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PARLIAMENT OF TASMANIA

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

# Lyell Highway, Granton to New Norfolk

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

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## MEMBERS OF THE COMMITTEE

Legislative Council

Mr *Harriss* (Chairman)  
Mr *Hall*

House of Assembly

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

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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: -

### **Lyell Highway, Granton to New Norfolk – Murphys Flats to Molesworth Junction and Tarrants Road in Granton to Lime Kiln Point.**

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

## **BACKGROUND**

This project will upgrade the Lyell Highway between Granton and New Norfolk. It is approximately 14.25 kilometres from Granton to New Norfolk. The highway is a Category 2 – Regional Freight Route in the Tasmanian State Road Hierarchy.

Over the past decade some upgrading of the Highway has been completed at:

- Murphys Flats overtaking lanes;
- Molesworth Road Junction; and
- the “Bumpy Bits”.

Further upgrading of the Lyell Highway has been divided into three projects.

Project 1 improvement works are currently under way. Project 1 is a road reinstatement project and is generally contained within the road reserve. Thus it is not subject to the approval of the Parliamentary Standing Committee on Public Works.

The remaining two projects are the subject of this reference to the Committee.

Project 2 consists of two sections. Project 2A is from the western end of the Murphy's Flats Overtaking Lane to the eastern end of the “Bumpy Bits”. Project 2B is from the western end of the “Bumpy Bits” to Molesworth Road Junction. Project 2 is 4.11 kilometres long.

Project 3 is one continuous section from Granton to Limekiln Point, a distance of 3.65 kilometres.

The Project 2 and 3 works involve widening and strengthening of the pavement with junction and access improvements. There are also some alignment improvements at specific points along the highway.

The projects are proposed to be 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 phase, preliminary design, has been completed and included the collation of background ground and environmental surveys, consultation with abutting landowners, public utility owners and the Derwent Valley Council as well as the development of the design solutions presented to the Committee.

The detailed design is now underway construction will not proceed until 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.

## **OBJECTIVES**

The overall objective of the proposed upgrading is to improve operating conditions on the highway recognising the significant engineering, cultural and heritage constraints that apply in a number of sections.

The specific objectives are to:

- Create a road geometry that is appropriate for the speed environment;
- Consolidate/rationalise accesses; and
- Improve safety.

## **SITE CONSTRAINTS**

The highway follows the southern bank of the Derwent River. The highway is often located at the base of the hillside adjacent to the river flats and as a result has tight curves and sharp crests.

The tight horizontal curves result in changes in operating speed outside the recommended range. This makes the driving task more difficult and potentially hazardous. The crests, and to some extent the curves, restrict the sight distance both along the road and from the junctions and accesses.

The high, steep terrain on the southern side of the highway and deep soft silts on the northern side pose significant design challenges due to cost management and the environmental impact of the proposed works as:

The high steep terrain creates: large earthworks volumes; and areas difficult to revegetate.

The deep river silts are: difficult to construct upon; and subject to settlement and in extreme cases failure of the road embankment.

As the highway is a category 2 road the provision of an efficient transport route is important. The speed limit varies along the highway in accordance the amount of roadside development and the speed at which the road can be traversed (operating speed) to determine the posted speed limit. The speed limit is determined according to applicable Australian standards:

- Project 2A is located in a 100km/h speed zone;
- Project 2B is located in an 80km/h speed zone; and
- Project 3 is located in an 80km/h speed zone.

Most of the horizontal curves and the crests are not sufficiently large for the operating speed.

To improve the efficiency and safety of the highway it is necessary to:

Increase the minimum curve radius (geometry improvements),  
Increase the sight distance along the highway,  
Increase the sight distance from and to junctions and accesses,  
To that appropriate for the operating speed.

There are a number of items of environmental, cultural and heritage value scattered along the length of the highway. The design elements of these projects try to avoid these valued items as best as possible. Where the designs impact on these items permission has been sought from the relevant authorities. It is known that there is one cultural site that cannot be disturbed and the design avoids this site.

## **THE EXISTING CONDITIONS**

### **The Road**

The Lyell Highway between Granton and New Norfolk is a two lane road with a sealed pavement width that varies in the range of 6.5m to 7.2m wide with unsealed shoulders. There are four junctions onto the Lyell Highway. The four side roads are:

- Tarrants Road;
- Bridgeview Road;
- Turners Road; and
- Rowbottoms Road.

These junctions are all in Project 3 and do not allow safe exit from the highway due to the substandard road geometry and high traffic volumes.

There are 28 property accesses on Projects 2 and 3. All of the accesses are unsealed and 12 do not have adequate sight distance.

### **Traffic Flow**

The most recent traffic counts undertaken in 2006 indicate that the traffic flow was around 6800 vehicles per day. 410 of these were trucks, of which 83 were articulated vehicles.

