examples where it has gone either way. With that awareness and transparency, I think we will see a lot more focus on agency performance, looking at that life cycle of projects from start to finish in monitoring themselves. The concept of this enables us to do it on a national basis so that agencies can have a more sensible conversation, but we have got on the past data, which is if it is not structured as well it cannot easily be done.

The Hon. PENNY SHARPE: Would you be able to outline to the Committee—I am happy for you to take it on notice—and point us in the direction of best practice rail projects in Australia that have basically been completed within the time frame and cost estimate that we could look at? The ones that you would point to as doing the best?

Mr McCLOY: We as a consultant, I am not so sure that we could have that information.

The Hon. PENNY SHARPE: Even if you just tell us what they are.

Mr McCLOY: I am not even so sure that I would be confident in giving you exactly which ones they are. We find this data is extremely tightly held by agencies, and if we ever do see it, it is under strict confidentiality.

The Hon. PENNY SHARPE: If they did it on budget and on time they would be shouting it from the roof tops.

Mr FORWARD: With respect, I think that is more a question for the agencies. As my colleague has pointed out, they keep this information very tight.

The Hon. PENNY SHARPE: I just thought that if you actually compared a cost you probably have a view. The whole point of this Committee hearing is the allegation or belief or fact that rail projects in New South Wales are higher than for projects elsewhere. I note that you have given us this very helpful diagram about what drives those costs. Can you outline to the Committee in your experience what the particular challenges in New South Wales are in relation to higher costs?

Mr McCLOY: I will commence this but I also think that my colleagues will want to add to it. If we just look at the scoping issues first, a number of points down there, some of them mean more in New South Wales than others; some might be done very well in New South Wales. But these are the types of things and I will just read for the purposes of the hearing. Ill-defined service level uplift—

The Hon. PENNY SHARPE: Sorry, I do not need you to read it. We all have it in front of us. I want from your experience to get you to point out in here the ones that you think have been particularly a problem in New South Wales.

Mr McCLOY: Probably the most obvious ones are the changing project objectives and user requirements. Often they are unclear at the start, and between agencies it takes a long time to bed in what they are. So consequently we need to have some latitude in the pricing of these projects. Changes to the technical standards is something which can affect us all the way through the project. In roads, I understand at a

commitment time for the project to be constructed, that is the end of the standards changes, whereas in rail the standards changes can occur at any time during delivery, and that could have a massive impact on costs.

The Hon. PENNY SHARPE: Has that been a particular issue in New South Wales?

Mr McCLOY: I understand it has.

The Hon. PENNY SHARPE: Can you give me more detail and an example of that?

Mr TRUEMAN: I think an example, Mr Lock put a slide up there of the Richmond line and you could see that there is an extremely comprehensively scoped engineering solution to the duplication of a railway and that has a huge impact on cost. So that is the changing project objectives and user requirements uplifting in scope generally. That would be one comment. The other is that that whole line was built while the railway continued to operate, running about 1,500, as I understand it, commuters per day. The juristic around what it would have cost if it was delivered with closing the railway down and bussing those commuters for a period of time would be less than half, and certainly the time involved would have been dramatically reduced. So that might be an example.

The Hon. PENNY SHARPE: You have pre-empted my next question, which is about line possession, which is obviously a huge issue in New South Wales specifically, given we are building on basically brown field sites. I am interested in your thoughts and suggestions around how we could reduce costs. Are there other things that the agencies should be looking at in terms of scheduling the track possessions for these projects?

Mr TRUEMAN: Certainty would assist. If people know in advance when the possessions are and they do not change come hell or high water—

The Hon. PENNY SHARPE: In your experience do they change a lot?

Mr TRUEMAN: Yes.

The Hon. PENNY SHARPE: Even though they are scheduled 12 months in advance?

Mr TRUEMAN: Yes, they still change. A lot of things are happening in parallel. For example, a signalling standard gets upgraded, the project then gets changed, it becomes harder to meet a possession and that possession disappears and is reallocated to another railway line. As time goes on cost is attracted to the project. If you like there is a positive feedback loop through the costs. But certainty and not changing the scope make a big difference. More routine night work would also make a difference. In the United Kingdom they are very focused on starting night work immediately, finishing it as late as they possibly can and doing it on a continuous basis rather than just having weekend or certain one-off possessions. Having more possessions and, where possible, closing lines or parts of lines for more extended periods, means that you have greater disruption for a shorter period but at a lower cost.

The Hon. PENNY SHARPE: I know this is probably a bit hard but the example we have been using is the duplication of Schofields and the difference between keeping it open. Are you able to tell us how long that took as opposed to Epping? If you closed it for a week could you do it in a week, or are you talking about two weeks? Do you have enough knowledge of that as opposed to certain time processes?

Mr McCLOY: I do not have the program figures with me but Mr Trueman mentioned something like half the time. I think the project took a couple of years. I do not have that information in front me but it would be significantly less. Other benefits would also come from that, such as the long-term maintenance on the line north of Quakers Hill, for example.

The Hon. PENNY SHARPE: Would you be able to supply that information to the Committee?

Mr TRUEMAN: I do not think we could.

The Hon. PENNY SHARPE: We could ask the agency for it.

Mr TRUEMAN: Yes, for sure. It is certainly months or years and not weeks.

Mr FORWARD: I wish to add another point as a result of my experience in the roads area. We have talked about scope creep and changes in technical standards. I have no evidence of this happening in the rail area but I suspect that it does. When I was managing the Roads and Traffic Authority there was an issue relating to the life of a project where the scope would change. From time to time junior officers would change technical standards which had a significant impact on the budgets. To stop that happening we set up a major projects review group chaired by me, as chief executive at the time. I do not know whether or not they still do it as I have been out of the Roads and Traffic Authority for six years. However, it did help to control the management of projects, for scope creep and for changes in technical standards. If there was a financial impact on changing scope or a financial impact for the project on a technical standard being changed it had to go to the major projects review group for approval. If it was a significant budget impact we would often refer it on to the Minister for his or her consideration.

Mr TRUEMAN: I wish to add to that. There is a real problem with ongoing shifting changes to standards in rail projects, particularly in Sydney. Doing things repeatedly has an impact not only on direct costs but also on indirect costs. In our experience preferential engineering has a big impact on costs on the major road projects. They are much more particular about determining functional requirements of an asset early in its lifecycle including the standards to which it will be built. They are fairly hardnosed about not adopting new standards because the project has been initiated and funded, et cetera, based on the previous set of standards. Unless there is an acknowledged specific line-in-sand change or proper variation process it is dealt with like that.

The Hon. NIALL BLAIR: I am glad you have been talking about scope creep. One thing I picked up from your opening address was the fact that quite often contingencies are being used to fund this further scope. Mr Forward, coming back to the example you used relating to the Roads and Traffic Authority, if there was scope creep and other things were starting to come in would it mean that the contingency could not be used for that further scope without going through a proper review and signing off at ministerial level?

Mr FORWARD: Absolutely. If there were minor changes in scope which had little impact on the overall budget—there was only a small percentage—it would not require ministerial approval. However, if there was a significant change, 5 per cent or whatever, clearly it had to be referred to a Minister. People used to come to me and say, "This project will now cost an extra 10 per cent or whatever", and I would say, "Okay, so what else will you not do on this project in order to bring it in at the approved budget? Go back and have a look at what else you can save. If this is so important what else can we cut out of the project?"

The Hon. NIALL BLAIR: Let us go back to the Quakers Hill or Schofields example where we saw a stick diagram turn into a slide with duplications of platforms, flyovers and things like that. I am sure that process would have been extensively reviewed before it was signed off.

Mr FORWARD: One would expect so.

The Hon. NIALL BLAIR: In a perfect scenario using the hypothetical situation about which we are now talking. Are we spending enough time and resources on the scoping stage?

Mr TRUEMAN: It is hard to know where to start answering that question. Sometimes we are spending way too much time and we are accommodating or humouring vast changes to scope without properly understanding the ramifications of those changes. Go back in time to the beginning of the Parramatta rail link and the decision to go under Lane Cove River. That would be an example. It would be interesting to know how well people knew the ramifications of that decision on the railway. Sometimes it takes too long and that allows people to put more scope into the process before it gets budgeted or before the budgets get locked down. In other cases it might be the other way around—when projects are fast tracked or announced before they have been properly thought through. That can drive delivery processes that might be suboptimal in relation to competition. I think there is a real mix. As I said in my opening statement, there is an opportunity to get service uplift in Sydney's rail system more quickly and at a lower cost.

The Hon. NIALL BLAIR: Are we relying too heavily on external consultants for the scoping stage? Should we be looking at making some of those decisions in government to define clearly our objectives so that we are able to put a clear scope to the market at a good cost?

Mr TRUEMAN: I am not sure whether we are the right people to ask about external consultants.

The Hon. NIALL BLAIR: I am interested in your answer.

Mr TRUEMAN: It is not a question of relying on external consultants or internal people; it is a question of understanding what service uplift is being sought, carefully defining that and then sticking to it.

The Hon. NIALL BLAIR: Another thing I picked up from your opening address was the use of existing transport corridors. Were you referring to the provision of other types of utilities and services in addition to existing transport corridors?

Mr TRUEMAN: I would have to refer to the opening address. However, many projects are done in heavily constrained brownfield environments and that adds significantly to the costs. Some of that is inevitable which means that comparisons between some of those sorts of projects are akin to similar brownfield projects, say, in the London environment where there are old signalling systems and all sorts of unknown services compared to the greenfield section of the Perth Mandurah area.

Mr FORWARD: My experience in the roads area is that many of the utilities have poor historic records of where those utilities are. I remember that on one project, for example, the upgrading of Windsor Road, various utilities were arguing that they were on one particular side of the road. When reality came and they were dug up they were on the other side of the road. That sort of experience adds to risks and it clearly adds to the cost of projects.

The Hon. CATE FAEHRMANN: Over the past six years what has changed in relation to risk and to the location of those utilities? I am sure that if you presented to this inquiry in 2004 you would probably give us the same chart. Over the past six years we have seen a huge escalation in prices for rail projects—probably beyond the cost increases for all those individual risks—so something else has changed. We are now hearing that it is difficult to build in New South Wales and in Australia but something else is going on because costs have escalated so much over the past six years. Do you have any idea why costs have escalated?

Mr TRUEMAN: I am not sure whether I would accept the premise of the question, that is, that the cost base has changed over that time. There have been some changes. I am sure that you are all aware that for a long time, for many decades, it has generally been acknowledged that there has been an underinvestment in rail infrastructure. When the east Narellan project and the clearways projects commenced in Sydney there was a quantum leap in the amount of activity on the rail network, which I am sure was a positive thing. When it started a lot of the risk associated with all that activity was taken by the contractors through the contracts that were let at the time, somewhat in ignorance. Those contractors are no longer ignorant about some of these constraints, the difficulties, the impact it has on construction productivity, the impact it has on staffing requirements and the impact it has on the duration of projects. They now fully cost those things into those bids, which has an impact on the cost of brownfield projects as compared to six years ago.

