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PARLIAMENT OF TASMANIA

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PARLIAMENTARY STANDING COMMITTEE ON  
PUBLIC WORKS

# **ARTHUR HIGHWAY – SORELL TO MURDUNNA PAVEMENT WIDENING AND SHOULDER SEALING**

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*Brought up by Mr Green and Ordered by the House of Assembly to be printed.*

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## MEMBERS OF THE COMMITTEE

### LEGISLATIVE COUNCIL

Mr *Wing* (Chairman)  
Mr *Harriss*

### HOUSE OF ASSEMBLY

Mr *Green*  
Mr *Kons*  
Mrs *Napier*

## **INTRODUCTION**

The Committee has the honour to report to the House of Assembly in accordance with the provisions of the Public Works Committee Act 1914 on the following proposal: -

### **ARTHUR HIGHWAY – SORELL TO MURDUNNA PAVEMENT WIDENING AND SHOULDER SEALING**

## **BACKGROUND**

The Arthur Highway is located to the east of Hobart and is the only road link to the Tasman Peninsula, one of Tasmania's primary tourist attractions. Currently, the Arthur Highway is single carriageway, one lane in each direction. The seal width is an average of 5.8m. The shoulders are predominantly unsealed with an average width of 1.0m. Edge lines exist in only a few isolated locations.

The highway is utilised by a broad mix of vehicles, including a significant tourist component. Traffic volumes decrease progressively from an Average Annual Daily Traffic (AADT) of 7230 at Sorell to 1600 at Murdunna. This includes a commercial vehicle content of almost 10%.

The speed limit for the majority of the highway is 100 km/hr, with a reduction through the townships.

The Department of Infrastructure, Energy and Resources (DIER) completed the Arthur Highway Planning Study in August 1998. As a result, improvement works have been undertaken and included in DIER's forward program. These high priority projects focus on safety improvements, including improved overtaking safety.

### *Economic and Social Justification*

Following a spate of fatal accidents on the Arthur Highway in 2001, discussions were held between the Government and local community regarding road safety. Agreement has been reached on the type of improvement projects of highest priority. Road widening and shoulder sealing between Sorell and Murdunna was one of the two packages of works agreed to at a public meeting with the Minister. The second package of works is the funding of \$1.5M of safety works decided by the local community.

The primary component of this project is the shoulder widening works. The objective is to widen the road to provide a minimum sealed width of 6.8m and to install edge lines, on the Arthur Highway between Sorell and Murdunna.

The specific safety benefits arising from this project are two-fold:

1. The provision of edge lines, upgraded guide posts and raised reflective pavement markers (RRPMs) provides enhanced delineation, especially at night.
2. Increasing the sealed pavement width will provide greater safety for errant vehicles.

Additional safety benefits will also be delivered through the second package of works, including the upgrading of safety fences.

This project will also achieve benefits in relation to asset maintenance, as shoulder grading is no longer required.

## **THE PROJECT**

### *Pavement Widening and Shoulder Sealing*

The existing pavement will be widened on both sides, to provide the following:

- An 8.0m seal width between Lewisham Road and Forcett. This meets DIER's Road Hierarchy target for the current traffic volume in this location.
- A minimum 6.8m seal width between Forcett and Murdunna. If a 7.2m seal can be achieved without earthworks, this standard will be adopted as it meets DIER's Road Hierarchy minimum target.

The existing road between Sorell and Lewisham Rd already meets the minimum seal width of 6.8m. No work will be undertaken in this area.

In conjunction with pavement widening, drainage reinstatement will be undertaken, including the extension of some culverts.

The widening works will not be undertaken in the townships of Forcett, Dunally or Murdunna, as this involves traffic management and property issues which can not reasonably be addressed with the timeframe or funding allocated for this project. The reduced speed environment in these areas encourages vehicles to stay on the sealed pavement.

### *Safety Improvements*

#### *Delineation*

The following delineation works will be undertaken:

- Installation of edge lines on all new work to provide 3.0m lanes.
- Upgrading of guide posts to meet the current standards.
- Installation of raised reflective pavement markers on the existing centreline.

### *Safety Fences*

Several sections of existing post and cable fences will be replaced with steel beam guardfences.

In addition, several additional locations have been identified which warrant the installation of safety fences. Guardfences will be installed in these locations.

