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PARLIAMENT OF TASMANIA

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Tea Tree Secondary Road – Pavement Widening and Alignment Improvements

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

MEMBERS OF THE COMMITTEE

Legislative Council

House of Assembly

Mr *Harriss* (Chairman)
Mr *Hall*

Mr *Best*
Mr *Green*
Mrs *Napier*

By Authority: Government Printer, Tasmania

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INTRODUCTION

To His Excellency the Honourable Peter George Underwood, Officer of the Order of Australia, 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: -

Tea Tree Secondary Road – Pavement Widening and Alignment Improvements.

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

BACKGROUND

Tea Tree Secondary Road is located east of Brighton in the southeast of Tasmania. It connects the Midland Highway with Colebrook Main Road near Campania. It is approximately 17 kilometres long.

The Road is a Category 2 – Regional Freight Route in the Tasmanian State Road Hierarchy. It is part of the nominated B-double route from southern Tasmania to the East Coast.

Most of Tea Tree Secondary Road was reconstructed and widened between 1988 and 1994 with the exception of the two sections shown on Figure 1. The total length of the two sections is approximately 4 kilometres.

Tea Tree Secondary Road is located in three local government areas - Brighton, Southern Midlands and Clarence. The western section (Section 1) of proposed works is within the Municipality of Brighton and the eastern section (Section 2) is in the Municipality of Southern Midlands. There are no works proposed within the City of Clarence.

The project is being undertaken in four main phases, concept development, preliminary design, detailed design and construction. The concept development phase assessed the road against the Austroads guidelines for road design. That phase identified that the width of the road is less than desirable for the type of traffic which now uses the road. Testing of the pavement revealed that it has insufficient strength to carry the anticipated traffic for the design life of 20 years. Also identified were a number of crests, curves, property accesses and junctions where sight distance is below Austroads guidelines. Also the width of some of the junctions makes it difficult for larger vehicles to turn.

The project objectives were generated to address the issues identified during the concept development phase of the project.

The second, preliminary design, phase has been completed and included the collation of background ground and environmental surveys, consultation with abutting

landowners, public utility owners and the Southern Midlands and Brighton Councils as well as the development of the design solutions presented in the report.

The detailed design and construction phases are programmed to proceed upon approval of the project. Many of the project objectives are related to the safe operation of the road. A road safety audit is included in the construction phase with the audit to be undertaken just prior to opening of the works to ensure that the safety objectives have been achieved.

This report summarises the issues associated with the proposed roadworks.

1.2 Objectives

Based on the issues that were identified in the concept development phase the objectives of the project are to:

- widen the sealed pavement to provide a uniform width for the full length of Tea Tree Secondary Road
- strengthen the pavement so that it can carry the anticipated traffic for the next 20 years
- increase the radius of the curves so that they provide a consistent alignment thereby improving safety
- improve sight distance over the crests where it is prudent and feasible
- provide appropriate sight distance from junctions and accesses
- improve the layout of the road junctions and accesses, especially for large vehicles.

2. THE EXISTING SITUATION

2.1 The Road

Tea Tree Secondary Road is typical of many rural roads in Tasmania. The road consists of a number of straight sections across relatively level terrain with the straights joined by either one or a group of low radius horizontal and/or vertical curves where the road crosses watercourses, ridges or the like.

The proposed works are located in a 100 km/h speed zone.

Tea Tree Secondary Road consists of a single lane in each direction. Lanes are typically 2.9 metres wide. The unsealed shoulder width varies from 0.7 metres to around 1.0 metre. Most of the table drains are narrow and shallow and do not provide effective protection for the pavement from water ingress.

There are five junctions onto the two sections of Tea Tree Secondary Road which are the subject of this report. The side roads are:

- Vineyard Drive
- Middle Tea Tree Road
- Grices Road
- Williams Road
- Rekuna Station Road.

The sight distance at Grices Road, Williams Road and Rekuna Station Road is deficient due mainly to the vertical alignment of Tea Tree Secondary Road. The narrow width of the five junctions impacts adversely on the use of the junctions by large vehicles.

There are five accesses on Section 1 and eight accesses on Section 2. Some of the accesses do not have adequate sight distance.

2.2 Traffic Flow

The traffic data is based on counts undertaken by DIER.

For Section 1 the traffic flow was 1,710 vehicles per day in 2003. 219 of these vehicles are trucks of which 82 are articulated vehicles.

For Section 2 the traffic flow was 1,048 vehicles per day in 2003. 184 of these vehicles are trucks of which 78 are articulated vehicles.

Based on the historic growth rate of 5% per annum between 1996 and 2003 the estimated traffic volumes in 2008 would be around 2,300 vehicles per day for Section 1 and 1,350 for Section 2.

2.3 Road Crashes

The two sections of Tea Tree Secondary Road experienced 10 crashes in the period from January 2003 until February 2008. The crashes were:

- one head on crash
- one car pulling out of Middle Tea Tree Road
- one collision between vehicles traveling in the same direction; and
- seven vehicles leaving the carriageway.