The Hon. JOHN AJAKA: I refer, first, to breaking down the contract, if I can use that terminology. Rather than having one contractor doing the entire job you now have a number of contractors doing sections of the job. Are additional risks incurred when that occurs in the sense that it requires greater government responsibility, time and involvement at a greater price, or does experience show that the opposite occurs?

Mr TRUEMAN: Without ducking the question, once again I think it depends on the circumstances. If you break up the project—whether it is in services or into physical pieces—you introduce risk that would not have existed had you contracted it out in one go. From the submissions that Treasury made to this inquiry we are aware that Treasury does not like that; it prefers more certainty at higher cost. If a decision is made to break it down, potentially that makes available other parts of the design and construction industry which might be of benefit in some circumstances. It might mean that you can progressively increase service to the community rather than simply having a single project open all at once. To the extent that there is an additional risk in managing the interfaces between those packages the Government must account for that. A good example of the Government doing that effectively is the housing stimulus program of the New South Wales Government which accessed all levels of the construction industry—small, medium and large—and which built a team internally and externally to manage all those parallel activities for a superior outcome.

Mr FORWARD: I wish to make a comment. You have raised an interesting and important issue and I do not think there is a simple answer. However, bundling up projects is often seen as the way to go. You then get the contractor to manage the interfaces and those risks. Ten, 20 or 30 years ago agencies broke up projects into small bite-size chunks and they often took a lot longer to construct. The agencies waited until a stage was

completed and then handed it over to the next contractor. As you can imagine, there were all sorts of issues there. The philosophy has been to bulk them up and to get the contractor to manage. However, what is starting to happen is that projects are now getting so large and so complex that some contractors are now having difficulty taking that risk on board on their balance sheet. I think it is a very important issue you raise and I do not think there is a simple answer, apart from the fact that we need to be a little bit careful that projects do not become so big that there is very little competition for those projects.

The Hon. CATE FAEHRMANN: They are too big to fail too?

Mr FORWARD: Exactly.

The Hon. JOHN AJAKA: If I could take that a step further? From your experience, is it indirectly happening anyway, when one major project is given to one contractor, that one contractor is in fact subcontracting certain aspects of the project out to various small contractors?

Mr TRUEMAN: I know of at least one project where the major contractor wishes that he had, so once again I think the answer is it depends. As a rule the contractors, until now at least, have wanted to retain as much of the work as they can. I think they will, with megaprojects, be much more risk averse over the next five to 10 years maybe, as they were in the past. An example would be Melbourne CityLink, where Transfield Obayashi were the joint venture D and C contractor and they subcontracted almost half of the project to Balderstone at the time.

The Hon. JOHN AJAKA: From an agency, government or department point of view, there would have to be greater involvement from that agency if it was going to give out a greater number of contracts. Giving out the one contract compared to giving out 20 contracts and continually monitoring them the agency would need greater resources?

Mr McCLOY: I will answer that. As answered by Peter and Paul, once a project is committed to the brownfields delivery, which in many cases it has to be—that makes sense—a couple of major issues come into play. It is difficult to then package it because then you have serious safety coordination responsibility issues, serious coordination issues with the possessions and interaction with the operator of RailCorp. That needs to be funnelled down into one single point contact with the contracting entity otherwise there could be some major issues. It drives us down that track.

Mr FORWARD: If I could add one point here? It also depends on the level of checking within the agencies of the contractor. There can be examples of overchecking, which add to cost and certainly add to delays on projects, and that is something that the agencies need to really have a look at.

CHAIR: In your submission you make the recommendation that each business case for each project should be supported by a defined set of objectives, user requirements and performance criteria. Does that mean that at the moment there are not any existing key performance indicators and, if not, how can that be improved?

Mr TRUEMAN: We are not necessarily privy to the business cases that are used, but certainly it is our observation that the objectives, in the broader sense—and it might include levels of environmental impact, occupation of corridors et cetera—are not necessarily well defined and, if anything, as a rule they grow rather than shrink. The user requirements likewise tend to grow over the course of the project and perhaps those slides of the Richmond line illustrate that point.

Mr FORWARD: I also raise a point here that the Committee might want to have a look at. We heard a lot this morning about the gateway review process from the previous presenters. I think it would be interesting for the Committee to look at how Victoria conducts their gateway review process versus how New South Wales conducts their gateway review process. I understand—and I have been involved in these in Victoria but not in New South Wales—that in Victoria the process is seen as an independent process, there to assist the agency and whilst Treasury funds the process, they do not get involved and Treasury wants to know that, yes, the gateway review process was conducted at the various stages and at the various gates, so if the project goes to pear-shaped, they then ask the project manager and chief executive, "Well, what did you do about the recommendations of the gateway review process? Did they help you and did you follow those recommendations and if not, why not?"

My understanding in New South Wales—and I stand to be corrected because, as I said, I have not been involved—is that the process is an internal gateway review, so agencies often look at these with Treasury involvement as a bit of an audit, not necessarily there to help the project but actually there as a gate for you to jump over in order for the project to proceed to the next step. In Victoria it is seen as a very constructive process and people welcome the gateway reviews within the agencies. They are very open and they see the gateway review as actually helping the management of that particular project. It is seen in a very constructive light. I am not sure in New South Wales the gateway review process is seen in the same constructive light and it is something that the Committee might have a look at.

Mr TRUEMAN: If I could also add, Paul, in the United Kingdom in Network Rail in the Department of Transport they are very particular to separate the project sponsor who is the owner of the business case from the project deliverer and the business case sits with the project sponsor and is not changed.

CHAIR: Is there anything else that you would like to raise with the Committee that has not been covered?

Mr FORWARD: No.

CHAIR: Any questions that you have taken on notice will need to be responded to within 21 days and you may receive further questions.

(The witnesses withdrew)

ROBERT STEPHEN MILLER, Director, Jacana Consulting, PO Box 806, Sutherland, affirmed and examined:

Mr MILLER: Jacana Consulting has done over 20 years work in large part on the national rail network in most States.

CHAIR: I understand that you are giving a presentation?

Mr MILLER: Correct.

CHAIR: Would you like to start with that or with an opening statement?

Mr MILLER: I might start with a few comments on some of the things that have been said this morning, is that permissible?

CHAIR: That is fine.

Mr MILLER: Firstly, I would like to endorse the comments that were made by Transport for NSW regarding using smaller contract packages. It is a related matter but the expertise that is held within government agencies has declined over recent years, particularly the technical expertise, probably over the last 20-odd years. I have personally had the experience in the office of the Federal Minister for Transport. I was invited to a meeting there. To give you some idea of the extent of the problem of internal technical expertise in agencies, the Federal Department sent a memo to the Minister in Canberra saying that they were not able to comment on one of our reports because they lacked the technical expertise.

Now that is 15 years ago; I am sure things have improved in Canberra since then but it does illustrate the historical legacy that we have had in dealing with rail infrastructure issues over the last 20 years or so. In regard to project cost comparisons, commented on also by Transport for NSW, regarding scope comparisons, in my opinion they can really only be viewed with any degree of certainty only when you have very detailed cost comparisons. Aggregated comparisons at project level are not that helpful unless you get your hands dirty and get down into the detail.

I will leave my comments and now move on to the presentation. The reason I have subtitled it from strategic planning to commissioning is, as you would be aware, this morning the focus has obviously been on projects. At the front end we have got serious problems with the integration of strategic land use planning and transport planning. At the back end we have problems with commissioning. In between fits individual projects and how those individual projects interface given that they are delivered by consultants and contractors, how those projects interface with the front-end, the strategic and transport planning, and at the back end is, in large part, the reason we are having problems with rail infrastructure costs. We will not have time to deal with all this today so I will be guided by the Committee as to where you want me to spend a fair bit of my time.

CHAIR: There is no need to cover anything that you have already putting your submission.

Mr MILLER: I appreciate that. I have tried to avoid that. If anyone is aware of there being an overlap, let me know, and I will move on. I have several recommendations at the end. We will see how far I get in the time you will allow me. There is a series of questions I would like to pose to the Committee for its consideration. I will not go through all of them now. I can come back to them in the question period if you wish. All of us who travel on trains have some idea of what some of the rail infrastructure is—we see various bits and pieces of infrastructure. It really is a major challenge to put all the pieces of the jigsaw together to deliver some of these very complex projects, as has previously been pointed out.

Why do we have a lot of rail infrastructure in cities? Most cities choose to have it if it is affordable. Some big cities do not have it. A lot of big cities have rail infrastructure that is in a lot worse shape than we have got here. I would like to emphasise the point that our infrastructure that has been developed in and around Sydney over the past 30 years has been an absolutely quantum shift in the way we have gone about delivering rail services compared with our previous generations. That fact should not be overlooked. We really do have some fantastic infrastructure, and by and large it works pretty well. There have been lots of blips along the way, there has been the odd disaster, but we should not overlook the positives.

The one message I would like to make sure that I get across today is the last bullet point "containing high infrastructure costs requires long-term planning commitment". We have a long-term land use planning capability. We have extensive documentation, five-year reviews, et cetera. It is probably one of the reasons that Sydney is the top of the league in Australian cities for rail service use by quite some margin.

CHAIR: For the sake of time, I notice point three related specifically to costings. Could we focus more on that item?

Mr MILLER: The reason I am emphasising this is because the long-term planning component is all about the cost. If you do not do the long-term planning—I found it quite noticeable that I did not hear anyone really talk about long-term planning this morning—and if we do not have a coherent, integrated land use transport planning system that is in place and is working, not just on paper but is working day in, day out, we will never achieve effective costing for rail infrastructure. Let me be very clear about that. It starts at the front-end. If we do not lock in that front-end planning, investigation, corridor identification and so on, then we may as well go home because you will never achieve substantial improvements. I can talk more about this. That is one of the reasons that we have got the cost structures, for delivering infrastructure at the moment. This is not happening in reality.

The Hon. PAUL GREEN: Mr Miller, I hear that you have a wealth of information and I am concerned that we will not have enough time to draw some of it from you. Would you mind if we went straight to questions and if we have time you can further elaborate at the end.

Mr MILLER: I am in your hands.

CHAIR: Are you happy to table your presentation?

Mr MILLER: Most certainly.

Document tabled.

