

**THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS MET IN
THE ROTARY PAVILION, DELORAINE ON FRIDAY 13 JUNE 2008**

**LAKE SECONDARY ROAD, MEANDER ROAD JUNCTION TO EAST CHURCH
STREET UPGRADE**

Mr TED ROSS, SENIOR PROJECT MANAGER, DEPARTMENT OF INFRASTRUCTURE, ENERGY AND RESOURCES AND **Mr ROSS MANNERING**, CONSULTANT, PITT & SHERRY, WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

CHAIR (Mr Harriss) - Gentlemen, as always the site inspection has been of benefit. Greg and Brian are familiar, probably more so than Sue or myself, with the location and the geometry, but it is important to see that. We thank you for that part of the process today. Ted, you are familiar with the process; Ross, I think this is the first time we have had you before the committee. We will go through the process of your making a formal submission to us. It is important that we get your evidence on the public record and then we will proceed to questions.

Mr ROSS - I guess I will start with an introduction to the project. The Lake Secondary Road - it is also called the Highland Lakes Road - provides access to the Central Highlands region of Tasmania. The road connects all the way from the south from the Midlands Highway at Melton Mowbray to the old Bass Highway here at Deloraine in the north. It is classed as a category 5 road in our State road hierarchy. The section of the Lake Secondary Road that we are treating and upgrading is the section between Meander Road junction and East Church Street, which is approximately 6.7 kilometres in length. The extent is shown on some plans that were submitted in the report. This section of road carries around 1000 vehicles per day. The upgrade works that we are doing involve widening of the road from its existing 5.8 to 6 metres to 3-metre lanes plus 0.5-metre shoulders. So that is a total of 7 metres in width. We are removing significant dips and bumps throughout the section. We are realigning several horizontal and vertical curves - Calstock and Pumicestone Ridge are the major ones. We are improving the crossfall on the road. We are restrengthening the pavement throughout. We are modifying the priority of the Meander Road junction and upgrading side roads and property accesses. The key objectives of the project are to widen the sealed pavement, which improves safety, and also to improve specific alignment elements and the layout and safety of road junctions.

Another point to make relates to road crashes. There have been 11 crashes on this road within the project area between November 1999 and 2003.

Mrs NAPIER - Were the crashes mostly head-on?

Mr ROSS - A lot of the crashes were either run-off-road crashes or hitting objects on the road - there were a few of those as well.

Mr HALL - No data since then?

Mr ROSS - No. In terms of the project justification, the wider pavement width with sealed shoulders is one of the keys to reducing the likelihood of the type of accidents that have been experienced on the road. We are also looking at increasing stopping sight distance and improving delineation through the provision of an edge line and guide posts where there is currently no edge line. Other improvements include: upgrading of warning signs along the road to warn drivers of changes in the standard of road; removal of roadside hazards reducing the severity of road crashes and, where we cannot remove these hazards, the installation of safety barriers to protect people from the hazards; upgrading the junction geometries to reduce the likelihood of varying road crashes and to cater for turning movements of larger vehicles; increasing safe intersection sight distance to the appropriate standard for property accesses; and sealing the accesses to reduce debris being dragged onto the road.

In terms of the public consultation on this project, we developed a public contact plan which involved talking to and liaising with a number of key stakeholders, including the Meander Valley Council, the travelling public, utility owners and land owners. In terms of that, we had a number of meetings with the Meander Valley Council. They supported the project and also assisted us in identifying stakeholders and other issues. In terms of the general public, we had a public display, which was erected at three locations in Meander, at the local store, in Deloraine at the Service Tasmania outlet, and at the council chambers at Westbury. The feedback throughout the consultation phase was positive and in support of the project. I would like to give Ross an opportunity to discuss some of the design and planning aspects of the project.

Mr MANNERING - As Ted mentioned, one of the significant parts of the project is fixing some of the deficient vertical and horizontal geometry. The first major place that we are doing improvements is at Calstock where we are lowering the crest to improve the sight distance. We are also improving the horizontal alignment through there as well. Further up the road at Pumicestone Ridge there is a series of compound curves there at the moment which make negotiating the corner, especially for unfamiliar drivers, quite difficult. The alignment there at the moment is only suitable for about 55 kph, so we are looking to realign the corner and provide a single curve around the corner and adjust the geometry on the approaches a bit to try to reduce the vehicle speed safely before entering the corner. We are also improving the sight distance around it as well. So as drivers travel around the corner they can see what is approaching them as well.