### **Road Crashes**

The sections of the Lyell Highway, encompassing Projects 2 and 3, experienced 89 crashes in the period from March 2001 until November 2005. The crashes included:

- 29 crashes in Project 2;
- 2 fatal crashes in Project 2 of which one was a head on;
- 60 crashes in Project 3;
- 1 fatal crash in Project 3 which was a head on.

### **The Road Side Environment**

The abutting land use is rural, dominated by rural residential with some horticulture (vineyards, tomatoes, cherries) and one private recreational facility, the Motor Yacht Club of Tasmania (MYCT).

On the southern side of the highway most of the land is hilly, mainly cleared with some trees along the roadside and a few scattered in the paddocks. There are some properties which remain untouched and vegetated by woodland. There are also rows of trees along the side of the road which form windbreaks and/or landscape features. At some locations these trees block sight distance from accesses and some are within the clear zone.

The Derwent River is a conservation area. It consists of wetlands and marshland. In some areas the river abuts or is inside the road reserve. There are many power poles close to the edge of the highway and there are a number of Telstra crossings which serve local properties.

## **PROJECT JUSTIFICATION**

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

### **Safety Benefits**

The proposed projects incorporate significant safety improvements for road users as follows:

- Increased stopping sight distance to 80 km/h standard for users travelling along the 80 km/h sections of the road;

- Increased stopping sight distance to 100 km/h standard for users travelling along the 100 km/h sections of the road;
- Increased safe intersection sight distance to appropriate standard for users of the accesses to the road;
- Upgraded junction geometries to reduce the likelihood of rear end road crashes;
- Rock fall protection fencing to prevent debris from falling onto the road reducing the likelihood of run-off-the-road crashes;
- Sealed accesses to provide better skid resistance and reduce the amount of debris being dragged on to the road;
- A wider pavement with sealed shoulders reducing the likelihood of run-off-the-road crashes and providing a lane for cyclists;
- 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.

### **Maintenance Cost Savings**

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

- Increased strength of the pavement using an asphalt overlay for those sections of the road where the current pavement strength is deficient;
- Improvement to the pavement drainage system reducing the rate of pavement deterioration; and
- Construction of sealed shoulders to reduce road edge maintenance.

### **Road User Benefits**

With the increasing traffic on the Lyell Highway 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:

- More uniform alignment of the highway reducing the need for speed changes and thus operating costs.
- Provision of auxiliary lanes at intersections will allow more uniform travel speeds.

## **PROJECT 2 AND 3 DESCRIPTION**

### **The Proposed Works**

All elements of the highway, curves, accesses and intersections have been prioritised with a software package, Road Safety Risk Manager (RSRM). These elements have been addressed balancing physical, environmental, cultural and heritage constraints to provide the best design solution to obtain a satisfactory outcome.

The proposed works can be categorized into:

- Vertical alignment improvements;
- Horizontal alignment improvements;
- Cross section improvements;
- Junction and access improvements.

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

### **Cross Section and Pavement**

Widening the sealed pavement will provide vehicles with more room to manoeuvre. Currently there is no room for vehicles to pass other vehicles waiting to turn right into accesses or side roads and no room for vehicles turning left to pull to the side to turn into accesses or side roads.

The existing cross section consists of a sealed pavement width of approximately 7 metres with unsealed shoulders of variable width. The proposed cross section consists of a 7.0 metre sealed pavement (2x 3.5m Lanes) with 1.2 metre sealed shoulders and 0.5 metre verges. This is generally achieved however at discrete locations a 0.5m verge and table drain cannot be achieved without significant additional expenditure (due to the high steep cuts and deep river silts), which does not realise benefit/cost tests. In these locations a concrete v-gutter will be provided. Verges will be sprayed with prime to prevent verge erosion and widened to 1m 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. The overlay requirement is not uniform along the length of the road.

At some locations along the road it is proposed that the vertical and horizontal alignment be changed to increase the sight distance when travelling along the road and from accesses and junctions. Where full vertical and horizontal alignment works are being carried out a new full depth pavement will be provided.

### **Vertical Alignment**

The design investigations identified that Projects 2 and 3 have five locations where the vertical alignment does not have the required sight distance over crests. An assessment of the likely costs and benefits of improving these sites resulted in alternative options being adopted for two of these locations.

One of these vertical crests is at the Limekiln and spans over two horizontal curves of varying radii. The design aims to remove the horizontal curves whilst retaining the existing vertical curve alignment. Removal of the horizontal curves is considered the major priority as the shoulder widening counters the deficient vertical curve by providing room to manoeuvre.

The other vertical curve is short and the sight distance very close to the required sight distance. These facts make this curve a low priority given the other competing priorities of the projects.



### **Horizontal Alignment**

As with the vertical alignment, the design investigations identified that, over Projects 2 and 3, there are 13 locations where the horizontal alignment does not have the required sight distance around the curve and/or the radii are too tight for the posted speed limit. An assessment of the likely costs and benefits of improving these sites resulted in alternative options being adopted at four these locations.