The Hon. PAUL GREEN: On page 3 of your submission you state that rail infrastructure planning has been conspicuously absent in the Metropolitan Strategy whereas in most of the OECD countries integrated land-use and transport planning is the starting point for rail infrastructure planning. What should the Government do to ensure rail infrastructure planning is an integral part of this State's infrastructure planning? Quite simply, what would you do differently that we are not doing?

Mr MILLER: Towards the end of my presentation I have made recommendations on what might be done. I will refer to that now. In my opinion there needs to be a close working relationship developed obviously between Transport for NSW and Planning and Infrastructure NSW. Historically there has never been a close working relationship; it has often been adversarial— going back to my days within the Ministry of Transport. It has certainly improved in the past few years but we need to lock down some institutional coordination arrangements. The chief executive officers and executives of both those organisations are then held to account to ensure that appropriate coordination is happening. On the one hand we have a lot of good work going on in Transport and in Planning NSW but, for example, the Metropolitan Plan, as it is called now, delivered fabulous results for New South Wales but it is only the past few years where we have started to make some improvements about delivering the infrastructure to go with it. That is where I have made several suggestions as to how that might be done. I would incorporate regional groupings of councils in that process because they are on the ground and that makes a big difference to the way these projects might end up being delivered.

The Hon. CATE FAEHRMANN: On page 6 of your submission you give some explanations of project cost overruns and say that there are overruns due to project scope variations and environmental approval conditions, but there are also more serious concerns about the transparency, accountability and probity of some participants in the project. In addition, there were significant problems involved with modelling the patronage forecasts. Is that in relation to a specific project or the Chatswood to Parramatta rail line that you are suggesting, or perhaps the first part of the question in relation to transparency and accountability and probity of some participants in the project?

Mr MILLER: Certainly some of those issues arose with the Epping to Parramatta rail link.

The Hon. CATE FAEHRMANN: Do you feel comfortable expanding on that in any way for the benefit of the Committee and the inquiry?

Mr MILLER: No.

The Hon. CATE FAEHRMANN: Modelling the patronage forecast has arisen in a number of submissions, and allegations of suspect modelling to justify a project. Would you care to expand on that further?

Mr MILLER: Not specifically, other than to say that reference was made earlier to peer review. Any modelling for demand forecasting or estimation needs to be peer reviewed. One of the major projects we did: the St George Regional Transport Strategy was peer reviewed by a professor from the University of New South Wales and that was hugely beneficial not only to ourselves but also to the councils involved and the Roads and Traffic Authority that funded that project. I have always wondered why it is not standard practice.

The Hon. CATE FAEHRMANN: Madam Chair, is it possible to suggest to Mr Miller where he would be comfortable talking to the Committee about my previous question in camera? Could consideration be given to having that evidence taken in camera?

CHAIR: Mr Miller, it means that the information you provide is confidentially kept within the Committee. The room would be cleared and therefore it would not be recorded publicly as to what you have said. It guides us but we cannot use that information as evidence.

The Hon. CATE FAEHRMANN: No transcript is provided publicly. The public have to leave the room but it may guide us in terms of what we do here.

Mr MILLER: I might be able to elaborate somewhat, it depends on the nature of the specific question. I am happy to consider that.

The Hon. CATE FAEHRMANN: I would like to move that we go in camera.

CHAIR: We only have 20 minutes, and we will consider that in the last five minutes.

Mr MILLER: Certainly there are some things that I would like to make publicly available and see how we go time wise.

The Hon. CATE FAEHRMANN: I found your submission interesting but when you said there were serious concerns about transparency, accountability and probity of some participants in the project is something that this Committee needs to investigate.

Mr MILLER: Could I quickly go through one of my recommendations that I suggest for your consideration is that a State agency public interest test be established for chief executive officers and executives in the relevant agencies. That would include sustainability and infrastructure objectives—

The Hon. CATE FAEHRMANN: Are these listed in your recommendations?

Mr MILLER: Yes, page 44 is the last page—page 47 on my old Mac.

The Hon. PENNY SHARPE: Your submission focuses a great deal on the role of Treasury and the impact that has on the delivery of rail projects. Will you outline what you understand is the role of Treasury in relation to infrastructure project costing?

Mr MILLER: I have not been in Treasury for 20 years so I really cannot comment on its procedures at the moment other than to say that the comments that were made by the previous speakers were very revealing.

The Hon. PENNY SHARPE: In relation to the gateways process and the way that that is used?

Mr MILLER: It was more their comments relating to the hands-on approach in New South Wales versus Victoria.

The Hon. PENNY SHARPE: I think your submission reflects that the hands-on nature of Treasury is perhaps resistant to rail projects?

Mr MILLER: Treasury has a job to do and it is damn important that it does it well for the sake of State finances. The problem is that because we do not have the up-front strategic planning I was referring to earlier, when projects are thrown up Treasury cannot have a lot of confidence that the way some of these projects get to Cabinet for consideration have been thoroughly thought through and what the financial implications are. You need to look at both sides of the coin.

The Hon. PENNY SHARPE: Some witnesses alluded to the way in which Treasury measures the cost-benefit of rail projects versus road projects, for example. Are there specific things that you would point to? Do you think there are things that Treasury perhaps misses when making this sort of analysis of projects being put forward?

Mr MILLER: Benefit-cost has some significant limitations, and often this is not appreciated. When you go through a discounting of the cash flow process, you are discounting your benefits and your costs. The main problem for rail projects is that often they have a life of 100 years. The Federal department currently is getting benefit-cost analysis done where they are saying the project timeframe is 15 years. So there is a generational issue here. Really, the methodologies are saying: We are going to focus on our generation, and really we are not worried about our kids, or their kids, or their kids. So it really is a major challenge. There is some significant refinement of benefit-cost analysis going on in the academic literature, but it is only refinement. To date I have not seen anything in the academic literature that indicates that there is the quantum change that is required.

The Hon. CATE FAEHRMANN: You said it was a Federal department that is looking at a 15-year benefit-cost analysis. Do you know what timeframe the State government uses?

Mr MILLER: There is further information in my supplementary submission on the Maldon to Dombarton inquiry of the Federal department. If you do not have that, I imagine it will be available in the next few days.

The Hon. MICK VEITCH: How does the 15 years relate to the life span they are putting on roads?

Mr MILLER: That is a good question, and I cannot really answer that off the top of my head. The methodologies in theory are applied equally to road and rail. But I will give you an example. The network benefits we have shown achieved by some strategic rail investment—and I am not saying we have rail investment willy-nilly; it has got to be very strategic because it is so costly—on a project that we undertook in southern Sydney accrued far and wide from where the project went in. That is not being reflected in the benefit streams that are usually included in benefit-cost analysis, because it takes a lot of research to do it. There are standard formulas and processes, so it is a fairly constrained use of benefit-cost analysis. In fact, the professor of economics at Queensland University, who did some work with us, said over lunch—and he might have been joking—that there has only ever been one full benefit-cost analysis that he was ever aware of, and that was in the eighties up to that point, because all the rest had not done enough research.

CHAIR: I have a question in relation to the tendering processes. Do you think there is any room for improvement? If so, whereabouts?

Mr MILLER: I am not really up to speed on the tendering processes at the present time.

Evidence taken in camera on motion by the Hon. Cate Faehrmann.

(Evidence in camera continued, however the following excerpt has been published by resolution of the Committee)

Mr MILLER: Can I answer that by saying that the only modelling exercises that I put any weight on are those that have been peer reviewed. I cannot give you any other examples of projects that have been peer reviewed; I'm just not aware of them. I mean peer review, not within a department; that's not peer review.

The Hon. CATE FAEHRMANN: Independently, yes.

The Hon. MICK VEITCH: With regard to the modelling, this would be—

Mr MILLER: I am sorry. Can I interrupt there? That applies to a lot of road and rail projects, by the way.

The Hon. MICK VEITCH: I was just going to ask you that.

Mr MILLER: It's a very imprecise science.

The Hon. MICK VEITCH: Whether the modelling be traffic volumes, or whether it be patronage, it always seems to be a problem at the end. It just seems to me that the modelling is not even with allowable tolerances, plus or minus a couple of per cent or 10 per cent; it just never ever seems to be in the ball park.

Mr MILLER: The real difficulty is that you are dealing with networks, and I would just like to emphasise the importance of the nature of the network; that we really had, other than the Christie report, very little network planning in rail. And so there are all these additions that we are just adding on, adding to the complexity, adding to the operating costs, and adding to the infrastructure costs, and that is why we have got to go back to the Swiss, Toronto sort of approaches of how you actually develop networks. We do not have any methodology for developing rail networks in the country, other than: Oh, here's a project, we will put this in here, and we will put this over there. But, in terms of an overall network, like the metropolitan area, we have really got to go back to basics and—

The Hon. MICK VEITCH: So political imperative drives the planning, as opposed to—

Mr MILLER: I do not know. But people want good news. They want to hear that there are projects happening. You draw your own conclusions. We have had one instance where we said that two projects were worth investigation in the early 1990s and we had the leaders of the two major parties come out and say, "Yes, we are going to do it." We were just saying that they needed to be investigated. I do not know why they came out and said that, but it never happened.

The Hon. NIALL BLAIR: I think the in-camera issue has been addressed and I would like to ask, with the permission of Mr Miller, that the last piece of evidence about networking on the Toronto and Swiss models, as well as peer reviewing of the numbers and scoping be able to be used by us for further evidence.

The Hon. JOHN AJAKA: You want the public hearing to be reopened?

The Hon. NIALL BLAIR: Yes, for that specific part. I believe the issue around the numbers related to a historical event in the 1990s, and that does not seem to be relevant now, so I think we can go back into a public hearing. I would like to examine later the Swiss model and the Toronto model, and the issue of networking, when we are looking at forecasting and peer reviewing of the numbers.

Mr MILLER: Yes. I might say that I am not an expert on them, but I can make some observations.

The Hon. NIALL BLAIR: We would just like to use that evidence. We can take it and use it for further examination at a later stage.

CHAIR: Are you happy for that to happen? The motion would be that we move out of in-camera proceedings to allow for the recording of your information in relation to peer review, and the Toronto and Swiss models.

Mr MILLER: And the networking issues.

The Hon. NIALL BLAIR: That is right.

CHAIR: We will also send you a copy of that transcript before it is made public, so you can check that.

The Hon. NIALL BLAIR: Very good.

Motion by the Hon. Niall Blair agreed to.

(Evidence in camera concluded)

(Public hearing resumed)

CHAIR: Thank you for attending, Mr Miller. No questions were taken on notice, but if there are additional questions they will be forwarded to you and you will be asked to respond within 21 days.

Mr MILLER: We are not going through any more of the presentation?

CHAIR: No, unfortunately, we are out of time.

