

PARLIAMENT OF TASMANIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Mathinna/Evercreech Bridge Replacements

Presented to His Excellency the Governor pursuant to the provisions of the Public Works Committee Act 1914.

MEMBERS OF THE COMMITTEE

Legislative Council

Mr Harriss (Chairman) Mr Hall House of Assembly

Mr Booth Mr Brooks Ms White

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1. INTRODUCTION

To His Excellency the Honourable Peter Underwood, AM, Governor in and over the State of Tasmania and its Dependencies in the Commonwealth of Australia.

MAY IT PLEASE YOUR EXCELLENCY

The Committee has investigated the following proposal: -

Mathinna/Evercreech Bridge Replacements

and now has the honour to present the Report to Your Excellency in accordance with the Public Works Committee Act 1914.

2. BACKGROUND

This reference recommended that the Committee approve construction works to replace five (5) wooden bridges, located on the Mathinna Plains Road and Evercreech Road in the northeast of Tasmania, with High Productivity Vehicle/Higher Mass Limit (HPV/HML) standard compliant concrete bridges to improve freight efficiency from the Mathinna region to the port of Bell Bay located at George Town. The 5 bridges are located on existing HPV/HML gazetted routes, but are currently load restricted, which restricts the operational capacity of roads in the area, thereby complicating industry vehicle movements. They are also reaching the end of their service life and are in risk of collapse.

The overall objectives of the project are to:

- Support improved freight efficiency through reduced travel times, and operating costs over the longer term;
- Provide better access to high quality road networks to cater for the harvesting of plantation timber from the Mathinna Plains and Evercreech plantation catchments;
- Reduce maintenance costs on surrounding roads in the network currently used by plantation freight vehicles detouring to avoid the load restricted bridges;
- Improve sustainability and environmental outcomes through the use of less fuel and lower resulting greenhouse gas emissions; and
- Improve safety outcomes for both industry and private vehicles in North East Tasmania.

The full submission of the Department of Infrastructure, Energy & Resources in support of the reference is published on the website of the Committee at:

http://www.parliament.tas.gov.au/ctee/Joint/works.htm

3. PROJECT FUNDING AND COSTS

P50 and P90 Capital Expenditure Cost Estimates

% of Base Estimate 88% 3% 10% 17% 964,816.85 183,958.33 31,970.49 952,716.28 Contingency 1,166.67 1,458.33 8,958.33 7% 2012/2013 Amount 2011/2012 28 28 28 28 6% %9 9%9 9%9 9%9 20,000.00 20,000.00 30,000.00 25,000.00 175,000.00 Net amount 20,000.00 30,000.00 25,000.00 6,850.00 11,397.00 10,675.00 2,800.00 48,489.00 55,000.00 3.9% 624,354,17 Net Rate Base Estimate 100 1700 00 1 00 1 00 1 4,726,620.00 2.00 1.00 3,781,296.00 Billed Qty Compound % of TCC tem the stem item item item vears item item Item Item Item Item Unit tem item item Base Estimate (Owners Coox + Contingency - Inherent Risk (Incl. Above)
Contingency - Contingent risk
Contingency - Contingent risk
Base Estimate + Contingency (Inherent + Contingent)
Cosh Rowr Start Construction October 2011 Finish Construction May 2013
Escalation (applied to base case + contingency) Detail Design and occurrent and occurre 4.1 Bridge No. 1953
4.2 Bridge No. 2951
4.3 Bridge No. 2951
4.5 Bridge No. 222
4.5 Taffic Management
4.7 Taffic Management
4.8 Service Relocations
4.9 Contractors project management
Total Construction Costs (TCC) Subtotal Contract Administration **Total Owners Costs** Subtotal Concept Development Concept Development
 Concept development project management
 Engineering Survey
 Size Geotechnical Investigations
 Functional Design Statement
 Stakeholder consultation
 PR and CBA
 PIR Concept development costs
 Concept Design 3.1 Contract Administration
3.2 Owners contract administration
3.3 Owners Engineer
3.4 Insurances
3.5 Professional Services (Legal) 4.0 Construction

P50 \$ 7,519,151.65 P90 \$ 7,974,702.45

4. EVIDENCE

The Committee commenced its inquiry on Thursday, 9 February when the following witnesses appeared, made the Statutory Declaration and were examined by the Committee in public:-

- Ms Sarah Boyle, Acting Manager, Planning and Design
- Mr Steven Kaczmarski, Project Manager

Overview

Ms Boyle provided the following overview of the North East Freight Roads Progam, of which the Mathinna/Evercreech bridge replacements are one component:-

As you are aware, the North East Freight Roads Program is a \$42.5 million program of which \$34 million is a Federal contribution and \$8.5 million is a State Government contribution. The first project that was completed under the North East Freight Roads Program was the Tebrakunna Bridge which was completed in April last year and that is on Tebrakunna Road, near Pioneer and it was completed at a cost of \$1.3 million. That was the first project that was rolled out under the North East Freight Roads.