One horizontal curve is short and the existing sight distance meets the minimum requirements. This makes this curve a low priority given the other competing priorities of the projects.

The other horizontal curves have tight radii and the sight distance is limited. Sight benching will be applied to these curves to improve sight distance. These curves are sequential which reduces the impact of their radius on the speed at which they can be and are traversed by vehicles. It is planned to place electronic speed activated signage at either end of these curves to warn drivers.

### **Junctions and Accesses**

There are four junctions in Project 3 which are to be upgraded. Safe Intersection Sight Distance (SISD) will be achieved at each of the junctions.

In accordance with Austroads guidelines, the required treatment for the junctions is to provide a wider shoulder opposite the minor road to allow through traffic to overtake turning vehicles. Queensland Main Roads have carried out research which has determined that a sheltered turning treatment can be provided within a similar area as required by the standard widening for junctions. The sheltered treatment improves safety by removing right turning vehicles from the through lane thus reducing the potential for rear end collisions. DIER has approved the use of the Queensland Main Roads sheltered treatments and all junctions will be designed accordingly.

Of the 28 accesses on Project 2 and 3, 12 will not meet the required SISD. However, the projects will either improve or retain the status of all accesses. Sealing of all the accesses and shoulder widening will make all accesses safer than they currently are.

### **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.

Pavement drainage will be improved by providing subsoil drainage and improved pavement shape.

### **Existing Environment**

#### Flora

#### Vegetation

The following three vegetation communities of conservation significance occur in the area:

- *Phragmites australis* grassland: considered vulnerable and inadequately reserved at the state level. Projects 2 and 3.
- *Acacia verticillata* dry scrub: of bioregional significance. Project 2.
- *Leptospermum lanigerum* scrub: of bioregional significance. Project 2.

#### Trees of Potential Cultural Significance

The following stands of trees of potential cultural significance occur within in the areas of the proposed roadworks:

- A stand of white gums between the roadside rest area and the Derwent River at Ch 7760 – 7860.
- Two weeping willows on the northern side of the highway at Ch 8215 – 8220.
- A row of old radiata pines on the southern side of the highway at Ch 10250 – 10350.

#### Threatened Species

The following two significant flora species, listed on the Threatened Species Protection Act 1995, occur in the area:

- *Austrostipa scabra* (rough spear grass): southern side of the highway Ch 3300 – 3400, 6430 and 6610 – 6640; northern side of the highway at Ch 6940 – 7010.
- *Vittadinia gracilis* (woolly new holland daisy): southern side of the highway at Ch 3300 – 3400.

#### Fauna

A number of threatened species have previously been identified in the wider area.

The Project 2 area consists largely of native vegetation, with a smaller area of agricultural land on the western end. As the agricultural area is largely modified it offers only limited faunal habitat value. The areas of native vegetation are generally in good ecological condition and are therefore likely to have a relatively high faunal biodiversity, the larger trees providing roosting, feeding and nesting habitat for both native and non-native species.

The Project 3 area consists largely of intensive agricultural and urban land. As this area has been significantly modified it offers only limited faunal habitat value.

#### **Aboriginal Cultural Heritage**

P. D. and V. J. Taylor of 249 Lyell Highway currently do not have a legal access. It is proposed to reopen their old access that is in close proximity to Aboriginal shell midden TASI 1087. An Aboriginal cultural heritage assessment of the site has been undertaken in order to assess the possible impact of the driveway works on the site. This site assessment has confirmed that, provided the re-instatement works do not extend beyond the existing disturbed area, the proposal will have no impact on TASI 1087.

#### **Historic Heritage**

A desktop review of all authoritative Registers and databases revealed the following listings:

### Project 2

Scottsdale (1041 Lyell Highway), Ch 10220 – 10340, southern side of highway:  
Currently listed on the Tasmanian Heritage Register (THR) (C807) and hence is subject to the provisions of the Historic Cultural Heritage Act 1995.  
Currently listed in Schedule 4 (Buildings and Structures of Heritage Significance) of the New Norfolk S.46 Planning Scheme 1993.

The row of old radiata pines on the southern side of the highway at Ch 10250 – 10350 are located on the Scottsdale title.

There are a number of additional features in the immediate area that are considered to have some cultural heritage significance.

### Project 3

Lime kiln, Ch 3250 – 3540, northern side of highway.  
Currently listed on the Tasmanian Heritage Register (THR) (R701) and hence is subject to the provisions of the Historic Cultural Heritage Act 1995.  
Currently listed in Schedule 4 (Buildings and Structures of Heritage Significance) of the New Norfolk S.46 Planning Scheme 1993.

There are a number of additional features in the immediate area that are considered to have some cultural heritage significance, such as the Marsh Farm and a redundant section of the old main road.