### *Additional Safety Works*

The Arthur Highway Working Group (AHWG) is currently scoping additional safety works. Priorities identified to date include removal of roadside hazards, bus stop improvements and sight benching.

The AHWG has agreed to fund the following safety works, which will be undertaken in conjunction with the widening project:

- Installation of raised pavement markers on the road centreline, from Sorell to Port Arthur;
- Installation of new guide posts with corner cube reflectors, from Sorell to Port Arthur;
- Upgrading of existing post and cable fences, between Sorell and Murdunna; and
- Installation of new safety barriers, in several locations between Sorell and Port Arthur.

A further \$1.1 M of safety improvements is currently being scoped. These safety improvements have been identified by the community and endorsed by the AHWG for scoping and costing. Community consultation will follow, and a final decision will be made by the AHWG on which projects are to be undertaken.

The following projects are currently being scoped:

### *Roadside Hazard Removal*

Removal of roadside hazards within the road reservation is being considered, for the entire length of the highway. This includes tree removal, relocation of power poles, installation of safety barriers and installation of frangible sign posts.

In general, a clear width of 5.5m from the edge of the lane has been adopted. However, in some areas this cannot be achieved due to the width of the road reserve. In these instances, a consistent roadside environment will be provided.

### *Sight Distance Improvements*

Areas are currently being identified where sight distance improvements can be achieved through the removal or trimming of vegetation and minor earthworks. In particular, it may be possible to achieve an overtaking opportunity west of Carlton River with the removal of roadside vegetation and some minor earthworks.

Upon completion of sight distance work and the widening project, a review of the existing barrier lines will be undertaken. Any adjustments will then be implemented.

### *Warning and Advisory Signs*

DIER's Traffic Management Branch is undertaking a review of the existing warning and advisory signs between Sorell and Port Arthur. This will identify locations where additional curve warning and advisory signs are warranted. Warnings signs for concealed entrances, school bus stops and wildlife are also being considered.

### *Road Sections Subject to Ice and Frost*

In conjunction with DIER's Maintenance Contractor and the local community, sites subject to ice and frost are being identified. Appropriate engineering solutions will be developed, which may include the installation of temperature sensitive warning signs.

### *Environmental Implications*

A botanical survey of all trees identified for removal will be undertaken prior to the commencement of this work. The hazard removal list will be adjusted to take into account the recommendations of the survey.

Council Approval will be sought prior to removal of any roadside vegetation.

It is proposed that an appropriate program of planting be developed to replace trees that are removed. It is envisaged that this will be undertaken in conjunction with local community groups.

### *Social and Environmental Implications*

The work for this project will be contained within the existing road reserve, and no acquisition of property is required. The impact on adjacent property owners will be minimal, and access to their property will be maintained during the construction period.

No site specific environmental issues have been identified. All the work is being undertaken in areas of previously disturbed land. Impact on vegetation will be minimal, and limited to reshaping the existing table drains.

No Planning Approval is required for the works to proceed.

### *Public Consultation*

The AHWG has been kept informed of the progress of the widening project. Liaison with this group has been undertaken on a regular basis to incorporate any of the safety improvements they identify into the widening contract.

A Public Contact Plan has been developed, which details the dissemination of information to stakeholders leading up to and during construction.

## **COSTS**

The major components of the work and the estimated costs are as follows:

Pavement widening and sealing of shoulders	\$1 200 000
Delineation including linemarking and guideposts	\$215 000
Installation of safety fence	\$110 000
Additional Safety Improvements	\$1 225 000
Planning and design costs	\$150 000
Contract Administration during construction	\$100 000

<b>Total Cost</b>	<b>\$3 000 000</b>
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## **EVIDENCE**

The Committee commenced its inquiry on Tuesday, 16 October 2001. Members inspected the site of the proposed works. Following such inspection, the Committee commenced hearing evidence at Parliament House, Hobart. The submission and supplementary submission of the Department of Infrastructure, Energy and Resources, together with the papers entitled "Notes on Accidents on the Arthur Highway", "Tasmanian Road Hierarchy Target Standards – Draft Revision 1 – October 1999" and "Tasmanian State Road Use Statistics (By Road Segment) 1998", were received and taken into evidence. The following witnesses appeared, made the Statutory Declaration and were examined by the Committee in public:-