Since then we have been focused on the planning phase. The other major project areas making up the program are the Mathinna/Evercreech bridges. There are five bridges we are seeking to replace down around the Mathinna area. We are seeking to upgrade the Tasman Highway between Derby through to the junction of Gladstone Main Road and then a short section, 2 kilometres at Gladstone Main Road up to Herrick and the purpose of that is to achieve a cross-section that will support the use of B-doubles and support the freight industry, particularly the forest freight industry, but also some of the agricultural and dairy industry up here in the far north-east.

The next project that is running in parallel to the Tasman Highway upgrades is the upgrade of Bridport Main Road. That is a significant freight route. It doesn't meet cost-section requirements for high productivity vehicles yet it is a high productivity vehicle route. We also have a school bus curfew on the Bridport Main Road so during the school bus hours of eight and nine and three and four in the afternoon B-doubles are not permitted to run along there so we are seeking to upgrade that road so that we meet the cost-section and also can apply to have the curfew lifted as well by improving bus space.

The next project under this program is upgrading the three junctions on the Prossers Road/Patersonia Road, so we are upgrading the Tasman Highway junction at Nunamara with Patersonia Road and upgrading the junction between Patersonia Road and Prossers Road and the most significant upgrade is the upgrade of the junction between Lilydale Main Road and Prossers Road at this end.

The final project under the North East Freight Roads Program will be some upgrades along Camden Hills Road. The Launceston Council has put together a little package of works that are targeted just minor curve improvements but from Camden Hill Road down to the Tasman Highway is a high productivity gazetted route so there are just some curves there that aren't working very well for the log freight vehicles.

Mr Kaczmarski provided the following overview of the proposed works:-

As a brief summary, as Sarah identified, these five bridges are part of the north-east freight roads program. In effect, the bridges that are there at the moment were built many years ago and are in a poor state of repair. Three bridges have load limits on them at the moment, so that means that no freight can leave from the timber-harvesting area and go on the preferred route, which is to go through the Esk Highway and back up to George Town. They are being forced to use the other routes up through Ringarooma and Legerwood, which are much more mountainous and difficult and narrow roads. The purpose of this replacement is to allow those vehicles to go down to the Esk Highway, which is a much quicker and more efficient route for freight to move along.

Change in name of the North East Freight Roads Program

The Committee questioned the witnesses about the change in name from the North East Forest Roads Program to the North East Freight Roads Program. Mr Kaczmarski responded:-

It was primarily in recognition that along Bridport Main Road particularly there is mixed freight; it is not just forest freight. There is a significant amount of agricultural freight along that road and there is some agricultural freight that runs along Tasman Highway as well

When questioned further by the Committee on who made this decision, Ms Boyle indicated that this was a ministerial decision, not a departmental decision.

Use for forestry freight compared with other industry freight

The Committee questioned the witnesses on the demand anticipated for forestry freight compared with other industry freight. Ms Boyle responded:-

I don't have the current percentage. Two years ago we conducted the third cycle of the Tasmanian Freight Survey, which is to be called the 'freight demand survey', in which all significant freight operators are surveyed for the current point-in-time freight task. At the moment I don't have the figures for the other general freight on Bridport and Tasman. We know there's a complicated movement for the dairy up here because they can't use HPV or a B-double trailer. They are doing something complicated and dropping a trailer in Branxholm, taking one trailer up and getting the milk and coming back and dropping that trailer and then moving on to another place to fill it up. There is at least one vehicle a day that does that, which adds significantly to the transport costs.

The Committee questioned the witnesses as to whether there was any intention to reprioritise the projects forming part of the North East Freight Roads Program given the current restructuring of the forestry industry. Ms Boyle responded:-

For the forest freight demands - and you can see the shaded areas are reflective of the density of the forest coupes that can be extracted - some of the routes initially were analysed on pre-forest restructuring. This analysis was done immediately after the election commitment in 2007. The department built up something called a forest freight model and they collated the data from all the stakeholders with coupes that would be harvested. That model was developed and initially some of these projects were identified. The initial program comprised a link road from Blessington Road up to Tasman Highway, just near Nunamara. That link road was going to collect from the Ben Lomond and Roses Tier area - so

it was basically all the upper Esk. It was going to collect timber from that area and move through the link road and up onto Prossers Road. It was essentially a bypass of Launceston for the Blessington, Upper Blessington and Roses Tier catchments.