The Hon. NIALL BLAIR: We will receive a copy of that and may ask further questions on it.

Mr MILLER: Yes.

(The witness withdrew)

(Luncheon adjournment)

CHAIR: Before we commence I will make some comments about some aspects of this afternoon's hearing. Copies of the guidelines for the broadcast of proceedings are available from the table by the door. Under the guidelines members of the media may film or record committee members and witnesses. People in the public gallery should not be the primary focus of any filming or photography. I remind media representatives that you must take responsibility for what you publish about these proceedings. Committee hearings are not intended to be a forum for people to make adverse reflections about others. The protection afforded to Committee witnesses under parliamentary privilege should not be abused during this hearing. I request that witnesses focus on the issues raised in the terms of reference and avoid naming individuals. The Committee has also agreed that any questions taken on notice should be answered within 21 days of the date on which the questions are forwarded. Finally, mobile phones should be turned off.

JOHN LOUIS GOLDBERG, retired academic, University of Sydney, sworn and examined:

CHAIR: I welcome you to the General Purpose Standing Committee No. 3 hearing into rail infrastructure project costing in New South Wales. Dr Goldberg, you are aware that some parts of your submission have been marked as confidential and you have been given a revised copy of your submission?

Dr Goldberg: Yes.

CHAIR: Therefore any of the sections that have been marked as confidential cannot be raised at the hearing today.

Dr GOLDBERG: Yes.

CHAIR: Committee members have been given three slides that you would like to speak to as an opening statement.

Dr GOLDBERG: Yes.

CHAIR: Please proceed.

Dr GOLDBERG: You cannot project them, can you?

CHAIR: No, but we are trying to.

Dr GOLDBERG: I commence by saying I have a long history in science and engineering, and I am an expert in mathematical statistics and probability, and I have applied those disciplines to consider the integrity of the Evans and Peck report. The first slide is about cost overruns. It is taken from a book by Bent Flyvbjerg, who I know quite well because I have had much correspondence with him over the years. We have gone more or less along the same path—he in Europe and myself in Australia. One of the things that he has pointed out was the probability of cost overruns for rail is likely to be much greater than for other transport modes. This raises a very interesting and serious question as to the processes that have given rise to this overrun of bias. When I looked at the Evans and Peck report I started to see flaws in it immediately, and I must tell you in plain language what they are because I know all of you are not familiar with statistical techniques.

The Hon. PENNY SHARPE: I would like to clarify which Evans and Peck report you are referring to.

Dr GOLDBERG: The Evans and Peck report about best practice.

The Hon. PENNY SHARPE: The best practice guide?

Dr GOLDBERG: Yes. Evans and Peck do follow to a certain extent what Infrastructure Australia prescribe but it reveals a lack of understanding of what they are doing, and I will tell you why. What they do is that they have what they call a base estimate for a particular part of a rail system. Then they tack on to that what is called a contingency. I do not know where they got the contingency value from but this is not best practice because what they should be doing is from a statistical and probability viewpoint. Do not forget that you have the problem that you want to get as accurate value as possible and the only way to do that is by the sorts of methods that I am going to describe to you. I have shown in one of my papers—at the 2010 Australasian Transport Research Forum—the way in which statistical methods can be applied to obtain what are called "confidence intervals" for various components.

What Evans and Peck or any other person should be doing is taking a large number of samples of a particular object. For example, take bridges; they need to get a large number of estimates and they must be reliable and independent estimates. Then you can form the necessary statistical parameters, which are necessary to assign a probability and a precision to that particular value. It would be a mean value, you see. The more samples you take, of course, the precision gets greater and greater. In a project costing say $4 billion or $5 billion you have a major problem if you do not do this because small errors or small offsets are going to cost the State a lot of money. I can conclude reasonably that the Evans and Peck process will not work for you. It is a fairly crude attempt to show "We are with it" or whatever. As an examiner of theses at the University of Sydney I have seen all the tricks. I spent 20 years in the faculty of architecture and design and planning, and I was an

examiner and mentor to a lot of the students. I can see where they are coming from. They are promoting themselves but, unfortunately, from the point of view of best practice they have failed full stop.

I want now to address the problem of consultants because you need to get reliable consultants. As the Committee is aware I have grave misgivings about the integrity of the consulting profession in this country. I am going to tell you that I have come to the conclusion that this is a cultural thing. I have mixed a lot in my life with French consultants, English consultants and American consultants and what distinguishes Australian consultants is some—I would like to be kind here—sort of trickiness in their attitude. For that reason I have suggested here that you contact certain agencies in Europe. I got back this morning from the United Kingdom a very good reply from an independent consulting group. You see the British consultants have much greater integrity because they live in a milieu that is quite different to us. Just because consultants in Australia lobby the Government and say, "I can do this and I can do that." I can show you that in roughly nine out of ten cases they cannot. I have practical experience. I could write a book on it. That is my opening comment on the Evans and Peck document. As I said earlier, I have received an email from England. How many copies do you want run off?

CHAIR: We will take a copy and then make further copies.

Dr GOLDBERG: Okay. It is from an independent called the IRCG group in England, which is composed of experts from British Rail. These people have a phenomenal record, like the Danes and like the French—particularly the French. It has my original message. As a rule you have got to be prepared to really get the best in the world for this. This is a vitally significant development in transport. It is that serious that it could make or break the State. If you do not provide a proper well-costed facility in the north-west sector there are going to be a lot of very disappointed people. May I expand on this?

The Hon. PENNY SHARPE: The North West Rail Link is a large project. You have outlined to the Committee your concerns about the method used by Evans and Peck, which is the standard method being adopted across Australia and is being used by both Infrastructure New South Wales and Infrastructure Australia. What method of costing, if not using the Evans and Peck method, would you use for the North West Rail Link?

Dr GOLDBERG: I have described it to you. You have to take a sufficient number of samples. For example a bridge; you take the drawings or estimates for the bridge and you go to all those places in Australia that have competence in the area and you get their views on the cost. This provides what is called a proper statistical sample, which is qualified in such a way that you can measure the uncertainty properly. That is my answer to your question.

The Hon. PENNY SHARPE: So that would be for each part of the project?

Dr GOLDBERG: Yes, each part. For example, you take the next component item, such as the rail track or whatever, and then you do the same thing and finally you end up with what is called a combined variance, and that gives you the confidence limits between which you can say with whatever precision you like to state, that the mean value is accurate. The point is that to get confidence limits you must go through this procedure.

The Hon. PENNY SHARPE: How long do you think it would take to go through your suggested procedure? Obviously time is an issue in relation to planning. Do you believe that the method that you propose is any more lengthy than the Evans and Peck method?

Dr GOLDBERG: I cannot answer that with any objectivity, I am afraid. All I can say to you is that my proposal is to create the right, accurate way of doing it based on proper science. This Evans and Peck thing is not based on science. For example, they have got a cumulative probability distribution. I do not know how they got it. There is not a single statistical parameter in the entire book, except what they call probabilistic. They have a list of various things. Yes, they call it probabilistic. It is not probabilistic at all; it is guess work. I am prepared to defend this in any forum in any part of the world, and I know that I could get agreement with it. For example, they claim that they have been around Australia and they did make a lot of contacts in the various States, Western Australia and so on.

CHAIR: Are you happy for us to proceed to questions?

Dr GOLDBERG: Yes, just a minute. Can I just continue for the second and third slides?

CHAIR: Yes, bearing in mind we have only about half an hour.

Dr GOLDBERG: Those two slides are important because they show that the process of benefit to costs has been corrupted in New South Wales, in one instance by the use of, well, what was called the north west transport link is just another name for the M2 motorway. I should have gone to slide two; I can dispose of that fairly quickly. I am trying to make people understand that rail systems do not have the same disutility that road systems do, and I have identified the way in which cost-benefit frauds involved spurious assumptions that all road users will achieve highest travel speeds irrespective of the traffic densities. That does not occur in rail because, even though the crush conditions, everybody is moving at the same speed. It is obvious; I do not need to press the question. The third slide is to do with my discovery that the M2 cost-benefit analysis in 1982 was fraudulent, and I make the point that the cost-benefit analysis of the M2 upgrade was fraudulent also. This raises the question that a whole lot of money in this State is being wasted on widening roads when it will not do anything. It is just a complete waste of money. That is all I need to say about that. So you should start questioning me.

The Hon. JOHN AJAKA: We need to consider whether to publish this email, of which you have provided us with a copy. I notice that it is on the University of Sydney letterhead. Is the IRCG—

Dr GOLDBERG: Yes. The reason is that I have been allowed to retain my privileges as I have formally.

The Hon. JOHN AJAKA: I understand that. I just wanted to ensure a couple of things—

Dr GOLDBERG: I have two email addresses.

The Hon. JOHN AJAKA: If you could just bear with me, I would be grateful. You said you were appearing today in your own person. I want to make sure: Are you representing the university?

Dr GOLDBERG: No, I made the statement under oath that I was not.

The Hon. JOHN AJAKA: Why is it on letterhead when the email is from IRCG?

Dr GOLDBERG: Because that is the university system that I am using, which I am allowed to use.

The Hon. JOHN AJAKA: I am not trying to attack you; I am just trying to understand. I just want to make sure that as IRCG sent you the email, you are saying that what happens when you print it off your system it has the Sydney university letterhead on it, because the email is from IRCG.

Dr GOLDBERG: Because I have no other way of doing it. I am locked into the IT system at the University of Sydney.

The Hon. NIALL BLAIR: Earlier you said that the only way we can accurately look at the estimates for a project is to get that wide sample of bridges or other infrastructure that is being constructed. Is there any other jurisdiction in any other country in the world that is undertaking that exercise to come up with this wide median that you would be satisfied with as data that could be considered accurate in your opinion?

Dr GOLDBERG: I can answer that by saying I have tried. Had you asked me, say, three weeks ago, I would have had all those answers for you. On the weekend I contacted the Danish rail people, the United Kingdom people and the French people, Systra, with a view to finding out that very thing. I cannot predict what their answer will be, but the point is that, as I understand from talking to people in France and England in my professional time, there is a much stronger feel for accuracy in these places. Bent Flyvbjerg did say in this book that the history of what they call heavy rail has not been good but he does not necessarily go into the reasons. I am trying to think originally about this. From my own professional experience, I just feel that if you had—for example, if the Danes came up and said, "You send us the drawings for a particular component and we'll look at them for you and we'll get various members to give independent estimates, give us a statistical sample", then I could tell immediately how successful it would be. I must get back to the main point again: as a citizen of this State I would be greatly worried for billions of dollars to be spent unless we knew or we had a handle on the probability that the costs would be correct.