- Peter Todd, Manager Asset Management, Roads and Public Transport Division, Department of Infrastructure, Energy and Resources
- Taryn Laird, Project Engineer, Department of Infrastructure, Energy and Resources

### ***Overview***

Mr Peter Todd provided the Committee with an overview of the proposal:

*The department recognises the importance of the Arthur Highway as the principal road connecting the Forestier and Tasman peninsulas in the south of the State. It provides access to one of Tasmania's principal tourism attractions, the historic site at Port Arthur. The Arthur Highway is categorised as a class 3 regional access road within the road hierarchy for State roads. Regional access roads are the main access roads to Tasmania's regions but carry less freight traffic than regional freight roads. The Arthur Highway is a single carriageway with one lane in each direction, as we saw this morning. The average sealed width is 5.8 metres; the shoulders are predominantly unsealed with an average width of 1 metre. Edge lines exist only in a few isolated locations. There is a broad mix of vehicles using the highway, including a significant tourist component. Traffic volumes decrease progressively from Sorell to Murdunna down to Port Arthur.*

*In 1998, the department completed the Arthur Highway planning study and, as a result, a number of improvement works have been undertaken and others included in the department's forward program. Many of these high-priority projects focus on safety improvements, including improved overtaking opportunities.*

### **Accident history**

Mr Todd then advised the Committee of the accident history of the subject road and the analysis that had been undertaken in relation to it.

*I would like to give the Committee some information on the crash history and some analysis we have done of that. I have some other information that I can table for the Committee to consider, which perhaps expands on what I would like to present this afternoon. Since 1991 there have been 14 fatal road crashes on the Arthur Highway, resulting in 19 deaths. Eight crashes occurred between 1991-95; there was one in 1998. However there have been five fatal crashes in 2001, resulting in eight deaths. Over the same period 40 crashes have occurred in which a person sustained a serious injury, 74 crashes where a person sustained a minor injury and 280 crashes were property damage only. The most significant crash type occurring on the highway in this 10-year period is vehicles leaving the road without a collision, this comprises 35 per cent of crashes occurring.*

*The Department has done a comparison between the Arthur Highway and a control site on the Tasman Highway to look at what are the factors that seem to be contributing or factors within those crashes. On the Arthur Highway non-local drivers comprised 82 per cent of all crashes for the period 1994-2000, compared to 66 per cent on the Tasman Highway - the control site. Drivers licensed interstate or overseas represented 18.2 per cent of crash*

*involved drivers on the Arthur Highway, compared to 14.5 per cent on the Tasman Highway. Drivers aged under 25, who are generally overrepresented in road crashes in Tasmania and indeed across Australia, were represented in only 22 per cent, compared to 29 per cent on the control site. A relatively high proportion of crashes occurred during daylight hours and many of those were during summer when vehicle volumes are higher. So from the analysis of that data it is quite clear that the high tourist component on that road, the number of interstate and overseas drivers, is a significant proportion of the number of crashes.*

*The counter measures being proposed in this project include shoulder sealing and widening and will significantly reduce the number of accidents. It will also assist with the shoulders and reduce the edge fall-away, especially on the insides of bends. Guideposts, retroreflective pavement markers and curb warning signs should also assist drivers who are unfamiliar with the route. Roadside hazard removal and safety fence improvements will make the roadside more forgiving for any vehicles that do leave the road. In Tasmania roadside hazards are a factor in about 40 per cent of fatalities.*

## **The Project**

The Project Engineer, Ms Taryn Laird outlined the scope of the project to the Committee as follows:

*There are two distinct components of work that we are undertaking, the first is the pavement widening and shoulder sealing between Sorell and Murdunna and the second is the safety improvements identified by the local community for which \$1.5 million has been allocated. The shoulder sealing is to occur between Sorell and Murdunna which is the area where the majority of the fatalities have occurred and has the higher traffic volumes.*

*Between Sorell and Lewisham Road the shoulders are already sealed and have edge lines. No work will be undertaken in this section. We recognise that this does not meet the road hierarchy targets, however it does meet the minimum width for this project of a 6.8 metre seal.*