2.4 The Road Side Environs

The abutting land use is rural, dominated by grazing with some horticulture – mainly vineyards but also there a number of rural residential properties. Most of the land is cleared with some trees along the roadside and a few scattered in the paddocks. There are a number of rows of trees along the side of the road which form windbreaks and/or landscape features. At some locations these trees are within the clear zone and present a hazard for errant vehicles.

The land abutting the Tea Tree Secondary Road consists of several different zones under the Brighton Planning Scheme 2000 and the Southern Midlands Planning Scheme 1998.

Many of the Aurora poles are located at various offsets from the road with the minimum being approximately 3 metres.

There are a number of Telstra crossings which serve local properties.

Both the Southern Midlands Council and Hobart Water have a water main which runs approximately parallel to the road in Section 2.

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3. PROJECT JUSTIFICATION

The justification for this project derives from the safety improvements, reduction in the current high maintenance costs and improvement in the operation of the road. These main issues are discussed below.

3.1 Safety Benefits

The proposed project incorporates significant safety improvements for the road users as follows:

- increased stopping sight distance for users traveling along the road,
- increased safe intersection sight distance for users of the junctions and accesses to the road,
- a wider pavement with sealed shoulders reducing the likelihood of run-off-the-road crashes,
- improved delineation through the provision of edge lines and upgrading of guide posts
- updating of the warning signs along the road to warn road users of changes in the standard of the road
- the removal of roadside hazards reducing the severity of run-off-the-road crashes, and
- the installation of safety barrier.

3.2 Maintenance Cost Savings

The proposed project will significantly reduce the recurrent pavement maintenance cost through:

- increased strength of the pavement using a granular overlay for those sections of the road where the current pavement strength is deficient, and
- improvement to the pavement drainage system reducing the rate of pavement deterioration.

3.3 Road User Benefits

With the increasing traffic on Tea Tree Secondary Road and therefore increasing number of heavy vehicles the proposed widening and vertical and horizontal improvements to the road will have the following road user benefits:

- Widening of the sealed pavement
- Improved delineation by installing edge lines along the road and new guide posts
- Providing bus stops
- Improved sight distance at accesses
- New safety barrier.

4. PROJECT DESCRIPTION

4.1 The Proposed Works

The proposed works can be categorised as:

- Cross section improvement
- Vertical alignment improvement

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- Horizontal alignment improvement
- Drainage.

In addition there will be works to improve junctions and accesses, property fences and landscaping.

4.1.1 Cross Section and Pavement

As mentioned above the primary aim of the project is to widen the sealed pavement so that the road can provide an improved service for its function in the B-double network.

On the sites where the Tea Tree Secondary Road will be improved the existing cross section consists of a sealed pavement width of approximately 5.8 metres with unsealed shoulders of variable width. The proposed cross section consists of a 6.0 metre sealed pavement with 0.5 metre sealed shoulders and 0.5 metre verges. Additionally the lanes will be widened on curves to allow for the increased tracking width of large vehicles on curves. Verges will be widened to 1.0 metre where safety barrier is provided.

The pavement investigation indicated that much of the existing pavement has insufficient strength to carry the estimated traffic loads for the next 20 years. Consequently a granular pavement overlay has been incorporated into the design to strengthen the road. At some locations along the road where it is proposed that the vertical alignment will be improved to increase the sight distance over the crest a new full depth pavement will be provided.

4.1.2 Alignment General

The traffic survey undertaken by DIER indicates that vehicles often travel along the straight sections of Tea Tree Secondary Road at 100 km/h. Austroads indicates that assuming motorists slow by 10 km/h as they approach a curve. Thus a design speed of 90 km/h has been adopted for the project.

4.1.3 Vertical Alignment

The concept development investigations identified that across the project there were five sites where the vertical alignment did not have the required sight distance over a crest. An assessment of the likely costs and benefits of improving these sites resulted in alternative options being proposed at these locations. At these sites, the vertical crests will be treated by widening the shoulder by an additional 1 metre as recommended by Austroads. This approach provides motorists with sufficient shoulder width to be able to manoeuvre around objects on the road rather than completely stopping. The additional shoulder widening locations are shown on the design drawings.

Section 2 is predominately located on sandstone. Geotechnical investigations have been undertaken to assess the relative cost of two alternative profiles for the road in the vicinity of Grices Road – one in cut and one in fill. The geotechnical investigations revealed that it should be possible to excavate the sandstone without incurring a significant cost penalty and thus the better lower alignment is proposed.

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The “cut-option” also improves Grices Road, as the existing approach to the Tea Tree Secondary Road from Grices Road is steep. By lowering the profile at the junction the intersection sight distance at Grices Road will be improved.

4.1.4 Horizontal Alignment

As with the vertical alignment the concept development investigations identified that Sections 1 and 2 both have 2 sites where the horizontal alignment restricted the sight distance to less than that recommended for a speed of 90 km/h. At all four curves have been upgraded such that the proposed design provides the recommended sight distance.

4.1.5 Junctions and Accesses

As mentioned in Section 2.1 of this report there are five junctions onto the two sections of Tea Tree Secondary Road. Safe Intersection Sight Distance (SISD) will be achieved at each of the junctions.