Two things happened at the same time. Once we started evaluating the field conditions it was clear that the cost to construct that was going to take most of this funding allocation. The other thing, that was more significant, is that there is a lot of native forest up here so a lot of the vehicles that were going to move along there were going to be taking native forest product out. With the forest principles agreement pretty well overnight when Gunns withdrew from native forest harvesting the number of vehicles that would be using this road halved basically so we withdrew that project. We represented the case to the State and the Federal governments to remove that project from the program and replace it with these bridges.

... The Bridport Main Road is probably our priority project in this because most of it does not meet HPV compliance. Within the program itself there was a nominal allocation of funding split between these so Bridport nominally is about \$14 million at the moment. In terms of reprioritising the remainder of these three significant projects and then the junction improvements here we have not stepped back and reprioritised and Bridport maintains the priority because of its general use and high traffic volumes. The time clock is that the Federal funding has been allocated from the Nation Building Program and that program finishes at the end of June 2014. We are planning on the delivery of all these projects prior to the end of the Nation Building Program.

The Committee questioned the witnesses as to what impact the closure of softwood sawmilling in Scottsdale has had on the prioritisation of the project and whether the fact that the original area that was to receive softwood log deliveries would no longer be receiving them made any difference to the road prioritisation. Ms Boyle responded:-

The initial forest freight model was predicated on the softwood from the whole region coming to Scottsdale and now that that mill is closed essentially what is happening is Mathinna bridges will collect the softwood from down here and that will move out there and anything on the watershed from Mathinna Plains Road is still moving and it is just going to Bell Bay. So instead of some softwood coming this direction to Scottsdale it is now all moving along Bridport Main Road. It is still on Bridport Main Road from this watershed on Mathinna Plains Road. It has just changed direction.

...No. The product is still being moved and from that watershed it is still being moved along Bridport Main Road; it is just in a different form.

... The overall objective of this was to improve transport productivity or transport efficiencies for the freight industry and particularly for the forest industry because that has the greatest component and with hopefully the lifting of the HPV curfew off Bridport Main Road it means that all HPVs will be able to use it through the school bus hours. We anecdotally know that B-doubles do stop at each end outside those hours and wait for the half hour or hour. In terms of transport efficiency for the freight industry both of these projects will make a significant difference. Similarly for Mathinna, Mathinna Plains and Mathinna bridges. At the moment, and from transport efficiency, the product that is still being moved, they are taking quite circuitous routes to get back down to Esk Main Road.

Construction Zone

The Committee questioned the witnesses as to whether the bridges would be replaced in exactly the same location as they currently stand. Mr Kaczmarksi responded:-

The original plan was to demolish the existing bridges and replace them in exactly the same location. We have had a thorough review of the constructability aspects of the bridges and predominantly to avoid lengthy detours for people we are moving towards allowing contractors to replace the bridges, or the three bigger bridges, immediately either upstream or downstream of the current bridge. That is within the 20 metres that has been identified and investigated for Aboriginal issues as well as environmental issues. I have met on site with the general manager and the works managers of Break O'Day Council and talked about those issues. In the cases where we are changing the bridge locations, or potentially changing them, they have identified that is where the bridge was before they built these bridges. It's exactly how they built the current bridges; they were built either downstream or upstream of the existing structure. Generally speaking, that's a preferred way of going. The problem we identified here is that the detour routes are up to 20 kilometres on gravel road and some of those are Forestry roads, which are not that suitable. There is a maze of roads up in that area and the potential is that people might get lost if we sent them off on a detour, so that's been the main issue. From a constructability perspective, to allow a contractor with lighter vehicles to get across a bridge and access to both sides is much better. In this case they would have to drive around the entire detour route to get to the other side.

The Committee questioned the witnesses as to whether Aboriginal Heritage Tasmania (AHT) was aware of the 20 metre upstream and 20 metre downstream construction zone and the fact that the bridges will not be replaced in exactly the same location and the impact this may have on the assessment of aboriginal cultural heritage issues. Mr Kaczmarksi responded:-

One of my tasks is to ensure that we have that discussion with AHT and DPIPWE and fill them in on exactly where we currently stand with our proposal. Once again, that won't be finalised until we get the concepts from the contractors.

... I am sure we looked at the 20 metres upstream and downstream.