The Hon. NIALL BLAIR: I understand that point. I was trying to see if there is other qualitative data around the world to show that other jurisdictions would have the same comfort in that theory if we have systems like that. If that is not something you are aware of—

CHAIR: You can take that question on notice if you have information coming forward.

Dr GOLDBERG: Would you frame the question in writing and send it to me by email so I have a record. I will be glad to help you on that. I do not think Flyvbjerg has actually gone into the nitty-gritty of the reasons for dispersion in the costings. I have written to him a couple of times about various things. I sent him over my cost-benefit analysis last year of the M2 upgrade and he was pretty pleased with that, which indicates that they may be on the same track. I do not know. If you want me to do a bit of research to help the Committee, I shall do it.

CHAIR: Thank you.

The Hon. MICK VEITCH: We have had some testimony today about modelling, particularly modelling for the usage of rail, for instance, passenger numbers and things like that.

Dr GOLDBERG: I am sorry, modelling for what?

The Hon. MICK VEITCH: Patronage.

The Hon. PAUL GREEN: Passengers.

The Hon. MICK VEITCH: Can I get your views, in a broader context, around the robust nature of modelling that is used for either traffic use or patronage in major projects like rail?

Dr GOLDBERG: Let me say this to you about that. I noticed in the press—I do not know how accurate the report is—that a Treasury official had somehow given out a figure for the patronage; I think it was 9.2 million. I reject that outright for the reason that when I did my own estimations I did do a proper analysis of the benefits and I took into account the fact that in the M2 corridor there would be two systems. It is a bi-modal system, essentially, and you have to take into account in CBA the slide over of passengers from the M2. The way the M2 is going it is heading for a disaster anyway for a number of reasons. It is almost unusable at the moment and I do not think it will much better even when they widen it.

I will describe what I did. The speed of rail average is about 43.33 kilometres an hour. That is based on timetable information from CityRail. The speeds on a motorway are highly variable because of the density changes. I have shown that in slide number two, I think. Consequently if you look at my analysis you will see I have taken account of that and I have come up with a figure about four times what the gentleman from Treasury did. Because the benefits of rail increase with time, the disbenefits of congested motorways decrease with time and you will see a gradual slide over. So I made an estimate. If you read the numbers that I put in there, they are fairly—I thought a lot about this at the time of what I would put in. But I did take account of these effects. The gentleman from Treasury did not, I think, understand the nature of the problem properly. When Treasury talks about benefit to costs ratio, they think in terms of financial outcome versus cost but that is only one form.

There are two forms of benefit to costs. The second one is the economic value. The economic value in train travel is the saving in travel time and you are able to do productive work on a train. One day I did a rough ratio check on my own line which passes through Beecroft and I came up with a figure of about one in three people who had laptops and other technological devices. Those statistics have to be costed in but Treasury does not do that. Consequently its methodology is suspect or deficient, whatever you want to call it. In the past, because it considered costs alone and not benefits we have the distortion that we see today in the transport system.

The Hon. PAUL GREEN: Mr Goldberg, your email merely has the identification of the Independent Rail Consultancy Group. Is that the right email you wanted to give us as that is all it has?

Dr GOLDBERG: Yes. I asked him to shake a leg and to give it to me before I appeared before the Committee and he obliged me. I think there will be more to come. The Government must look at experienced people in Europe in particular and obtain their views. In my view the maturity of the Danish system and, in particular, the French system, will give us valuable guidance as to what may be achieved. I will be writing to

Bent Flyvbjerg and asking him for his opinion to see whether I can obtain more information of that type. This is an interesting book if you have not read it. If you have read it you will find that it is remarkable. He goes into everything that is pertinent to these legal questions and to every other question.

On the matter of funding, the private-public partnership has been a total disaster. On no account must this be contemplated. I have given you an 11-page document about that. I know intimately the history of this. I was one of the few people who predicted the financial collapse of three of the main motorways in Sydney. They were the Cross City Tunnel, the Lane Cove Tunnel and the river city motorway. I did this by using my own statistical methods and I was well ahead of the pack. For example, the Commonwealth Bank, which is supposed to know all about risk assessment of infrastructure, failed utterly to predict the river city motorway collapse. I did it two years ahead of when it happened. Therefore I believe I have authority to say that I know a great deal about this matter. If I might make this comment I noted that Mr Greiner thinks that the private sector should be involved. So be it. Unless the whole system is accurately costed by competent people it does not matter whether or not the private sector is involved or who takes it over. I keep returning to this question.

The Hon. PENNY SHARPE: Your submission talks about the financing arrangements for rail and you suggest that those arrangements should be overviewed by an independent committee separate from Treasury. Can you outline to the Committee how you think that would work and who would be on it?

Dr GOLDBERG: Frankly, I would like to be on it. However, I am not liked by certain parties—the Macquarie Bank and the rest of them—because I got under their skin basically by exposing them. I probably would not be allowed on it anyway. But the point is that I think it should be funded by the State. Let me get back to that point. I think an independent committee of specialists who have a track record of knowledge in this area should look at it. There is some talk, for example, about the use of bonds. I understand that Mr Baird's son is in Japan doing something about raising bond money. However, it has to be realised that with the global financial crisis hovering over us all the time and the debt problems in Europe, this will be a big ask. People will not subscribe money or buy bonds or whatever unless they believe that they will get a return. With the triple-A rating in New South Wales—and I hope that it stays that way—you will probably get people investing in bonds. However, I do not know whether that is enough.

I want you to take on board this extremely important issue. The rise in congestion in cities in Australia is linear. The Bureau of Transport Economics published some data on this. There is no doubt that Australia has a generous road supply compared to other countries. We have 39.2 metres per capita which is the second highest in 27 countries. In other words, the supply of roads in Australia is near the top of the list yet we cannot use them properly because of the poor design. The Roads and Traffic Authority messed up Sydney with its urban freeways. You will never beat congestion and you cannot build it out. Consequently, the priority of the Government should be rail all the time. So far as I can see to waste money on road building now is just not on.

The Hon. CATE FAEHRMANN: Dr Goldberg, I would like some more information about benefit cost ratios. In other jurisdictions in Australia where governments have undertaken what seem to be quite good benefit cost ratios on transport projects I found the benefit cost ratio for the Gold Coast Rapid Transit, which is quite a significant project. Are you suggesting that the New South Wales Government needs to do benefit cost ratios or has it done that for similar projects? For example, in this document, which I can provide to the Committee later, it has undertaken a quantitative economic analysis and it has detailed benefits such as drawing on standard values of the environmental impacts of road vehicle use. It has used that and it has said:

> The shift of some car users to public transport provides the opportunity to avoid ownership of cars and to build facilities for car parking.

I imagine that there is a big list of environmental benefits.

Dr GOLDBERG: Yes.

The Hon. CATE FAEHRMANN: I looked at the supporting documents for the Gold Coast Rapid Transit rail project and found interesting what the Government has done there. Can you think of similar road or transport projects in New South Wales in which the benefits have been outlined to that extent?

Dr GOLDBERG: I will take that question on notice and I will do the research for you. Some years ago I was involved in a court case in the New South Wales Land and Environment Court to do with the widening of Abbott Road—a connecting route between the M2 and M4. I went to France to do this research and I refer you to the paper that I sent you which was published by the Societe Francaise d'Acoustique. If you read that you will

see that I did something of the style that you have described. Let me give you an example of this. Ernestine Gross, a fellow witness and an academic from Macquarie University, was a witness in the Land and Environment Court. She was able to cost the value of sleep disturbance.

As the judge did not seem to comprehend what she was talking about, she just listed it all. If you refer to that you will see exactly what happened. That is one example in New South Wales that you can take on board. In the time available to me and with the resources that I had I could not do anything more than I did, which is what you see in my submission. Ernestine Gross assessed environmental damage and noise and all that sort of stuff by the value of disrupted activity. For example, if you are sleep disturbed by noise you can cost that with, say, the working rate for work of about 15.5. That is the sort of stuff you get from the Bureau of Statistics and from the census, so you can do it.

The Hon. CATE FAEHRMANN: I have one more question, Dr Goldberg. This morning Mr Chris Lock, the head of the Transport Projects Division of Transport for NSW, said that cost estimating of rail projects was, in his words, "about predicting the future". What is your response to that?

Dr GOLDBERG: It is to do with the time value of money. That is what he was talking about. By the way, I have that in my submission. I have done what is called a present value analysis, which I will read out.

The Hon. CATE FAEHRMANN: I think he was referring also to all the steps relating to contingency and not just to the time value of money.

Dr GOLDBERG: Sure, you can add in contingencies. I want to tell you in simple terms what present value means. If you put $1 in a savings bank now at 5 per cent interest you will have $1.05 in one year's time. But in order for it to be worth $1 in one year's time its worth today can only be 95¢, which is called its present value. We say that future payments and receipts must be discounted relative to the present. I think he might have been referring to that type of methodology. However, it is standard practice in all CBA work. Is that clear by the way?

The Hon. CATE FAEHRMANN: Yes, I understand.

CHAIR: Are there any other questions? There being no further questions, I thank you very much for coming today, Dr Goldberg. The two questions that you have taken on notice we will send through to you for response in the next 21 days.

Dr GOLDBERG: I will do that for you.

(The witness withdrew)

GAVIN BRONTE GATENBY, Convenor, EcoTransit Sydney, affirmed and examined:

CHAIR: Would you like to make an opening statement? There is no need to cover anything you have already covered in your submission.

Mr GATENBY: I will make an opening statement. First of all, I would like to thank the Legislative Council for its vote in setting up this inquiry and to thank the members of the Committee. We believe that this Committee has the historic opportunity to save New South Wales billions in overspending. This morning you heard a great deal of rationalisation about rail costing from Transport for NSW and Evans and Peck. It was said that costing methodologies are not really the problem, although a few things might be tweaked of course.

I would urge you as a Committee to exercise a robust sense of judgement on the rationalisations that you have been offered. EcoTransit Sydney first began drawing attention to the issue of rail costings in 2008 and it was the cost estimates for the South West Rail Link in comparison with the actual final cost of the Western Australian Government's Mandurah line that first drew our attention to the state of affairs in New South Wales that did not seem right. Mandurah is, in fact, the elephant in the room. I would be happy to elaborate on as many of the troubling aspects of the submissions received from Treasury, Transport for NSW and Evans and Peck as I can but they would be secondary to one massive fact, any explanation for which is missing from their submissions: the final cost for the long and complex Mandurah project was less than the public estimate for the short and reasonably simple South West Rail Link.