The junction treatment for Rekuna Station Road will stay the same as the road serves just three properties. All other junctions listed in Section 2.1 of this report will have an Auxiliary Right Turn Treatment (AUR) in accordance with Austroads guidelines. The AUR has pavement widening on the opposite side of the junction to allow vehicles to safely pass those waiting to conduct a right turn movement.

On Section 2 the two accesses to Ransley’s property (old Rekuna School - historic property) are very steep. The road will be widened away from Ransley’s property on the southern side of the road not to encroach onto the heritage listed property. At the present cars coming from the property onto the road is on a steep uphill slope and therefore makes it very difficult for the drivers entering the road. Only minimal profile changes improving the accesses will be made. Both existing gravel accesses will be sealed as part of the project.

4.1.6 Drainage

The existing road drainage system operates satisfactorily. Generally the existing culverts will be lengthened to accommodate the wider road. However, pipes smaller than 375 mm diameter will be increased to this size, as small pipes are prone to blocking.

New 1.8 metre wide table drains will be constructed for the full length of the works.

4.2 THE EXISTING ENVIRONMENT

4.2.1 Flora

Vegetation

The proposed road improvements will result in a significant impact on the Eucalyptus viminalis grassy woodland and some impact on the lowland grassland complex.

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Threatened Species

Five plant species of conservation significance, as listed on the Threatened Species Protection Act 1995, were recorded in the project area. Two of these species are also listed on the Commonwealth Environment and Biodiversity Conservation Act 1999 (EPBC Act), one endangered and one rare.

Three of these species will be impacted by the proposed road improvements.

A Permit to Take, pursuant to the Threatened Species Act 1995, has been sought from the Conservation Assessment Section (CASS) of the Department of Primary Industries and Water for the removal of:

- 73 plants of *Austrodanthonia popinensis* blue wallaby grass.
- 20 plants of *Austrostipa nodosa* knotty spear grass.
- 610 plants of *Vittadinia muelleri* narrow leaf new holland daisy.

The *Austrodanthonia popinensis* blue wallaby grass is also a listed species under the EPBC Act. A referral to the Commonwealth Department of Environment, Water, Heritage and the Arts will be made.

4.2.2 Fauna

There will be no impact on threatened fauna species as habitat loss associated with the proposed works is minimal and the existing habitats are not regarded as being of crucial significance locally for any of the threatened species previously recorded from the wider area.

4.2.3 Aboriginal cultural heritage

No sites of Aboriginal cultural heritage value have been identified in the project area.

4.2.4 Historic heritage

There will be no impact from the proposed roadworks on any heritage listed properties, or their title boundaries.

4.2.5 Visual impact

There will be some impact on visual amenity in the area as it will be necessary to remove the following trees in section 2 of the project:

- The solitary oak on the northern side of Tea Tree Secondary Road, west of the entrance to Woodlands.
- Three trees on the southern edge of the northward trending line of mature *Pinus radiata* trees on the northern side of Tea Tree Secondary Road at Ch 3840.
- The single *Radiata* tree on the southern side of Tea Tree Secondary Road at Ch 3840.

All of these trees are required to be removed from the edge of the proposed road alignment to improve safety along the road corridor.

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4.3 Social Assessment

Potential social and economic impacts as a result of the proposed works will be positive, as the aim of the works is to widen the road and improve safety along Tea Tree Secondary Road and its associated junctions and accesses.

There will be some short-term social impacts arising from inconvenience associated with the road construction activities.

Tea Tree Secondary Road forms part of the school bus route. All existing bus stops have been discussed with the bus operator. Representations have also been received from several residents about the inadequacy of the existing school bus stops on this B-double route. As the Tea Tree Secondary Road forms part of the B-double route bus stops will be constructed to allow sufficient room for the school bus to pull off the road safely.

Bus stops are currently located at junctions and accesses. It is proposed to widen the throats of these junctions and accesses. The location of the bus stops is shown on the design drawings.

4.3.1 Property Impacts

There are six landowners on Section 1 and fourteen landowners on Section 2 who own land adjacent to the road. It will be necessary to acquire land from 15 of the landowners. Acquisitions are typically from the frontage of the property. This will require re-fencing of most of the highway boundary along the affected properties.

There have been discussions with the affected property owners to determine what accommodation works are necessary and to enable acquisition of the necessary land. Every effort has been made to ensure that individual concerns have been addressed.

There are five accesses on Section 1 and eight accesses on Section 2. Currently, not all accesses have adequate sight distance. Accesses will be improved where necessary to achieve safe intersection sight distance for 90 km/h.

4.4 Public Consultation

As part of the project a public consultation strategy has been developed and implemented. This strategy is consistent with the project phases described in section 1.1 above in that it has four phases.

In Phase one of the project, the concept development phase, DIER has been consulting with both Brighton Council and Southern Midlands Council to identify any issues from ratepayers and road users that the Councils may be aware of which should be included within the scope of the project. The extent of the project was discussed with both Councils and both support the upgrading of this section of Tea Tree Secondary Road.

Phase two of the public consultation strategy consisted of:

- meeting with the abutting property owners to firstly explain the reasons for and objectives of the project to them, secondly provide them with a

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opportunity to raise issues directly with the project team and thirdly to provide them with a mechanism to input into the development of the project. During the discussions with the landowners the processes which are used by DIER for the necessary land acquisition was outlined to each of the owners.