Out past Pumicestone Ridge we come around onto a fairly flat, straight section. At the end of the straight there is a crest which has fairly poor sight distance. We will raise the road through that section to improve the sight distance, which will also improve sight distance from the adjacent dairy farmer's property accesses as well and improve and make a lot safer his movement of machinery around his property. The next section, probably a kilometre past there, has a series of deficient horizontal and vertical curves. We are looking to smooth out that profile and make it a lot easier for people to drive along.

We then end up on a straight section that runs down towards Long Ridge Road junction. At the junction there is a fairly tight vertical curve that makes it difficult for drivers to see what is approaching on the other side of the junction. We are going to lower that,

which will make a significant improvement. Past that bit we end up on the approach to the Meander Road junction. At the junction we will change the priority, based on the traffic volume data that we have. There are actually more vehicles travelling towards Meander than there is going towards the lakes.

We will change the priority so that the vehicles going out to Meander will travel straight through. Vehicles travelling to the lakes will actually get into a designated left turn lane which will act as a visual cue to them that they need to turn off to head down towards the lakes. It will also allow them to move out of the way of vehicles travelling straight through to Meander. Travelling in the opposite direction at the junction we have a widened sealed shoulder which will allow vehicles travelling from Meander through to Deloraine to move past any vehicles that are propped to turn right down towards the lakes.

Some of the other things that we are doing along the road: we are providing bus stops. Through some of the consultations that we have done with the landowners, we have identified properties where they have kids getting on the school buses. We have provided wider sealed shoulders for those locations to allow the buses to get off the road. A significant part of the project, as Ted mentioned, is getting some of the hazards out of the clear zones - relocation of power poles and removal of trees that are too close to the road. That is a fairly significant aspect. Back at the start of the job, as we mentioned on site, we are extending the foot path from down near the council reserve along to the showgrounds. During periods where the show grounds have activities along there it will be a lot easier for vehicles to move along towards the showgrounds.

The other thing we are looking to do there is move the speed zone out a bit as well. At the moment the speed limit drops to 60 kph just past the showgrounds. We feel that it would be beneficial for that to move out so that it is sort of on the outskirts of the township. That will improve safety at the showgrounds as well during those periods when there are pedestrians around.

Mr HALL - Sorry, that is past the entrance to the showgrounds, is it?

Mr MANNERING - Yes, that is right. Where there are pedestrians close to the road the vehicles will be travelling at a lower speed.

Mrs NAPIER - Will there still be that drain though in between the footpath and the road? Are you going to put the footpath right next to the road?

Mr MANNERING - We have pushed the footpath as far away from the road as we can. So where the existing property boundary is on that side, we have pushed the footpath right over hard against it to get as far away from the road as possible, which provides enough separation between the edge of the road to make that safe for pedestrians.

Mrs NAPIER - So you are not going to have that drain - that culvert that is there?

Mr MANNERING - The big drain is on the other side of the road. There will be a little shallow one - most likely a dish drain - probably about 300mm deep in between the two of them. But there will be no significant drain.

Mrs NAPIER - But there is a bit of a drain there?

Mr MANNERING - Yes.

Mrs NAPIER - It is good to keep the pathway away from the road.

Mr MANNERING - Yes. What we have tried to do is move the footpath as far away from the road as we can without having to get involved with land acquisition from the industrial properties that front along there.

Mr ROSS - Do you want to just make a comment about the EDD?

Mr MANNERING - I guess, yes. In developing some of these geometry upgrades we have been asked by the department to use extended design domain methodology (EDD), which is a design procedure that has been developed by Queensland Main Roads. It is basically for situations where you have an existing road that you are looking to upgrade. But there are lots of constraints that make it really hard to achieve what you would normally do if you were building a road in the middle of a paddock where you had a fresh go at it. Basically what the methodology allows you to do is to look at the design or look at vehicle speed along the length of the road and then choose appropriate geometry, given your constraints, to make the road safer. So the procedure allows you to relax some of the standards that are in the Austroads guide, which we would normally design to. The difference is about a 10 kph drop in design speed.