### **Visual Impact**

There will be some impact on visual amenity as it will be necessary to remove the row of radiata pines on the northern side of the Lyell Highway fronting 1020 Lyell Highway due to the road realignment.

### **Noise**

Computer noise modelling has determined that the works will not increase the noise levels beyond that which will result through normal traffic growth. In accordance with DIER standards there is no warrant met for doing any noise mitigation.

A copy of the Noise Report has been forwarded to those residents with noise concerns.

### **Environmental Safeguards**

#### **Proposed Management Regime**

In order to limit the impact on the environmental values identified, the following processes and actions will be incorporated into the project:

- The amount of land that will need to be acquired for completion of the works has been kept to the minimum practicable level required by good road design.
- All weed areas will be clearly identified and requirements for treatment of the various declared weeds included in the tender documents.
- Where there is potential impact on any of the additional features (eg. Marsh Farm and the old redundant section of the old Main Road) this has been

discussed with Heritage Tasmania to ensure that all works are undertaken in accordance with heritage requirements.

All sites with environmental values will have environmental protection fencing erected around them for the duration of the contract.

In the unlikely event that any Aboriginal cultural material is encountered during the construction phase the normal protocols will be followed. These require that all activities cease in the area immediately, pending consultation with the TALSC and the Manager, Aboriginal Heritage Section, Department of Tourism Arts and Environment (DTAE).

#### **Environmental Approvals Required**

**Threatened Species:** As three threatened species listed in the Threatened Species Protection Act 1995, will be impacted by the proposed roadworks, a Permit to Take will be sought from the Conservation Assessment Section (CAS) of Department of Primary Industries and Water (DPIW).

**Heritage:** As the proposed roadworks will impact on two heritage listed sites (Scottsdale, including one of the old radiata pines, and Rathbone's Lime Kiln) a Works Permit from Heritage Tasmania will be sought for each of these sites.

#### **Social Implications**

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 the Lyell Highway and its associated junctions and accesses.

There will be some short-term social impacts arising from inconvenience associated with the road construction activities. These will be mitigated by good communication and traffic control during construction.

#### **Property Impacts**

There are 17 landowners in Project 2 and 35 landowners in Project 3 who own land adjacent to the road. It will be necessary to acquire land from 14 of the landowners. Acquisitions are typically from the frontage of the property which will require re-fencing of most of the highway boundary.

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 28 accesses in Project 2 and 3. Not all accesses have adequate sight distance, however the projects will either improve or retain the status of all accesses.

#### **Cyclists**

Cyclists who use the Lyell Highway currently must occupy part of the traffic lane. Austroads recommends that in a 100km/h zone the bicycle lane width be 3m maximum, 2.5m desirable. Due to geotechnical restrictions (high steep cuts and deep river silts) providing these widths is not feasible.

Widening of the road includes 1.2m of sealed shoulder. This, combined with 3.5m lanes, provides room for vehicles to manoeuvre around cyclists without having to cross the centreline marking.

### **Public Consultation**

DIER submitted that as part of the project a public consultation strategy has been developed and implemented. This strategy is consistent with the project phases in that it has four phases.

In Phase one of the project, the concept development phase, DIER has been consulting with the Derwent Valley Council to identify any issues from ratepayers and road users that the Council may be aware of which should be included within the scope of the project. The extent of the project was discussed with Council and Council supports the upgrading of this section of the Lyell Highway.

Phase two of the public consultation strategy, during preliminary design, consisted of meeting with the abutting property owners to:

- Explain the reasons for and objectives of the project to them;
- Provide them with an opportunity to raise issues directly with the project team; and
- Provide them with a mechanism to input into the development of the project. During the discussions with the landowners the DIER procedure land acquisition was outlined.

Landowners identified a number of issues including sight distance from accesses and junctions and the lack of a sealed shoulder. All those consulted have been supportive of the specific improvements proposed and the works in general.

The third phase of the public consultation strategy, during detailed design, is to:

- Discuss with the school bus operators to identify any operational issues, particularly with bus stops, and to determine where these are required for current patronage;
- Hold meetings with each of the public utility owners to identify the location of their infrastructure and the consequent impact of the proposed roadworks.

Late in this phase the focus is on landowners to precisely define the:

- Extent of the required acquisition;
- Works at driveways;
- Replacement of fencing; and
- Changes to public utilities servicing their properties.

The land required for the works will be surveyed and the acquisition process will commence. This will involve the Office of the Valuer General and DIER Land Assets Group liaising with the landowners to agree on compensation to be paid. Plans of the proposed works will be placed on DIER's web site and be provided to the Derwent Valley Council for publication on their web site.

The final phase of the public consultation is during construction. During this period DIER will keep the travelling public informed of possible impacts through signage on

the site and notices in the press. There will be close liaison between the contract administration team and adjacent landowners to ensure that the landowners are advised works staging and potential impacts.