- discussion with the school bus operator who has a route along Tea Tree Secondary Road to identify any operational issues, particularly with bus stops, with the current road and to determine where bus stops are required for current patronage.
- Meetings have been held with each of the public utility owners to identify the location of their utilities and the consequent impact of the proposed roadworks.

Landowners identified a number of issues including sight distance from accesses and junctions and the lack of a sealed shoulder and poor facilities for school buses which were also identified during the concept development phase of the project. All those consulted have been supportive of the improvements proposed to the specific issues identified and the works in general.

The third stage of the public consultation will be focused on the landowners to precisely define extent of the required acquisition, the works at driveways and replacement of fencing and changes to public utilities to their properties. The land required for the works will be surveyed and the acquisition process will commence which will involve the Office of the Valuer General and DIER Land Assets Group liaising with the landowners to agree on the compensation to be paid to the landowners. Plans of the proposed works will be placed on DIER's web site and be provided to the Southern Midlands and Brighton Councils to enable them to place them on their web sites.

The final phase of the public consultation is during construction. During this period DIER will keep the traveling public informed of possible impacts on them through signage on the site and through notices in the press. There will be close liaison between the contract administration team and the landowners to ensure that the landowners are advised of the stage of the works and the impact on them.

Planning Approval

The road works, as proposed, cross through two municipal areas – Brighton and Southern Midlands. The works are exempt from planning approval in both municipalities, pursuant to clause 5.1 (Exemptions) of the Brighton Planning Scheme 2000 and Schedule 1 of the Southern Midlands Planning Scheme 1998.

Both Brighton Council and Southern Midlands Council Planning Officers have confirmed the exemption.

State Policies

State Coastal Policy

The Tasmanian State Coastal Policy 1996 is applicable to all land within a distance of one kilometre from the high-water mark. The proposed development is not within 1

km of the River Derwent and, accordingly, the State Coastal Policy 1996 does not apply to this project.

State Policy on the Protection of Agricultural Land

The State Policy on the Protection of Agricultural Land 2000 provides for protection of the States prime agricultural land from conversion to non-agricultural use and development. The policy defines Prime agricultural land as meaning:

“Agricultural land classified or capable of being classified as Class 1,2 or 3 land using the Class Definitions and methodology from the Land Capability Handbook, KE Noble 1992, Department of Primary Industry, Tasmania.”

The project area is mapped as Class 4, 5 and 6 agricultural lands and not capable of sustaining agricultural production, consequently the proposed works are consistent with the State Policy on the Protection of Agricultural Land 2000.

State Policy on Water Quality Management

In accordance with Section 35.1 of The State Policy on Water Quality Management 1997, all road construction works must employ measures consistent with best practice environmental management to prevent erosion and the pollution of streams and waterways by runoff from sites of road construction.

Appropriate silt control and sedimentation measures will be put in place to protect the surrounding waterways and prevent potential soil erosion on site.

COST ESTIMATE

Cost Item	Amount
Earthworks	560,000
Drainage	180,000
Pavement	940,000
Bituminous Surfacing	310,000
Traffic Facilities	130,000
Landscaping	20,000
Junctions, Property Works and Public Utilities	520,000
Acquisition	200,000
Design, Contract Administration, Project Management and Public Consultation	910,000
Contingency (≈12%)	470,000
TOTAL	\$4,240,000

EVIDENCE

The Committee commenced its inquiry on Tuesday, 6 May last. Accompanied by Officers of the Department of Infrastructure, Energy & Resources, the Committee was conducted on a site inspection of the proposed works.

Following the site inspections the Committee reconvened in Committee Room 2, Parliament House. The following witnesses were called, made the Statutory Declaration and examined by the Committee in public:-

- Brian Daws, Senior Project Manager, Project Services Road Programming & Delivery Branch, DIER; and
- Brian Williams, Design Manager, Pitt & Sherry

Background

The Senior Project Manager, Mr Daws, provided the Committee with the following overview of the project:-

I will begin with the background of the project, the existing situation and some of the benefits and Brian can go into a bit more detail about the actual design of the road that we showed you this morning. The Tea Tree secondary road is located out near Brighton. It connects the Midland Highway with Colebrook Main Road near Campania. It is about 17 kilometres in total. The road is a category 2 regional freight route in the Tasmanian State road hierarchy and it is part of the nominated B-double truck route. Most of the section of Tea Tree secondary road was reconstructed and upgraded between 1988 and 1994, apart from the two sections that we looked at this morning. The total length of the two sections is about 4 kilometres.

The project is being done in four main phases: concept development, preliminary design, detailed design and the construction. During the concept phase we identified that the width of the road is less than desirable for the vehicles that use the road. Testing of the road pavement also revealed that the pavement strength is insufficient to carry the design loads for the next 20 years, which is the design life. We also identified that there are a number of crests, curves, property accesses and property and road junctions which also needed improvement. The project objectives were generated from the issues that were identified during the concept phase. In the preliminary design we went through and collated all the background environmental surveys.

We had consultation with the abutting landowners, the public utility owners, the Brighton Council and the Southern Midlands Council.

