

REPORT ON PROCEEDINGS BEFORE

**PORTFOLIO COMMITTEE NO. 5 – INDUSTRY AND
TRANSPORT**

WINDSOR BRIDGE REPLACEMENT PROJECT

CORRECTED

At Macquarie Room, Parliament House, Sydney on Monday, 7 May 2018

The Committee met at 10.30 a.m.

PRESENT

The Hon. Robert Brown (Chair)

The Hon. Wes Fang

Dr Mehreen Faruqi

Mr Scot MacDonald

The Hon. Daniel Mookhey

The Hon. Peter Primrose

CORRECTED

The CHAIR: Good morning, ladies and gentlemen. Welcome to the second public hearing of the Portfolio Committee No. 5 inquiry into the Windsor Bridge Replacement Project. This inquiry will examine the expenditure, performance and effectiveness of the Roads and Maritime Services Windsor Bridge Replacement Project. Before I commence I acknowledge the Gadigal people, who are the traditional custodians of this land. I pay respect to the elders past and present of the Eora nation and extend that respect to other Aborigines present here today. Today is the second of two hearings we plan to hold for this inquiry. We will hear today from Roads and Maritime Services, Transport for NSW, technical experts and a proponent of the project.

Before we commence I will make some brief comments about the procedure for today. Today's hearing is open to the public and is being broadcast live via the Parliament's website. A transcript of today's hearing will be placed on the Committee's website when it becomes available. In accordance with the broadcasting guidelines, while 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 they must take responsibility for what they publish about the Committee's proceedings. It is important to remember that parliamentary privilege does not apply to what witnesses may say outside their evidence at the hearing. I make the point that parliamentary privilege extends only to the witness at the table and not to anyone in the public gallery. I urge witnesses to be careful about any comments they may make to the media or to others after completing their evidence as such comments would not be protected by parliamentary privilege. The guidelines for the broadcast of proceedings are available from the secretariat.

There may be some questions that witnesses could only answer if they had more time or with certain documents to hand. In these circumstances witnesses are advised that they can take the question on notice and provide an answer within 21 days. Witnesses are advised that any messages should be delivered to Committee members through the Committee staff. If a witness wishes to table documents they should indicate so and the Committee staff will collect them. To aid the audibility of this hearing, I remind Committee members and witnesses to speak into the microphones. In addition, several seats have been reserved near the loudspeakers for persons in the public gallery who have hearing difficulties.

I notice there are many people in the public gallery today. This is a somewhat contentious issue and I remind everyone in the audience that this hearing is not an open forum for comment from the floor. Audience interruptions can make it difficult for witnesses to communicate with the Committee and for Hansard to record accurately the proceedings of the hearing. Mobile phones are a special bugbear of these hearings. I ask everyone to turn off their mobile phones or turn them to silent for the duration of the hearing.

DAVID MAURICE SAMUEL, Individual, sworn and examined

The CHAIR: I note that you have submitted submission No. 336. Before we proceed to questions from Committee members would you like to make an opening statement?

Mr SAMUEL: I would, Mr Chairman. Thank you Mr Chairman for inviting me to appear before your Committee today. I appear as a private individual, and a resident of the Hawkesbury, who has lived on the north side of the river not far from Windsor for the past seven years. Whilst I profess no expertise in engineering or planning, I have had some experience of politics, and from my reading of the published submissions to the Committee I seem to be the only one who has drawn attention to the disturbing and worrying political dimensions of the movement against the project.

My arguments are set out in paragraphs 1 to 28 of my submission to the inquiry, which appears on the Committee's website, as you have mentioned, Mr Chairman, as submission No.336, and I trust that honourable members have had the opportunity of seeing it. Briefly, what I am saying is that, first, our democratic system of government works only because we all accept "the rule of law". In this context, that means simply that once a dispute has been decided by the courts—including any provisions for appeal—we acknowledge the outcome as being final and we move on. Secondly, Community Action for Windsor Bridge [CAWB] and its allies have shown they have nothing but contempt for this core democratic principle. From an early stage they have adopted the Trotsky doctrine that perpetual challenge wins; that an organised minority prepared to protest long enough and loudly enough will eventually defeat an unorganised majority, even a government—especially a government of the kind we have in most Western nations now that has been so drained of self-confidence that it no longer defends itself by collecting duly awarded penalties from those who legally challenge it and lose. I refer, of course, to the waiving of the substantial court costs awarded against the CAWB.

Thirdly, in categorising the CAWB as "an organised minority" I cite their recent testimony to the Committee that they had collected no fewer than 40,000 signatures and that "their core Facebook page has more than 10,500 likes and a reach of more than 100,000 people". This suggests an organisation not exactly short of resources and yet they further attest that they have been "exposed to the bullying and manipulation of a well-resourced government department". As far as I am aware, the New South Wales Government has at no time sought signatures indicating approval of the new bridge, nor maintained a Facebook page constantly pushing out promotional material of its views. If any reasonable person was asked to judge which of these two parties had the slick, professional, well-resourced sales campaign aimed at inducing supporters they would be bound to say the CAWB, not the Government.

To paraphrase Jonathan Swift, lies and political propaganda travel halfway round the world while truth is putting its boots on. Incidentally, CAWB's charge of "bullying by government" will certainly have raised some hollow laughs from many local residents who have been on the receiving end of abuse and ridicule from CAWB members. Finally, CAWB and The Greens have kept this political fight active for at least the five years since planning approval was granted for the replacement bridge. That they should now in a last-ditch effort seek to use the Legislative Council as a pawn to bring pressure to bear on the State Government to abandon the project is in my view the absolute pinnacle of political hypocrisy. Thank you Mr Chairman.

The CHAIR: For the record I advise that the proponent of this inquiry was not The Greens; it was the Hon. Robert Brown, MLC, who is sitting in front of you. I did so after I visited the site. The Committee comprises a cross-section of the political spectrum. One could argue that the modern committee system in the New South Wales upper House is controlled by the crossbenchers. That is pretty much the case; they are no longer government committees. There are only a few minutes left. Mr Samuel, would you be able to table your opening statement for the benefit of Hansard?

Mr SAMUEL: I certainly can.

Dr MEHREEN FARUQI: Are you aware that heritage experts, including the Heritage Council of NSW, the Australian Heritage Council and the International Council on Monuments and Sites, also oppose the location of the bridge based on the serious and irrevocable damage that they say would be done to the heritage value of Thompson Square, impacts on Aboriginal archaeology, visual impacts and impacts through landscape character? The list is long. Do you think they are also politically motivated?

Mr SAMUEL: I do not believe that they are probably politically motivated in the sense that you are suggesting but they certainly are in an industry which requires them to look after heritage, and that if anything is passed that does not meet that approval they tend to lose favour. Heritage is something that is subjective. You seem to be now trying to substitute your views for the Minister's and the experts in governments own views five

years ago. That is what seems to me to be the element of uncertainty that you keep alive by constantly carrying on these protests.

Dr MEHREEN FARUQI: Could you clarify what you mean by my views?

Mr SAMUEL: What do I mean by what?

Dr MEHREEN FARUQI: What do you mean by "your views"? Are you alluding to my views or are you alluding to the views of the Heritage Council that I just put forward?

Mr SAMUEL: I am alluding to the views that have been expressed by the CAWB.

Dr MEHREEN FARUQI: My question was very precisely about the views of the Heritage Council.

Mr SAMUEL: I cannot speak for the Heritage Council, can I?

Dr MEHREEN FARUQI: Of course you cannot.

The CHAIR: We are running out of time.

Dr MEHREEN FARUQI: I will leave it there.

Mr SCOT MacDONALD: You point out that the exhaustive legal process has now finished, appeals to the Land and Environment Court, et cetera. What is the community's general expectation that the next steps will be?

Mr SAMUEL: I think that everybody that I have spoken to locally was extremely relieved when there was a final result to the appeal by the CAWB against the planning approval, and I believe that was in October 2015. From that time onwards everybody thought locally, "At last we are going to get something done. This has been talked about for so long; it is about time that we saw some action." But this was not the case. Protests have gone on ever since in an attempt to try to derail the whole project.

Mr SCOT MacDONALD: Do you think there is any point in canvassing these matters through the Land and Environment Court if the decision is not going to be respected?

Mr SAMUEL: I am sorry; I did not quite follow that?

Mr SCOT MacDONALD: I cannot see the point. We have gone through the courts. We have gone through an exhaustive judicial process, as you call it, but the decision is still not accepted. The question I am asking is: Why have a judicial process?

Mr SAMUEL: That is the question that I ask as well. It does seem to me that this is moving towards what I think I have described in part of the submissions to almost a post-democratic society that was proposed some years ago by Lord Mandelson in the United Kingdom. We are moving towards a situation where the views of ordinary people become less and less important and the views of special minority or special interest groups become ever more dominant. That seems to be the way that the CAWB has been progressing its activities over the past five years.

The CHAIR: We will call a halt as it is 10.45 a.m. and I want to make sure we get through the list of witnesses this morning. Mr Samuel, it was great to meet you.

Mr SAMUEL: It was nice to meet you too.

The CHAIR: Thank you very much for agreeing to come and give open evidence today. The panel will have some questions that it wishes to put on notice, given the short time available. If those questions are put to you in writing, we would like the answers back within 21 days of you receiving them if that would suit you.

Mr SAMUEL: I would be delighted to do that, Mr Chairman.

(The witness withdrew)

PETER HELTON STEWART, Independent Adviser, sworn and examined

The CHAIR: Before we proceed to questions, would you like to make an opening statement?

Mr STEWART: I would. As a bit of context, my background and my connection with the Windsor Bridge Replacement Project started in early 2013 when the Department of Planning and Infrastructure approached me to report on the environmental impact statement [EIS] in respect of the structural condition of the existing bridge. In relation to this inquiry, the terms of reference pertaining to the Windsor Bridge, the following aspects are relevant: maintenance regime, costs and interventions, renovation methods considered, justification for demolition and heritage impacts. Briefly I will address and summarise these.

For the maintenance regime, the EIS stated that the existing bridge needs to be replaced as its structural integrity is deteriorating with age and it is no longer cost-effective to maintain. What I find is the maintenance declined once the Roads and Maritime Services [RMS] made the decision to demolish the bridge in or around December 2003. The evidence for this is from the RMS presentation to the Department of Planning and Infrastructure in April 2013—of which I have a copy—and also the bridge maintenance report dated January 2004—of which I have a copy. While the bridge is deteriorating from various ailments, it is not about to collapse in the short term. Each element can be treated and this has been plainly demonstrated by Roads and Maritime Services [RMS] and others.

It appears that RMS has left it untreated because of the recommendation in December 2003 to replace the bridge in five years. I note that 10 years have elapsed since that decision and a new operational bridge could still be up to five years away. I do not want to spend too much time speaking about maintenance costs because they were discussed at some length in the first public hearing. However, it is clear that from the various maintenance costings submitted by RMS that insufficient funds have been allocated to the maintenance of the bridge, especially its fabric and given that it is heritage listed.

Maintenance interventions are actions designed to repair the fabric of the bridge. They do not involve cosmetic works or painting. The Department of Planning and Environment asked what RMS had done in terms of interventions to repair the fabric of the bridge in the past 10 years. RMS responded, "No specific interventions have taken place to reinstate the fabric of the bridge, although activities such as removal of spalling continue as part of bridge maintenance."

I will now deal with renovation methods. The environmental impact statement [EIS] states that, "Elements of the bridge have deteriorated substantially and RMS has assessed that it is not practical to replace or repair these elements." My comment is that two methods have been proposed, one by RMS and the other by the ex-chief bridge engineers. I believe they are appearing before the Committee next, so I will not address that issue. However, they have suggested a viable alternative. The RMS method was designed to strengthen the bridge to modern-day standards and to take a full loading, which would be wasteful given that a new bridge would be used to do that anyway. The bridge engineers' option was to look at other uses of the bridge with lower loadings. There was a subtle difference. The RMS proposal would destroy the heritage and the bridge engineers' option would preserve the heritage to a large degree, although not 100 per cent.

I will now deal with the justification for demolition. The EIS states that four reasons were put forward for replacing river crossing at Windsor: First, the deterioration in the condition of the existing bridge; secondly, the existing bridge does not meet current engineering and safety standards; thirdly, it has lower flood immunity; and, fourthly, its poor traffic standards and performance. None of these statements on its own would justify demolishing the bridge. They do justify the construction of a new bridge, but they do not justify demolishing the old one.

The fourth issue is the heritage of the bridge. The EIS proposes in point 7.1.5, "The 1874 bridge will be dismantled in a manner that allows its construction methods and evolution to be appropriately documented as an archival record prior to and during its demolition." This is a heritage landmark that contributes to the social and economic life of Windsor. It would be a great loss to demolish this state-significant structure. Interestingly, there is no evidence that the RMS management approach to bridge maintenance and repair changed as a result of the current bridge either being listed on the RMS Section 170 Register or being classified as State significant on 21 October 2004. Maintenance continues as though nothing happened. It would be catastrophic if we took the RMS approach to all our heritage structures. There needs to be some determination to maintain our heritage for future generations.

In summary, RMS neglected maintenance of the existing bridge assuming the EIS would be approved and, hence, the bypass built and the existing bridge demolished. Incredibly, it is now 15 years since the decision was made to demolish the bridge. Putting this in perspective, approximately 105 million vehicles have crossed

the bridge since then. The condition of the bridge will have deteriorated due to this neglect. Refurbishment methods were thought to be too expensive. However, other bridges in the network have been refurbished and the methods proposed are not overly expensive. The questions regarding heritage structures and who is responsible, who provides the budget and who maintains them and to what standard need to be very clear. They are certainly not clear at the moment. The reasons for demolition of the existing bridge are based more on the decision to build a bypass than the poor condition of the existing bridge.

The CHAIR: Will you repeat your last statement?

Mr STEWART: The reasons for demolition of the existing bridge are based more on the decision to build a bypass—or a new bridge if members prefer that term—than the poor condition of the existing bridge.

Mr SCOT MacDONALD: I do not see a lot of emphasis on safety in your submission. You talk about heritage, the engineering reports and maintenance. It seems to me that you are not realistically weighing up the retention of the bridge versus the safety of the people using it. Would you care to speak to that?

Mr STEWART: Yes. Safety is fundamental in the deterioration of the bridge. I think that is what you are getting at. Is that correct?

Mr SCOT MacDONALD: Yes.

Mr STEWART: I have said in my report that there are methods to repair all of the conditions it is suffering from. My point was that nothing has been done to improve the situation.

Mr SCOT MacDONALD: RMS told the Committee a couple of weeks ago that the life of the bridge was about 20 years. How do we reconcile your proposition versus what RMS has put to the Committee?

Mr STEWART: The proposition to keep the bridge rather than to demolish it? My proposition was that with the expenditure of less than \$20 million—in fact, it was \$18 million at the time I wrote the report in 2013—it could have had a 50-year life if those methods had been employed.

Mr SCOT MacDONALD: But we would still have a bridge with narrow lanes and limited pathways on one side. It sounds as though you are prepared for that community to have inferior infrastructure. There is no other way to put it.

Mr STEWART: I think you are misinterpreting what I am saying. The new bridge will happen anyway and that will provide all the current safety standards. However, the old bridge could be upgraded for a lesser use. It would be perfectly safe. That is where I am coming from.

The Hon. WES FANG: Do you believe the new bridge is needed?

Mr STEWART: I have not looked at that. If you try to put any more traffic over the existing bridge, a new bridge will certainly be needed soon. It is inevitable eventually.

The Hon. WES FANG: Do you believe that the current bridge has met or exceeded its traffic capacity limit?

Mr STEWART: With the growth in traffic in the area, yes.

The Hon. WES FANG: So your submission is really about the ability to keep the current bridge and to have another bridge?

Mr STEWART: The heritage significance is such that we should keep it and not simply document it.

The Hon. PETER PRIMROSE: The Committee has heard evidence previously about, and you have spoken to the issue of, neglect of maintenance and refurbishment activities being premature. The Committee has heard evidence that between 1994 and 2012 the cost of repairs on the Windsor Bridge was a total allocation of only \$89,614, which is only \$4,700 a year. Can you elaborate on some of the physical things that have happened on the bridge as a consequence of that?

Mr STEWART: I can talk about only what happened up to April 2013 when I was involved. Until then the various ailments were graphitisation of the cast-iron piers and carbonation of the beams, which leads to the concrete expanding and cracking so that moisture gets into the steel and it rusts and expands. It gets worse. There is a bridge that has been repaired; it has been re-alkalined. It is the Cook River Bridge in Marrickville. It has been done very successfully. That ailment can be treated. The cast-iron piers which you allude to can be jacketed. You can put a jacket around them—to just above water level. That will repair them. It is repairable. There are a few other things. Joints are seized up and there are various other issues with the bridge.

The Hon. PETER PRIMROSE: Would it be fair—I do not want to paraphrase what you have said—to say that the effects of old age, which people keep referring to, are a consequence of the lack of maintenance allocation to the bridge, rather than the age of the bridge itself?