The South West Rail Link is basically a small rail extension. It is 11 kilometres of track across unchallenging terrain, with two new stations, an interchange with two other lines at Glenfield and a stabling yard. Some other bits and pieces have been added on to that. Its cost estimate went, when first mentioned by government, from about $400 million to $688 million in 2004, as announced by Craig Knowles when it was supposed to go ahead and also at the time when TIDC was formed. It then went to $1.36 billion at the time of Michael Costa's Treasury and then to $2.1 billion in 2010 when contracts were finally signed.

Let me briefly paint a word picture of the difference between the two projects. Mandurah is a double track electrified narrow gauge heavy rail line that is 71 kilometres long. To give you an idea, that would stretch between the Sydney CBD and the lower Blue Mountains. It was constructed in just four years. Including rolling stock cost is usually put at about $1.5 billion. The line has 11 stations, nine of those have fully integrated bus transfer stations within them and eight of them have very large commuter car parks. Two of the stations in Perth CBD are underground and the Perth station platforms—Perth is the equivalent of our Central station—required the demolition of half a city block. Then there was a kilometre of difficult tunnelling in a difficult sand environment under their CBD.

The line crosses the Swan River twice; one crossing is 270 metres and the other is 600 metres. They had to do 14 new road over rail bridges or culverts and six rail over road bridges, and there was a stabling yard at Mandurah. Contrary to what you would have seen implied this morning in some of the statements, 43 per cent—nearly half—was what would by any definition be called a brownfield job because about 43 per cent of it was constructed in the narrow median strip of an operating four-lane freeway that never closed down during the construction time, plus of course, the usual problems with services crossing and so forth.

I would urge the Committee to at least fly the length of the line on Google Earth or Neo map, the Australian product, to get a picture of the scope of the project. Per kilometre and ex-rolling stock, South West Rail Link's estimated cost when finally contracts were written was $191 million per kilometre versus $18 million per kilometre for Mandurah. I put it to the Committee that no factor related to standard versus narrow gauge, geology or the change of scope to the South West Rail Link can go remotely near explaining such a vast discrepancy and by any measure the complex engineering targets on Mandurah—the bridges, the tunnelling in the CBD, and all of those things, were vastly were more difficult than anything you would find on the South West Rail Link.

You have heard a lot today about contingency and risk, optimism, bias and the recently imposed P90 standard. I put it to the Committee that the move to so-called probabilistic rather than deterministic or, as the Roads and Traffic Authority used to say empirical methods of cost estimation, is in fact unsound and indeed anti-scientific. In 2000 Mandurah's capital cost to government, including the rolling stock for this comparison, was estimated to be $941 million but construction did not start for about four years and it ended in 2007, so we have to factor seven years of inflation into that figure to see how that original estimate stood up.

If we use the Reserve Bank inflation calculator, $941 million in 2000 comes to about $1.5 billion in 2007, which is basically what the project plus its rolling stock cost. So their team was spot-on, very close to the mark. That was in spite of a labour shortage that broke out, a big labour shortage crisis due to the beginning of the minerals boom over there, a protracted and bitter industrial dispute and a 90 per cent rise in the cost of steel during the course of the project. They used empirical methods but P90, on the other hand, guarantees to put capital costs on an escalator. It is in fact a self-fulfilling prophecy by always factoring in massive contingencies and then, as we have seen, contingencies on top of contingencies, and then broadcasting the estimate, as of course will happen in a parliamentary democracy, media release are issued saying, "The Government will deliver the $1.36 billion South West Rail Link".

By doing that we are guaranteeing that the final cost of the job will include those contingencies, and this is no doubt gratifying to contractors because it insulates them from all risk and guarantees windfall profits. To endorse P90 is to endorse a view of the world that says that in spite of all the advances in engineering, technique, and our understandings of geology, hydrology, materials and project management, indeed now our capacity to find buried services or to know where they are from the historic record, all those advances that have taken place over the past many decades, in spite of all that, everything is more risky and uncertain than it was when this State built such examples of engineering excellence as the CBD rail loop.

I think for the Committee it is a task of forensically examining, picking apart some of those rather sonorous rationalisations we heard this morning about why things are like they are in New South Wales. It simply does not make sense that the West Australians can build a massive narrow gauge, heavy rail project that would stretch in New South Wales from here to the lower Blue Mountains and do it for less than the cost of our final estimate; their actual cost was less than our final estimate. I suggest that is a very good place to start with an examination of the situation we now face in New South Wales.

CHAIR: Thank you very much. We now start with questions from Cate Faehrmann.

The Hon. CATE FAEHRMANN: We will focus on Mandurah for a minute considering your knowledge of that. You do not have the PowerPoint presentation document given this morning but you were present when it was given, is that right?

Mr GATENBY: I was, yes.

The Hon. CATE FAEHRMANN: Slide No. 46 refers to the internal benchmarking document where rail and CBD/tunnels and they compare the dollars per track kilometre current estimate. They have Epping to Chatswood rail line at $84 million and package F, Perth to Mandurah at $89 million, and refer to a few others. You have the document now. What is your opinion of that estimation?

Mr GATENBY: I have to say it is something of a sleight of hand. We are talking here about tunnels, double track rail tunnels or two single track rail tunnels side by side. They put Epping to Chatswood at $84 million and Perth to Mandurah at $89 million. This is a terrific example of comparing like with unlike in an extremely unfair fashion. The Epping to Chatswood work was part of a long tunnel cut in exceptionally—

The Hon. CATE FAEHRMANN: Just to interrupt, it is $89 million per kilometre?

Mr GATENBY: Per track kilometre, it was part of a long job cut in the ideal medium of Sydney sandstone, which is the ideal medium for tunnelling, internationally recognised, and it was a long job, so there were economies of scale in there, whereas in Perth they had the huge set up costs of the very difficult tunnelling in sand under their CBD, so it comes out here at $89 million. I put it to you that that says nothing about the per kilometre cost for the whole of the Perth project, which comes out at about $17 or $18 million, depending on how you do the sums, compared to Epping to Chatswood. It is just comparing like with unlike in a way which I suggest is obfuscating the issue completely.

The Hon. CATE FAEHRMANN: Just to be clear, you are saying they have highlighted the cost of that tunnelling as such rather than the cost of the whole project?

Mr GATENBY: Yes.

The Hon. CATE FAEHRMANN: Was the Epping to Chatswood rail line all tunnelling, that entire project? How many kilometres?

Mr GATENBY: It is entirely a tunnelled project, unfortunately—it should have gone across the river at Lane Cove—but it is entirely a tunnel project and it is in the ideal median Sydney sandstone. You can really regard it as a greenfield project.

The Hon. CATE FAEHRMANN: How many kilometres of tunnel were there for Mandurah?

Mr GATENBY: It is a bit over a kilometre in their central business district and it is through particularly nasty, soft, horrible geology. There is a long slot at one end of it and then you go straight into a bridge across the Swan River from there. I am not sure if they have included in there the actual cost of the station as well. If they are including that as part of the tunnelling it would be another obfuscating factor.

The Hon. CATE FAEHRMANN: Why in your opinion is there such a difference? You outlined in your opening address what you see as the real differences in the costs between the Mandurah line, using the example of the South West Rail Link I think. Why in EcoTransit's opinion in knowledge is there such a vast difference between those two costs?

Mr GATENBY: I think that is something that bears a forensic standard of investigation. If you look at where the project starts, it was first mentioned at about $400 million or $440 million. At that point the Western Australian Government would have built it in six months for about $300 million. It then goes to $688 million in the year in which Transport Infrastructure Development Corporation [TIDC] comes into the picture—as TIDC is formed and takes over the responsibility for rail design as the exclusive provider of rail infrastructure to RailCorp and CityRail. It then inexplicably exactly doubles again during Mick Costa's time as Treasurer and then it increases by 54 per cent. That 54 per cent might well have been the famous probabilistic contingency increase that we have heard so much about this morning.

It cannot really explain the doubling, nor can the add-ons which supposedly came later explain that. If those add-ons that have been kind of passed over as being perhaps a serious contributing fact to the cost increase, $200 million was for a stabling yard at Auburn and $40 million was for some additional electrical wiring and substations to enable more trains to be in the tunnel, the airport rail line tunnel after the line was opened. The $40 is reasonably small in relation to the total increases in costs that we have seen. The $200 million is similarly not going to get anybody over the line with those increases. I should add also by the way that the Auburn stabling yard was not originally part of the project because part of the whole original justification for the project was to have a large stabling yard in south-western Sydney to stable trains for the morning rush hour.

Auburn came along half way through the project because Treasury, after the project was cancelled, then agreed to a stabling yard at Auburn instead. As it turns out we are going to get both of them, and need them. But those ones will not get you over the line between an initial starting cost of $400 million or perhaps $688 million if you prefer during Craig Knowles' tenure to $2.1 billion. We can possibly explain some of this as being the probabilistic cost estimate generous contingency allowance but a lot of it cannot be explained that way. I suggest they need to be very seriously looked at, particularly that doubling under Michael Costa's Treasury.

The Hon. CATE FAEHRMANN: We have heard a lot this morning about the tight ownership in terms of major construction companies in Australia being highly concentrated between two companies, and they are the tier one contractors that really bid for a lot of the work. Is that having any influence over the cost of projects?

Mr GATENBY: I would think that some of the participants this morning certainly thought so, and I think so. Indeed, Transport for NSW I note gratuitously makes reference to that as a problem, and Les Wielinga did. We are dealing with an oligopoly era or a duopoly, if you like, and that cannot be a healthy situation. In those circumstances those massive cost overruns that are factored into the publicly announced amount of pool of money that is available to deliver the project are going to be very easily absorbed into the budget and they will build to that limit. I would also make the observation that there is a certain truth in the fact that rail projects have tended to overrun because we have not actually built many of them in the past few years, whereas road building has been continuous and the Roads and Traffic Authority had built up a considerable pool of highly experienced engineers, estimators and road builders who had all done the job, who knew it back-to-front and knew how to deliver value for money in terms of roads.

It is also very interesting that in Western Australia when they came to tendering out Mandurah they broke down the project into a series of small packages with the avowed intent of spreading the work around. I am quoting the Minister's remarks to me about this. She said "We want to spread the work around and we want to spread it around small to medium sized contractors". So they brought into the project team a man from their roads authority that had had vast experience in designing the breakup of these packages. They set up all the rules about how many bits you could tender for and so on. They wanted to spread the work around and get the maximum benefit out of the competition process.

The Hon. PAUL GREEN: It is not unusual to do that? It makes it more competitive?

Mr GATENBY: It makes it more competitive but I would question in an environment like New South Wales where the five tier one construction giants are owned by just two firms, whether that really is actually possible to do.

The Hon. PAUL GREEN: I think there is a protocol that one has to qualify before one can even tender for a lot of those major jobs. Is that benchmark so high that other smaller firms cannot match that?