The detailed design and the construction phases have not been started yet and will commence once the approval is given to proceed.

We are also including a road safety audit as part of the construction phase to make sure that all the safety objectives have been achieved.

I turn to the objectives of the project. Based on issues that were developed identified in the concept development phase, the objectives have been identified as: widening the sealed pavement to provide a uniform width of the road for the vehicles; strengthening the pavement so that it can carry the vehicles for the next 20 years; increasing the radius of the kerbs so that they provide a consistent alignment throughout all of Tea Tree Road; improving the sight distance over the crests where it is prudent to do so; providing appropriate sight distances from junctions and property accesses; and improving the layout of the road junctions and accesses.

At the moment, the Tea Tree secondary road consists of a single lane in each direction. The lanes are typically 2.9 metres wide and they have an unsealed shoulder which varies from about 0.7 to 1 metre. Most of the table drains along the road are narrow, they are shallow and they do not actually provide effective protection for the pavement from any water ingress.

As you have seen this morning, there are also a number of junctions that cross with the Tea Tree secondary road in the two sections. There are also 13 property accesses across the project and some of these do not have adequate sight distance.

Going through the previous data on the Tea Tree secondary road, between January 2003 and February 2008 we were able to identify 10 vehicle crashes on the road and they ranged from one head-on crash to pulling out of the junction and leaving the carriageway.

The roadside environment is typically rural and it is dominated by grazing with some horticulture, mainly vineyards that you would have seen along the road this morning. Most of the land has been cleared with some trees still located along the roadside which also prove to be hazardous to vehicles.

We also have a number of Aurora power poles which are located at the various offsets from the road and these are as close as 3 metres. We also have Telstra in the vicinity and the Southern Midlands Council and Hobart Water have water mains in the area of the proposed works.

The justification for the project derives from the safety improvements, the reduction in the high maintenance costs and improvement in the operation of the road.

Safety benefits for the project will include: the increased stopping sight distance for the users traveling along the road; increased safety and protection of sight distance for the users at the junction and the property accesses; the wider pavement and sealed shoulders; improved delineation through the provision of edge lines and upgrading for guide posts; updating of the warning signs along the road; removal of roadside hazards; and, where required, the installation of safety barriers. The project will also significantly reduce the recurrent pavement maintenance costs through strengthening of the pavement, as it will be providing a granular overlay across both sections of the project and also the improvement to the pavement drainage system by upgrading the drains to reduce the water ingress.

The road user benefit will come from the widening of the sealed pavement, improved delineation, providing better bus stops, providing improved sight distance at property accesses and, as mentioned, safety barriers where required.

The public consultation that we have done is part of the project to date. It has been broken down into four phases. In phase 1 of the project, the concept development phase, DIER has consulted with both Brighton Council and the Southern Midlands Council to identify any issues from the ratepayers and the road users that the councils might be aware of. The extent of the project was discussed with both councils and both supported the upgrading of this section of the road.

Phase 2 of the public consultation consisted of meeting with the property owners, firstly, to explain the reasons for and the objectives of the project to them; secondly, also to provide them with the opportunity to raise any issues directly with the project team; and thirdly, to provide them with a mechanism of input into the development of the project. During the discussions with the landowners DIER's process for the necessary land acquisition was also explained to them.

There were discussions held with the school bus operator who has the bus route along Tea Tree secondary road to identify any operational issues they currently have, particularly at the bus stops.

We have also had meetings with the public utility owners - Telstra, Aurora and Hobart Water - to identify the location of their utilities and any impact we will have.

Through this phase the landowners identified a number of issues including the sight distance from their access and road junctions; the lack of a sealed shoulder; and poor facilities for school buses, which was also identified during the concept development phase.

All of those who were consulted as part of phase 2 were supportive of the improvements proposed to the specific issues that were identified for the work in general.

During the third stage of public consultation we will focus on the landowners to precisely define the extent of the work, particularly in relation to land acquisitions, the works at driveways, replacing fencing and any public utilities that may affect their property.

The final phase of the public consultation will be during the construction. During this period DIER will be keeping the traveling public informed of possible impacts on them through the use of signage on site and through notices in the press. The contract administration team will also be liaising closely with all the property owners so that they know when they will be impacted and how.

For the planning approval the project goes through Brighton Council, which is the first section, and Southern Midlands Council, which is the second section. Both of these sections were exempt from the planning approval and this has been confirmed through the planning officers.

Project design

The Consultant Design manager, Brian Williams made the following submission in relation to the project design:-

The project design has a number of elements. Probably the main ones are widening the road and improving the geometry plus the vertical plane - the crests - and also improving the horizontal alignment. As Brian has already mentioned, we are widening the road to provide a uniform cross section. We have tried to do that generally on one side of the road so that we only impact on owners on one side the road and not on both sides. This will also help with the construction operations - they have less impact on the traveling public if we are only working on one side of the road. We do have to come back and put an overlay right across the whole width of the road over the full length to strengthen the road and we have tried to minimise those impacts by designing on one side.

... The base is all right as a sub base but not as the top layer, so we need to put a new top layer on to strengthen it.