Mr STEWART: My understanding, if I could elaborate—

The Hon. PETER PRIMROSE: Please.

Mr STEWART: —is that RMS—or the Roads and Traffic Authority [RTA], as it was in those days—brought in a bridge information system in the early- or mid-nineties. I am not sure of the exact dates. Through that, there was a much more systemised inspection of bridges. They certainly did pretty rigorous tests when a flood took place. They sent divers down and they checked. But this was in fairly recent times. To their credit, RMS has spent quite a bit of money investigating the cracks and the underwater ailments. I cannot say that there has been a systemic problem going way back. I think our maintenance management of assets has improved over the period. The discovery of those ailments was probably in the early 2000s. They have not known about it for a long period of time and not done anything about it; they have known about it, but around about that time they made the decision to build the new bridge. So they said, "Let's not do anything about it."

The Hon. PETER PRIMROSE: The conclusion I would draw from that—I think you have made this point; please correct me if I am wrong—is that remediation is certainly possible.

Mr STEWART: Yes.

The Hon. PETER PRIMROSE: So we are not talking about a bridge that is going to fall down. With a bit of tender loving care and some State funding—

The Hon. WES FANG: About \$20 million.

The Hon. PETER PRIMROSE: —we can actually bring it back.

Mr STEWART: That is correct; yes.

The CHAIR: About \$20 million.

The Hon. PETER PRIMROSE: It beats stadiums.

The CHAIR: I did not say that.

Dr MEHREEN FARUQI: Or the billions of dollars spent on other things.

The CHAIR: Mr Mookhey, did you have any questions?

The Hon. DANIEL MOOKHEY: No.

Dr MEHREEN FARUQI: You said earlier that you were commissioned by the Department of Planning and Infrastructure to look at the condition of the existing bridge.

Mr STEWART: Correct.

Dr MEHREEN FARUQI: You made recommendations to the Department of Planning and Infrastructure based on your report, which also included recommendations to refurbish and repair the bridge as one of the options, and to keep it there. Am I correct?

Mr STEWART: One of the things I recommended was: let us not rush into demolishing it because it is so significant; let us see if we can't repair it and retain it in some form or other—not to be the new bridge but to have some alternative use.

Dr MEHREEN FARUQI: Obviously that recommendation was not taken on board in the final option that was selected, which is building this bridge here and demolishing the Windsor Bridge.

Mr STEWART: I was not involved in how the final decision was made. My recommendation went forward and—

Dr MEHREEN FARUQI: Yes, absolutely. You have had a lot of experience. Does this often happen—that clients outright reject an option given by the expert that they have hired? Has that been your experience?

Mr STEWART: I do not think I can comment on that. I do not think I can add to it. I have been involved in the Sydney Harbour Bridge. The RMS spent significant funds in upgrading the Harbour Bridge. We all know the Harbour Bridge very well. We know that it is a landmark. We know it is heritage and we want it to last for many years. I was involved in the strengthening of it. It now has a very long lifespan due to the efforts of

RMS, as they aware of the heritage. They put our brochures on heritage. This one seems to have slipped through and they do not seem to have had the wherewithal to want to keep it. I understand that they have a bottom line. We all have a bottom line. There is no return for them in it. My point is that heritage is valued by a lot of people; surely we can give some money to whoever is the owner for the structure to maintain it in a standard that will last for whatever appropriate use. That was where I was coming from.

Dr MEHREEN FARUQI: You said earlier—I think we know this—that if the completion of the bridge goes ahead where it is, or if a bypass happens, that will be some years away—maybe five, at least. So this bridge will have to be used for that time period, in any case.

Mr STEWART: Yes.

Dr MEHREEN FARUQI: Given that the RMS has said that there are issues with maintenance, and your report suggests that there are quite a few issues, should the bridge be brought up to standard and refurbished and repaired for at least those five years, or should we allow people to keep going on it in an unsafe condition?

Mr STEWART: You do not go on it in an unsafe condition. Never. I would never recommend that you do that. I think the refurbishment proposed by the Pearson-Wedgwood group would be very appropriate to extend the life of that bridge—maybe up to 50 years. I cannot remember their value, but for probably cost less than \$20 million you could have a bridge that would last for 50 years. Since 2013—you say it would be another five years—it would be 10 years. I do not know what has been done on the bridge in the past five years. Maybe some interventions have taken place but I have not been advised about that so I do not know. That is a question you should ask RMS: what have they done?

The CHAIR: We may well interrogate RMS further on that particular aspect.

Mr STEWART: I do not think they could live with owning the bridge and letting it continue to deteriorate. As you said, it is a safety issue.

Dr MEHREEN FARUQI: I guess the point I am coming to is that it would have to be refurbished and repaired to bring it up to standard for use for at least five years.

Mr STEWART: Yes.

Dr MEHREEN FARUQI: But then, obviously, when you repair and refurbish it you just do not do it for five years. You could spend the same amount of money and do it for the next 50 years.

Mr STEWART: Exactly; yes. It will not cost any less to refurbish it for five.

Dr MEHREEN FARUQI: Exactly. For me, as an engineer, it would make no sense, then, to demolish it.

Mr STEWART: And they have not factored in the cost of demolishing it.

Dr MEHREEN FARUQI: Yes, exactly. In the last hearing we heard from a representative of the RMS. They said that there is a possibility of the bridge detaching during flood conditions, as it continues to age, which gives the potential for components to flow down river. That was one reason they were giving to demolish the bridge, which, hopefully will be refurbished before the next bridge is built. It is a very skewed way of thinking. What is your view on that? Do you think this bridge, which has not come apart for the last 100 years or so will suddenly come apart in a flood and become a danger?

Mr STEWART: If they do not maintain it that is a possibility, but it has been overtopped 64 times, and survived very well. So I would say that maintenance is a very important part of maintaining that structure. It should not come apart if it is looked after properly.

Dr MEHREEN FARUQI: Do you have a view on why RMS and the Government are persisting with this idea of demolishing this bridge?

Mr STEWART: I do not know. I cannot really answer for them. That is a question you should put to them. I suspect it does not add anything to the bottom line for them to repair it; that is all costs.

Dr MEHREEN FARUQI: You are an engineer so I am going to ask a question about floods. One of the reasons that RMS has given is about flood immunity. As far as I understand it, the current flood immunity is one in two average recurrent intervals [ARI]. The new bridge will bring it up to one in three ARI. As an engineering expert I just want to ask whether that is enough justification for this new bridge to be built where it is being built. Going from one in two to one in three, in my opinion, does not provide a high flood resilience.

Mr STEWART: I probably should not answer that because I am not really a hydraulics engineer. It is obviously better, but is it sufficiently better? That is a question to ask. What is the difference? It means that the bridge is higher and therefore a greater volume of water can go under it. So yes, it is safer in that sense. The approaches to the existing bridge are too low, and the water goes over them, so it is about raising everything so that it is above the high flood level. They are saying that it still could be overtopped. I would question whether that is wise. If you are building a new bridge you have an opportunity to build it high enough. There is a bypass I was involved in around the other side of Windsor. That was made very high so it could go across the flood plain and be safe. We built a bridge up at Colo on the back road up to the Hunter Valley and it is designed to be overtopped, so the water can flow over it. There comes a point that if you make it so high it becomes so expensive it is not worth doing.

Dr MEHREEN FARUQI: What is your view on the option that many in the community and others have been talking about, which is the bypass of the town itself? That is, keeping this bridge, refurbishing it and building another bridge as a bypass like many other towns across New South Wales have?

Mr STEWART: I think it was called a bypass but it puzzled me that it went into Thompson Square, because that is not a bypass. We tendered and did a bypass of Berry but that does not actually bypass Berry. It cuts Berry in two. The Goulburn bypass is a true bypass. The town of Goulburn has benefitted greatly from the bypass, which is counterintuitive but it has. Some bypasses work very well. Other towns die because of a bypass. You have to weigh it carefully as to the impact of the bypass. But certainly if it goes into Thompson Square I would not actually call it a bypass.

Dr MEHREEN FARUQI: You are not a traffic expert?

Mr STEWART: No.

Dr MEHREEN FARUQI: Okay, I will not ask you any traffic questions. You were saying that the maintenance figures that you are aware of and that are quite low go up to 2013 only and you are not sure what amount has been spent since then.

Mr STEWART: No, I do not know from then on because my commission was completed at that time by May 2013.

The CHAIR: Your discipline is structural engineering?

Mr STEWART: I am a civil engineer.

The CHAIR: You mentioned other bridges that you have worked on, looked at or restored. Do they include any large bridges about the size of the Hawkesbury Bridge?

Mr STEWART: I have worked on the Anzac Bridge, the Harbour Bridge and the new Iron Cove Bridge. The Sea Cliff Bridge was my main one, but that is a new bridge. In terms of renovating old bridges, I have probably not done a lot of that except on the Harbour Bridge and the Anzac Bridge—hardly mentionable.

The CHAIR: You could probably put a riveted steel bridge the size of the Sydney Harbour Bridge on your CV.

The Hon. WES FANG: The proposal that you have put forward to retain the bridge does not include any increase in safety such as increasing lane width or barriers. All of the reasons that RMS has given us as to why safety needs to be improved on the bridge, do they get addressed in there?

Mr STEWART: Probably that is the next stage in the detail. If you are talking to the Pearson Wedgwood people you could ask them. That could be incorporated into an alternative use for the bridge. But what the RMS is saying is that to meet current standards it would need radical change to that bridge. To give the lane widths and, obviously, suitable widths for pedestrians is probably too big an ask. A new bridge is definitely needed to meet the new standard and from a safety point of view the old bridge can be upgraded to suit a different use and be safe.

The Hon. WES FANG: But in your opinion the current bridge cannot be reasonably upgraded to today's standards for a reasonable amount of money? Do you believe that a new bridge is required?

Mr STEWART: RMS came up with a renovation method and strengthening method which would have met the current standard according to them. They came up with a method but it would have destroyed the heritage completely, so you might as well not have bothered. But, yes, there was an effort proposed by them which was workable but it would have required the bridge to close for nearly two years to actually do the work, whereas the alternative that looks more attractive is that the bridge can stay open with minor closures maybe at night and things like that.

The CHAIR: Has your company ever done any work on bridges that incorporate parts of a bridge going across extensive flood plains? One of the arguments we have heard from different people is that the whole area is a flood plain and so you cannot consider the bridge in isolation. No matter how high you build the bridge the approaches on either side are coming into potential flood. Has your company had any experience with what we will call large bridges where the river may be only as wide as the Hawkesbury but the flood plain could be rather extensive? As examples I am thinking of the Bulahdelah bypass and the Kempsey bypass particularly.

Mr STEWART: We were involved in the Macleay River, but just in the tender stage. But, still, if you look at the design of that bridge it allows for a very wide flood plain. It is a long bridge to allow that. There are a lot of bridges out west which are long because there are very flat areas and very large flood plains. There are quite a few out west that are like that.

The Hon. PETER PRIMROSE: Are there many other bridges that you are aware of that do not comply with current standards?

Mr STEWART: It is interesting you raise that. Often when you build new infrastructure you have to adjoin something that is existing—that has been built 20, 30, 40 or 50 years ago and that meets old standards. What you are building meets a new standard, so then you are faced with an issue of what happens where the two join. We have had that all round the country. You have to decide if you alter what is there or accept it. It is built to a different standard, it has worked perfectly for 40 years. Or do you upgrade it just because it does not meet the new standard? Quite often you accept what is there provided the safety, which has been raised, is still maintained. It is quite often that old guardrails, for instance, do not meet the current guardrail standards. Tests have been done, new guardrails are better designed. When one road is abutting another road do you go back and change the road you are abutting on to? Every project is different and has to address that. There is no easy answer to say that you do it or you do not, but you are always faced with structures built to old standards when you are adjoining them or modifying them.

The Hon. DANIEL MOOKHEY: What is the policy of RMS in that respect as far as you are aware? Insofar as you were asked to provide any commentary in 2013 on that question, what was that advice?

Mr STEWART: I would have to think of an incident where it has happened.

The Hon. DANIEL MOOKHEY: Is what you are describing a discretionary choice RMS always faces on infrastructure decisions or does it have a policy that it usually applies?

Mr STEWART: I think you would have to ask them that question, but a risk analysis would be taken and then from that risk analysis you would decide whether you could live with the old design or change it. To replace everything that does not meet current standards, we could not afford it in this country.

The Hon. DANIEL MOOKHEY: We can barely afford to build new things that meet current standards, let alone replace the old. What you are describing in your submission is effectively the adaptive re-use of the existing bridge, is it not?

Mr STEWART: Yes.

Dr MEHREEN FARUQI: As I understand it, the new Australian standard has a lane width of 3.5 metres. The current Hawkesbury bridge lanes are three metres wide. I also know that Sydney Harbour Bridge lanes are 2.8 metres wide.

Mr STEWART: They are not all the same.

Dr MEHREEN FARUQI: Exactly. The Anzac Bridge lanes are also three metres wide. Given that logic, do you think the Anzac Bridge and the Sydney Harbour Bridge should be replaced as well?

Mr STEWART: I am not going to comment on that. Have you ever driven down Pennant Hills Road? Do not go on the inside lane.

The CHAIR: Thank you very much for your evidence, Mr Stewart. We are a little ahead of time but we are going to get some of the catering staff back down to man the coffee and tea machines because the audience looks a bit dry. Thank you very much. We will send any questions on notice to you in writing through the secretariat. We would appreciate it if you replied to those questions within 21 days.

(The witness withdrew)

RAYMOND JOHN LLOYD WEDGWOOD, former Chief Bridge Engineer for the New South Wales Government, sworn and examined

BRIAN JOHN PEARSON, former Chief Bridge Engineer for the New South Wales Government, sworn and examined

The CHAIR: Welcome. Before we proceed, can I say that engineers are always welcome in this room. Would either or both of you like to make an opening statement before we proceed with questions?

Mr PEARSON: In submission paper No. 122 we introduced ourselves as two retired former Chief Bridge Engineers of the Department of Main Roads [DMR] and the Roads and Traffic Authority [RTA] in New South Wales who were "responsible for the location, investigation, design, construction, maintenance and management of road bridges". We have a combined experience of 80 years, during which time we were involved with some 1,200 bridges over a large range of bridge types. We are ex-officio members of the Roads and Maritime Services [RMS] heritage committee, having chaired the group for bridge heritage matters before it morphed into being concerned about all RMS heritage issues. Our current concern is the future of the historic bridge over the Hawkesbury River at Windsor, the destruction of which is a prime object of the current road and bridge authority. We believe that it is wrong and unnecessary to destroy a bridge in good condition that has served the community for 144 years and is currently carrying some 23,000 vehicles a day, up to and beyond the legal limits for vehicle loads, without distress and no discernible deflections or vibrations.

We believe that it is wrong and unnecessary to destroy a bridge with a traffic lane width of 10 feet—3.048 metres—and width between kerbs of 20 feet, when many bridges have similar or narrower lane widths but have not been replaced, such as the Sydney Harbour Bridge and Anzac Bridge. We believe that it is wrong and unnecessary to destroy a bridge because it is likely to fail in the next flood when during its 144 year life to date it has survived about 100 floods, each of which submerged the bridge. We believe that the views of the local community and concerned visitors should be taken into account when expressed in a petition to government signed by hundreds requesting the existing bridge remain in service, whereas no similar petition has been made requesting that the bridge be demolished. We believe that the cast iron piers supporting Windsor Bridge are not suffering from serious deterioration because of graphitisation, a phenomenon that can cause distress in cast iron sewer pipes at high temperatures. This grand old lady's legs are in fine form after 144 years. The graphitisation erosion can be treated and, as a result, life prolonged.

We believe that the fact that the last weld repairs on the pier bracing were carried out in 1957 indicates that the observed cracking of the welds in the pier bracing are insignificant. We believe that this bridge is capable of carrying all current legal loads. We have separately mathematically analysed the reinforced concrete deck system to confirm this view. During its life to date it has never been necessary for a load limit to be imposed by a road authority. We believe that it is wrong to destroy a bridge because of largely superficial surface imperfections, such as spalling of concrete, which mainly occurs on the outer beams because of a poor deck drainage detail, which could be readily corrected. These minor problems can be repaired and strengthened where necessary, generally without disrupting traffic.

We believe that it is wrong to disregard Macquarie's town of Windsor, steeped in Australian colonial history, and its Thompson Square, which is probably the oldest village meeting place in colonial Australia. If you destroy a community's history, its historic meeting place and its bridge, you destroy its glorious past and leave it with practically nothing. We believe that while the planned replacement bridge has been promoted by its proposers as providing improved flood immunity, this improvement is only minor. We have prepared the attached graph from over 200 years of flood records. This graph indicates that the deck level of RL7.0 AHD for the existing historic bridge has a flood frequency of 2.0 years, whereas the deck level of the RMS proposed bridge of RL9.8 AHD has a flood frequency of 4.1 years—an improvement of only 2.1 years, thus providing minimal additional flood protection. If the flood figures are only taken from the time of construction of the Warragamba Dam in 1947 to account for changes in the nature of the catchment, the flood recurrence intervals are 1.2 years for the existing bridge and 3.7 years for the RMS proposal—a slight improvement of 2.5 years.