In summary, DIER submitted that it will continue to consult with:

- Derwent Valley Council;
- Transportation and Tourism bodies;
- Emergency services;
- Public utility providers;
- Businesses;
- Local residents;
- Other government agencies; and
- The wider local community.

DIER submitted that a wide variety of communication methods have and will continue to be employed, depending on the target audience, such as:

- A public display;
- Public notices;
- Media releases;
- Letters;
- Meetings;
- Phone calls; and
- Newsletters.
- Specific Stakeholders

In its written submission, DIER identified a number of stakeholders who have a history of concerns and detailed how such concerns were being addressed as a part of the normal consultation process.

### **Planning Approval**

The area of the proposed works is located within the Derwent Valley Municipality. Councils are required under the Land Use Planning and Approval Act 1993 to administer activities within their municipal boundaries in accordance with their planning schemes. All works must be undertaken in accordance with the New Norfolk Planning Scheme 1993 (planning scheme).

Clause (h) of Schedule 1 (Exemptions from Planning Approval) of the planning scheme provides an exemption for the repair and reconstruction of roads:

#### **h) Public Works**

The carrying out by the Council or any public authority of works for maintenance and repair purposes, including the repair and reconstruction of roads or footpaths and renewal of drains, sewers, pipes or cables.

There are three applicable Special Areas: Flood Prone Area, Landscape Protection Area and Buffer Area. However these do not change the permit status of the development.

Derwent Valley Council has confirmed that Projects 2 and 3 are exempt provided Heritage Tasmania approves the Works Permit.

#### The Derwent Conservation Area

There are four sections within the project areas where the proposed road works extend into the Derwent River Conservation Area. These occur at Chainage 150, 325, 550 and 2700.

The proposed road works will involve some works within (or the acquisition of) the Derwent River Conservation Area (PID: 1969948, Title ref: 133870/1).

A Reserve Activity Assessment (RAA) detailing the nature of the works, any high conservation value items potentially impacted and mechanisms proposed to mitigate the impact has been submitted to the Parks and Wildlife Service. The RAA has been approved, subject to a number of conditions.

DIER have and will continue to consult with Parks and Wildlife and the Derwent Estuary Program to ensure conditions are met.

### **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 within 1 km of the River Derwent and, accordingly, the State Coastal Policy 1996 applies to this project.

The road works will be located directly adjacent to the existing carriageway, almost exclusively within the road reserve. The road works proposed will have no impact on the sensitive aspects of the coastal zone.

#### State Policy on the Protection of Agricultural Land

The State Policy on the Protection of Agricultural Land 2000, provides for protection of the State's 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.

There is no prime agricultural land in the area.

#### 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.

## **PROJECT COSTS**

### Cost Estimate – Project 2

Cost Item	Amount (\$)
Earthworks	1,881,000
Drainage	521,900
Pavement	1,226,100
Bituminous Surfacing	424,300
Traffic Facilities	242,100
Landscaping	611,300
Accesses and Utility Relocation	220,500
Acquisition	92,000
Design, Contract Administration, Project Management and Public Consultation	591,900
Contingency (≈11.5%)	757,100
Out Turn (0%)	0
<b>TOTAL</b>	<b>6,568,200</b>

### Cost Estimate – Project 3

Cost Item	Amount (\$)
Earthworks	1,372,300
Drainage	420,200
Pavement	348,400
Bituminous Surfacing	369,500
Traffic Facilities	303,300
Landscaping	246,800
Accesses and Utility Relocation	316,700
Acquisition	62,000
Design, Contract Administration, Project Management and Public Consultation	516,400
Contingency <sup>6</sup> (≈9.6%)	444,300
Out Turn <sup>7</sup> (6%)	231,900
<b>TOTAL</b>	<b>4,631,800</b>

## **EVIDENCE**

The Committee commenced its inquiry on Thursday, 5 June last. Accompanied by the consultants, the Committee was conducted on a site inspection, following which the Committee recovered in Committee Room 2, Parliament House, Hobart. The following witnesses were called, made the Statutory Declaration and examined by the Committee in public:-



- Ted Ross, Senior Project Manager, Department of Infrastructure, Energy & Resources
- Juan Lee, Consultant, Pitt & Sherry
- Tim Morris MP

## **Background**

Mr Ross provided the Committee with the following background to the proposed works:-

*The Lyell Highway between Granton and New Norfolk is 14.25 kilometres of road. It is a category 2 road in the DIER hierarchy. Over the past decade the department has done a lot of work on the highway, which has included the upgrade of the Murphys Flat overtaking lanes, the Molesworth Road junction and the bumpy bits. This election commitment of \$40 million is to upgrade the remaining sections between Granton and New Norfolk. Project 1, which is already under way, consists of works that are generally contained within the road reserve, which is why it was not subject to the approval of the Parliamentary Standing Committee on Public Works. Projects 2 and 3 are what this report covers. Project 2 runs from the western end of the Murphys Flats overtaking lanes to the eastern end of the bumpy bits and then from the western end of the bumpy bits to Molesworth Road junction. The locality plan on page 2 of the report shows those two locations. On figure 1 you can see the two locations I have just mentioned. Project 3 is one continuous section, which runs from Granton through to Lime Kiln Point.*