Ms Boyle added:-

The request for advice that DIER sent to AHT describes the bridges being replaced in the same location, but seeking approval for a 20-metre buffer zone for the purpose of construction, to move around the site. It was just to note that, although the bridge is intended to be replaced in the same location, there would be some disturbance up and down for the process of construction.

The Committee questioned the witnesses as to whether proper consultation with Aboriginal Heritage Tasmania would occur, and Mr Kaczmarski confirmed that it would.

The Committee questioned the witnesses on the accuracy of statements made in the DIER submission that there would be no need to submit a Development Application to the Break O'Day Council. Mr Kaczmarksi responded: I met with the Break O'Day Council last week on site and suggested that we will make these proposed changes and they have said that we will need to DA now if we are going to build beside, so we are progressing to do that.

When specifically asked if a Development Application would be required, as the works are replacements with new bridges, not repair works on the existing bridges, Mr Kaczmarski confirmed that a Development Application would be required.

The Committee questioned the witnesses on the cost impacts of any road realignments necessary as a result of moving the bridges within the 20 metre upstream and 20 metre downstream construction zone. Mr Kaczmarski responded:-

It is much cheaper than the maintenance of the detour routes. In fact, in some cases we are putting the bridge back on the original alignment that was there before these bridges were built, so most of the formations are there. You can almost see where the road used to go, so the cost of that additional road pavement work will be less than the maintenance of the gravel roads that we would have to do for 12 months. This way it also reduces the construction time because to demolish a bridge and rebuild it you have to do one at a time because you can't get access past that to the next bridge. So this cuts back at least six months on the time span, which is another cost-saving factor.

New approach to cost-estimating of publicly funded projects

The Committee questioned the witnesses on the new approach required to estimate the costs of publicly funded projects, and specifically the use of P50 and P90 estimates. Ms Boyle responded:-

Probably about four or five years ago the Federal Government was becoming alarmed at the cost overrun of publicly-funded major road and rail projects and there was a pattern across the country of cost overruns up to about 40 per cent being quite reliable for significant projects which in Tasmania, from the Federal Government's perspective, because our projects are fairly small was not such an issue but when they are talking about \$1 billion or \$2 billion projects in Queensland and New South Wales the 40 per cent cost overrun is a significant issue for the Federal Government to have to resolve. They engaged some specialists in cost estimating to work with all the State road authorities to look at and evaluate each of the cost-estimating processes that each State was putting into place and then they drew together a preferred process that was agreed with the Federal Government, and there are a couple of different techniques but essentially we are heading nationally towards something called a probabilistic cost-estimating technique which uses a program that just runs thousands and thousands of iterations.

Out of that has evolved something called the best practise cost-estimating guide or standard for publicly funded road and rail projects. All the projects that the Federal Government fund now require that cost-estimating process to be used. Out of that there is this terminology that has evolved called the P50 and P90s estimates so the probabilistic technique just produces an NS curve that you can draw lines on. With the P50 line there is a 50 per cent chance that the project will be delivered for that amount of money and the P90 means there is a 90 per cent chance that that project will be delivered for that funding. On a P90 there is a 10 per cent chance that there will be a cost overrun to that cost that has been delivered.

... In developing these cost estimates there has been a lot of discussion around the risks and developing contingencies. Previously we have just added a 10 per cent or 20 per cent contingency as a flat rate so we have chosen a contingency percentage and we have said we will put a 20 per cent contingency on it. With this new process we actually identify all the risks very carefully right at the beginning of a project at the planning phase and we reevaluate those risks and we put a dollar value to each of the individual risks. What we end up with is something called a derived contingency which again has generated through all this probabilistic cost technique and there is a range that is recommended for each of the phases of scoping, concept development and final design pre-tender which that derived contingency falls between. So that derived contingency percentage gets smaller as we are getting towards the end of the project.

What you do not see on these things is a flat rate contingency; you just see little percentage of a derived contingency which is an assessment of all the risks throughout the development of the project. In our reporting to the Federal Government in our project proposal report they require significant discussion and demonstration of how we derived the P50 and P90 cost estimates, and the contingency. They like to see the contingency range that has been derived through the risk assessment process. It is compulsory for all Federal-funded projects now. They will not provide funding for the delivery phase if we don't put out that P50 and P90 cost estimate.

Stepping back into the State-funded projects, the department has put up, and it has been agreed by Cabinet, the State infrastructure investment program and in that we have recommended the same process. We are just applying the same P50 and P90 cost-estimating process to go through for all our State funding projects as well because as an agency we believe that is a much more rigorous process of developing our cost estimates.