We believe that the complexity and extent of the Hawkesbury-Nepean floodplain, especially the Hawkesbury Basin, is unique to Australia and that a comprehensive physical model is required to understand its behaviour during flood periods. Such a model would need to extend from Warragamba Dam to Wisemans Ferry. The results would be of value to other studies of the effects of flooding in the valley. Finally, in our combined experience of 80 years, we have never encountered similar action by a road authority that deprived a local community of a much-loved bridge. The action now planned for the Windsor Bridge would deprive the community, the State and the nation of one of its most historic treasures—one which, with a little cosmetic attention, could serve the nation for at least another century.

It is our belief and recommendation that RMS should desist from any further work and expenditure on its option 2A bridge scheme, with the funds which would be spent on replacement and demolition of the existing bridge being allocated to the following: a bypass for Windsor to link in to the Hawkesbury Valley flood evacuation strategy routes including a new bridge across the Hawkesbury, that is, the Rickabys Line; a physical hydrological model to study flooding patterns for the Hawkesbury floodplain; cosmetic repairs as described to the substructure and superstructure of the existing bridge, plus the addition of an upstream footway to provide convenient access to the town beach; and widening of the bridge over the Hawkesbury River at Richmond to reduce traffic congestion. On completion of a bypass, the existing Windsor Bridge will be subject to a load limit of, say, 16 to 20 tonnes to eliminate heavy traffic through the town and avoid a car park situation. Thank you.

The CHAIR: Mr Wedgwood, would you like to add anything to that?

Mr WEDGWOOD: Not really. We will proceed to questions. One of the things that I wanted to say is that one of the important features of the floodplain is a feature known as the Breakaway which occurs about three kilometres upstream of Windsor. The water, at just under 10 metres reduced level, flows across this Breakaway towards Wilberforce and bypasses Windsor. About 80 per cent of the flood flow would go through the Breakaway and only about 20 per cent would go past Windsor. That does not change the water level but it does change the volume of flow. I think that is another reason why the bridge has lasted so well in flood periods for both water flow forces and debris forces on the bridge.

The CHAIR: Are both of your backgrounds in civil, structural or hydrological engineering?

Mr WEDGWOOD: Yes.

Mr PEARSON: Yes.

Mr WEDGWOOD: I am a civil engineer but both of us have been involved in bridges, so we have been involved in hydrological.

The CHAIR: I was about to say that.

Mr WEDGWOOD: And a lot of other extraneous things.

The CHAIR: A couple of considerations have drifted to the top of this little pond. One is that the existing bridge should remain in some form and should be preserved for a number of reasons—to allow the community to have easy access or for heritage reasons, et cetera. A range of costs have been attributed to that. The second point of almost universal agreement is that there does need to be another crossing over the Hawkesbury River. If you look at the population projections for Sydney—and heaven help us the way we are going—it is probably going to be a necessity rather than a luxury. The question comes down to the decision that the Government appears to have made and the processes that are ongoing as we speak: to put a replacement bridge adjacent to the existing bridge, do the changes and then probably demolish the existing structure for safety reasons.

Your submission is that the existing bridge could be upgraded or, if it were to be downgraded in the load limit and the type of load on it—the length of load, for example—it could last a long time as a heritage and local precinct type bridge. Since both of you were involved as chief engineers, we have seen infrastructure developments—I will call them bridge developments—over large floodplains in New South Wales. An example is the Macleay River bridge which is the Kempsey bypass. I do not know how long that causeway is but it must be all of 15 to 20 kilometres. The Bulahdelah bypass, whilst not so long and extensive, similarly flies over a floodplain. We have also heard evidence from other witnesses about how extensive the floodplain is and that there are plans for evacuations on certain routes. Recently, we also heard from the Government that it is now going to discuss the Castlereagh Freeway, or whatever you would like to call it. Given all those considerations, would you two gentlemen like to propose or give us an opinion as to where you believe a new bridge and causeway should be constructed? Where do you think would be the optimum location or locations?

Mr PEARSON: For a new bridge across the river?

The CHAIR: Yes.

Mr PEARSON: We believe the new bridge should span the bend in the river upstream of Windsor where for a normal water level, a width of about 90-metre span would be required. Downstream of Windsor the river widens. In fact, I will speak for a few minutes on that point. The width of Wisemans Ferry is 366 metres, Webbs Creek Ferry is 414 metres, Sackville Ferry is 290 metres and Lower Portland Ferry is 209 metres. The present bridge is about 150 metres and, as I mentioned, on the bend upstream of that bridge it is about 90 metres, which is the spot where we prefer. I might mention that Mr Ray Wedgwood did the Anzac Bridge which has a main span of 345 metres. In effect, if we are going to do a single span over the river at those locations, you

would need about three or four Anzac bridges which would be impossible to finance. Our bridge would be much cheaper. There is a section of the Roads Act, division 2 section 78, that requires a bridge builder or a road authority to take account of the existing river traffic if he is putting a new bridge in the river. The section, in effect, tells the road authority that it would be unwise to put a pier in the river because it would be subject to damages if any accident occurred against that pier by existing river traffic.

That clause was introduced because I put a bridge at Woodburn over the Richmond River some years ago. Before doing that I notified the local council and the road authority where we intended to put this bridge and asked if there was any objection likely from anyone. Both the road authority at Grafton and the local council wrote back finally and said, "There is no impediment in the river to that bridge."

After we built the bridge, a boat builder upstream who had built fishing boats then claimed considerable damage against the road authority the Department of Main Roads [DMR]. I was in the commissioner's office at the moment when the legal officer came in and said, "We have lost. We have no chance of winning that. We better settle." It cost the road authority a considerable amount in settlement. As a result of that, the commissioner and the Minister decided that this clause would be introduced. It may have some effect on the present road authority's intention to put a new bridge on piers adjacent to the existing bridge. The clause in the Roads Act states that bridges built prior to this clause being introduced were not affected. However, the new bridge may be affected and I am sure that the courts will be interested if the new bridge were built and an accident occurred against it. It would, of course, incite considerable damages against the road authority if it proceeded with the bridge.

The CHAIR: Generally speaking, the largest commercial water traffic on the river at the moment probably would be or potentially could be tourism-type traffic, such as riverboats?

Mr WEDGWOOD: Yes.

The CHAIR: There is no large-scale industrial-type water traffic on the river, is there?

Mr WEDGWOOD: Not at the moment, no. To go back to your question about the location of a new bridge, when I looked at what the Roads and Maritime Services [RMS] had looked at, their nine schemes, they were all through the town or downstream and one of them was so far downstream it picked up this extra flow that came across the Breakaway, so you are going to be in full flood rather than partial flood. Also, having found out about the Hawkesbury Valley flood strategy and their routes, both main routes and feeder routes, it seemed to me that you should aim to try to link to that feeder routes, which is Richmond Road, and the link to get across to there and to reach the bridge.

The CHAIR: I have taken up enough of the panel's time.

Dr MEHREEN FARUQI: Thank you very much for providing a submission and coming in today to give evidence. I am going to start with an issue that you have highlighted in your submission and which I am very concerned about, and that is the issue of government in-house expertise being diluted in transport and road departments. I would like you to expand a little bit more on that. Why do you say that; what have you seen happening, and how do you think that has an impact on this particular project, if it does?

Mr PEARSON: Madam, in my term, we were producing up to 160 bridge designs a year, and building 160 bridges a year. I understand that a year ago the output of bridges by the RMS in-house was one. There has been a considerable change. We mentioned the change in structure from pyramidal to plateau, the introduction of directors instead of the old system, and the profuse issuing of major works to consultants. That has a result that can be good and it can be bad, depending on how the consultant performs his work.

Mr WEDGWOOD: I think it all comes down to the fact that now the RMS uses design contracts for big projects, including roads and bridges. Before it was a separate contract, as roads used to be built by day labour and bridges were built by contractors or day labour. With the new system of design and construct, both the road design and the bridge design is let out by the contractor to a consultant who has to be approved by the RMS, but it is a separate pool of resources.

Dr MEHREEN FARUQI: Going through the documents, I have come to the conclusion that the benefit-cost ratio for this particular project has been a moving feast. If you look at the options report, it was 4.5; if you look at the environmental impact statement, it was 14.6; and then the business case is 2.5. Given that you have 80 years of experience, why do you think that is the case? Option one is almost the same bridge, same location, which was chosen in 2008. Why do you think there is such a huge difference in the benefit-cost ratio across those seven years?

Mr WEDGWOOD: In my view, the higher number is the result of an imaginative project manager wanting to make things look a lot better than they really are.

The CHAIR: Been there, done that.

Dr MEHREEN FARUQI: Do not admit to it, Chair.

Mr WEDGWOOD: You or me? Me too. That was a traffic study that was done. I am disappointed that the traffic engineer involved who made that comment, which we repeated in our submission, was not called to give evidence. I think he would be able to provide a lot better information about that. In my view, I cannot see how the benefits of the RMS system would be any better than the benefits for the Rickabys Line proposal.

Dr MEHREEN FARUQI: You were talking earlier about a bypass. Mr Pearson and you suggested a bypass route. We hear from the Government that the traffic volumes currently on the road do not warrant a bypass. I want to get your opinion. You said the traffic volume is 23,000 vehicles or something?

Mr PEARSON: Yes.

Dr MEHREEN FARUQI: I am aware that other bypasses have been built in New South Wales with less traffic volumes. Would I be correct?

Mr WEDGWOOD: Yes.

Dr MEHREEN FARUQI: For the record, can you remember some bypasses with smaller traffic volumes that have been built, otherwise you can take it on notice?

Mr WEDGWOOD: I was involved with one of the earlier bypasses in Camden in the seventies when they put the highway across the floodplain and away from the main street of Camden. I designed that bridge and supervised the construction of it. Since then there have been an enormous number of bypasses—Goulburn bypass, all the bypasses up the North Coast on the Pacific motorway, Macksville, Kempsey. The only one that is not going at the moment is the Coffs Harbour bypass. There is the one that Peter Stewart mentioned at Berry. There are a whole lot of bypasses. Even now, there is one proposed for Tenterfield, I believe. The number of vehicles a day that they are talking about is 8,000. It is just blatantly wrong.

Dr MEHREEN FARUQI: On page 14 of your submission you said that the RMS has deliberately confused technical standards and that this reeks of applied discrimination. Can you explain that further?

Mr WEDGWOOD: That excellent report was talking about the standard of widths of bridges. They have got a standard and that has been a standard that has changed over the years as we have been involved, even before and after we were involved. They also have a rider on that standard, "or as good as you can do". As we have discussed with widths, the Harbour Bridge and the Anzac Bridge both have widths or laneways similar to the existing bridge at Windsor.

The CHAIR: And at a lot higher speeds.

Mr WEDGWOOD: That is right.

Dr MEHREEN FARUQI: You must be aware that one of the main reasons the RMS is giving for replacing the existing bridge is the width of the narrow lanes?

Mr PEARSON: Yes.

Dr MEHREEN FARUQI: Obviously you do not agree that that is a good enough reason?

Mr WEDGWOOD: No, no. I thought the main reason was the concern about the graphitisation of the piers and the condition of the superstructure. I thought that was the main reason for wanting to replace the bridge.

Dr MEHREEN FARUQI: No, that is one of the reasons that they give. I asked the previous witness about the replacement of the piers. The new bridge or the bypass will take some years to complete. Will it take at least five years?

Mr WEDGWOOD: Four, so less.

Dr MEHREEN FARUQI: In the meantime, people will have to use the current bridge. Will the current bridge require an upgrade and repair? That is the main reason for building a new bridge.

Mr WEDGWOOD: If it was left as it is at the moment and nothing was done to it, it could last. It has lasted for five years since they first proposed the replacement; I could see it lasting another 10 years without any action. If you put a load limit on it, which we are proposing—16 to 20 tonnes for vehicles—and then repair the carbonation of the concrete, which is causing the spalling of the concrete from the reinforcement, and repair the piers then it would last another hundred years plus.

Dr MEHREEN FARUQI: Do you have a rough cost estimate for how much it would take to do the repairs that you recommend?

Mr WEDGWOOD: We reckon it would be between \$7 million and \$10 million. RMS has estimated it at about \$18 million, but that involves a very sophisticated method of re-alkalising the carbonated concrete. We do not think that is necessary at the moment. A lot of repairs we do like that are on bridges in very severe marine environments, like the bridge over the Cooks River at Botany Bay on General Holmes Drive, the Swansea Bridge at the lake entrance at Lake Macquarie and a bridge at Ballina called Missingham Bridge, which is over the entrance to the Richmond River near the mouth of the river. That is where you have to go big time with the repairs; but in the benign environment at Windsor, we reckon you need just a conventional repair, which is to blast off the loose concrete and around the reinforcement, apply a protective coating to the reinforcement and then—

Mr PEARSON: Carbon fibre.

Mr WEDGWOOD: No, not even carbon fibre, just checking that the reinforcement is competent. There are a lot of concrete mixes now that you can use for that sort of repair that are very valuable.

The CHAIR: I have done that on a high-rise building in Sydney.

Dr MEHREEN FARUQI: The last cost estimate that I know of for the Windsor replacement bridge is \$54.4 million, and we found out in the last hearing that \$30 million has already been spent. Do you think that this new bridge can be built for \$20 million, the amount left over from the budget?

Mr WEDGWOOD: No, because there is about two kilometres of road involved with the new bridge. Do you mean the RMS bridge?

Dr MEHREEN FARUQI: Option one. Do you think the original estimate of \$50.4 million is accurate?

Mr WEDGWOOD: I would say you would be looking at about \$70 million or \$80 million.

The Hon. DANIEL MOOKHEY: You mentioned that in your careers you were responsible for the maintenance of approximately 1,200 bridges. Is that correct?

Mr WEDGWOOD: Yes.

The Hon. DANIEL MOOKHEY: I have probably travelled on a few of them and they all appear to be standing, therefore congratulations and well done.

The CHAIR: He does not weigh much; a low load.

The Hon. DANIEL MOOKHEY: With your long years of expertise, how would you characterise \$89,000 spent on maintenance of the Windsor Bridge from 1994 until 2013?

Mr WEDGWOOD: Extremely low; I reckon that is about \$4,000 a year. I would have thought that a bridge like that, even just to keep ticking over, would have required at least \$15,000 a year to be spent on maintenance. The maintenance should have been done when the deterioration was first noticed, rather than being left for so long.

The Hon. DANIEL MOOKHEY: In your view, did the decision not to spend the amount you suggest have shortened the lifespan of the bridge?

Mr WEDGWOOD: Marginally. The concrete in that bridge is very high-strength concrete, a very high standard of concrete for its age. Concrete does not deteriorate, apart from getting carbonation or chlorination, as you get from salt water. It should last forever.

The Hon. DANIEL MOOKHEY: RMS has provided an explanation as to why the maintenance spending has been so low, and its view seems to be that whilst there is the proposition to replace the bridge, maintaining the bridge or otherwise allocating funds to do maintenance comes at the expense of the cost of building the new bridge and, equally, there is very little point because the bridge will be demolished. From your experience, is this a practice that RMS has adopted in respect to other bridges? RMS seems to have stated that because there is a new bridge in planning, it will short-change maintenance of the existing bridge. Is that a routine practice?

Mr WEDGWOOD: It is a balancing act. You have to ensure the bridge is safe for the traffic that it is carrying, and in this case the bridge at Windsor is carrying full legal loads—and beyond, I would suggest. You have to work it out; if you are going to demolish a bridge, you do not spend excessive money on it, but you do keep it ticking over and keep it going to meet standards.

Mr PEARSON: The bridge was designed originally for a 16-tonne farm tractor, which was the heaviest vehicle used in the day.

Mr WEDGWOOD: That is the concrete deck.

Mr PEARSON: The piers are 144 years old and their cast-iron cylinders were taken four feet into rock. That was backfilled with a mixture of bricks and concrete, and there has not been any movement in those cylinders over the 144 years. There has not been any load limit placed on the bridge at any stage—I think I mentioned that earlier—and yet the bridge is still standing, waiting for cosmetic repair to give it another 50 years of life, at least. As Mr Wedgwood mentioned, we are proposing that when the bypass bridge is built, the load limit on this bridge will be reduced to 16 tonnes or so, and thereby the heavy vehicles will bypass the town and there will be no need for any further reduction in the load limit, or any reduction at all. The bridge's accident history is amazing. We could only locate two fatalities, and neither was due to the bridge itself.

The Hon. PETER PRIMROSE: We have already covered a number of my questions. Referring to page 22 of your submission, I presume that given age per se is being raised as an issue in relation to the bridge, there are currently Roman bridges throughout Europe that are collapsing.