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

*The project objectives, which are on the second page, overall are to create an understanding that the operating conditions recognise the significant engineering, cultural and heritage constraints that apply to this project. The specific objectives of the project are to create a road geometry that is appropriate for the speed environment, to consolidate and rationalise accesses and to improve safety.*

*The second phase was the preliminary design phase which included a collation of a lot of the background and environmental surveys; and consultation with landowners, public utility owners and the Derwent*

*Valley Council. We are now in the detailed design phase, which will not proceed until the project has been approved.*

*Many of the project objectives are related to the safe operation of the road. In doing this we will conduct a road safety audit prior to the opening of the works to ensure that the safety objectives have been achieved.*

*There are some of the other issues that I would like to raise. I have already touched on the sight constraints in terms of there being significant engineering, cultural and heritage aspects. In terms of the location of the project, the highway follows the southern bank of the Derwent River and it is adjacent to high cliffs on one side and the river flats. As a result of that, the highway has a number of tight curves and sharp crests. The tight horizontal curves result in changes in the operating speed outside the recommended range. This makes the driving task more difficult and potentially hazardous. The crests, and to some extent the curves, restrict the sight distance both along the road and from the junction and accesses. The high and steep terrain on the upper side of the road is a significant challenge because of the large amount of earthworks that are required in order to widen on that side. It is also difficult to revegetate. On the other side the deep silts are very difficult to construct upon and are subject to settlement over a long time.*

*I would particularly like to highlight the traffic flow that the road is designed to and the 6 800 vehicles per day, of which 410 are trucks and 83 articulated vehicles. I also want to recognise the road crashes. There have been a significant number through projects 2 and 3, in particular 89 crashes in the period from March 2001 until November 2005.*

*The justification of the project is derived from the safety improvements and a reduction in the high maintenance costs and operational environment of the road. Some of the main ones that we have discussed in the section on 'Safety Benefits' is increasing the stopping and sight distance to the relevant standard of the areas; increasing the safe sight intersection distance for accesses; upgrading junctions; providing rock-fall protection in areas; sealing of accesses to provide better skid resistance and take off for vehicles; providing a wider pavement, which is the 3.5 metre lane with the 1.2 metre shoulder. This also provides additional safety for cyclists. There is also improved delineation on the edge lines, guideposts and pavement markers. We are putting in warning signs and removing roadside hazards. Where we are unable to remove the hazards, we will install a safety barrier to protect vehicles from hitting them. A big part of this project is to increase the strength of the pavement and in doing that increasing the life of the road, and at the same time taking out some of those irregularities in the pavement and making it smoother. There will also be improvements in the drainage. The sealed shoulders reduce edge breaks along those areas, which also reduces maintenance.*

## **Design/landowner consultation**

Mr Lee made the following submission in relation to the consultative process and design:-

*Basically we have consulted with all the landowners. We have had individual meetings with them all to understand their problems and feelings on the current road situation and to confirm what they are after and what they expect. This is an ongoing process and we still have land acquisitions to deal with in the finer details of that. We have worked out how much land we need to take in a rough capacity and now we have to tie it down with them in more detail. Some of those landowners have other extraneous issues that need to be sorted in that process.*

*Heritage, cultural and environmental issues have been all identified and permits have been sought to take or remove where needed.*

*In the report we have mentioned under 'Threatened Species' that there was rough spear grass from basically 3 300 through to 7 000. That is not quite correct. It is actually two types of spear grass: one type from 3 000-3 400 and the other type in the rest of those chainages. The other type, just for interest, is a knotty spear grass as opposed to rough.*

Mr Ross added:-

*There are a couple of other things in terms of some of the impacts on landowners. We have undertaken computer modelling along the entire length of the works and determined that there will be no significant increase in the noise.*

*... Further on another issue in terms of cyclists, part of the report identifies that cyclists who use the Lyell Highway currently occupy part of the traffic lane. Austroads recommends in a 100kph zone that bicycle widths are to be 3 metres maximum and 2.5 metres is desirable. Due to the geotechnical restrictions, high steep cuts and deep river silts provided, these widths are not feasible as part of this project. Widening of the road includes 1.2 metres of sealed shoulder and this, combined with the 3.5 metre lane, provides room for vehicles to manoeuvre around cyclists without having to cross the centre-line marking.*