*In the areas of the widening, work will be undertaken on both sides of the road. The existing centre lane will be maintained and edge lines will be installed on all new work. From Lewisham Road to Forcett, which is approximately a kilometre, an 8.0 metre seal will be adopted. This reflects DEIRs road hierarchy standards for the traffic volume of over 7 000 vehicles a day.*

*From Forcett the traffic volume has dropped to under 3 000 vehicles a day. The seal width of 7.2 metres will be adopted, which is again consistent with our road hierarchy targets. In some areas a 7.2 metre seal is not possible without either large scale earthworks or property acquisitions and in these areas a minimum of 6.8 will be specified and about 15 per cent of the site will have that treatment. No widening shall be undertaken in the area of the proposed overtaking lane until we confirm whether funding is available for that or not.*

*Widening through the townships will be undertaken at a later date as a separate project due to the property and traffic management issues in those areas. In conjunction with the widening, about 50 culverts will be extended to ensure that they end water at least a metre from the edge of seal and some drain reshaping works will be required. No major earthworks are intended.*

*The second package of works is the safety improvements that have been identified by the local community and endorsed by the Arthur Highway Working Group. The working group has agreed to fund the following safety works, which will be undertaken in conjunction with the widening project, and that is: the installation of raised pavement markers and new guideposts from Sorell to Port Arthur, the upgrading of existing post and cable fence and installation of a new safety barrier.*

*The remainder of the safety improvements are currently being scoped. These safety improvements have been identified by the community and endorsed by the working group for DEIR to scope and cost. Community consultation will follow and a final decision will be made by the working group on which projects are to be undertaken. The projects that we are scoping are roadside hazard removal - we are considering the removal of roadside hazards within the road reservation for the entire length of the highway. This includes tree removal, relocation of power poles, installation of safety barriers and installation of frangible sign posts. In general, a clear width of 5.5 metres from the edge of the lane has been adopted, however in some areas this cannot be achieved due to the width of the road reserve and in these instances a consistent roadside environment will be provided.*

*Areas are currently being identified where sight distance improvements can be achieved through the removal or trimming of vegetation and minor earthworks, in particular it may be possible to achieve an overtaking opportunity west of Carlton River with the removal of roadside vegetation and some minor earthworks. Upon completion of sight distance work and the widening project a review of the existing barrier lines will be undertaken. Any adjustments shall then be implemented.*

*DIERs Traffic Management Branch is undertaking a review of the existing warning signs and advisory signs on the highway and this will identify locations where additional kerb warning and advisory speed signs are warranted. Warning signs for concealed entrances, school bus stops and wildlife are also being considered.*

*In conjunction with DEIRs maintenance contractor and the local community, sites subject to ice and frost are being identified. Appropriate engineering solutions will be developed, which may include the installation of temperature-sensitive warning signs. DEIR are conscious of the environmental implications of the projects. A botanical survey of all trees identified for removal will be undertaken prior to commencement of the work and the hazard removal list will be adjusted to take into account the recommendations of that survey and council approval will be sought prior to removal of any roadside vegetation. It is proposed that an appropriate program of planting shall be developed to replace the trees that are removed and at this stage it is envisaged that that will be undertaken in conjunction with local community groups.*

*In terms of the construction program, the ministerial commitment for this project was given to the local community that the work would be undertaken within the 2001-02 financial year and the budget reflects that. Tenders have been invited for the widening works and a contract will be awarded upon approval from this Committee. That work will take about four months to complete.*

*It is anticipated that the planning works associated with the safety improvement projects will be completed by the end of November 2001 and implementation will proceed following further community consultations and final prioritisation by the Arthur Highway Working Group.*

### **Hydro poles**

The Committee questioned the witnesses regarding the removal of some 150 hydro poles as part of the safety improvements, specifically as to who would bear the cost of removal. Mr Todd responded:

*... the road authority will have to pay for that. We will have to pay for that out of the project. That's the normal arrangement when doing road works and if we need to move services, whether they be poles, cables of the service authorities, we are required to pay for that cost.*

The Committee asked Mr Todd as to whether the removal and relocation of the power poles was subject to a contested tender process. Mr Todd responded:

*I imagine it will be Aurora doing the work because it's their infrastructure. I don't think that we have much option but to get them to do it.*

*... I think they will organise that work and we would have to negotiate with them on a price. I don't think it's a contested issue from our point of view. We won't undertake the work and we won't manage it ... normally they give us a price on what it costs to remove a pole or relocate a pole. We will be seeking the best price that we can, based on there being quite a number of them to be moved.*

*... The only way we will know (that it is the best price) is on previous experience with the cost of moving poles. I don't think we have any jurisdiction over what Aurora does in terms of whether they do the work themselves or they put it out to contract and make it contestable*

Mr Todd undertook to investigate whether it was possible to direct Aurora to allow a competitive tendering process for the removal of poles.