Mr PEARSON: There is a Roman bridge in Spain, on the Portuguese border, which was built in around the year 100. The builder put a plaque on that bridge which is still there saying, "I have built a bridge that will last forever". That bridge is still carrying highway traffic 2,000 years later. There are many examples of that.

Mr WEDGWOOD: Even though it has been bombed in a couple of wars, it has been repaired and is still carrying traffic.

The Hon. PETER PRIMROSE: Age per se is not a factor?

Mr WEDGWOOD: Not necessarily, no.

The Hon. DANIEL MOOKHEY: What have the Romans ever done for us, gentlemen?

Mr PEARSON: It is a bit like me.

The Hon. PETER PRIMROSE: It might be worthwhile to see if we could contract them to build a bridge.

The CHAIR: They copied the Babylonians.

The Hon. PETER PRIMROSE: In your attachment L you talk about the option of an upstream bypass. One factor that has been raised with us is that if you build a downstream option then for some reason the existing bridge will fall to pieces in a flood, although it has not done so for a long time, and that would destroy any new bridge. I presume in a flood, the river would not flow upstream, so that would not be a factor in relation to your option?

Mr WEDGWOOD: No, not at all. I think in probably 200 years or 300 years if the bridge is left there it will eventually start to disintegrate, or even longer than that. It is a very rigid, stable bridge but, once again, the policy of RMS if they built a new bridge, any bridge that was that close upstream you would be wanting to demolish it.

Dr MEHREEN FARUQI: It really baffles me that the heritage experts say a bridge should not be built there, that the current bridge should be kept, and you and others have given the same sort of advice. Given your experience with departments such as the Roads, Maritime and Freight, why do you think they are persisting in not only just building option one but also in demolishing the current bridge?

Mr WEDGWOOD: The first RMS project officer I spoke to about Windsor—I went in to see him at RMS head office—he was very concerned about the graphitisation of the piers. He was very concerned that the bridge was going to be washed away in the next flood. He was an experienced road person but he had no experience in bridges. I think it just got to him, that sort of worry. Otherwise there is talk about the possibility of dredging sand out of the river to supply sand for the concrete for the airport at Badgerys Creek and others—the sand deposits at Penrith are running out—and that could be to get barges upstream through the bridge, I do not know. The other possibility I have heard mentioned is that there was a resort upstream that wanted to get access for tourist boats upstream from the bridge.

The Hon. PETER PRIMROSE: The one thing that has not been mentioned as a reason for this is the issue of safety. We have heard that the bridge is going to fall to pieces in a flood and destroy any new bridge downstream. I think you have already addressed that—maybe in 300 years, if nothing is done. We have also

heard repeatedly that in terms of traffic movements the bridge is unsafe. Can you comment on that? I refer you to page four of your submission.

Mr WEDGWOOD: I have driven over that bridge a number of times As Mr Chairman said, it is quite slow because of the constraints of the site not because of any load or speed limit.

The CHAIR: The approaches.

Mr WEDGWOOD: The approaches, yes. Mr Pearson checked I think and there have been two fatalities on the bridge—one was a guy coming home drunk from the pub and he fell off into the river; and the other was a passenger in a car that got into strife and went it. That is in 70 years of history.

The Hon. PETER PRIMROSE: They both took place in the 1980s according to your submission?

Mr WEDGWOOD: Yes.

Mr PEARSON: I think the fact that the approaches are not high speed restricts the driver's speed. By the way, there is a speed limit on the bridge and that adds to the safety. But so many bridges have so many lane widths similar to Windsor Bridge and they are not listed for destruction. You cannot use the lane width as a reason for getting rid of the bridge, in our opinion.

Mr WEDGWOOD: Just on that point, I have had a look at the possibility of raising the deck of the existing bridge—that would have to be done after the bypass goes in of course. I reckon that you could come back and raise the deck to the same level as the RMS proposal. Each deck weighs about 100 tonnes so it would take four jacks, one on each corner, each worth about 25 tonnes. There are some dowels that join the deck to the piers. All you have got to do is break them out and then lift it on a frame. I reckon it would take about six or seven months to raise the bridge. The one thing you cannot do is increase the width between piers, but you can definitely raise the deck.

The CHAIR: Gentlemen, thank you for agreeing to appear before the Committee today.

Mr PEARSON: Mr Chair, we have some papers that we have written regarding graphitisation et cetera. Should we table those?

The CHAIR: Yes. Please table them.

Mr PEARSON: I mentioned earlier that I had prepared a graph.

The CHAIR: The Committee would like you to also table that graph.

Mr PEARSON: We will table all these documents.

The CHAIR: The Committee does not have the graph.

Mr WEDGWOOD: Yes, you do.

The CHAIR: No, it was not included in the documents.

Mr WEDGWOOD: There was a tabulation.

The CHAIR: No, it is not there.

Mr WEDGWOOD: Well you can take that one.

Documents tabled.

(The witnesses withdrew)

PETER MOULD, former New South Wales Government Architect, affirmed

The CHAIR: Would you care to make an opening statement?

Mr MOULD: I would. Thank you for allowing me to address the Committee. As you know, I am the former New South Wales Government Architect. In that role I was engaged twice with the proposed Windsor Bridge. My involvements were as a member of the Heritage Council of NSW, and, when the Government Architect's Office was involved, in undertaking an urban design assessment for RTA—as it then was—for options for the proposed bridge.

On the Heritage Council I was part of the sub-committee appointed by the council to review the RTA proposal. We concluded that the proposal would have a negative impact on the historic significance of Thompson Square and proposed refusal, which was endorsed by the Heritage Council, but voided by the planning approval sought from the Minister responsible for planning. The proposal reviewed had a high-level bridge across the river and through the eastern part of Thompson Square. I understand that remains the preferred option. The heritage values of Thompson Square are well established and documented through numerous assessments and reports. I am sure you are familiar with them.

The Government Architect's Office was separately commissioned by the RTA to review various options for the crossing, and concluded that in terms of urban growth and historic context a new bridge on the periphery of town would be a more appropriate outcome. Nonetheless, RTA requested an assessment of options within Thompson Square. I remain convinced that infrastructure of the scale proposed would have such a negative impact on Thompson Square and its heritage significance that alternative locations should be pursued. There is much discussion in the reports on mitigation measures to lessen the impact of the bridge on the square—bridge design, urban design, and so forth—but they all accept the proposition of a bridge in the square. I do not believe the impacts of a bridge of this height and width can ever be successfully integrated into the square. The scale of the intrusion is too great and will destroy its urban setting and its heritage values. Even the lowered bridge has abutments over five metres high to the underside of the bridge at the northern edge of the square.

Although my primary concern is with the impact on the current and future heritage values of the site, I am also concerned with the project assessment process that has led to this proposal. Since the outset of this project all RMS and RTA reports draw the same conclusion— a bridge through Thompson Square. Arguments are then made and strategies developed to mitigate its impact. I fear that once this option was chosen, all subsequent reports have been framed around that choice and its underpinning assumptions. Further, I believe the decision is driven by cost considerations above all else. Option one always scores best in terms of capital cost.

That is not to say that the expenditure of public money is not fundamentally important, but that it is one of many considerations, and sometimes not the pre-eminent one. As a citizen of New South Wales I want Government money spent carefully, but also wisely. The current proposal, since its inception, has gone from four lanes, to three, to two; and from a design speed of 60 kilometres per hour to 50 kilometres per hour. The pedestrian path and separate cycleway are now combined as a shared path. Does that not mean that by placing it in the square, with all its negative impacts, the mitigation measures then required deny its primary performance criteria?

My concerns with process are illustrated in the assessment of options against project objectives, and the comparison between option one, the preferred option and option six—the one that by-passes the town centre. This is evaluated in table 4.2, page 49 of the environmental impact statement. There are 25 criteria, with many criteria scored equally. Of those criteria that differentiate options one and six, seven favour option one, and six favour option six. But let me analyse a few of those rankings. The first is: meets road speed at 60 kilometres per hour. They score equally but we now know that option 1 has been reduced to 50 kilometres per hour, so option six must score higher. The second is: provides crossing that has higher level of flood immunity than the existing bridge. Surely, the necessary levels are design criteria for any crossing—that is the whole point of the crossing—and I would argue that it is easier to achieve out of town where the existing town street pattern and levels are not restrictions.

So why is option one scored higher? The third is: minimise impacts of noise. Option one scores three stars and option six scores one. That implies that cars and trucks moving up hill through the town centre, at a raised level, braking at the roundabout, adjacent to the town square, and above single-storey cottages will have less noise impact than a bridge out of town. I do not accept that. The fourth is: minimise impact on Aboriginal and non-Aboriginal heritage and conservation areas. Option six scores much higher here, but it is one criteria. I would argue that those are three criteria. Just re-evaluating these few criteria would mean that option six was superior on 12 criteria as compared to option one, which would be superior on five criteria.

We are also told in the environmental impact statement that a reason for demolishing the old heritage bridge is that in floods it might break away and damage the new bridge adjacent to it downstream. Clearly it would have less impact on a new bridge much further away. This is a clear differentiator, but is not part of the assessment comparison. I could go on, but I believe the point is made. If the process of bridge selection is predicated on a predetermined outcome alternatives and any associated re-evaluations are not balanced. So I conclude by repeating my concerns about the irreversible damage to our State's heritage that would be caused by the current proposal, a belief that alternatives have not been properly assessed, and a request that an alternative be found. Thank you.

The CHAIR: Your substantial submission to the Committee was made in confidence and has been treated as such. Members will ask you questions based on your submission. I will ask you to be the arbiter as to whether you think any question might lead to a breach of confidentiality or if you will waive that right.

Mr MOULD: I am happy to waive that right. If I can explain, the reason I put the confidentiality in it is I feared that my title as former government architect might give it more weight than was necessary. But everything I have just covered in my opening statement was covered in that report.

The CHAIR: Then I will instruct the Committee members that they may ask any question—within common decency—that they wish.

Dr MEHREEN FARUQI: Thank you for coming in today to provide evidence. You have expressed your quite serious concerns about the impact on the heritage value of Thompson Square and Windsor town if option one goes ahead. Do you think those impacts would be irreversible?

Mr MOULD: Yes, I believe so. The scale of construction that would have to take place would destroy much of the archaeology and much of the heritage value of the site.

Dr MEHREEN FARUQI: As part of your involvement with this project did you let RMS and the Government know of those concerns about irreversible impact?

Mr MOULD: Yes. Our report to RMS first scheduled that our recommended option was the bypass option. They understood that that was our recommendation but they said they preferred to go with option one and they asked us to do an urban design assessment of option one even though our recommendation was clear.

Dr MEHREEN FARUQI: In your experience as a government architect and in your other capacities with your expertise have you come across any other such project where there would be irreversible impact on quite significant heritage and yet the Government would go ahead with it?

Mr MOULD: I cannot think of a direct example but I guess the issues of heritage and new development always come into play. There have been examples where they have been very well handled. For example, if you think of the Governor's house that is now under the square in front of the Museum of Sydney, originally that was a development site. The Government recognised the significance of it, drew the development away from that and interpreted the heritage. There are ways of doing it. I can think of good examples. I am not at the moment off the top of my head able to think of bad examples. There are many I know.

Dr MEHREEN FARUQI: You said earlier that you compared this option with another option that probably ticked more boxes. We also have the issues of heritage. Why in your view is the Government going ahead with this option? Is it just the cost, or what in your view is the reason?

Mr MOULD: Reading the reports, it seems to me cost is the primary driver. I do understand cost is a huge issue, but I also understand it is our responsibility as public servants to balance cost issues against other things. I have been involved in many projects where the not least expensive option was the chosen option because it had other advantages.

Dr MEHREEN FARUQI: I understand that the cost-benefit analysis or ratio at the moment does not consider the cost to heritage or to the environment or to the community. Do you think that is a real issue in this instance?

Mr MOULD: I think it is. I think many issues are given equal weight and it is very difficult and often subjective how you assess things. But I think all the heritage reports—and I am sure you have seen many of them—are quite conclusive about the significance of this site. So it has to have a very high ranking. There are places that have lesser significance and therefore would have lesser ranking. This is on the State Heritage Register. I think 15 State Heritage items are affected by this. That is very significant. Therefore it requires, I believe, a much higher weight in its ranking assessment than some other things.

An example is the performance of the road. I have worked with the RTA. I have great respect for them as road engineers. Their ability to build roads in different circumstances is profound. Moving it from one place

to another will not stop them achieving the traffic objectives that they want to achieve. They will be different, of course, but they will still be achievable. I would not make that as high a ranking—because it is achievable either way—as the one that has the impact on heritage.

Dr MEHREEN FARUQI: What is your view on retaining the current bridge? Whether this goes ahead or whether we get a bypass or not, should this bridge be retained?

Mr MOULD: I am not the expert on bridge engineering. I have read bridge engineers' reports and I have read different reports. Just outside I ran into Ray Wedgwood, who was a former bridge engineer for the RTA. I have worked with him in the past. He is a man I hugely respect. He said he has assessed it and thinks the bridge can stay. I put huge weight on Mr Wedgwood's advice. I do not know a more experienced bridge engineer in Australia. I am not the person to talk about its structural integrity. From a heritage point of view, I would love to see it restored and kept for a pedestrian and cycle way. I know that continued traffic and increasing size of trucks and things puts pressure on the old bridge. I believe it is redeemable. Reports that I trust make me believe it is redeemable but, to be honest, I have to say I am not a road or bridge engineer.

Dr MEHREEN FARUQI: That is fair enough. You mentioned the flaws in the project assessment process, especially this idea that one option is selected quite early on and then everything else from that time on is rejected. No alternatives were really even costed in this instance. What would be your recommendations to improve that process?

Mr MOULD: I think where my concern came from—we first did an assessment for the RTA back in 2008, which is 10 years ago, and the assumptions made then seem to be still current in the current environmental impact assessments I have read. I understand that if cost was a major concern and the only way that the project could get up that was the one that got permeated. It just strikes me when reading the reports that it is based on the assumption of what we must achieve and everything is filtered under that. For example, a lot of work in the environmental impact statement and in the heritage values has gone into how the effects on Thompson Square could be mitigated. There is much discussion on that but that sort of discussion has not happened with any of the other options. It is only because it is having such a big impact that they are having to go through the efforts to mitigate, even changing the road engineering requirements.

I would argue that there will other impacts, of course, with every option, but if you went to the same level of assessment, other options might score better, just as well or differently. But I cannot see that rigour in the other options. The example I gave about noise, I read the report and it said that one of the concerns about the bypass road is that properties that are currently unaffected by noise would be affected by noise. That is true. But, equally, properties that are currently affected by noise would not be in the future, and nor would the town centre or the town square. If you weigh one against the other, which one comes out? Just to say that a few people will be more inconvenienced does not lead to the corollary that many people will be more enhanced. I do not think that they are being equally balanced and that worries me as a process.

Dr MEHREEN FARUQI: Would you recommend that option one be scrapped and that the Government go back to the drawing board and assess some of the other viable options a little more?

Mr MOULD: I believe the option to bypass the town is the best option but, yes, I think several of the options need to be assessed further. The bottom line is that any option other than going through Thompson Square is an improvement.

Mr SCOT MacDONALD: I am trying to understand Thompson Square. When I look at it as it exists now it appears as though it is dissected almost right through the middle. The alternative we are looking at still has an impact on Thompson Square. It looks to me as though it is smaller. I take your point about infrastructure, the scale of it and things like that, but just in the alignment, as I said, at the moment it neatly dissects it compared to the new alignment which goes off to the side largely leaving Thompson Square as a complete square. Is there not merit in that?

Mr MOULD: There are a few issues tied into that. First, the existing road is at grade; the new road is raised up and will be five metres up in the air. The second thing is that it pushes over against existing residences, which would have a huge impact on them, while the current one does not. I think putting a new delivery system for heavy traffic past Windsor is a very good thing; I think a great thing would be one that took it out of Thompson Square altogether. That would allow Thompson Square to be restored to its full glory. I believe Thompson Square is not representing and properly interpreting the value that it has as a heritage site. Putting in an even bigger piece of infrastructure, albeit pushed to one side but much higher, will have a far greater impact on Thompson Square. At the moment, yes, you are right, the road does dissect it, but it dissects it in a fairly passive way—this is a fairly aggressive way. I think the level changes are the things that will make one more dominant than the other. But I agree with you. If we could turn it back to a pedestrian and cycle way

and have a bypass somewhere other than Thompson Square, Thompson Square could be regained as the major historic public place it should be.

The Hon. DANIEL MOOKHEY: To be clear regarding the chronology of your involvement with the advice, did you provide advice in your capacity as a member of the heritage committee?

Mr MOULD: No. The advice I gave to the RTA was when it commissioned the Government Architect's Office to do an urban design assessment of the alternatives. That was when we recommended the bypass alternative. That was in 2008.