Mr GATENBY: I have no detailed knowledge about that but I would suggest it is an area that needs to be very closely examined because in the rather incestuous situation we are dealing with it would be a way to exclude potential players from the game.

The Hon. PAUL GREEN: Quite often governments will not accept anyone unless they have a prior work history in that particular State. It is very hard to get as work history until you do a job in that State. That is another thought about to get more competition if those people are allowed in the game if they met the criteria I am sure. The Committee has been focussing on contingencies today and potentially loading up contingencies for a profitable outcome. With your investment in the game and knowing this particular industry, will you tell us about the other side of it? What about cost overruns? Who absorbs the risk if we go beyond that day that is set in the sand, the company has made all its cost estimates and then they go on the other side? We have talked about making profits on contingency. Will you explain what happens in terms of the risk factor if they do not meet the D-day that the Government has signed off on? Who takes the risk? What are the percentages?

Mr GATENBY: Again that is not one that I could offer much deal of detail about. There is a very interesting history, particularly in public-private partnerships in New South Wales and in Western Australia, as to who is going to absorb the risk for a project. At first if you look at, say, the Cross City Tunnel the Government absorbed a large percentage of the risk. That was clearly unpopular with the public when the Government had to keep paying out over a long period of time. We then went to a regime, which was particularly expressed in road projects, where the private builder and operator were supposed to absorb all the risk. That led to a series of financial disasters. I would suggest that there is another one coming up very shortly with this massive $5.6 billion road project in Brisbane where they are again taking the entire risk on a $5.6 billion road project in the city the size of Brisbane. I would suggest that history will probably record that that was on the basis of very, very dodgy traffic forecasts, as have been the disasters in some of the other projects like the Cross City Tunnel in particular.

The Hon. PAUL GREEN: It is not unusual for a government to pick up the tab if it falls short, especially if the company goes broke I would imagine?

Mr GATENBY: Yes.

The Hon. PAUL GREEN: You said that a government putting out a media release announcing a $1.6 million project, for example. Do you suggest that those price tags should not be mentioned to maybe hide the opportunity for tendering to come in first rather than telling the tenderer what it is going to be? Do you suggest that we go out too early with that price tag?

Mr GATENBY: That is certainly a very good point, I think. I also think it would be an interesting exercise to devise a method of concealing at least the contingency of a project. It is an interesting problem in a parliamentary democracy. I put this to the former Western Australian Minister who I know personally and she said to me, "Well in a parliamentary democracy it is very difficult not to have public what the budget for a project is." However, it is my view better for a government to factor in a small, objectively empirically-costed contingency into a project and to keep it as small as they can and to wear the blame if there is an overrun.

Because if you do it the other way around, particularly with a P90—and remember that a P90 is supposedly a 90 per cent guarantee or almost a 100 per cent guarantee that there will be no overruns in the project no matter what happens—and you go out with that and you broadcast your base estimate plus the P90 to the world, you are guaranteeing in fact that money is going to come out of other government programs. Treasury makes a great play of saying "Well, we want to be certain because by golly if there is an overrun later on it will have to come out of some other program." I put it to you with this P90 regime it comes out of those other programs in advance as a total guaranteed protection against risk for the contractors and, indeed, probably a windfall profit.

You are in that position. Either we have to devise a method whereby Parliament conceals the contingency that it is prepared to allow or we have to run with much smaller contingencies and be rather nicer to each other when there is an overrun. As it happened the Minister was flogged horribly in the press when there was a small overrun on Mandurah at one stage—it went six months over time. But they built this whole project in four years and they got it for what is an almost unbelievably low sum in recent terms in New South Wales. I would also so that this has not in the recent past always been the case in New South Wales.

If you look, for example, at the airport rail link—which was a very different, cutting-edge tunnelling job, in the most difficult environment it could be, sand below the water line—a huge tunnel-boring machine had to be brought to Australia just to construct that tunnel. We got the eight or 10 kilometres of that line for about $100 million a kilometre all-up—fitted out, and with stations, four of which were also very expensive and challenging. That whole project came in at about $100 million a kilometre for very difficult tunnelling. That is sort of line ball with what international costs have been for at least 10 or 20 years.

The Hon. PENNY SHARPE: Remind us what was the total cost of the airport line.

Mr GATENBY: About 8.5 kilometres for $850 million.

The Hon. PENNY SHARPE: Mr Gatenby, can you outline to the Committee who is EcoTransit and who your members are?

Mr GATENBY: Yes. EcoTransit is a community-based, not-for-profit lobbying group. We lobby for public transport and active transport proposals, and in the past have been active in lobbying against certain road proposals as well. Our membership is composed of interested members of the public, and they have very varied backgrounds, ranging from people who have worked in the railways all their lives and people who have had an involvement in the rail construction and rail operations industry. We are engineers, students and people who have been rail buffs. I myself am a retired public servant.

The Hon. JOHN AJAKA: How many members are there in your group?

Mr GATENBY: At the moment, our current paid-up membership is about 70 people.

The Hon. PENNY SHARPE: You have given a quite compelling narrative around the costings of the Mandurah to south-west Perth rail link. So far, you have encouraged the Committee to look further into that. Are there specifics that you would point to that you think are making overruns, particularly in New South Wales, surely not just a case of contingencies being overblown? I am trying to get some detail about where you think things are actually going wrong, and what government should be doing about those things?

Mr GATENBY: I would say there are a number of factors involved. One factor back in the time when TIDC was TIDC—and I noted there was almost a flat denial of that this morning—was that TIDC, which was a wholly owned government corporation in which the Transport Minister was shareholder, funded itself by charging a flat 12½ per cent to RailCorp—

The Hon. PENNY SHARPE: Can I clarify that? You are saying that their response to that question this morning was incorrect when they denied that?

Mr GATENBY: It was certainly incorrect in relation to TIDC. I do not know about the Transport Construction Authority; and certainly not now, when that does not seem to be the arrangement. But we have got to look at these things historically. We are going back to look at what some of these increases have been all about. There was in my opinion, and I think this should really be tested forensically, an inbuilt incentive for TIDC to overcost jobs, to load in massive amounts of contingencies, so that the amount that TIDC was paid by the end user was enhanced. Now, that may be a factor. Then we have, at some point or another, this probabilistic

estimation method, the P90 regime starting to creep in, and mandated more or less after 2008, when the handbook or guidelines came out.

But there also remains—and this is what I was alluding to with the south-west rail line—a period when you suddenly have an unexplained, almost exact doubling of the costs of projects. One has to question whether in Treasury, which is an environment which historically has not been friendly towards rail projects, there was not a tendency to double the costs of projects in order to halve the benefits. I think Treasury's role needs to be probed in that respect.

There are several other factors. One is that I think, unfortunately with politicians in New South Wales, there has been a tendency to want to be able to say, "I delivered the $2.1 billion or $3.5 billion, or whatever, project." It is much more exciting to talk of projects in the big round billions than it is to say, "I delivered a relatively inexpensive, cost-effective small addition to the rail network in Sydney's south-west." That is something of a factor. I think there may be something of a factor in gold-plating, which is often referred to. I certainly think there is a factor in the sort of muddle and continuous redesign of projects, which has been encouraged by multiple layers of bureaucracy. For example, if you look at how it has worked in the recent past, CityRail says, "We think there should be an extension to the rail network here." That is then taken up by TIDC. TIDC does not actually produce detailed plans; it produces a concept, a reference plan. In fact, probably what happens is that they write a brief and hire a consultant to produce a concept plan. Then they hire people—

The Hon. PENNY SHARPE: This would be the Port Botany freight line example?

Mr GATENBY: That is a pretty clear example of that happening. The $30 million would duplicate three kilometres of track and one level crossing on a little-used road.

The Hon. PENNY SHARPE: Again, you have been able to provide a critique of what is wrong with that approach. What alternative is available to government?

Mr GATENBY: A new regime.

The Hon. PENNY SHARPE: Using the Port Botany line as an example, because it is a relatively simple one.

Mr GATENBY: I would commend to you what used to be called the Public Works model for doing things. That was that the government retained sufficient expertise to plan and design projects to a very high level, and not much detail was left to contractors. It is only in the generic types of small-scale things that they might make decisions about, such as precisely where a culvert goes on a creek. The private part of it comes in when the government, having developed the whole project to a very high level, then puts the project out to tender. At the moment we have this question that, because we do not know what to think and because we cannot design anything in the government ourselves, we hire a consultant to tell us what consultant we need to get to design the project, and then the first layer of consultants just do the concept plan or a feasibility study, and then you get to the next level, and so on. Skills have been lost from the system, so that there is not a tight, well organised department with its own expertise and corporate memory, relatively insulated from the private sector, so that there should not be a revolving door and people would should stick for quite a while.

The Hon. PENNY SHARPE: So the RTA would retain that. Would you agree with that?

Mr GATENBY: I certainly did agree with that. The RTA were very good. I mean, I have been an opponent of the RTA on many of its projects for many years, but I would have to admire the expertise that they brought to bear and the level of design that they were able to do, so that when they went out to tender they went out with a great deal of certainty.

The Hon. PENNY SHARPE: So it would be your view that if New South Wales were to go down that path with rail projects that would basically get a better outcome and it would be more cost effective than the current system?

Mr GATENBY: I believe history will show that, yes.

The Hon. NIALL BLAIR: I wanted to go to the flip side to that. One of the statements made earlier was that New South Wales does not have the number of projects to warrant retention of that level of expertise within the organisation. What is your comment in relation to that?

Mr GATENBY: It is true that one of the reasons we have a problem today is that we have been bludging off John Bradfield now for 50 or 60 years. He and his predecessors in New South Wales laid down and built such a world-class system that in the years when petroleum was abundant and cheap we were able to get away with making very few additions to the rail network. So projects became episodic; we were sort of reinventing the wheel every time we built a project. We are now in a very different situation. I would say to the Committee that there is a very interesting thing that it has to take into account: that is that the total vehicle kilometres travelled in Australian capital cities has been flat-lining for seven years; that is to say, since well before the global financial crisis.

In the same period, and particularly recently, personal vehicle kilometres travelled, or per capita vehicle kilometres travelled—that is, all sorts of vehicles, trucks, motor bikes, cars, the whole lot—have actually been plummeting. That is because of a change that took place in about 2003-04, when petroleum reached about 80¢ to 90¢ a litre, and thereafter everything started to change. Petroleum pricing is continuing to go up, and we can be sure that energy prices in general will continue to rise much more steeply than they have historically. So we are faced with the need to build a whole series of rail projects—light rail projects and heavy rail projects—and freight rail projects will be particularly important in this new environment. So I think we need to lay the groundwork now for getting back that continuity of expertise in the government's own people that we had in the past.