... That will give us the 20 years. It is normally 175 mm thick. The existing road is a bit rounded and a bit out of shape so it won't be a uniform thickness, but it will be approximately 175 mm. That will give us that 20-year design life. On the widening bits you have

to have three layers of paving. You have to have a full depth of paving, about 450 mm, to get the strength on the outside.

...Outside the seal it is not strong. We will cut out all the existing narrow shoulders and put a full pavement thickness in.

As I mentioned when we were on the site visit, the horizontal alignment changes are fairly minimal. It is the first curve as you come out of Tea Tree before you get to Vineyards Drive, just improving that curve a little. The first curve on the second section - the right-hand curve where the off-cut exists already - at the very eastern end is where we take that little S-curve out. So the horizontal alignment changes are fairly small and we try to use the existing road and not go off that to save the asset. There are more changes in the vertical and they are more complex for what we want to achieve. As we mentioned, to try to keep the budget under control, we are not tackling the major crest at the water tank on section 2 to use the funds to get better benefit for the amount of money we expect. On those crests where we are not improving the alignment, the road will be widened a little further so that motorists have somewhere to manoeuvre if there is an object on the road. If you look on the back of the report, the preliminary design drawings, and go to P8, if you look at that black pavement there is a little bit of orange between the yellow and the black. That is a little bit of widening at the shoulders because there is a little crest there.

Old schoolhouse

The Committee questioned the witnesses regarding the dual accesses to the 'Old Schoolhouse', the following exchange took place:-

Mr WILLIAMS - There are a couple of issues there. Tea Tree Road is not a limited access road under the Roads and Jetties Act so DIER has no statutory control over access. The only control over access is through the council. I think the heritage impacts would be something for Heritage Tasmania to take up, with respect to the road design.

Mrs NAPIER - So you are saying that, given that they already have two accesses, you are not going to change anything?

Mr WILLIAMS - Not going to change it.

Mr DAWS - We are not going to close it down because it is already an existing situation.

Accesses

The Committee questioned the witnesses as to whether any existing accesses are proposed to be removed. Mr Williams responded:-

There are relatively few accesses on the road for a road that has a lot of roadside developed, as you noticed this morning. Some of the properties that come in off Grices Road, the two corner properties, don't access onto Tea Tree Road; they access onto Grices Road. The same at Rekuna Station Road; the property there actually comes in off it there rather than off Tea Tree Road. So it's not a major issue. We have been able to achieve appropriate intersection sight distance for those accesses, which complies with the requirements of the planning scheme, even though we are not required to lodge a development application because of certain exemptions. We still meet those requirements for sight distances.

I think the accesses are up to an appropriate standard. We've talked to the owners, as Brian mentioned, about what sort of vehicles they take in and out. The access opposite Williams Road, for instance, is fairly elaborate. The owner of that property has a truck bodyworks. He has big trucks going in and out so the access there is quite elaborate.

Intersections/Sight distances

The Committee questioned the witnesses regarding sight distances and the differing treatment of the intersections given the traffic volumes on the road. The following exchange occurred:-

Mr WILLIAMS - *The reason for the left-turn lane at Vineyards Drive is that it hasn't quite got the sight distance we'd like for that crest, so we were proposing to put some widening of the shoulder in this area. What turned out was that it came along the road and then went out with the shoulder widening and then came back in. Then there's Vineyards Drive access immediately after we've terminated the widening. That is where it needs to be to manoeuvre around an object on the road.*

Mrs NAPIER - *So that was on the crest of the hill?*

Mr WILLIAMS - *Yes. We thought somebody might misunderstand what that piece of widening was and go in there thinking they were going to be able to turn into Vineyards Drive because it was very close and then suddenly they would come back out because it stopped. If somebody comes through and thinks also that they were turning, there's a potential hazard so we decided to extend that lane through to Vineyards Drive and turn it into a left-*

turn lane so it could be used for a left turn and for avoiding an object on the road because of the slightly restricted sight distance on the crest. That's how it came to that. The warrants for the junction operation don't require that left and right. But as we were going to build this situation which, in our view, was going to be slightly hazardous, we thought this was a better solution.

Mrs NAPIER - That explains that relative to the plan. Coming back to that Middle Tea Tree Road, which I thought was probably the busiest connector on the sections of road that we saw -

Mr WILLIAMS - That would be the only through-road.

Mrs NAPIER - I was a bit surprised that we weren't allowing at least a pull-off there.

Mr WILLIAMS - As you can see from the marking on the plan, the dashed line on the northern side, it is a lane where if there is somebody propped to turn right into Middle Tea Tree Road somebody can drive over that dashed line and pass them on the left-hand side. That is standard for junctions.

Mrs NAPIER - You mean the bus stop area?

Mr WILLIAMS - No, in between the bus stop and that little piece there. So you have the through line where you have the -

Mrs NAPIER - So there is an allowance for people to go on the other side of there?

Mr WILLIAMS - Yes, but not a marked separate right-turn lane. It's a widening of the pavement with a full width of lane.

Mrs NAPIER - So you have a right-hand turn lane but you don't have a left-turn lane.

Mr WILLIAMS - No, we haven't got a left. From a traffic point of view I would suggest that very few people would make that left turn.

Mrs NAPIER - Because?

Mr WILLIAMS - Because it's not a very big catchment of people between there and Colebrook Main Road.