The Hon. DANIEL MOOKHEY: In 2008. So that was in your capacity as the Government Architect?

Mr MOULD: Yes.

The Hon. DANIEL MOOKHEY: You provided your advice and you were told by the then RTA that it had a different preference?

Mr MOULD: Yes.

The Hon. DANIEL MOOKHEY: Were you given a reason or an explanation as to why it had that preference?

Mr MOULD: The RTA had done a similar analysis, as you would read in most of its reports, and said it was better for traffic—I am not sure whether that is true—and that it was a better cost. That seemed to be a primary driver.

The Hon. DANIEL MOOKHEY: Did it ever mention safety to you?

Mr MOULD: No.

The Hon. DANIEL MOOKHEY: Thereafter, what engagement did you have with the RTA and then RMS?

Mr MOULD: Thereafter it came before the Heritage Council. I was a member of the Heritage Council. I used to chair the Heritage Council assessment committee and the Heritage Council formed a subcommittee, of which I was a member, and asked us to assess the project. That came later—it was still option one. Because of the heritage values, which was the primary concern of the Heritage Office, we found that the impact was too great and we recommended refusal. However, I think the project was then submitted into the planning department through what was then called part 3 (a), which meant that the Minister had approval and that switch could be flicked off the Heritage Act. So that advice had no standing.

The Hon. DANIEL MOOKHEY: Have you seen the planning controls that the Minister issued when he approved the project?

Mr MOULD: No, I have not.

The Hon. PETER PRIMROSE: In your view how will the heritage values of the site be affected if the roundabout is removed and traffic lights are put in, which is the current proposal?

Mr MOULD: I think the biggest impact comes from the bridge rather than the roundabout. The roundabout exists at the moment and I think the proposal is to enlarge it slightly and put traffic lights in. But that is right at the top of the square. I think those issues could happen whether or not there was a bridge. I think it is the impact of the bridge coming through the square that is the big issue.

The Hon. PETER PRIMROSE: So traffic lights are not a concern for you?

Mr MOULD: Do you mean as a cyclist, motorist, or former Government Architect?

The Hon. PETER PRIMROSE: As a witness?

Mr MOULD: As a witness, no.

The Hon. PETER PRIMROSE: Earlier you mentioned the issue of traffic speed—60 kilometres per hour or 50 kilometres per hour. Do you have a view on what an appropriate speed through a heritage site such as this would be?

Mr MOULD: I would say the slower the better, but I would say that generally, particularly when approaching a town. The point I was trying to make when I mentioned the speeds was that the RTA put as one of its design criteria a 60 kilometre per hour design criteria. Then, because it put the project in Thompson Square, one of the methodologies it used to lessen the impact was to lower the bridge height—still above flood

level. That meant that the gradient up to the roundabout that you were talking about got steeper, which meant that the road speed dropped down to 50 kilometres an hour. I do not have a problem with that; it is not the road speed. The problem I have was that RMS was then assessing that against other options and saying that they were all equal because they can all achieve the same speed. Because of the mitigations one would have to do in Thompson Square, the same speed could not be achieved. RMS is not comparing like with like. For me it was not the issue of speed that was the problem; it was the issue of the process.

The Hon. WES FANG: We have heard evidence that Thompson Square has evolved over time to adapt to the requirements of the day. Is there not an argument that could be made that this is yet another evolution of Thompson Square and that it is in keeping with the evolution of the surroundings and the requirements of Windsor and the surrounds to travel?

Mr MOULD: You could make that argument; I do not accept that argument because I think that with everything you do—with every evolution—you should try to do it wisely and in a considered way. Yes, we can basically do anything—modern engineering is pretty powerful. Whether we should do it is really what we have to question; not only whether we should do it but also whether there are just as feasible or other viable alternatives. If we know it is going to have a major impact and we know it is highly significant as a heritage site—and we do—trying to mitigate that is really important. I think that the mitigation measures that are proposed with the bridge through Thompson Square are nowhere near enough to mitigate the impact of putting a bridge in Thompson Square.

The Hon. DANIEL MOOKHEY: Is it possible to obtain an adequate level of mitigation so that it preserves the heritage?

Mr MOULD: Not with a bridge that meets the flood levels that have been asked for, I do not believe, in Thompson Square. Elsewhere, yes, but I just think that the values are so profound. The other thing is that there is fundamental archaeology there, both European and Aboriginal, that needs to be uncovered. Once we destroy that, it is not gone and recaptured in the future—it is gone forever. Some things need to be protected. They might not be well revealed yet, they might not be fully interpreted yet. That does not mean that future generations will not have the opportunity to do that. I have worked on many heritage sites where we have not had the time or the money to effectively uncover what we know might be valuable, but we have gone to great pains to make sure it is protected so that it is available for future generations.

The CHAIR: Would you, for example, consider the preservation work and the interpretation work that was done at Government House as a benchmark? Do you think that was adequately done?

Mr MOULD: I think it was very well done. That was done in the 1980s. I think it could be done a lot better these days. I think we have learnt a lot more. I think science has moved on, analysis has moved on. I think we could always do things better. I just used that as an example of where we moved the whole development to protect the site. That was why I used that example.

The CHAIR: You regard the protection of the site itself as the minimum that should be done?

Mr MOULD: Yes. The footings of the old Governor's cottage are still there. They are available for interpretation in the future.

The Hon. WES FANG: We have heard from RMS that it is able to continue to protect the heritage that it has uncovered.

Mr MOULD: I do not accept that. I believe the scale of the works that have to go on with the bridge work—I think the current proposal is for an incremental launch bridge. The good thing about that is that most of the construction will occur on the other side of the river and it will come across, but the abutments would have to be on the Windsor side to receive that as to quote "profound".

The CHAIR: Thank you very much for giving us your evidence. I take it from your statements at the table that you are quite happy that the original submission could be made public?

Mr MOULD: Sure.

The CHAIR: Committee members may have some questions that they wish to ask you on notice. Once you have received them, could I ask you to return any answers to those questions in 21 days? Would that be acceptable to you?

Mr MOULD: I will certainly do my best.

The CHAIR: Thank you for your evidence.

Mr MOULD: Thank you.

(The witness withdrew)

(Short adjournment)

STEPHEN MICHAEL FOX, Executive Director, Group Finance, Transport for NSW, sworn and examined

IAN ALLAN, Director, Program Management, Greater Sydney Project Office, Roads and Maritime Services, on former oath

JOHN THOMAS HARDWICK, Executive Director, Sydney, Roads and Maritime Services, on former oath

COLIN LANGFORD, Director, North West Precinct, Sydney Division, Roads and Maritime Services, on former oath

The CHAIR: Good afternoon. We have before us representatives of RMS and Transport for NSW. I remind Mr Langford, Mr Hardwick and Mr Allan they appear before us on former oath. Would you like to make opening remarks?

Mr LANGFORD: Before we start, I would like to table copies of a map. I would like to thank the Committee again for their time and continued interest in this subject. We welcome the opportunity today to assist the Committee's understanding of the need for this project and why the replacement bridge balances the needs of all user groups and best addresses the needs of the community. During the first public hearing, the Committee showed considerable interest in the project financials and options considered. I would like to briefly provide some further context around these two issues.

First, I acknowledge the Committee's interest in the cost of delivering the project and the final business case, which sets out the rationale for the project. A copy of the business case has been provided to the Committee. The business case includes the economic assessment for the project; however, as we have previously stated, the total project cost is not yet disclosed as the tenders for the construction contract are currently being assessed. For this reason, confidentiality needs to be maintained until the tender is awarded, in order to safeguard commercial-in-confidence negotiations and protect the public interest. We will, however, provide the Committee with the anticipated total project cost following conclusion of the negotiations and the award of the contract, which is on track for later this month. While I cannot discuss specific figures, I can confirm the project delivers sound economic justification with a strong benefit-cost ratio and therefore represents value for money.

Roads and Maritime Services acknowledges the project cost has risen since the 2012 Environmental Impact Statement. This is due to many factors, including the time since the start of the project inception in 2008. Further factors include extensive geotechnical investigations, utility relocations and urban design treatments as part of the project. Roads and Maritime Services has also invested a significant amount of funding to further study, protect and document heritage items within Thompson Square. This has included the salvage of Aboriginal artefacts and carrying out a redesign around the now-located 1814 brick barrel drain to ensure the drain is preserved in place. Costs have also escalated due to unexpected delays with the project time line, including the unsuccessful challenge in the Land and Environment Court in 2014. These cost increases would likely be reflected in all of the other options considered for this project. Despite these additional investigations and development work, the project will still deliver positive community benefits in line with project objectives and offer the best value for money for the replacement of Windsor Bridge.

During the last hearing, the Committee inquired about the options to bypass Windsor, if the existing bridge was retained. It is important to understand why constructing a bypass and the retention of the existing bridge is not feasible. The existing bridge is more than 140 years old, it is deteriorating and is approaching the end of its serviceable life. The project business case contains a summary of the findings of three separate structural assessments carried out by Roads and Maritime and two other independent engineers, including Peter Stewart's report for the Department of Planning and Environment. The findings clearly document the critical structural failings of the bridge that cannot be repaired without a significant amount of work. This rehabilitation work was estimated to cost around \$18 million in 2012 and requiring the closure of the bridge for up to 12 months. The existing three-metre wide lanes are not wide enough to allow the safe passage of trucks, and there are heavy vehicle speed restrictions currently in place due to the structural weakness of the bridge. The existing bridge is also at a lower height than surrounding roads, restricting community access during times of flooding.

A key driver of community concern with the existing bridge is the significant congestion experienced on approach roads. The intersections on either side of the river have inadequate capacity, which results in traffic delays in the morning and afternoon peak periods. There are a number of safety issues with the adjoining intersections, with 52 crashes recorded in the five-year period between 2011 and 2016, resulting in 20 people being injured. There is a lack of safe crossing locations for pedestrians and poor vehicle sight distances. To reiterate: Both the existing bridge and approach roads do not meet current engineering and safety standards. Rehabilitating the existing bridge at significant cost does not address any of these key community issues.

Roads and Maritime refutes the statement made at the last hearing that the bridge is poorly maintained. In 2008 the Government committed to replacing the bridge. Following extensive investigation and community consultation, a decision was made that the most cost-effective solution to meet the project objectives was to replace the bridge with a new higher structure, 35 metres downstream of the existing alignment. Once the decision to replace the bridge was made, inspection maintenance works were carried out, just like any other bridge in this condition. The difference was that it was in the public interest to defer any costly renewal works, if possible, until the new bridge can be built and these costs not be incurred. This is the most prudent way to manage assets that are in the process of being replaced and removed from service. The decision to progress with the replacement bridge option was not taken lightly. The decision had to balance the benefits and impacts across a number of factors. These include providing a safe and reliable crossing of the Hawkesbury River, providing access and connectivity to Windsor and its businesses, improving traffic performance, providing value for money and being sympathetic to the heritage of the area.

At the last hearing the Committee indicated that it was difficult to understand the options that were assessed without the information in front of the Committee, which is why I tabled copies of the map. Roads and Maritime Services carried out extensive consultation between 2008 and 2012 to identify and consider options to address Windsor Bridge nearing the end of its serviceable life. Nine options were identified and can be seen in the tabled map. In summary, the options can be grouped into three broad categories: upgrade the existing bridge; replace the bridge along a new alignment at Windsor; or construct a bypass around Windsor. During the last hearing it was noted that RMS did not adequately pursue the bypass options, in particular the Pitt Town Bottoms and the Rickabys Line options during this consultation. A stakeholder options review workshop in September 2008 identified four options for detailed consideration. All members of the stakeholder workshop, including Hawkesbury City Council, Office of Environment and Heritage and the Government's Architects Office unanimously agreed the Pitt Town Bottoms option did not warrant further consideration. The option did not meet the desired direction of travel and would have led to significantly higher capital costs than other options due to building a longer bridge across the river and wider floodplain. In its report to the Department of Planning and Environment in 2013, Cambray Consulting, engaged by the department to provide an independent assessment, also shared the view that a bypass via Pitt Town Bottoms was not viable.

Evidence to the last hearing also noted concerns that RMS had not undertaken proper consultation with the community when presenting option 6, along the Palmer Street alignment to the north east of Windsor and extending across South Creek—the red option on the map before the Committee. Option 6 was the least preferred option by the Aboriginal community because of the potential cultural heritage impacts. There were a number of further issues with an approach road over South Creek, which would not provide the same level of flood resilience. Option 6 would not maintain an efficient connection to the town centre, would have an adverse impact on existing residential properties and would reduce the useable size of open space in Governor Phillip Park. The same can be said for option 7, which travels along Court and North streets before connecting with Palmer Street—the light blue option on the map before the Committee. The preferred option to replace the bridge will increase the size of Thompson Square, it will reunify the park by removing the current road that is cutting it in two, and provide safer pedestrian connectivity to the river. It is clear from the consultation that there are alternative views about the merits of any bypass option and that the process of comparative assessment carried out by RMS was the correct due process.

The other bypass option referenced during the first hearing was the Rickabys Line option, which was proposed during the environmental impact statement process. The alignment of this route is shown on the second map we have tabled—the black lines to the south-west on the map before the Committee. This option involves repairing the existing bridge so it could be retained for light vehicles only and building a western bypass to connect to the Hawkesbury Valley Way. This option is not considered feasible as it does not provide enhanced benefits to the community and motorists. If the Rickabys Line option was built, it would require the construction of 2.2 kilometres of new road and bridge—starting near the existing bridge on the Wilberforce side of the river and travelling in a westerly direction to connect with the Hawkesbury Valley Way. In comparison, the current project only requires 500 metres of new road and bridge. Traffic studies show that the majority of vehicles using Windsor Bridge in the morning travel south to use Windsor Road and head towards Parramatta and the Sydney central business district, and that the opposite travel pattern occurs in the afternoon.

The Rickabys Line option would require motorists to travel an additional 3.4 kilometres to reach the intersection of Macquarie and Bridge streets. Vehicles travelling south towards Windsor Road could continue along the Hawkesbury Valley Way using Jim Anderson Bridge and rejoin Windsor Road at Mulgrave. However, this will still result in extra travel distance of 2.9 kilometres. Further, for people wishing to travel west towards Penrith, the Rickabys Line option would add an extra 1.5 kilometres per trip compared to the existing route via Macquarie and Bridge streets. The Rickabys Line option only favours a small percentage of vehicles travelling to Richmond and saves 400 metres of travel. Traffic modelling shows the overall traffic performance of the

Rickabys Line option is not improved over the proposed bridge replacement and has poorer traffic performance in the morning peak.

The Rickabys Line option would require a long, raised road embankment across the flood plain, which would act as a dam to flood water. Depending on the height of the embankment, this would also entail a large number of expensive culvert structures or a viaduct along the approaches to the river crossing to avoid causing increased levels of flooding to upstream buildings and properties. Greater property impacts and acquisition, and complicated environmental assessment and biodiversity offsets for the loss of threatened swamp forest habitat, are also negative impacts of this option and will add to an increase in cost and environmental impacts. The cost of the Rickabys Line option is estimated to be two to three times the cost of the current proposal and would also require the existing bridge to be retained and repaired, thus adding further structures and maintenance obligations into the future. Despite the significant extra cost for the Rickabys Line option, it does not provide improved traffic performance. This option does not address the existing traffic congestion along Bridge Street and does not address existing pedestrian safety and accessibility to Windsor.

In summary, the environmental impact statement exhibited in 2012 included detailed assessment of the nine original options, as well as four other community route options with sub-options. The community was invited to provide feedback on the options considered during the exhibition of the environmental impact statement. All of the issues raised were responded to in the response to submissions and many have resulted in modifications and enhancements to the final project. From the detailed and extensive investigations carried out and community engagement undertaken, it is clear none of the bypass options meet all of the project objectives. The best outcome for the community, for motorists and for taxpayers is the bridge replacement option. As I noted earlier, the existing bridge and approach roads do not meet current engineering and safety standards. Rehabilitating the existing bridge at significant cost will not address any of these key community issues. After more than 10 years of consultation, development, assessment and an unsuccessful court challenge, the option to replace the bridge has been shown to deliver the best overall outcome for Windsor and the Hawkesbury region. Thank you.

The CHAIR: Does anyone else wish to make a short opening statement?

Mr ALLAN: No.

Dr MEHREEN FARUQI: Earlier today the Committee heard from the former New South Wales Government Architect. In that role he provided expert opinion on the project in 2008 and then later as part of the New South Wales Heritage Council. He made it very clear that if option were to go ahead then the heritage damage to Thompson Square would be irreversible. Given that RMS has an obligation to adhere to ecologically sustainable development principles—the key being the precautionary principle—what is your view in response to that evidence?

The CHAIR: Before Mr Allan answers that question, I have asked the secretariat to provide each of you with a copy of the former New South Wales Government Architect's evidence. As of today, just before you gentlemen appeared before the Committee, that evidence was made public. It may help you to answer some detailed questions in relation to what he said in his submission.