So if you normally designed for 100 kph under the Austroads guidelines, under the EDD methodology, a 90kph Austroads curve would achieve the standard required in the EDD methodology. It basically allows you to make significant improvements to the road and make the improvements go further. By using that methodology we have managed to make the available budget achieve more safety improvements.

Mr GREEN - How is the EDD weighed against the national standard? Did they achieve national recognition for the process?

Mr MANNERING - Ted would know more about this than I, but it is a procedure that they have developed - they have done quite a lot of research into the methodology -

Mr GREEN - But it is called a standard. It must be weighed against something.

Mr MANNERING - No. In road design terms there are no standards on geometry; there are only guidelines. The Austroads guidelines that we would normally design to are that and this EDD methodology is again a guideline. The Austroads guidelines are adopted generally across the board and almost accepted as a standard, I guess.

Mr GREEN - That would be for long lengths of rural-type roads, like in Queensland.

Mr MANNERING - Yes. Generally what has happened in the past on roads like this where there are relatively low traffic volumes, a decision would have been made to design the road for 80 kph, even though the posted speed limit might be 100 kph. The EDD process makes it more transparent about what you are doing with the geometry improvements, based on those constraints. It is a good methodology in that you do not just say 'We are

just going to reduce it'; there is a thought-out process which looks at the constraints as you go through.

Mr ROSS - Where we have, for example, an accident history or something like that, you do not look at reducing the guidelines in such areas. Where there is an accident history you do use the full guidelines.

Mr MANNERING - I will talk a bit about some of the environmental issues. As part of the initial work we did in developing the concept design for the road upgrade, we have done flora and fauna investigations, historic heritage and Aboriginal heritage. We have addressed all those issues. The main aspect from the heritage point of view was the Calstock property on the left-hand side of the road as you head out of Deloraine. We have consulted with Heritage Tasmania about what we are doing past there. Basically we are requiring that the title is broken up into two bits - there is the heritage-listed part of Calstock and the adjacent paddocks, which are not heritage-listed, so through the bit where the paddocks are we have moved some power poles away from the road to try to get them out of the clear zone. That meant we had to acquire a little bit off those paddocks, but we have adjusted the road geometry so that as we get to the part of the property that is heritage-listed, we have moved away so we do not need to acquire any land. That means we can retain some of the trees that are on the boundary and maintain the ambience of the property.

In terms of Aboriginal heritage, there are no issues along the road. With flora and fauna, there was some evidence of a green and gold frog along the Causeway, just past Calstock.

Mrs NAPIER - That's a wet, swampy area.

Mr MANNERING - Yes, but the swamp is far enough away from the road for us not to have any impact on it.

I will now talk a bit about the landowner consultation that we have done. We have talked to all the landowners individually along the road - both those we are acquiring land from and those we don't need to. Obviously, with projects like this where we are widening the road, there are long sections of land acquisition that we need so that we can get some of the obstructions far enough away from the road. In general, all the landowners support the project and very keen for it to go ahead. It has been on the cards for a fair while, so many of them are pretty pleased that we have got to this stage and hopefully we will see some construction activity later this year.

There are two owners along the length of the road - Neil Van Rooye and Tim Evans, who have dairy farms with property on either side of the road. At the time we submitted the parliamentary standing committee report, due to budget constraints and -

Mr HALL - Intervention by local members!

Laughter.

Mr MANNERING - the relatively low number of vehicles on the road, the department felt that spending the available money on providing geometry improvements that benefited

the whole of the community were a worthwhile outcome for those funds. Since then we have developed the design a bit more and we are a little more confident of our available contingencies.

Mrs NAPIER - So who won? Mr Hall or Mr Polley?

Mr GREEN - No they have just been put back in their place because it was of advantage to the whole of the community.

Mr HALL - No treachery afoot!

Laughter.

Mr MANNERING - So the department is currently in negotiations with both those landowners about providing stock underpasses for them -

Mr GREEN - It sounds like a very good outcome to me.

Mr MANNERING - Yes, I think it is.

Mrs NAPIER - So one of the owners who would have liked a stock underpass isn't going to get it -

Mr MANNERING - No - assuming that both landowners are willing to contribute under the funding arrangement that has been proposed to them, both of them will get it.

Mr GREEN - It will add significant value to their property, I imagine.