*In terms of the timing of the projects, project 2 is the one on which we are spending most time at the moment in the detailed design. We are targeting to get the project into tender in August, for a construction date of October 2008 and completion in April 2009. The second project, project 3, will tender in June 2009 for construction between August 2009 and March 2010. Those time frames have been identified as the best time to construct on this highway because of the summer conditions and the longer days. That is why those time frames have been identified.*

## **Lime kiln**

The Committee questioned the witnesses as to why the section of the road adjacent to the old lime kiln could not be more subjected to a more significant correction. Mr Ross responded:-

*In terms of that section of the road we have identified, we are improving the horizontal alignment through that section. In terms of the vertical alignment, would you like to mention that, Juan?*

Mr Lee added:-

*We could fix the vertical but it was seen by us as more beneficial to spend the money in other areas. The main problem with that lime kiln is the tightening of those two curves. We believe by fixing that we will significantly better that geometry without having to do the vertical alignment as well, which is then another step up in cost. The cost-benefit ratio doesn't quite balance for that.*

When questioned as to whether the heritage issues associated with the lime kiln impacted upon the design, the witnesses responded:-

**Mr LEE** - *They do. We have done a preliminary design for it and we think we can get around it by providing little walls so that the batter doesn't go back as far so we don't have as much impact on that lime kiln itself.*

**Mr ROSS** - *In terms of horizontal and vertical curves the horizontal curves are the biggest constraint in terms of improvement in safety, so we have identified that and improved it. The other thing we are doing through that section is we are still widening. That assists with safety in that in the vertical curve at least you have room to manoeuvre, which is more than they have currently at that location.*

**Mr LEE** - *All the horizontal and vertical curves are prioritised in the preliminary phase to determine which were the worst ones and we have tried to hit them in that order.*

## **Powerboat club**

The questioned sought an explanation from the witnesses as to how the section of the road adjacent to the powerboat club was to be treated and whether such treatment would facilitate better access to the club. Mr Ross responded:-

*Currently the access is on the Granton side of a crest. What the design aims to achieve is to lower that crest to improve sight distance and also to move the access to a point on the top of the crest so that they have maximum sight distance. Also at that location we are widening on the southern side so that there is sufficient room for vehicles to go around cars that are coming from Granton and propped to turn right into the motorboat club.*

## **Pavement costs**

The Committee sought an explanation of the costs differential between projects 2 and 3. Mr Lee responded:-

*On project 3 we will be widening the shoulders. We have done what is called the 'deflectograph' over it, which basically determines the strength of the pavement. The pavement has been found to be borderline in project 3 but is probably okay for the next couple of years. During that time we will probably overlay it anyway which will help fix the structural integrity. Project 2 has been found to be very deficient. The pavement has been found to be fairly weak so we are going to put a granular overlay over the whole road, which increases the cost of that road.*

Mr Ross added:-

*In terms of the pavement materials in project 2, there is a significant amount past the motor yacht club and also on that Scottsdale orchard corner. Both those locations are going to have significant realignment works - horizontal and vertical. That requires additional pavement materials.*

## **Provision for bicycles**

The Committee noted the proposed provision of 1.2 metre shoulders and questioned the witnesses as to why it was not proposed to provide at least a 2.5 metre shoulder to provide safety for the cyclists. The following exchange took place:-

**Mr ROSS** - *To move to a 2.5-metre wide lane would involve significant increases in excavation. You would have to acquire a lot of land off landowners; you would have to build on silts. The increase in costs would be significant and not achievable as part of this project.*

**Mrs NAPIER** - *Are you talking millions or hundreds of thousands?*

**Mr ROSS** - *Millions.*

**Mrs NAPIER** - *You are allowing for a 1.2 metre width on the road to accommodate cyclists and there was some discussion about whether it would be preferable to move to at least 1.8 metres, which would be consistent with an 80 kph zone.*

**Mr ROSS** - *I would have to confirm that, but yes.*

*...In some sections in order to have 1.2-metre shoulders we have had to install a concrete gutter drain. So instead of having our preference, which would be a 2-metre-wide table drain, which assists in catching debris and also drains the pavement, we have had to install a concrete drain. In some sections to achieve that 1.2 metres we have had to spend significant money*

*and go away from our preferred table drain to a concrete drain. What we have tried to achieve on this project is to provide a consistent road environment, so all the way through from Granton to New Norfolk to provide 3.5-metre lanes and 1.2-metre shoulders. To widen in some sections would have made an inconsistent environment, required additional cost and had additional impact on landowners.*

The Committee referred the witnesses to the document entitled “Tasmanian Road Hierarchy Target Standards 1999” and in particular to the recommendation in such document that the recommendation for category 2 roads is for a 1.5 metre sealed shoulder. The Committee subsequently asked the witnesses to explain the apparent inconsistency between the proposal to provide a 1.2 metre sealed shoulder on the subject section of road which is classified as a category 2 road. Mr Ross responded:-