Mr ALLAN: In undertaking an urban design architectural assessment of the works on Thompson Square, RMS has followed the principles of Beyond the Pavement. The Department of Planning and Environment submission said it was important that an urban design treatment was designed for Thompson Square. Council wrote to the Department of Planning and Environment saying that it supported the project but it wanted a thorough urban design treatment to be undertaken. Over the last 18 months, since the end of the court case—between 2016 and 2017—that was a condition of the Department of Planning and Environment approval.

Extensive urban design has been undertaken for the project, including all nine principles of Beyond the Pavement. That was undertaken by professional urban designers and documented and the urban landscape plan is available on the RMS website. It had to be approved by the Department of Planning and Environment, which was done. The point that I want to make is, it actually conformed with what council asked RMS to originally do.

Dr MEHREEN FARUQI: So you would disagree with the statement of the former New South Wales Government Architect, and many others who have provided the same evidence, that no matter what mitigation happens with this option the impacts on heritage will be irreversible?

Mr ALLAN: Part of the statement says "a high-level bridge across the river and downstream of the square". That is what is here in the submission in front of me now; it was a requirement of the Department of Planning to lower the bridge to bring down the level of the bridge to a lower level.

Dr MEHREEN FARUQI: Could you just answer the question that I asked?

Mr ALLAN: Could you repeat it?

Dr MEHREEN FARUQI: I just said we heard evidence from many people today, including the former New South Wales Government architect, saying that the damage caused by option 1 to the heritage of the square and the town would be irreversible. Do you agree with that or not?

Mr ALLAN: No, I do not agree with it, because other urban designers have said something to the contrary.

Dr MEHREEN FARUQI: Talking about urban designers and architects, I have a letter in front of me which the Committee received which is addressed to RMS. It is dated 26 October 2012 and it has been written by Hill Thalys Architecture + Urban Projects Pty Limited, who I understand RMS commissioned to do some work on architecture and urban services around this project. In this letter they are letting RMS know that they are electing not to tender for future stages of the work on the Windsor Bridge project. Do you know the reasons why they elected not to tender for future stages?

Mr ALLAN: No, I do not. I was not involved in 2012.

Dr MEHREEN FARUQI: I do not think that is a good enough answer. RMS works as an organisation; you are working on this project. Were you aware at all that there was a company called Hill Thalys which was engaged by RMS?

Mr ALLAN: No, I was not. The urban designers we have used is Spackman Mossop, who have worked with us through the duration of the project from 2012 and have carried on in the last few years as well.

Dr MEHREEN FARUQI: The project started in 2008. Would you then say that none of you are aware of what happened between 2008 and 2012? In my knowledge that is not how organisations work. If you are working on a project you are aware of the history of the project no matter when it started or when any of you got involved.

Mr ALLAN: In my case, I have been working on the project for the last two years, but it is only one of about 20 projects in my portfolio I look after. But I am aware that Spackman Mossop, the urban designers, prepared the report for the environmental impact statement and have also worked in response to councils' and Department of Lands' conditions of approval to do a full urban design treatment for the project.

Dr MEHREEN FARUQI: Are any others aware at all of this letter and why Hill Thalys withdrew?

Mr LANGFORD: I am not aware of the letter, but I think it is fair to say that, as you said, this project has been going on for 10 years—numerous consultants, community engagements, other organisations have been involved for a very long time in this project; to ask any of us to reference a letter of someone who actually did not work on the project or is not going to have any further part of the project, I think, is unreasonable.

Dr MEHREEN FARUQI: They actually did work on the project. They were paid some amount of money by RMS. Could you take it on notice and let me know how much they were paid—that is Hill Thalys?

Mr LANGFORD: Yes, we can take it on notice.

Dr MEHREEN FARUQI: I am baffled that no matter how long a project goes on for and it is still going on, that people who have started now are not aware of the history of the project given the contentious nature of the project. I might put other questions on notice as well because what I do know is that these consultants withdrew from the project or elected not to tender because they had very serious concerns regarding key issues such as design and width of the bridge, the siting and scale of the western roundabout, the interpretation of the existing bridge and the lack of firm commitment to the associated public domain works in Thompson Square, and many, many more were not taken on board. In fact, they were asked to delete their recommendations from their report. I think that is quite a serious issue. So if you are not aware, maybe this is the time when you should become aware of that.

Mr HARDWICK: We will take that on notice, but I would also like to mention that we will have to also in that response show what has happened since 2012, because a lot of modifications have been made to the final design, which could have been some of the things that you have got in that letter that I do not know about. But there are a lot of things that have changed in this project since 2012 as well which have been all positives for the community.

Dr MEHREEN FARUQI: Talking about things that have changed in the project, one of the things that has changed quite dramatically in the project is the benefit-cost ratio [BCR] of the project, which in 2012, according to the EIS, was 14.6 and it has plummeted to 2.5 in the business case. I am thinking that at this rate by the time this bridge is built in a few years' time it could be in the negative or could have become zero. I just

want to understand how have these 12 points been taken off the benefit-cost ratio in four years and since 2016 has there been a further analysis of the benefit-cost ratio and has it changed at all?

Mr LANGFORD: The final business case, which was completed last year, includes the final economic appraisal for the project. As I said earlier, I cannot talk to specific figures but I can confirm that the project does have a positive BCR which gives value for money and a positive investment for the State. The project is extremely viable; it is needed. We have said numerous times at this hearing, and I have heard from plenty of experts, that the bridge itself does have significant structural issues. We need to provide a safe crossing of the Hawkesbury River for the residents of not only Windsor but the broader Hawkesbury area.

Dr MEHREEN FARUQI: With all due respect, Mr Langford, my question specifically was benefit-cost ratio. Do any of you have any idea of why it plummeted from 14.6 from 2012? I understand that, Mr Allan, you have been here since 2012 on this project.

Mr ALLAN: No, 2016.

Dr MEHREEN FARUQI: Do any of you know why it plummeted, what was the reason, what changed? That is a huge difference, you would admit that, would you not?

Mr LANGFORD: Yes. We will take it on notice about the reason why it has changed.

Dr MEHREEN FARUQI: Do you think it has changed since 2016?

Mr LANGFORD: It has not changed since the final business case.

Dr MEHREEN FARUQI: Just coming to the maintenance and repair of the bridge, does this benefit-cost ratio include the cost of dismantling the current bridge?

Mr LANGFORD: Yes, the cost for removal of the old bridge is included in that cost.

Dr MEHREEN FARUQI: Could we know what that cost will be?

Mr LANGFORD: The cost for removal is estimated at around \$1.9 million.

Dr MEHREEN FARUQI: Is that going to be part of the same tender as building the bridge?

Mr LANGFORD: Yes, it is.

Mr HARDWICK: It is section 2.4.4 of the final business case and it is there about the removal and backfill of the existing bridge approach roads and removal of the existing bridge once the new bridge is operational. It is actually part of the tendered prices that came back against that.

Dr MEHREEN FARUQI: I think earlier you refuted the discussions we had in the last hearing about the very little amount of money that had been spent on the maintenance of the bridge. We had an email that stated that from 1994 to 2013 just over \$57,000 had been spent on the maintenance of the bridge. I think you said earlier, Mr Langford, that that is not accurate.

Mr LANGFORD: I can talk to the maintenance dollars expended.

Mr HARDWICK: Initially, what I would like to do is speak just around what we do as far as our strategy around maintenance of assets. The first thing we do is actually the inspection-type maintenance, which is the critical maintenance to identify whether there are any defects related to an asset that could make it unsafe and unusable. Those inspection maintenances have always been done, and that is the initial process. Then the second part of that is you determine whether you have a corrective maintenance activity, which is something that you find a defect where there are minor things that you may need to correct, which is minor works, and then there would be the things related to major renewal works or upgrade works to bring it to a condition suitable for the medium to long term. So all of the activities related to that inspection work and any minor works related to that have all been completed as identified and required within that. Anything that could be deferred beyond the time of the bridge being replaced would obviously have been done so as to make sure that we did not waste public money by doing things when we were then going to replace the bridge in the future.

Dr MEHREEN FARUQI: I am just asking about the cost ideas.

Mr LANGFORD: In the business case—which you have, and which is in section 2.1.8—we currently spend approximately \$50,000 per annum on access and level 3 inspections for the existing bridge, and up to \$100,000 per annum on intermediate repairs. Last time we talked about the concrete spoiling under the structure. We have to do interventions underneath to stop concrete falling onto river using. So it includes concrete spoiling repairs and other things.

Dr MEHREEN FARUQI: In what years have those \$150,000 been spent?

Mr LANGFORD: Those figures refer, probably, to the last four or five years. Previous to that there was information released as part of the EIS for expenditure prior to that.

Dr MEHREEN FARUQI: You would surely know, if \$150,000 was being spent every year on the maintenance and repair of the bridge, which years they were spent in.

Mr LANGFORD: I will have to take the specific years on notice. Generally speaking we are currently spending around \$150,000.

Dr MEHREEN FARUQI: We also asked you last time, I am quite sure, to take on notice what had been spent prior to that. Do you have those figures with you. For five years we have spent \$150,000; what was spent before that per year?

Mr LANGFORD: We have taken that on notice.

Dr MEHREEN FARUQI: Again?

Mr LANGFORD: No. We said we would provide that information by 11 May.

Dr MEHREEN FARUQI: Do you have that information with you?

Mr LANGFORD: Not today. We said that we would provide that by 11 May, as requested by the Committee.

Dr MEHREEN FARUQI: If the new bridge—whether it is the bypass or option 1—is built, the timeline for completion, as far as I can remember, is 2021. Is that true?

Mr LANGFORD: It was two years for construction of the new bridge, and then around 12 months for the rehabilitation of the park and removal of the old structure.

Dr MEHREEN FARUQI: So three years from whenever it starts.

Mr LANGFORD: In total.

Dr MEHREEN FARUQI: In the case of the current bridge, will that \$150,000, which you say you are spending now every year, be spent for the next three years? Will that make sure that the bridge is safe for traffic over the next three years?

Mr HARDWICK: The maintenance will carry on, as it has done for the last four to five years, in the same way. The inspection work will be completed, and if any defects are found that will not last until we replace the bridge over the next three years, then that work will have to be undertaken like it would be on any other structure. The safety of that structure and the integrity of the structure is paramount to the way in which we do business.

Dr MEHREEN FARUQI: After that, if this plan goes ahead, that bridge will be dismantled.

Mr HARDWICK: That is correct. The maintenance strategy is around making sure that that bridge is dismantled after the construction of the new bridge.

Dr MEHREEN FARUQI: I think in the Department of Premier and Cabinet submission, in the context of the refurbishment option it was mentioned that the economic cost to the community was part of that refurbishment option. It is about the cost to the community, which factored-in that the bridge would have to be closed down and other reasons for doing things—how it would impact the community. I am just wondering if the economic cost to the community, if there was any, was considered in respect to the current bridge? Is there an economic cost to the community factored into the replacement bridge?

Mr HARDWICK: As the new road will be completed, when we remove that there was no need to take into consideration the economic cost of it. We were not going to close a used road at that point because we would have a new road open and people would be able to use it. There would be bike paths. All of the reasons people use a crossing now would be in place by the time we removed it, so there would be no other economic costs.

Dr MEHREEN FARUQI: So the only economic cost to the community is the closure of the roads. There is no other economic cost to the community that was considered?

Mr LANGFORD: I do not really understand the question. As part of the development of the project many factors have been considered about the benefits or costs of carrying out the proposal. A lot of the benefits for this project are with respect to the traffic benefits and the travel time savings associated with the bridge.

Dr MEHREEN FARUQI: I just wanted to confirm. As far as I understood from the business case there were no economic costs to the community, no costs to heritage that were considered as a cost while evaluating the benefit-cost ratio.

Mr LANGFORD: The costs are listed there in the business case, Dr Faruqi.

Dr MEHREEN FARUQI: What I am saying is that there were no costs. I just wanted to confirm that that is the case. So, I guess, the damage to the heritage—

Mr SCOT MacDONALD: Point of order: I think that question has now been asked three times. The witness has tried to answer and has answered, I think, the same way three times. It is getting to the point of badgering the witness.

The CHAIR: I note that the witness has indicated that the costs are in the business case. I guess, by inference, any costs that are not listed in there, the Government has not accepted or has decided that they were not costs. I uphold the point of order. The witness has answered the question so I will ask Dr Faruqi to move on.

Dr MEHREEN FARUQI: I will move on. One of the reasons the bridge is being replaced is that the lanes of the current bridge are not wide enough and there are new standards which say that the width of the lanes should now be 3.5 metres. Am I right about that?

Mr LANGFORD: On the new bridge the lanes are 3.3 metres wide.

Dr MEHREEN FARUQI: So they still do not meet the new standards.

Mr LANGFORD: No, the propose new bridge has 3.3 metre-wide lanes, and that does meet our—

Dr MEHREEN FARUQI: But the new Australian standards, as far as I understand them, say that the new lane width should be 3.5 metres. Am I right?

Mr ALLAN: No. There is a range of lane widths which comply to the standards. For a straight alignment and for various traffic volumes 3.3 is compliant with the current standard.

Dr MEHREEN FARUQI: And 3 metres is not.

Mr ALLAN: Three metres is not. It is evidenced by the fact that trucks cannot pass on the bridge at present. A truck will pause while trucks, at present—

Dr MEHREEN FARUQI: I asked this question of another witness before. Using that same logic, do you think bridges like the Harbour Bridge, where the lane is 2.8 metres wide or less, and Anzac Bridge, where the lane is three metres wide, also need replacing? It is a serious question.

Mr ALLAN: That is true. On the Harbour Bridge, where the traffic is travelling in the same direction, on a very straight alignment, as a standard you would prefer it to be wider but it does operate. That is what it needs to be for traffic flow. However, at Windsor, trucks sometimes have to pause to be able to pass on the more difficult alignment and the approaches to Windsor Bridge.

Dr MEHREEN FARUQI: Could that option be addressed in a bypass option, as well?

Mr LANGFORD: Obviously if the bypass option was considered, you would look to build it to the current standards. One of the key points that seems to be glossed over is that not only is the lane bridge narrow, but you only have a one-metre-wide footpath, which does not come close to any safety standards for pedestrians and cyclists. The new bridge has wider lanes, but also has a three-metre-wide shared path. A key driver of this project through the development process has been to provide improved safety—not only for vehicles but also for pedestrians and cyclists. The relocation of the cycle path and shared path to the western side provides better connectivity to Windsor town centre and the park on the northern side. The rehabilitation of the bridge—the repair of the current bridge—does not address that safety issue.

The CHAIR: I would like clarification. When we talk about lane widths and you talk about straight paths, where you have fairly tight curves—as on the southern or Windsor side of the current bridge—does a lane width of 3 metres effectively decrease in a bend? In a modern design do you widen it out to 3.2 metres in the bend? What do you do?

Mr ALLAN: Yes. If the radius is tight you need to widen the lane, as you have suggested.

The CHAIR: So the widths of the lanes that we have been discussing here today are in reference to straight lines.

Mr ALLAN: Yes, they are.

Dr MEHREEN FARUQI: After RMS appeared at the last hearing a representative from the Department of Planning told us that they had based their assessment on a one in five year ARI level, but I am sure we heard from you that the bridge has been designed to a one in three. How does that work out? If the assessment is done on a different ARI and you are designing on a different one, is that assessment valid any more?

Mr ALLAN: When I read through the former reports, in the early options stage they were talking about a one in five at that particular time. But when further investigations were done in more detail the EIS does describe the current design level at 9.8 metres, which is a one in three ARI standard.

Dr MEHREEN FARUQI: So the one in five situation was a mistake on the part of the Department of Planning. Has the proposal been approved for a one in three or a one in five ARI, I guess is what I am asking?

Mr ALLAN: The EIS says one in three.

Mr LANGFORD: And we cannot comment on whether what that person was talking to was the current design or a past design. We would have to understand the context within which they told you that information.

Dr MEHREEN FARUQI: That is one of the problems with this project; there have been so many designs and so many things have changed that it is hard to keep up.

Mr LANGFORD: Most of the things that you have been taking about have been identified in that final business case and most of the information we are giving you is explicitly out of the final business case.

Dr MEHREEN FARUQI: I think it is in the questions and answers document on the RMS website dated August 2016 that one of the reasons to not build a bypass is that traffic volumes are too low to warrant it. We heard from witnesses today about bypasses that have been built for much lower volumes. I have looked at them in other towns, for instance in Goulburn and other places. What would you say to that? Do you think it is still valid to say that the traffic volumes are too low to warrant a bypass with 26,000 vehicles per day as assessed?

Mr LANGFORD: I can talk to some of that. I think the key area of concern around a bypass is that when we have done the traffic studies no one bypass actually meets all of the objectives and all of the travel demand. I think when you talk about bypasses in other towns or other places they are very specific to what the need is. At Windsor itself the traffic studies have shown—and Mr Allan can go into it in further detail—that either a bypass on the east or the Rickabys Line bypass to the south does not address the majority of travel demand from either side of the river. The bypass does not provide improved traffic performance compared to the proposed replacement bridge on the current alignment.