Mr HALL - I think one of the main issues is their safety concerns. Their dairy herds have increased in both cases. Being a past dairy farmer myself and having had to move 250 cows across a public road, I know that it can be a fairly scary experience at times. Most locals know when to stop; however, that road has a lot of tourists on it and no matter how many flags and warning devices you have erected, some people just try to drive through the whole herd. From a safety point of view, I am very pleased that the underpasses will happen for both those landowners.

Mr MANNERING - I will just talk a bit about where we go from here. At the moment we are finalising the property boundaries, deciding where some of the Aurora poles are going, looking at a few embankment slopes and a few things like that. Once we have those property boundaries finalised, we will organise for our surveyors to go back out and mark where the new property boundaries are going. At that time I will go back and talk to each of the affected owners individually to discuss what their new fence will look like and agree those sorts of details with them; discuss what their access will look like, because pretty much every access along the road will have to be regraded to match the new road levels. In doing that we will be sealing all the property accesses back to the new property boundary, which will be a big improvement for some owners. At the moment some of those have gravel accesses, so they will be pretty pleased about that.

I think that pretty much covers everything I was going to talk about.

Mr ROSS - In terms of the construction program, we are looking at completing the design development stage in June-July this year. We will tender later in July, which will lead to construction over the summer months, between October and April. The current cost estimate we have is \$8 million, which is right on budget.

Mr HALL - I have noted the traffic flow data and the crash data. The crash data is now five years old and I think there have been some fatalities since. The report perhaps does not reflect that there have been more accidents and lives lost on that road. So the report perhaps does not reflect that there have been more accidents and indeed more lives lost on that road. I just wondered why the statistics were a bit old.

Mr MANNERING - The crash information that is there is the crash information we were provided with when we started the job, so there would be more recent available information on that, yes.

Mr HALL - Yes, it's a bit academic. The other thing was the traffic flow data that you took. Was that done at a similar time? I notice that it was done in August, which is probably about lowest flow traffic time of the year because the tourists are not there and the activity is much less.

Mr MANNERING - Those traffic volumes were taken in 2004. As a general rule in Tasmania, traffic growth is about 2 per cent a year. Out here you would probably expect it to be a little higher than that, given some of the activity that is going on out at Meander. Based on that growth, in current day volumes you would expect the vehicle volumes to be up around about 1000 vehicles a day. In working out the strength of the pavement, the provisions for the turn lanes and that sort of thing at Meander road junction, we have allowed for that traffic growth in the design. One of the difficulties with having such an extensive State road network is trying to get current data on all of the roads. The department has a list of projects that they go through and try to collect traffic data. This road out here is just one that had not been picked up for a couple of years.

Mr HALL - There is no doubt that traffic volumes will pick up when the Meander Huntsman Lake, if you like, becomes a recreational fishing lake as well as an irrigation water body. You can expect some quite significant traffic movement to increase up there. As well, periodically there is quite a lot of plantation stuff up there which will come on line in cyclical times.

Mr MANNERING - Yes, that is one of the reasons why widening the road and getting that sealed shoulder on it is so important - the increased truck volumes and people with boats and that sort of thing. It will make it a lot safer for them and it will be a better outcome for those increased volumes.

Mr HALL - Better for all the fishermen like Mr Green, who obviously travels up and down the road a lot. In relation to the tree removal just along the side of the showgrounds, you have had quite a bit of consultation, and the show society is reasonably comfortable with what you propose?

Mr MANNERING - Yes. We have been talking with two representatives from the showgrounds, Philip Atkins and Geoff Terry. We have met with them quite a few times

and they are aware that we need to acquire some land from the showgrounds, which will mean that we are impacting on those trees. They are currently getting a quote from a specialist for relocating some of those trees - the ones they think they can realistically relocate and have them survive. The department will pay for that to take place. They are going to relocate those trees onto not the new road fronting boundary but onto what you would call the northern boundary. Whilst it is unfortunate that we are impacting on those trees, I think it is a good outcome that we are managing to keep some of them because they do have a community significance.

Mr HALL - In terms of the budget, I did have a look in yesterday's budget allocation. I think it was only in the region of \$5 million, so I presume that some of this will obviously carry over from last year to make up the \$8 million?

Mr ROSS - The \$8 million is split over the next few years, but this is a project we are looking at using contractor finance to help us finance the project where the contractor will pay the contract out the following financial year.

Mrs NAPIER - So this runs across two years, does it?