CHAIR - Which one?

Mr WILLIAMS - Right at the far end of the job. Once you get to Colebrook Main Road, if you want to go to Richmond, you'll go straight down. You will not come down Middle Tea Tree.

CHAIR - This is the one that goes down past Casimaty's down further, the Middle Tea Tree Road?

Mr WILLIAMS - I don't know.

Mr BEST - Would you have the trucks coming back that way, though?

Mr WILLIAMS - No.

Mr BEST - So the trucks go towards Campania, do they then come back through towards Brighton from Campania?

Mr WILLIAMS - There is a bit of truck traffic across but I don't know where the turning thing is.

Mr BEST - If you're turning off here, you don't really want a truck -

Mr DAWS - You do have a pretty good sight distance. It's a long straight and you can see the junction well in advance.

Mr BEST - From which direction?

Mr DAWS - When you're coming from Campania heading towards Brighton. You've got a good sight distance leading up to the junction, whereas with Vineyards Drive we only provided the left-turn lane because you didn't have that sight distance.

Mr BEST - I understand that, but if you have a heavy rigid vehicle on your tail and you want to turn left - there may not be a lot of traffic but I'm not sure where you listed the collisions and what occurred at that intersection -

Mrs NAPIER - Is there much evidence to say there have been collisions in this area?

Mr BEST - There is a listing of one here. It doesn't say where the head-on crash was but there was one car pulling out of Middle Tea Tree. One would assume if it pulled out - I don't know which way it was turning but -

Mr WILLIAMS - A left-turn lane is not going to help you probably. If he's coming out of a junction he's made a wrong decision as to how big the gap was.

Mr BEST - What I was interested in is that that bank seems to sit up a little bit there. When we were in the bus looking across it seemed to be up maybe half a metre or so. Say you are coming

from Richmond and heading towards Brighton - I see how you've laid the set-up here, you've put a bit of an angle there so that increases your view, but you have a bit of bank with trees. I thought you might have opened that up a bit better.

Mr WILLIAMS - *They don't restrict the sight because when you come up to the hold line on Middle Tea Tree Road you can see a fair distance. We checked all that. If you come back, the bank that you identified there in front of the church limits your sight distance but you can still see far enough when you come up to the hold line.*

Mr BEST - *So if you bring your vehicle to here, say, how far along can you see from there? What would be the sight distance?*

Mr WILLIAMS - *I don't think I can answer that off the cuff, Brenton.*

Mr BEST - *I'm not trying to give you a hard time, but I just wonder how far you can see. You are saying you measured that, or somebody has.*

Mr WILLIAMS - *I can't answer that without checking.*

Mrs NAPIER - *If you allowed at least for the left-hand turn - say, if someone is coming from Campania, if you allowed a bit more of a left-hand lane that would not only provide a better pull-off to the people coming in that direction but if you were sitting in Middle Tea Tree Road and wanting to turn right that would also improve your vision because you would have a bit more of a -*

Mr BEST - *I don't think you would see very far.*

Mr WILLIAMS - *To get another lane in there would require us to push the whole road to the north so we don't go into the church property.*

Mrs NAPIER - *You would need to move the road on the northern side?*

Mr WILLIAMS - *Yes. At the moment we have it sitting just about where the existing road sits. There is a bit of a drain and a cut batter on the churchyard fence is almost right on top of the batter.*

Mrs NAPIER - *They don't have any cemetery headstones in there, though. You'd just lose a couple of trees, I suppose.*

Mr DAWS - *We can't be sure how close the graves are to the actual fence line.*

Mr WILLIAMS - I don't know how close the closest graves are. You probably can't rely on the headstones; you would have to check that there aren't graves closer.

Mr BEST - I am not saying you haven't done it, but can you check that sight distance because it might make a big difference - another half metre or something. But, as you say, maybe you could see a distance along there.

Mrs NAPIER - The rest of the intersections are, in a sense, similar but even on the Williams' one, on P14, it is a friendlier pull-off than the connection into Middle Tea Tree Road. Good luck to them with the one on the right. I am looking at P14, Williams and Burns, and the road heading into the Williams' place. That is quite a user-friendly connection for their property.

Mr WILLIAMS - Actually that's not what it is for. That is better widening for a bus stop. There is also a bit of additional widening at Rekuna Station Road on the opposite side of the road - notice how that tapers out - that is a bit of space to put a bus stop.

Mrs NAPIER - Where the connections are?

Mr WILLIAMS - Yes, and you get the dual use of the pavement. A little left turn as well and the bus can pull in.

Mrs NAPIER - And that stops a car pulling out and running over a kid at the same time. That's not a bad idea.

CHAIR - Can we go back to P9, the Middle Tea Tree Road? The property on the western side is owned by Woodlands Wines. Have they done any development or looked at a reception winery, that sort of thing? I'm looking at the little shed there at the moment. If they did any development they would probably want to come off the Middle Tea Tree Road, wouldn't they, so that's going to increase the traffic volume perhaps there?

Mr WILLIAMS - I am sure that DIER would encourage them to come off Middle Tea Tree Road.

CHAIR - I am sure they would. Some of those wineries become pretty successful and they attract a lot of traffic.