Dr MEHREEN FARUQI: But if a bypass was built and the bridge was upgraded and most of the heavy vehicles could go on the bypass, while not necessarily allowing through traffic, would that meet the demands of the community otherwise?

Mr LANGFORD: All the options investigated showed that the preferred option and the one that best met all of the project objectives was the replacement bridge.

Dr MEHREEN FARUQI: We heard earlier that there is a flaw in the assessment process in that once one option is decided on other investigations into other options are not done in as much detail as the decided option. That is a real flaw in the process. What would you say to that?

Mr LANGFORD: I do not believe there is a flaw in the process. There has been the evidence you have had, the two public hearings, the length of time this project has gone on for, the amount of investigation, the options that were assessed, and, as I said in my earlier statement, nine individual options plus a further four that were provided by the community. This project has critically looked at all viable options or all potential options to address at the fundamental core of this project the structural failings or the nearing the end of its life of the existing bridge. I do not agree there is a flaw in the process. It has been comprehensive. It has been thorough. You will see those earlier reports and documents right back to 2008 and the options report. They all critically assessed and looked at the pros and cons of the different options against the project objectives in a comparative assessment.

Time and again, the replacement bridge option is the one that stands out as the most economically viable, as the one that best meets the needs of the community, and the one that definitely meets the desired path of travel. When we bring it up to current standards it will have improved safety. We will reunify Thompson Square. We have got an exhaustive amount of conditions of approval. Through all that consultation, as I said earlier, the project has been improved significantly through that level of engagement, through those

investigations and through those studies. What we are proposing to start building very shortly is going to be the best outcome for Windsor and the community.

Mr ALLAN: Something I think is also important to add is we do recognise it was a difficult decision and a controversial project. As a result, in the submissions report in response to the EIS further study was done of the Rickabys Line option. Chapter 4 in our submission refers to that where Rickabys Line was reassessed for its traffic performance, its cost and its flood resilience. All those aspects were examined to a further degree and came to the same conclusion in that document.

Dr MEHREEN FARUQI: Please correct me if I am wrong but I think one reason you gave last time you were here for removing the current bridge was that in case of a flood it could dismantle and damage the new bridge. We have heard from experts today and others as well who say that has almost zero likelihood of happening. It has not happened; the bridge has been overtopped many times in floods. I would like you to respond to that.

Mr LANGFORD: I refer you to the final business case that you have. In the annexures in the structural assessments of the bridge you will see photo after photo of bits and pieces falling off this structure. At nearly every span, at every girder and at every pier there is deterioration of the structure. There are concrete chunks falling off this bridge. The reinforcement is exposed and corroding. There is significant concern that in a major flood this bridge will fail. If we are building the new bridge 35 metres downstream it poses an unacceptable risk that should this bridge or parts of this bridge detach and wash downstream it could be detrimental for the new structure.

The CHAIR: Are the working papers for the probability analyses and the risk assessment available? In other words, what probability was assessed of the bridge failing?

Mr LANGFORD: I understand there is a risk assessment as part of the business case, which is in the business case.

The CHAIR: We may have a closer look at that. We may come back and ask for some working papers just to see the calculations and the analysis, if that would be proper.

Mr ALLAN: Certainly. Something we are aware of is there have been three independent studies of the necessary rehabilitation of the old bridge—one by RMS, one by AECOM and one by Peter Stewart, who I think you also spoke to today. In all three of their assessments they gave a cost in the range of \$14.5 million to \$18 million as a cost to rehabilitate the bridge.

The CHAIR: That is on one side of the equation, but are there any probability analyses or assumptions available to the Committee? Could we have a look at the probability analysis of the bridge failing?

Mr ALLAN: The risk assessment of the bridge? We will take it on notice but we can provide the three rehabilitation engineering reports.

The CHAIR: Do you they contain probability analyses or not?

Mr ALLAN: That is not the style of those reports.

The CHAIR: How do you do a risk assessment without a probability analysis?

Mr ALLAN: The bridge engineers do the analysis. They undertake to assess what repairs are necessary and they also load test the bridge to make sure it is suitable for current loading conditions. And they can continue to monitor.

The CHAIR: Those reports are what has informed the conclusion that the risk is high, or high enough, so that the bridge should be removed? Is that what you are saying?

Mr ALLAN: The bridge is continuing to deteriorate and three reports are recommending significant repairs are now needed in the range of \$14.5 million.

The CHAIR: We are well aware of that. It is not the question that I asked, but I will probably arrange to have a question asked on notice. Dr Faruqi, I am sorry for taking up your time.

Dr MEHREEN FARUQI: No, that is fine, Mr Chair. Is the \$150,000 that has been spent every year except for the past few years and will be spent until the new bridge comes online enough money to repair it to the stage that it does not fall apart? I guess you would not know because there is no probability analysis, but is it enough to make sure that bits and pieces do not fall off?

Mr HARDWICK: Let me reiterate what I said before which is answering the same question. We do the inspection maintenance. Those inspection maintenances, which are done every year, identify what corrective

actions are required. They will identify corrective actions that could be required in the next 12 months, three years, five years or 20 years. Whatever the corrective maintenances that are due to be done before this bridge is replaced will be carried out on that bridge. Whether it is \$150,000 or more, that is irrespective. The public safety component of it is why we would be doing the work. That work would be carried out. With all the bridges that we have across RMS, for some bridges those inspections identify more work than we anticipated and for others we find less work than anticipated.

We deal with our bridges as a portfolio of assets and we look at the continuous ageing and degradation of each of those bridges. It is not just a one-off assessment; this is a history of information built up over a very long time, which gives the information about the speed of deterioration and how long it takes between planning to replace a bridge and actually replacing it. As this case has shown, we are here at 10 years and we have three years left before we can pull that bridge back out of service. It was 13 years ago when the original assessments were identifying that the deterioration rate over the next 10 years meant that we should move to a replacement strategy rather than continuing to refurbish the bridge.

Dr MEHREEN FARUQI: I understand that but I also understand from the business case that the \$150,000 of repair and maintenance of this bridge projected over the next 30 years has been used to do the cost-benefit ratio with the other bridge. I did see the figure of \$4.5 million for this bridge, and I think that equates to 30 years for the maintenance and repair of this bridge and about half that—\$2.4 million or something along those lines—for the new bridge. Obviously you have taken \$150,000 and spread it over the 30 years, which means that you are not anticipating more than \$150,000 in repair costs per year. My question is: Why not spend that \$4.5 million over the next 30 years to keep the bridge—pedestrians and cyclists or light traffic can go over it—rather than wasting the \$2 million to dismantle this bridge when it has heritage value. What is the basis for that?

Mr HARDWICK: That would be your standard maintenance costs that are estimated. Renewals are separate business cases that are put together as part of the upkeep of the bridge. If we need to spend \$18 million that would have to go through our normal governance processes to get that approved as a separate piece of work. When you are talking purely maintenance, it is purely the things that we do to this bridge in its current condition projected forward. Any other works would be related to what we call "capital refurbishment works", which would require a business case and the timing to make sure that we were not doing them too early or too late. They are separate business cases done on their own merits. When you have many thousands of bridges you have to prioritise that across the bridges to determine which ones you do this year, next year and the year after. But that is the capital refurbishment of those bridges, which you would be looking to get more life out of at the end of that.

Dr MEHREEN FARUQI: So refurbishment would be different to repair and repair would be different to maintenance?

Mr HARDWICK: There are the maintenance and minor repairs, and then there are what we call "refurbishments", which potentially is giving it some capital value that it may have in the future.

Dr MEHREEN FARUQI: So maintenance and minor repairs is now \$150,000 a year? Is that what the business case says?

Mr HARDWICK: That is correct.

The Hon. DANIEL MOOKHEY: Mr Fox, what is the role of Transport for NSW in this project?

Mr FOX: Transport for NSW helps manage the investor assurance process both within itself and within the relationship with Infrastructure NSW [INSW] and ultimately agrees to the releasing of funds for a project once it has reached that point.

The Hon. DANIEL MOOKHEY: That is a helpful way to prompt the next question, which is: What is the role of INSW in this?

Mr FOX: This project has a long history. INSW is not that old. This project is a registered project in INSW, as are all projects worth over \$10 million. It is a tier three project and is managed as a tier three project. It is tier three because of the risk of the project and its delivery and therefore that determines what the level of engagement is of INSW in assurance paths and assurance gates versus what is done by an agency.

The Hon. DANIEL MOOKHEY: You are music to my ears. There is nothing I love more than an Infrastructure NSW investor assurance framework conversation.

The CHAIR: You have to get out more.

The Hon. DANIEL MOOKHEY: I do. Working back through time, was the preliminary business case produced and assured under Transport for NSW assurance policies?

Mr FOX: No the project goes back before the existence of Transport for NSW. Transport for NSW was established in 2011 and the optioning and reports about optioning were done prior to the existence of Transport for NSW.

The Hon. DANIEL MOOKHEY: When was the preliminary business case done?

Mr FOX: I do not know if there was specifically a preliminary business case because that terminology around the various business cases did not exist prior to that time.

The Hon. DANIEL MOOKHEY: Can RMS help us in that respect? Was a preliminary business case ever done?

Mr ALLAN: Processes were different in the evolution. There were project development plans leading on to project implementation plans, and economic assessment was part of those processes. There were also gateway review processes to satisfy NSW Treasury at that time.

The Hon. DANIEL MOOKHEY: Under Treasury guidelines?

Mr ALLAN: Treasury would audit RMS for sample projects during that time and look at the process.

The Hon. DANIEL MOOKHEY: Because of the nature of this project, which proceeded through INSW and Transport for NSW, can you step us through when the economic appraisal was done? In what year?

Mr ALLAN: I am sorry, I do not know when it was. I will take the question on notice.

Mr FOX: To my knowledge, an economic appraisal was prepared after the EIS that was reviewed by Transport for NSW as a tier two review and we dealt with the final business case at that point.

The Hon. DANIEL MOOKHEY: The final business case was produced a year ago—I think we clarified that last time.

Mr FOX: I think it goes right back to 2017, yes.

The Hon. DANIEL MOOKHEY: So a year ago?

Mr FOX: Yes, the beginning of 2017.

The Hon. DANIEL MOOKHEY: Was that prepared under Transport for NSW guidelines?

Mr FOX: Yes. By that stage the project had been tiered as a tier three. The Treasury circular and the new investor assurance framework were put in place in roughly August 2016. This project was tiered as a tier three and it was up to the final business case stage. Under tier three, the assurance of final business cases are a matter for individual agencies as to whether or not they pursue them. In Transport we do assurance reviews around final business cases—that is our Transport policy. It is not a requirement of the INSW process but it is certainly one that is in Transport. A project of this nature would be assured. A final business case was prepared and an independent assurance review was done within Transport for NSW for this project.

The Hon. DANIEL MOOKHEY: Who conducted the independent review?

Mr FOX: The independent reviewers for that project included Mr Danny Graham who looked at the business, commercial, delivery and infrastructure aspects, and the technical reviewer was Christopher Wassef.

The Hon. DANIEL MOOKHEY: From the perspective of a layperson, is it correct that RMS produces its final business case and that under the Transport for NSW assurance framework you would commission independents to have a look at that?

Mr FOX: That is correct.

The Hon. DANIEL MOOKHEY: Are independent reports available to the Committee or is that something that Transport for NSW would be prepared to consider?

Mr FOX: We do not normally release them but we would certainly consider it. I will have to take that on notice but, yes, a report was prepared.

The Hon. DANIEL MOOKHEY: Going back to the tier three review, I accept your point that this project, because of its historic nature, may well have avoided the opportunity for INSW to do this. But under tier three projects, it is mandatory for INSW to supervise or otherwise see or sight the project justification aspects. In fact, that is the only aspect of tier three assurance that INSW considers to be mandatory.

Mr FOX: That is correct. For a tier three project, INSW would normally—this is a project initiation—look at the initial project investigation to see whether the project should be initiated as a project and registered.

Mr FOX: The issue is that projects that were already in delivery were effectively accepted and put into the INSW system as a live project.

The CHAIR: Mr Fox, Mr Mookhey's questions relating to tabling those independent reviews for the Committee, normally questions on notice will take 28 days. Would you be able to give us a yes or no answer whether the Government would allow you to table those within the next week? Would that be asking too much? A simple yes or no answer is all I want.

Mr FOX: Yes, I think that should be possible, but I am not the final authority on it.

The CHAIR: We will do it at the end of the day. Given that the evidence is that you will rock and roll and sign a document at the end of this month, we are up against the time clock. Even though we have asked all witnesses to provide evidence within 28 days, we would like to get questions that require yes or no answers—such as: Will you provide evidence?—earlier. I will modify that when we come to the end of the evidence by asking you to decide among yourselves whether you can agree or not that you could provide those sorts of documents within seven days.

The Hon. DANIEL MOOKHEY: When was it rated and entered into the INSW list of projects?

Mr FOX: It was registered with INSW on 24 August 2016. It received its independent review—this is a risk review, which is done without Transport's involvement by people involved in infrastructure projects. That was done by what is called the Risk Rating Advisory Group and that was done in December—I do not have the exact date here—which was then agreed by—

The Hon. DANIEL MOOKHEY: December 2016?

Mr FOX: Yes, and that was endorsed by the Infrastructure Investment Advisory Committee, which is the senior steering committee for the assurance process, in January 2017.

The Hon. DANIEL MOOKHEY: That was three years after the INSW assurance framework commenced?

Mr FOX: Yes, the assurance framework was mandated in Treasury's circular TC16-09, which is when the Government mandated it as a process for government agencies.

The Hon. DANIEL MOOKHEY: Given that this is a \$50 million project, if this project was being conceived and initiated now, there is absolutely no way it could get anywhere near this level unless INSW agreed that there was a project justification for it?

Mr FOX: At a gate zero.

The Hon. DANIEL MOOKHEY: At a gate zero, that is correct.

Mr FOX: After gate zero, which is basically saying that there is an issue to be addressed and that solutions need to be examined. That is really all a gate zero is.

The Hon. DANIEL MOOKHEY: Why mention the committee concluded that essentially this project has escaped that test by way of a loophole?

Mr FOX: That is only the first stage. There are multiple stages in assessing a project and we are up to the final business case. It has had an assurance review done at the final business case.

The Hon. DANIEL MOOKHEY: Mr Fox, you are right. There are multiple stages of assessment, but no INSW project worth \$50 million would ever get to any of those stages unless INSW agrees that there is a need for it?

Mr FOX: INSW had it reviewed by its risk assessment committee and it was lodged and accepted as a project and tiered by INSW. I would put that the fact that they have accepted it and they have tiered it and have put it in their system is effectively acceptance that there is an issue to be addressed.

The Hon. DANIEL MOOKHEY: Now it is being assured by Transport for NSW under assurance policies for Transport for NSW? Is that a correct summary?

Mr FOX: That is correct.

The Hon. DANIEL MOOKHEY: Does that mean that Transport for NSW will be the authority that makes the final decision to release the money?

Mr FOX: That is correct.

The Hon. DANIEL MOOKHEY: Have you been involved in the tender process? How are you oversighting that? Can you explain the role of Transport for NSW?

Mr FOX: Not at this stage. The tender process is being run by the agency. Once that process is complete, it would normally go to a finance committee for final approval of release of funds for the project.

The Hon. DANIEL MOOKHEY: Presumably you are envisaging that to occur some time in the next couple of weeks or months?

Mr FOX: Once the tender is finished being evaluated and the value of that tender is determined and the project cost is finalised, it will come back to that committee, that is correct.

The Hon. DANIEL MOOKHEY: In that process, are you 100 per cent reliant on all the information provided to you by RMS or is there an opportunity for an independent oversight at that level?

Mr FOX: At this stage we would rely on the fact that we have an assured final business case. We would probably ask if there was any change of a material nature that requires the business case to be refreshed. We may request that at that time. Otherwise, no, if we have an assured business case. If it is in line with the business case in respect of the plus and minus of the sensitivity around the business case, then, no, we probably would not.

The Hon. DANIEL MOOKHEY: Is there a benefit realisation framework for this project?

Mr FOX: Yes, there is.

The Hon. DANIEL MOOKHEY: Is that public?

Mr FOX: I believe it is in the business case that has been submitted to you as a draft benefits realisation plan.

The Hon. DANIEL MOOKHEY: That then goes to my point, which is what status should we be awarding it if it says "draft"?

Mr FOX: No, the benefits realisation is the final gate, which is after you have finished the project to ensure that—

The Hon. DANIEL MOOKHEY: You are getting the benefits you said you would?

Mr FOX: That you have got the benefits that you said you were going to deliver.

The Hon. DANIEL MOOKHEY: That is true. Equally, in respect of other Transport for NSW projects, that benefit realisation framework is checked, is it not?