### **Road hierarchy minimum target**

The Committee questioned the witnesses regarding what the regime of road hierarchy minimum targets are and their relationship to traffic volumes. Mr Todd responded:

*... the Arthur Highway is a category 3 - there are five categories. Can I give you an example, a category 1 is the Midland Highway, which is the main freight route for Hobart, Launceston and continues right through to Burnie, in fact. That is our highest one. Then we have at the other end, which are more local access roads, at class 5. The Arthur Highway falls right in the middle as a class 3 and we have a number of targets in terms of lane width and shoulder width on a class 3 road depending on the volumes - up to 5 000 vehicles we are looking for a three metre lane and the shoulder width varies depending on the volumes as well. So for the section north of Lewisham Road where traffic volumes are 6 000 to 7 000, we are looking for a three metre lane with a one metre shoulder, which if you add those together and double it it gives you an eight metre seal. Where the traffic volumes drop down between 1 000 and 2 500, which is predominantly the rest of the road, our hierarchy asks for a three metre sealed lane, a 0.6 metre shoulder, so if you add those together and double it, you get 7.2.*

*As Ms Laird indicated in her evidence, we will be able to achieve that on 85 per cent of the road. There's some places where it's more difficult because of property acquisitions and earthworks where we'll only be able to achieve 6.8, so we're very close. The lane widths would be the same but it would be just a slight reduction in the shoulder widths. So that is how the road hierarchy works. We increase the level of service depending on the function and the traffic function and that is how that works.*

### **Future Federal funding**

The Committee questioned the witnesses as to the quantum of funding that would be required to construct passing lanes. Mr Todd responded:

*It will be about another \$3 million. What we have done in our proposal to the Commonwealth is we packaged up a project called 'The Arthur Highway Upgrading'. I think the total was about \$7 million, which included the work we're doing in this project, the overtaking lanes - and there were some other works I don't recall at this stage. What we would be looking for would be RONI funding - which is Roads of National Importance - which is a dollar-for-dollar contribution, a dollar from the State and a dollar from the Commonwealth. What we would do, if we were successful with that submission, is we've now committed \$3 million in the project we've presented to the committee today. There would obviously be some additional funds we would need to find in the next year or the year after but if we received a similar contribution from the Commonwealth of \$3 million that would go into those overtaking lanes. That is about of the order that we're looking at for those.*

### **Future improvements**

The Committee sought evidence as to whether further improvements were planned by the Department, particularly in relation to realignment of sections of the highway. Mr Todd responded:

*It is certainly something that we'll monitor. We believe that the implementation of this project will deliver real safety benefits immediately. The cost of realignment is not insignificant. Through that sort of terrain my estimate is it could be \$500 000 to \$1 million a kilometre to rebuild a road like that. It's a very expensive exercise. It's a very narrow road reservation; it would require significant land acquisition and it would be a very long process. The department believe that by widening the road we can get some very good safety benefits now, but we would monitor the performance of the road - accidents and so on and traffic volumes -*

*with regard to any future upgrading. But at this stage it's not planned.*

## **CONCLUSION AND RECOMMENDATION**

The evidence presented to the Committee clearly demonstrated the need for the widening of the Arthur Highway between Sorell and Murdunna together with the safety improvements proposed for the section of the highway from Sorell to Port Arthur.

The measures being proposed, which include shoulder sealing and widening, will significantly reduce the potential for accidents. Guideposts, retroreflective pavement markers and curb warning signs should also assist drivers who are unfamiliar with the route.

The Committee fully supports the on-going pursuit of federal funds to provide for overtaking lanes in the future.

Accordingly, the Committee recommends the project, in accordance with the plans and specifications submitted, at an estimated total cost of \$3 million.

**Parliament House  
HOBART  
29 October 2001**

**Hon. D. G. Wing M.L.C.  
Chairman**