Mr ROSS - The funding is across three or four years in total. But we will be concluding all the construction in the next financial year. In terms of this project there will be less impact on the community if you do it over one summer. Also, the community will see that benefit straight away.

Mrs NAPIER - So what percentage of the roads budget - the road construction budget - is done that way?

Mr ROSS - I am sorry, I would not know that answer to that.

Mr HALL - When Mr Green, as former minister, announced this project just before the last election within it was the Haulage Hill part of the Lake Secondary Road leading down to the Great Lake. In terms of funding, is that still on the radar?

Mr ROSS - The Haulage Hill section of road is within the program but is currently unfunded.

Mr HALL - I will make of that for the budget reply next week.

Mr GREEN - But there has been significant design work done?

Mr ROSS - As part of this project we did design work and liaison with the community. They have identified a number of other priorities on the Lake Secondary Road that we have taken on board. They have been put in for a budget bid, basically.

Mr HALL - Your construction period will be from October this year hopefully and then in April 2009 you are fairly confident that you can achieve the right contractor and the right economies of scale so that you can get it cleaned up in that time?

Mr MANNERING - We would like to think so. It will certainly push them in terms of time. But we are pretty keen to get it done. It is a big job in terms of that - 6.7 kilometres of

road in one summer is a big job. But we are very conscious of trying to get it done in that period. It would be nice not to have to come back the next summer because you always end up with that down-time over winter when you cannot get anything done. If we can avoid doing that we will. We are certainly making every attempt to ensure that we can.

Mr ROSS - It is subject to weather. If there is significant inclement weather over the summer period -

Mr HALL - Which would be good for a change!

The only other question I had was the Meander Road junction - I think that looks like a good outcome to me. You actually measured this, so what was the difference in traffic volumes? Was it significant between Meander and the Lake Secondary Road?

Mr MANNERING - At the time of the vehicle count in 2004 there were a total of 277 vehicles travelling between Meander and Deloraine and about 178 vehicles travelling between Deloraine and the Central Highlands. So there is a fairly significant difference - 100 vehicles. That vehicle count was taken between 7 a.m. and 6 p.m. on that day. So 100 vehicles in that period is fairly significant.

Mr HALL - I thank you for that. As a local member, I am obviously very pleased to see this come before the committee. We will have to deliberate on that of course but it is significant because a lot of people, particularly tourists who come to Tasmania, look at their map and say, 'There is a road that goes right through the centre of the State and it looks like a good one. We will go on it,' and they get to Deloraine and start off on that and it is a nasty shock to them.

Mrs NAPIER - Especially if you have a caravan. I have only one question. There is a reference to a property - in East Church Street, was it? that apparently needs a retaining wall to be fixed up. What was that about?

Mr MANNERING - We have talked to the owner of the body works. At some stage in the past, through some maintenance issues, either the council or the department removed a retaining wall. When you drive down the road you see a bit of the existing wall there. I think in removing that wall, the owner noticed some cracking in the block work of his workshop, which required him to put some steel reinforcing inside the building. The owner is pretty keen for the retaining wall to go back in through that section.

In improving the drainage through that bit we are extending the kerb and gutter in East Church Street along to an existing culvert on the side of the road. In terms of the design, we are not getting any closer to the bodyworks. In putting in the kerb and gutter we are putting a bit more material backing behind the kerb and gutter which will improve the reinforcement of the road. We don't see that it is necessary to put the retaining wall back in, given that we're not moving any closer and that we are going to be putting a little bit of material in behind it. We think that is a good outcome in terms of trying to address that issue.

Mrs NAPIER - The bulk of the money appears to be spent on basically building the road itself and there is \$1.16 million for the design contract project management and public consultation. That seems to be relatively high relative to an \$8 million budget. Just

looking at it I am thinking it is probably because of the number of accesses that are involved in this project, which is relatively high.

Mr MANNERING - There are two components -

Mrs NAPIER - It is usually about one-tenth of the budget, isn't it?

Mr MANNERING - There are two components in there. There is the design cost and the contract administration. One of the big things about this job is that it is complicated because there are so many adjacent landowners and there are lots of property accesses and the impact of them. In terms of trying to address those issues, they all take time to make sure that all of those stakeholders are aware of what is going on and making sure that their requirements are incorporated into the design. It takes a little while to get those details incorporated. The other thing with this job is that because it is over such a long length it will warrant having a fairly extensive contract administration role to make sure that it is being built in accordance with the design and DIER's construction procedures. There will be a fairly strong supervision involvement in this job to make sure it ends up with the end product we are after.