Mr WILLIAMS - I think Woodlands Wine have a number of properties out this way, so where they would want to build -

CHAIR - I'm just looking at where their vines are.

Mr WILLIAMS - I think they own more properties down Middle Tea Tree Road as well.

Mrs NAPIER - You are saying you have to move the road over to the north in order to do it. What would the additional cost be to try and give you a better left hand turn into Middle Tea Tree Road coming from Campania?

Mr WILLIAMS - I don't think it would be enormous additional cost.

Mr DAWS - I guess one of the issues that we haven't actually mentioned yet is the project does have a budget of \$4 million. When you look at the preliminary design estimate, which has been done to date, I think we are up to \$4.24 million, so we are slightly over. So part of the detailed design we're already looking at ways to refine the estimate to make sure that we're only pricing what we need to price. Also to -

Mrs NAPIER - You have a contingency of 12 per cent though, haven't you?

Mr DAWS - That's all included, but that's spread out on the different elements of the design. There's a spread sheet right the way down the back that actually details the contingency percentage for all the different items and that's where during this next stage we will refine those contingencies as we identify exactly where the power lines are going to be. So we might be able to reduce some of those costs. We are already looking at ways to try to refine the price and to make sure we're not getting a blow out. I guess we are all just aware that we don't want to over-commit ourselves to the project and deliver something which is going to be outside our budget.

Project cost

The Committee asked the witnesses to elaborate upon fee structure of the project. Mr Daws responded:-

A lot of those fees already rolled up into the consultancy are for the design of the project as such. With the contract administration and project management and those types of overheads, at this stage we're using a nominal percentage of the overall project budget to say that this is what we think it's going to be at this stage and that's been revised down as the project goes on. For instance, \$180 000 for project management is just based on a typical project of \$4 million - so I guess these numbers are put there to say that if we do have a typical project based on past experience this is the type of order we're looking at. We may actually come down a bit but that's also why we haven't contingencies through there because we're already basing them on an average, whereas when you look at the pavement or the drainage, Brian is able to say that to

construct a 400mm pavement we know will cost us x amount of dollars so we've got a better feel of where the numbers are coming from.

Speed limit

The Committee questioned the witnesses as to whether it was the intention to sign the horizontal curves as 90 kph. Me Williams responded:-

No. Good design practice is that you don't have different elements on the road, so you come down one curve to the next if they're right and lefts really close together and there is not more than a 10 kph speed differential between those two curves. So there's only a little change in speed. The traffic data on the road indicates that the 85th percentile speed - that is the speed at which 85 per cent of motorists are traveling - is about 100 kph. They do that on the straights so that the following curve we can design at 90 kph because there is a 10 kph speed differential, and that's accepted practice Australia wide. So we really don't need to have this sort of road designed at the speed limit; you can design it for 10 kph less. If you have a series of curves you can wind them down as it gets bendier and then up again at the other end because if someone comes the other way it's got to be down for them as well. You shouldn't have that speed differential, so that's why we've designed the curves for 90 kph.

Aurora poles

The Committee questioned the witnesses as to whether there existed an arrangement with Aurora Energy in relation to the replacement of poles affected by the proposed works. Mr Daws responded:-

It is something that we are still trying to work through with DIER and Aurora and we had a meeting yesterday afternoon to discuss exactly that - issues on other projects. Because the road has been there for donkey's years and the powerlines have always been put next to the road, Aurora will go through and where they have just individual poles to replace they are not going to try to adjust the entire powerline easement just for one pole. For that reason, Brian has identified that there is a whole series of powerlines through here which we are moving right away from the powerlines as part of this work.

...At the moment we acquire enough land so we can put the power poles within the road reserve without an easement on the actual landowners. There are other ways around it, which we are still in the process of trying to work out, which involves Aurora easements through private properties but it is still something which is in the process.

... there is now an agreement between the department and Aurora that they have a life cycle of 30 years for their power poles so if the power poles through here were 30 years of age, for example, and we needed them relocated, there is a cost sharing between the two because Aurora would have had to replace them anyway so we do not pay the full value of a pole which has reached its use-by date. So there are those arrangements in place as well to try to offset that cost.

DOCUMENTS TAKEN INTO EVIDENCE

The following documents were taken into evidence and considered by the Committee:

- Tea Tree Secondary Road Pavement Widening and Junction Improvements
– Submission to the Parliamentary Standing Committee on Public Works, April 2008

CONCLUSION AND RECOMMENDATION

—The need for the proposed works was clearly established. The design for the proposed works once complete, will provide the following benefits: improved safety by providing increased sight distance; a wider pavement with sealed shoulders; upgrading of junctions; the removal of roadside hazards and the installation of safety barrier Reduced pavement maintenance costs through the improvement to the pavement drainage system and the strengthening of the pavement.

The Committee is of the view that a pull off access for a left turn into Middle tea Treet Road is needed for enhanced road safety and should be built into the design if at all possible.

The Committee recommends the project, in accordance with the documentation submitted, at an estimated total cost of \$4,000,000.

**Parliament House
HOBART
5 June 2008**

**Hon. A. P. Harriss M.L.C.
CHAIRMAN**

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