... Off the S-curve you can pull off any P factor you like. P50 and P90 is what the Federal Government is requiring. P50 is the higher-risk number that there will be cost overrun. If you take a whole bracket of projects, you can say that over 100 projects 50 per cent of those projects might overrun and 50 per cent might under cost run. So within a whole program, and north-east freight roads is a small program because it has five projects happening under the one bracket - as we do the cost estimates for each of these different phases we are using the P50 cost. We need to get the scoping for each of these projects to match the P50 costs so that if there is cost overrun, there is going to be some float left, because we have no more money. The \$42.5 million is the maximum amount of funding we have so we have to deliver what we can in this whole package of projects and be very careful on the scale and scope within each project.

Ability to deliver the North East Freight Roads Program within budget

The Committee questioned the witnesses on the capacity to deliver the projects identified in the North East Freight Roads Program within the budget allocated for the program and how the identified projects have been prioritised within the budget allocation. Ms Boyle responded:

... Essentially the P100 is \$42.5 million and that means that we are 100 per cent sure that we have to deliver all this work for that amount of money. We are scaling and scoping each of these carefully in the unknowns we have. At the moment the first certainty we will have is the contract price for these bridges. Once we know that, we will have a bit more certainty as to how much money we have for the rest of the program. We have locked these two projects in and in terms of scaling to take account of any cost overrun or exceeding the P90 it will be picked up in the amount of work, and probably the amount of work we can deliver on Camden Road.

... Yes, but, having said that, we need to be set up for having some scalability within the contracts, too. For Bridport Main Road we are certain we can deliver a certain amount of road widening to that 8-metre cross-section, but the remainder of it we are not certain about so we are keeping those projects as inseparable parts. We may put them out to tender and we may not, depending on how much this costs and how much that costs.

... The way it is working the Mathinna bridges will, if it is approved here, occur and we will have a fixed price there. The next priority is the upgrades on the Tasman road and that is primarily because we can't scale that project, it is pretty well a non-scaleable. If we drop any of it out we won't be able to achieve the cost section required to get gazette if we are seeking gazettal to say it is an HPV route. It is an all or nothing if that is our objective. Bridport Main Road is more scaleable because it is just the way that has worked out. We have been there and we have done bits and pieces over the last few years. There are some sections that are close to meeting that cost section that we are looking for, not quite but close enough, and there are other sections that just don't meet it at all and we are widening from 6 metres to 8 metres and particularly the southern section nearest the 4 or 5 kilometres out of Scottsdale so it is a bit more of a scaleable project and because it is such a significant road, the department will keep its eye on in the long run to achieve the ultimate upgrades.

Then we have not scoped the works on Camden Hill Road yet. The Launceston Council is not all that enthusiastic at the moment on Camden Hill Road. They would prefer for all the money to be spent on Prossers Road. We will just juggle these two projects on the scope and on Camden Road and Prossers Road to a certain extent based on the costs when they become certain for the other major projects. The total package is P100 so there is no more money, that is it, we are just managing the project.

The Committee sought confirmation that the bridges to be constructed would not become stranded assets, which was confirmed by Ms Boyle.

5. DOCUMENTS TAKEN INTO EVIDENCE

The following document was taken into evidence and considered by the Committee:

 Department of Infrastructure, Energy and Resources – Submission to the Parliamentary Standing Committee on Public Works – Mathinna/Evercreech Bridge Replacements, February 2012.

6. CONCLUSION AND RECOMMENDATION

The need for the proposed works was clearly established. The identified bridge assets are nearing the end of their service life and are at risk of collapse, which presents a safety hazard. The bridges are load limited, which restricts the operational capacity of the roads on which the bridges are located to a level substantially below that which is intended under their gazettal as High Productivity Vehicle/Higher Mass Limit routes. This has flow on impacts including: greater loading on local road networks thereby increasing road maintenance costs; increased vehicle operational and maintenance costs; and adverse effects on driver safety through increased travel times and the use of steep gravel roads.

The Committee notes that while there has been a change in circumstances with regards to heavy vehicle movements from forestry operations, as a result of forestry industry restructuring generally, and the cessation of softwood sawmilling in Scottsdale more specifically, this has had no adverse impact on the need for the proposed works. The demand for heavy vehicle movements in the area still exists at a level that justifies the need for the proposed works, albeit in a different direction than on which the project was originally based.

The Committee is of the view that the project will provide for improved freight efficiency in the area, while reducing maintenance costs on surrounding roads and providing an improved level of safety for both industry and private vehicles.

The Committee recommends the project in accordance with the plans and specifications submitted.

Parliament House Hobart 16 March 2012 Hon. A. P. Harriss M.L.C. Chairman