Mr FOX: It is part of the suite of documents when the business case is assured, that is correct.

The Hon. DANIEL MOOKHEY: After the project completes, what will Transport for NSW be doing to ensure that the benefits that were promised are actually realised?

Mr FOX: As a tier three project, the touch on this one would be relatively light in the sense that the business case would go to what was the ultimate cost, what were the actual outcomes in respect of meeting the initial need that was assessed.

The Hon. PETER PRIMROSE: I have been ticking off my questions by my colleagues; I have not ticked off as many answers. That is another matter. Earlier on you raised the issue about the court case. Can you tell me roughly how long that case held up the project?

Mr ALLAN: Approximately two years. The hearings were held in 2014, but then over 12 months— from memory, approximately 12 months elapsed before the court gave us a determination.

Mr LANGFORD: I have the specific details. The appeal was lodged in the Land and Environment Court in March 2014. The hearing was held in October of that year and the appeal was dismissed in October 2015. So you can say nearly 18 months to two years.

The Hon. PETER PRIMROSE: Earlier on in your evidence you mentioned that the estimate cost of demolishing the current bridge was about \$1.9 million. Is that correct?

Mr LANGFORD: That is correct.

The Hon. PETER PRIMROSE: How much of the existing bridge will be removed for \$1.9 million? What will be left, if anything?

Mr ALLAN: All the spans will be removed and the abutments will be demolished and shaped as part of the project, as approved. There is also the option of a viewing platform being kept on one span on the southern side of the river.

The CHAIR: That would run from the abutment out to the first set of piers?

Mr ALLAN: That is right, yes. That is not too deep into the river; it is in the shallow part of the river.

The CHAIR: Would there be any additional work required above the \$1.9 million to ensure the integrity of the two piers that were going to hold a public viewing platform?

Mr ALLAN: That would also have to be assessed.

The CHAIR: Assessed at the time?

Mr ALLAN: Treatment would also have to be done on the railings and the protection for pedestrians in that area as well.

The CHAIR: That is not included in the \$1.9 million?

Mr ALLAN: That is true.

The Hon. PETER PRIMROSE: That is a good point. I am trying to get an idea when we are talking about \$1.9 million what exactly it costs. In respect of the court case taking 18 months to two years, how far behind schedule would you say this project is at the moment?

Mr ALLAN: It was never anticipated that the court case would go as long as it did. The project was put on hold at the time of the challenge being initiated and, as a result, the project did not achieve any work being done on it during that time. Hence one of the earlier questions, there was probably no work done on the business case during those couple of years either.

The CHAIR: I have a question on a point of elucidation. We understand from discussions on site with the heritage team and, I think, your evidence that there has been some delay due to what they found—in other words, the archaeological assessment. How much delay has that encompassed?

Mr ALLAN: When the project was reinitiated at the end of the court case, there were extensive conditions of approval in regards to heritage, urban design and other matters which were also initiated at that time. That meant a round of archaeological investigations, preparation of a strategic conservation management plan, archival recording, all of which were substantive. They identified the areas where salvage of the Aboriginal artefacts was to be carried out in the sand body. That took the initial part of the planning. The salvage of the sand body is a lengthy operation planned to take several months. It involves recovering it and recording it all carefully in layers. When that was done is when the brick barrel drain was found. It was learnt that the sand where the Aboriginal artefacts were was not undisturbed but sand from other parts of the cutting had been placed over that area. The layer of history had actually been disturbed was what we found three metres down where the brick barrel drain was. That initiated another four or five months of investigations. I remember your question to the archaeologists was: Had they been given adequate time to do those studies?

The CHAIR: Yes.

Mr ALLAN: You asked both the Aboriginal archaeologists and the European archaeologists, and I do remember them saying that yes, they had been given adequate time for the study.

The CHAIR: By my rough calculations, that is about another year added, is it not?

Mr ALLAN: Yes. We have been doing the pre-conditions of approval for probably two years now.

The CHAIR: That means 18 months in the court and two years getting through those conditions, so a 3½ year delay.

The Hon. PETER PRIMROSE: Did any of the preliminary archaeology predict conditions for the sand body?

Mr ALLAN: Yes, they did. There is a process to be undertaken where you identify where the most significant part of the sand body is and then target salvage in that area. It is identical to what was done when the museum was constructed at Windsor, when the sand body was impacted and the heritage authorities worked out the right way to deal with the sand body. We used similar techniques in our investigations.

The Hon. PETER PRIMROSE: Did they remove the concrete beams, dating from around 1897, as part of the work done?

Mr ALLAN: I know the concrete beams have been found and I have seen them. We have not removed them. I think they date to when the bridge was being converted to a concrete deck in the 1900s.

The Hon. PETER PRIMROSE: How many accidents have occurred on the bridge in the last five years that have involved more than one vehicle? Do you have any statistics?

Mr ALLAN: Mr Langford, in his advice, provided the crash records. The majority of those crash records are targeted at the intersections both to the north and to the south of the bridge, where the highest frequency of accidents are.

The Hon. PETER PRIMROSE: How about telling me about accidents on the bridge itself?

Mr ALLAN: I am sorry, but I do not know the answer to that.

The CHAIR: Perhaps you could take that question on notice.

The Hon. PETER PRIMROSE: Please do. I would be interested because we keep hearing about people needing to slow down on the bridge and I am trying to get an understanding of what happens.

Mr HARDWICK: You have to look at what causes an accident, not just where it occurs. If someone pulls up suddenly on the bridge because of a vehicle coming the other way or something of that nature, the traffic starts to build up. You have to look at whether the accident occurred on the ramps to the bridge or on the bridge. It would mean looking at the congestion and the cause of the congestion and then identifying where the accidents are. The severity of the accident depends on how much investigation was carried out related to the individual accident.

Dr MEHREEN FARUQI: For how many of those accidents do you have the data?

Mr LANGFORD: There were 52 crashes recorded between July 2011 and December 2016 on Bridge Street and Wilberforce Road between Freemans Reach Road and Macquarie Street. Of those crashes, 41 occurred at intersections, eight occurred on undivided road sections and three occurred on the divided road sections. Of those 52 crashes, there were no fatal crashes and 20 crashes were recorded as injury, with 20 people injured.

The Hon. PETER PRIMROSE: If traffic lights at George Street could improve traffic performance, could they be installed for the current bridge?

Mr ALLAN: The report says that that would have to be tested against the sight distances at that location. Currently, you come up a sloping alignment, and that would have to be analysed further.

The Hon. PETER PRIMROSE: That happens on roads all the time, including ones that I take every morning. Has that been looked at?

Mr ALLAN: I can give a more definitive answer on the other side, where there is also a dangerous intersection. At that location, where a roundabout is proposed, the RMS review of road design said you could not put a roundabout at that location because of the great difference between the embankment versus the low-level bridge at seven metres.

The Hon. PETER PRIMROSE: Please take on notice the question about the reasons for not being able to put traffic lights on George Street. The other question to take on notice is: What would be the estimated cost of putting lights on George Street?

Mr LANGFORD: We will take those questions on notice, but I can give more context around the intersection. It is currently a single-lane approach, and you could not signalise a single-lane approach and expect to manage traffic performance. It would need widening of the intersection on the approaches, and the preferred outcome is widening the lanes on the approach to that intersection to be signalised. You could not just signalise what is there today and expect the traffic performance to improve.

Mr SCOT MacDONALD: I go to page 20 of the Department of Planning and Environment [DPE] submission where it is said that any solution other than the proposed replacement would lead to more significant delays, which may lead to safety issues. Is there a risk to public safety in the trajectory that we are taking now?

Mr HARDWICK: When you say "now", do you mean in the current business case or if we had to start again?

Mr SCOT MacDONALD: Delay, uncertainty and those sorts of things.

Mr LANGFORD: There is definitely a public risk. As I said, there have been 52 crashes in the five-year period, and with the structural integrity and standards of the bridge—the safety rails do not meet

current standards, the footpath on the existing bridge does not meet current standards—retaining the current bridge in action would be the worst outcome.

Mr HARDWICK: To be clear, if we moved to another option, it would have to go back through the full process again, and we would have to go through all of the investment decision-making that has been put in place.

Mr SCOT MacDONALD: Presumably that would take some time.

Mr HARDWICK: A number of years on top of the time still to go.

Mr SCOT MacDONALD: How far away are we from further weight or speed limitations? Are such limitations being considered in the next three years or so?

Mr LANGFORD: Those considerations are taken during the six-monthly and annual inspections.

Mr SCOT MacDONALD: Is there any consideration of that at the moment?

Mr LANGFORD: The last inspection determined that the current speed restrictions for heavy vehicles is appropriate but we have not made any other changes at this time.

Mr SCOT MacDONALD: Mr Fox, can you tell me the annual inflation rate for infrastructure roadworks at the moment?

Mr FOX: The construction cost index is running at roughly 6.5 per cent.

Mr SCOT MacDONALD: We are looking at a project worth about \$50 million. It is costing about \$3 million per year in delays.

Mr FOX: That is roughly right.

Mr ALLAN: Also could I add that most of the construction spend is in the later years of the process you go through. The worst of your inflation impact is against the years in which the construction spend is.

Mr SCOT MacDONALD: The last couple of years.

Mr ALLAN: It is not year one; it is your subsequent years.

Mr SCOT MacDONALD: So it is compounding?

Mr ALLAN: Yes.

Mr SCOT MacDONALD: On the maps the Committee was given I did a very rough count of the number of properties that the Rickabys Line option could possibly go through and I came up with 10 properties. That is let alone going over a creek before you hit the river. Then it goes over some significant forest bushland that has been retained. So, starting with the Rickabys Line option, do you have any idea as to the cost of that compulsory acquisition?

Mr LANGFORD: You are correct, the extent of property impacts and acquisition is far greater and more significant than the current proposal. At the time of the option assessment it was estimated that it was two to three times the cost for the overall project. What has not been drawn out in the conversation is that if you did take the Rickabys Line option and pushed a fairly large proportion of traffic onto Hawkesbury Valley Way, you would also need to upgrade intersections or part of the actual carriageway width between the connection to Hawkesbury Valley Way all the way through to Jim Anderson bridge and beyond, which would also likely impact property to widen those intersections and part of the road.

Mr SCOT MacDONALD: You are referring to resumption down here on the map?

Mr LANGFORD: All the way down to the cemetery and beyond.

Mr SCOT MacDONALD: Does the same comment apply to the Pitt Town Road and option number eight? For both of those I came up with a minimum of 12 properties.

Mr LANGFORD: That is correct. Similar to the Rickabys Line option, Pitt Town Road between Windsor Road and Pitt Town itself would also need to be upgraded. You have a number of intersections along there that are essentially rural in nature because they are not taking the volume of traffic that we have talked about moving along—

Mr SCOT MacDONALD: Twenty-six thousand cars per day going down Pitt Town Road.

Mr LANGFORD: For those of you who know Pitt Town Road, it would need a significant upgrade as well.

The Hon. WES FANG: Are you satisfied that you have examined all options and that the proposal for the Windsor Bridge replacement is the right model?

Mr LANGFORD: After critically reviewing all the project documents and work that has been done, particularly over the last six months with the inquiry, I am absolutely satisfied that the proposal is the correct one for the community. It will give a significant improvement in safety and it will actually give a safe crossing of the Hawkesbury. This structure will be built with a 110-year-design life. It will prolong and protect that crossing of the river for the next generation.

Mr HARDWICK: As a person who has been with the RMS for just over 12 months, there has been a lot of review of this project the whole time I have been here. It is probably the most examined project we have on our books. It has gone through so much scrutiny over the past 10 years, testing and retesting of the options. It is still by far the best option available to us to replace the current Windsor Bridge in its current condition.

The CHAIR: You have stated that there has been 50 crashes in the five years, which is about 10 per year, and then there was the delay created by the court case and the conditions of the deliberation being about three years. So 35 of those crashes have been caused by the delay. Has the RMS done anything in that period of time to mitigate the traffic safety on the bridge and its approaches? If so, what have you done?

Mr LANGFORD: I will have to take on notice the specific works, but I can say that there were particularly some safety concerns around George and Bridge streets. We did make some changes to that as part of our road safety reviews in recent years and the actual allowance of different movements or banning of movements to improve the safety. We have an annual Safer Roads program across the organisation where we pinpoint specific safety issues and hotspots across the broader network. Through that very detailed review of the whole network and the safety performance across the network we would identify those key locations and nominate for investment to address them.

Mr HARDWICK: Mr Allan has some specifics.

Mr ALLAN: The area where there is a safety risk is the connection of Freeman Reach Drive and Wilberforce Road.

The CHAIR: On the other side?

Mr ALLAN: On the other side. The difficulty there is inadequate gaps in the traffic for vehicles to make right-hand turn movements and there is nothing of which I am aware to improve that situation.

The CHAIR: Not a larger roundabout or something like that?

Mr ALLAN: A roundabout could not be built at this stage because we spoke about the grades.

The CHAIR: This Committee has written to the Premier to ask the Premier if she would consider delaying the letting of the tender to allow us to conclude this inquiry. That decision has been referred to your Minister and I await a reply from your Minister. Forget about having to start the project again, and another five or 10 years and so many million dollars down the drain, what practical impacts would it have, apart from the 10 traffic accidents that are going to happen in a year, if this project were delayed six months to allow this inquiry to conclude? I am not asking you to make a policy statement. I am simply asking you as practitioners of building roads and bridges what practical impact would a six-month delay have on your project?

Mr LANGFORD: I might answer that. From a practical sense the New South Wales Government has gone out to tender in good faith with the private sector to bid for this construction contract. If we defer the tender and the announcement then the costs of tendering on the private sector would be sunk—

The CHAIR: I am sorry. I did not hear that. Would be?

Mr LANGFORD: Would be expended and lost to those private bidders because there is a tender expiry period, which would run out. We would have to go back and go through an open tender. From a practical sense we would be costing the private sector dollars in having to rebid for these works.

The CHAIR: But if you did not have to go back out, if you concluded your tender process but did not let the contract, it would cost a deferred start penalty?

Mr HARDWICK: It depends on how long the contract tender prices are good for. Whatever that period is before letting the contract. If you go beyond that they have to retender.

The CHAIR: Is it a rise and fall contract or a fixed price contract?

Mr ALLAN: It is a rise and fall, but rise and fall does not apply for their tender period. The tenderers will say that their subcontractors may not hold the prices they have indicated to them in their tenders, then

material quotes would not be applicable; you would have to reinitiate the tender process. That would be standard practice.

The CHAIR: So the consequences are you believe that you would have to stop the tender process and restart the tender process because you could not do it any other way?

Mr ALLAN: Yes.

The CHAIR: Secondly, that the 12-month delay in the start of the project would mean somewhere down the track a 12-month increase at the rate of 50 accidents every five years—so 10 more traffic accidents. Any other consequences?

Mr HARDWICK: Obviously the rising costs of construction.

The CHAIR: Which you have already said is something like about 6 per cent per annum, is it not, in the construction index at the moment?

Mr LANGFORD: Yes. Add to that the additional maintenance of the bridge being in service for a longer life.

The CHAIR: \$150,000 a year. Am I correct there?

Mr LANGFORD: And I think most importantly is that this project has planning approval to proceed. It has conditions approval prior to pre-construction, which we have met; it has been through an unsuccessful Land and Environment Court challenge. This project has been scrutinised, investigated and considered for many, many years and we are at the point to proceed into construction and actually deliver on what we promised the community many years ago.

The CHAIR: And then, after all that, you are bumping up against me. Sorry about that, fellas.

Mr HARDWICK: It is not that; it is just making sure that the private contractors—

The CHAIR: Sorry. I understand. I was being flippant; I apologise for that. We do not have time for another question unless it is a really critical one and it will take one minute.

The Hon. DANIEL MOOKHEY: As an extension of your question, Mr Chair, in respect to that tender expiration period, which is standard for all contracts, did RMS set the conditions as to how long, or have you left it to each tenderer to tell you how long their prices are good for?

Mr HARDWICK: It is standard process for us to nominate the tender validity period.

The CHAIR: Which is 30 days?

Mr HARDWICK: No, it is longer than that. It is either 60 or 90. I would have to go back and check.

The Hon. DANIEL MOOKHEY: Could you take that on notice and check please?

Mr HARDWICK: Certainly.

The CHAIR: We have exhausted all of our time. Gentlemen, thank you very much for coming and agreeing to give evidence today. I feel a couple more processes will occur, but I will not go any further than that. Your evidence has been clear, it has been concise and if there are any questions we will ask you for a 28-day return on questions on notice, with one exception—the question to Mr Fox regarding whether or not the assessments could be provided. Could you provide that answer within seven days? Does that seem reasonable? It is up to you to say so now if you do not think it is.

Mr FOX: Yes, it should be possible.

The CHAIR: Thank you very much. I thank you for your evidence. That concludes today's hearing.

(The witnesses withdrew)

(The Committee adjourned at 16:02)