The Hon. MICK VEITCH: You may have been in the gallery this morning when the Committee heard evidence that the Federal Government has now brought in a 15-year assessment period to determine the cost-benefit of rail projects, which is a very similar period to road projects. What do you think would be a suitable time to determine the benefit of a rail passenger or freight rail project?

Mr GATENBY: Well, it would have to be bigger than 15 years. Many of us arrived here today on the city underground link, which was mostly constructed before the Great Depression and finished in 1956, and will continue to work, as far as anyone can tell, for at least 100 years to come. So I would say that 15 years is pathetically short for a road; but, for a properly constructed rail network, with adequate maintenance and so on, we would really have to be looking at 100 years. A lot of rail infrastructure that we are travelling on now is more than 100 years old.

The Hon. MICK VEITCH: Were you aware of that number? Had EcoTransit heard of it before?

Mr GATENBY: No, I was not aware of that number. I was fascinated that it was said to be 15 years. It would mean, for example, that we have only got three years to go with the airport rail line, which came on stream for the Olympics. So should we be writing it off and, what, completely rebuilding it or building a new one? It is just nonsense.

The Hon. MICK VEITCH: I move on to the issue around tendering for major rail projects. I am keen to have EcoTransit's views on the pre-qualification process and the use of hurdle criteria. I guess I am harking back to a point you made earlier about smaller bundling of tenders. Can I have your views on whether or not the pre-qualification process and the use of hurdle criteria are restricting or are barriers for smaller construction organisations to be involved in the process?

Mr GATENBY: Not really knowing how high the hurdle is, or whether it has barbed wire at the top of it or whatever, I do not think I could answer that in detail. What I can say is that surely you must have some sort of qualification. You must be able to show in some way that you have, or at least the people involved with you have, some demonstrable history of being involved in major rail projects. I would also say that probably we should have a regime where, for simpler parts of the work, the hurdle is lower. That may indeed be the case, but we have not looked at those sorts of tendering processes in that much detail, and indeed I do not know if the details are available publicly or are out there on a website where you can find them and look at them. They must surely be given to people who tender, but whether the public has ever been very aware of it, I do not know.

The Hon. MICK VEITCH: That is my next question, about the transparency of the tendering process, particularly for large rail corridor developments.

Mr GATENBY: I would have to take that on notice. As far as I know, the tendering process is reasonably transparent, at least at the stage when they say, "This is to build such and such." I would also point out here, by the way, that amongst contractors, whether they are people who are contracting to design or build stuff, there is a notable reluctance to come forward with criticism of the regime imposed by Government for the reason that they really do not want to stick their heads up and be seen to be critical of a system that they are trying to operate in and get into. They would rather take their chances the next time around and have another go than squawk about how badly treated they think they were.

The Hon. PENNY SHARPE: Taking you to your submission and the issue around the delays to the extension of the light rail, you indicate that basically we are all genuinely puzzled about why that has been deferred and you suggest that it could possibly be to skew the benefit-cost ratio to justify deferral. Could you expand briefly on that issue?

Mr GATENBY: There are many mysteries about this, and this was explained by the *Sydney Morning Herald* recently in an article in which I was quoted. What nobody could understand was that the Government does not pay a cent up front for the light rail part of the thing. Under the terms of the contract that Metro Transport Sydney operates under, they pay for the stations, the wiring, the vehicles and all the rest of it, and then the Government repays them over the life of the contract for those things. Quite how a figure of $176 million was arrived at is a mystery to us. We have upgraded the entire line, a new section of line—something that was not what Eco Transit recommended or fought for, and was not what the operator wanted or what the consultant recommended either. They recommended that they simply replace whatever sleepers were necessary, realign or regrade the track a little bit and do basic stuff like that, which is what was the case with the first extension from Wentworth Park to Lilyfield, yet there was a requirement from Government that the whole thing be completely renewed from the ground up so we got an even heavier specification freight line built for a light rail system, which is all very wonderful.

The wonderful thing was that industry scuttlebutt said that it came in for about $25 million, that 5.6 kilometres, completely renewed from the ground up, which is gratifying. How the rest of the work, which comprises of a few slabs of concrete, 30 metres long and 4 metres wide, some steps, some lightweight light rail wiring and some lightweight light rail signalling systems could come to $176 million, I do not know. The contractual arrangements are something of a mystery and precisely how it could take until 2014 to get anything to run on this is a total mystery because the actual work should take no more than six months. The three-kilometre extension from Wentworth Park to Lilyfield took six months and cost $20 million, of which the Government at that stage paid $16 million—excellent value. How you get $176 million for 5.6 kilometres out of that, I do not know. What I am saying to the Committee is that you have to use a robust sense of critical faculty on this sort of stuff and I can only think that that enormous estimate was thrown up as a way of deferring the project, for whatever reason I do not know.

The Hon. JOHN AJAKA: You answered some questions earlier about the makeup of Eco Transit Sydney, but can you indicate to the Committee some brief details of your experience and qualifications? You seem to have excellent detailed knowledge and I wonder if you could let me know about your background?

Mr GATENBY: Mine personally?

The Hon. JOHN AJAKA: Yes.

Mr GATENBY: My main career was with the New South Wales Government public service. I was the chief guide of the Australian Museum for two years. Most of my career was with the National Parks and Wildlife Service where I was a project officer and an operations officer, and although I was an occasional spokesman for the wildlife service in major emergencies, I dealt mostly with design and publication, and supply and printing of brochures and other interpretive materials.

The Hon. JOHN AJAKA: Over those years, did you have direct involvement in rail and road building or transport?

Mr GATENBY: My direct involvement with transport was that at one stage for about three and a half years I was the secretary of the taxi section of the Transport Workers Union, but no, I am not an engineer.

The Hon. JOHN AJAKA: Do I take it from some of the last evidence you gave in relation to Eco Transit that you are puzzled, but you have not seen any specific detail, you have not seen the contracts and you are not aware of the ambit or scope of the project, and what you are suggesting is that we should ascertain that?

Mr GATENBY: I certainly think you should ascertain that. If we are talking specifically about the light rail project, I have some idea of the scope of the project. That is very easy for anyone with a reasonable education to get a handle on, and even with some simple research I am aware of what has happened overseas and so on. We are talking about nine light rail stops, which is basically 18 slabs of concrete 30 metres long and three or four metres wide with some steps leading up to them and a sign and a bus shelter, which you could probably get for free from the nice people at Adshel.

CHAIR: Following on from your public works model, do you have an example of another state, whether in Australia or overseas, where this model works, particularly in relation to rail?

Mr GATENBY: I think you will have an opportunity to discuss that with Mr Peter Martinovich on 6 December, and I would commend his expertise in that respect, because they very much stuck with that public works model in Western Australia, using the processes that he will no doubt describe to you, in a series of large and important projects. The Northern Line preceded the Mandurah Line—a very long project—and, after having closed down the line to Fremantle, they reopened it and electrified it completely. So there has been quite a history of large projects there although, as people have noted, in an environment which is quite often easier in some places than Sydney because Perth is not such a big city, but nevertheless I would not downplay the difficulties, particularly on the Mandurah line, which were very considerable.

I think that Peter Martinovich could certainly describe the processes that they used over there in order to get the results that they have got. We have also recommended that it would be a good thing if Parliament sponsored a study into the history of rail building contractual relationships in New South Wales, even if using a history department that is unconnected with any of the rail or road industries, even if it is just to get a snapshot of how major projects were undertaken in the past—things like, for example, the Eastern Suburbs railway under Askin, the CBD loop under various governments and so forth—to be able to get a handle on what value for money the public got out of those different contractual arrangements that have existed over time compared to the present.

The Hon. CATE FAEHRMANN: The Committee has been talking all day really about the Evans and Peck best practice cost estimation and what has become standard for many agencies, as I understand it, across Australia. I do not know if you have looked at or know the standard. If you do, what is your view on it? This is the one that contains P90.

Mr GATENBY: I think if you read the document and look at the commentary on it that is contained with the Transport for NSW submission you get a sense of disquiet about it. Evans and Peck have mandated a standard—and it has been adopted now—whereby you give extraordinary leeway for risk to be taken by the Government. The very fact of going as far as getting rid of 90 per cent of all risk—and you would have to question how you calculate that 90 per cent—

The Hon. CATE FAEHRMANN: Through something called Monte Carlo, I think.

Mr GATENBY: Yes, through a program called the Monte Carlo method, so this supposedly employs a random process and yet you might note in the Transport for NSW submission there is a dissenting note, and that is that they gratuitously draw attention to the fact that while Evans and Peck implied that for rail projects the British Government standard should apply, which says that you should automatically apply—this is supposed to be a random process—68 per cent on top of your base estimate for rail projects, Transport for NSW demurs. They point out in their submission that they do not actually do that. They do not apply it in quite that way. They take each small section of the project and apply a different estimation to each of those. I am very sceptical of this supposedly probabilistic or stochastic method of arriving at this supposed certainty.

I think that it needs to be critiqued and it needs to be looked at in relation to some actual recent projects in Australia's past to see if they came anywhere near that sort of level of cost overrun that they are talking about. I also say that this view of the world that says we know less about the world now and how it works engineering wise and project wise, geology, hydrology, material strength and all the rest of it—we apparently know less about it now. We are more confused and disorganised and unmethodical than we were 20 years ago, or 30 years ago, or 50 years ago. I just think that it is either a counsel of despair or a deliberate obfuscation.

The Hon. NIALL BLAIR: Are you aware of any projects where P90 has been applied and we know what the final outcome was? That is, if we took this formula and applied it to the Western Australian model you have been speaking about would we would get similar outcomes to what the outcomes actually were?

Mr GATENBY: To be honest I only heard about P90 a few weeks ago. I heard about in the circumstance where I asked the Chief Executive Officer of Metro Transit Sydney how on earth it was that this small extension of the light rail network, under almost ideal conditions, could come to $176 million and he said, "I do not know. They might have applied P90 to it." I said, "What is that?" He said, "It is something they do in Treasury when everything in the project goes wrong."

The Hon. NIALL BLAIR: You said that the Western Australian project was complex in the geology, the industrial disputes and the number of river crossings in the central business district?

Mr GATENBY: Yes.

The Hon. NIALL BLAIR: To my mind it sounds like a complicated project—

Mr GATENBY: Yes.

The Hon. NIALL BLAIR: —and may be something worthwhile to apply a formula to that is factored to look at all of those complications in a project. Would you agree with that?

Mr GATENBY: Absolutely. Again, I think that is something that Peter Martinovich will want to talk about. He has written about this extensively in engineering papers, scientific papers and so forth. You will probably find his testimony on this very interesting.

(The witnesses withdrew)

(The Committee adjourned at 3.56 p.m.)