Mrs NAPIER - Are we now moving to the point where projects are going closer to a design and consultation being closer to one-eighth of the cost rather than one-tenth of the cost?

Mr ROSS - I think that is a project-specific-type item, so for this project this is the estimated cost for doing that component of the project. For a different project it might be different again. For example, within this one there is a significant amount of geotechnical works that happened on Pumicestone Ridge in order to assess the suitability of undertaking excavation through that section. Similarly, some of that design amount was work in design of Haulage Hill and some work on Lake Secondary Road as well. In terms of the components of that design, I think it is very project-specific. I don't think you can make a generalisation that that would be the cost of the whole program.

Mrs NAPIER - What are out-turn dollars?

Mr ROSS - Out-turn dollars is the difference in the time value of money basically. This is the estimate at this time.

Mrs NAPIER - That is your inflation expectation?

Mr ROSS - Yes.

Mrs NAPIER - Presumably the contingency cost that you have built in there is associated with some of those key projects where it is hard to assess exactly what they are going to cost you?

Mr MANNERING - At this point we have that contingency. When we put this cost estimate together it was based on our concept design. At that point some of the things we weren't sure about the exact details so the contingency reflects that. We're now at the stage where we have almost finished the preliminary design and at that point we will have another go at the cost estimate and refine those contingencies. As we work out some of

the quantities and get a better idea of what rates to expect when we get our construction tenders in, we will refine that contingency and it will probably reduce.

CHAIR - I have one question regarding the underpasses. The contribution to the underpasses by the two landowners is \$20 000 cash to indicate a genuine intention to treat. Is that correct?

Mr ROSS - The offer we have put to landowners is an up-front contribution of \$20 000 and then a secondary contribution of up to \$20 000 of the compensation that would be due because both landowners will have, for example, significant land acquisitions and other impacts on their farms. So it is a maximum contribution of \$40 000 which is the cost of a stock underpass as supplied by the landowners themselves.

CHAIR - Yes. So what alternatives are you looking at for the construction style of underpass? You can clearly see where I am coming from - with the capacity to reduce the construction cost?

Mr ROSS - Sorry?

CHAIR - You said 'standard underpass'. Are there alternative to a standard underpass?

Mr ROSS - Both land owners requested a stock underpass that suits their needs in terms of allowing cattle and -

Mrs NAPIER - And a tractor, I suppose.

Mr ROSS - No, not a tractor. They have both requested that it be just for a bike or to basically walk under there with the cattle. It is 1.8-metre high stock underpass, which is enough to get the cattle through but not tractors.

CHAIR - Do you have a cost estimate on that?

Mr ROSS - We have, I guess, some preliminary -

Mr MANNERING - Both owners have been talking to our company in Victoria who provide a standard stock underpass unit which is a bit different to what normally goes in under roads when we have construction jobs done here. They have both been given an estimate for those. The exact numbers I would not know off the top of my head but, based on the arrangement or the funding arrangement that DIER has put to both of them, both see it as a fairly good deal.

Mrs NAPIER - You would not want to be a very tall farmer though, would you, with a 1.8-metre height? It is not very high.

Mr HALL - If you are riding on four-wheel motorbikes you lower yourself a bit.

Mr ROSS - They will learn quickly if they are bit high!

Laughter.

Mr MANNERING - The one thing that we are looking at the moment is the type of stock underpass units that they would like to install, as these have not been installed on any government roads before. We are doing a fairly stringent check at the moment to make sure that it meets all those design requirements: to make sure that it will be designed for the vehicle loads that we normally design for; make sure there is cover to the reinforcement; and all of those sorts of things that we would normally do when we use a product that would be sourced locally. We are investigating that at the moment. Assuming that it ticks all of the boxes in terms of that, we will look to see how we can facilitate that within the contracts.

Mr HALL - My knowledge is that they are around about \$24 000 each, I think, from this Victorian company. They are approved by your counterparts in Victoria.

Mr MANNERING - I talked to one of the guys from the company yesterday and he indicated to me that they have been installed on the Princes Highway. So, yes, they have gone in on Victorian roads under VicRoads authority before.

Mrs NAPIER - And presumably they are much cheaper than putting in a big culvert?

Mr MANNERING - Yes, if you were to put in a circular culvert instead you would have to line the bottom with concrete which then reduces the available width that you get - you also get a narrower width in the bottom. A box is the best outcome in terms of that. These ones that the owners want to put in are a little different to how we would normally do it. Normally we would have a concrete base slab that would be poured in situ and then the pre-cast sections would actually be a U-shape. These units are actually a full box. So instead of having the in situ concrete base slab you put some road-base down and get the ground material up to the right strength and then the units sit on top of that. So it is a little bit different construction methodology to what has been used here in the past, but assuming it meets all these other requirements that we need, there should not be a problem with it going in.

Mr HALL - It could be a useful bit of ground-breaking not technology so much but procedure for future projects in the State.

Mr MANNERING - Yes, we might find that. I am not sure whether some of the local contractors are aware that this product exists. If it is successful on this project we might see it being installed elsewhere.

CHAIR - In the event that you do not need the \$1.2 million contingency that Mrs Napier was speaking to you about earlier, what other project-specific components could be attended to on that stretch of road?

Mr ROSS - I think the project is designed as it is so that any additional funding would go back into the program.

CHAIR - With regard to the Queensland EDD methodology, your preamble to the explanation in your submission suggests that there are topographical, property and financial constraints which have led you to go down that path. Which of those issues predominates your decision to go a different direction?

Mr ROSS - Once you decide what your road reserve is going to be you set the constraints of your project. So if, halfway through construction we found we had a bit of extra money and we could have, say, raised the road a little more, you cannot do that because you have not required enough road reserve. You might have to bring things closer to an Aurora pole that you have just shifted before and so forth. So it is a combination of those factors.

CHAIR - But the predominant one surely, when you are setting out on the project and doing your design, would be finance, would it not? You say, 'We only have that much. We therefore have to compromise'. It is probably not the right word to say 'compromise' but, as you say in your submission, it is not possible to upgrade some of the deficient horizontal and vertical geometry. Would that not be predominantly because of the budget allocation?

Mr ROSS - What we are trying to do is design to the extended design domain to provide a consistent drive for the road user. So all the way from Deloraine to Meander junction we are going to give them a consistent drive. There will be no obviously higher standard section of road. We are trying to design to the one standard so that a driver, who starts driving from Deloraine to Meander, knows what to expect as they are driving along that road.

CHAIR - Yes, but had you had the budget, you would have gone to Austroads guidelines?

Mr ROSS - The budget you would need to design that road to Austroads guidelines would be significantly higher than what is available.

Mr MANNERING - There was one estimate we did on a re-alignment - not to full Austroads design but to improve slightly more, for example, the alignment through Pumicestone Ridge -

Mr ROSS - We changed, that is right. I think we increased the radius of the single curve that we provided through there and did a rough estimate of extra excavation quantities in there. In the small movement that we made we managed to increase the money by about \$1 million. So that would be the logical place that, if you had more money, you would try to spend it. But, because of the topographic constraints, the actual value for money that you get out of trying to improve that will not go very far. You would spend it pretty quickly in the excavation costs and not really achieve a substantial benefit.

Mr GREEN - Could I mention, Mr Chairman, too that on site we did discuss the issues associated with flooding. Both the farmers' and, I think, the department's view was that they did not want to raise the levels of the road through that causeway section any higher than it is at the moment, which is also an issue of design. It could have been improved upon but you did not want to flood any more.

Mr MANNERING - Yes, that is right. We are very conscious that we do not want to raise the road levels any more than we need to, apart from rehabilitating the strength of the road, so that we do not change the flooding regime of the Meander River. Any significant increase in the road levels out there would need a fairly detailed look at what impact that would have on the flows of the river down towards the township.

Mr ROSS - And similarly impacts on landowners. We are trying to minimise any impacts on the landowners by staying within the existing road reserve as much as possible.

CHAIR - Thank you, gentlemen. I think everybody has fired their questions so, with that, we thank you for your evidence to the committee.

Mrs NAPIER - It was a good briefing out on the road, too.

Mr MANNERING - A bit cold, though.

Mr ROSS - Yes, thank you very much.

THE WITNESSES WITHDREW.