*This document outlines targets and as part of this project we have tried to maximise the width that we have provided for motorists and in doing that we have been able to achieve 1.2 metres. A target here may be that it reads 1.5 metres and we are aiming for that target but we were only able to achieve 1.2 metres*

The Committee questioned the witnesses as to whether Bicycle Tasmania had had an opportunity to comment upon the proposed works. Mr Ross responded:-

*Yes, we have given them an opportunity to comment on the design but if they would like to view it again or talk to us again, we are happy to do that.*

The Committee sought the opinion of the witnesses as to the ‘bicycle friendliness’ of the proposed works. Mr Ross submitted:-

*Currently the road is 3.5-metre lanes with a gravel shoulder. What we will be doing as part of this works is provide an additional 1.2-metre shoulder, a 0.6-metre verge and also a friendly table drain. What we will be doing for cyclists is improving what they have now. Although it doesn't meet the full Austroad design standards, it is significantly better than what they have at the moment.*

The Committee questioned the witnesses as to whether the Department had made any assessment of the Lyell Highway between Granton and New Norfolk in terms of being an important cycleway in accordance with the provisions of the road hierarchy target standards, which recommend that shoulders on important cycleways be given special consideration as to widths regardless of category. Mr Ross responded:-

*As I have mentioned previously, what we have aimed to provide is a consistent road standard for all road users, and that includes taking cyclists into account. The road is designed to improve safety for everyone. Another example is that throughout the highway we are improving sight distance. A vehicle travelling along that road will be able to see the cyclist much sooner than at the moment.*

*... We wrote to the cyclists, as we wrote to other stakeholders, and gave everyone an opportunity to make comment. At this stage we have not received any comments from them. Based on the submission that you have from Bicycle Tasmania, I suggest that we will go back and have another discussion with them.*

*... I think it is outside what I can probably discuss with you here as to the bicycling strategy, who makes those decisions and what determines an important cycleway. I know, for example, in this project that we consulted with the Derwent Valley Council. We discussed the widths of the road with them and informed them that this was what we were providing. They made comments on cyclists as well, but at the end of the day they were happy with what we were providing for this project.*

*... It hasn't been brought to our attention that this is a significantly important cycleway.*

### **New accesses**

The Committee questioned the witnesses as to what access would be available in the event of new subdivisions receiving approval. Mr Ross responded:-

*The whole road is limited access. That has been proclaimed so it's the department's view to restrict access onto the highway and try to get vehicles onto the highway through the same accesses. For accesses such as Molesworth Junction, the department has spent a lot of money on that infrastructure to try to get vehicles to enter at that location.*

### **Radiata pines**

The Committee questioned the witnesses as to whether the radiata pines would be removed. Mr Ross responded:-

*The way the department views those is that we will assess them as to whether they are a hazard within that clear zone. If they are not within that clear zone then there is no reason to remove them. As an ongoing maintenance strategy we regularly go through and remove trees.*

*... We have already had an arborist look at those trees, and that is how we have determined that we can get rid of that first one but not the others.*

### **Speed limit**

The Committee questioned the witnesses as to what the proposed speed limits were to be for the road. Mr Ross responded:-

*Currently the speed limit up to Lime Kiln is 80 kph and that will remain. We then have the series from there right through to the end of bumpy bits and that is 100 kph. There is then a section from the end of the bumpy bits through the Molesworth Road, which is currently zoned at 80 kph.*

Mr Lee added:-

*From the end of the bumpy bits to just before the motorboat yacht club we will have electronic signage up through there.*

Mr Ross concluded:-

*It's from the end of the overtaking lanes through towards the motor yacht club. There is a section of road there where there is a series of tight curves. I think the estimate to straighten that section of road, for example, was around \$6 million. It was identified as a lower benefit ratio there. In that section we will provide sight benching and increasing widths to provide increased safety. We are also looking at providing through that section electronic signage to further warn motorists if they are going too fast.*

### **Bus pull-offs**

The Committee questioned the witnesses as to what provision is proposed to be made for school bus pull-offs. Mr Lee responded:-

*There are currently a few pull-offs along there, but I spoke to the bus drivers and they don't have any concerns at the moment. I believe that they don't have any pick-ups in this section.*

*... There is one couple who have requested it but their kids aren't yet school age and he keeps telling me that he wants to move anyway. The school bus service isn't prepared for us to spend money to put it in for one person.*

### **Batter rehabilitation**

The Committee questioned the witnesses as to explain the process of batter rehabilitation. Mr Lee responded:-

*Batter rehabilitation - and you will see this happen with package 1 - involves putting down topsoil over those cut faces and then applying a jute mat over the top of it, which is like a hessian sack, and then placing hydroseed - which is a mix of seed and papier-mache - and then placing little trees along the bench and placing little grass seedlings in the face. In doing so, what will happen is that all of that stuff should grow and it will hold it all together and stop erosion and hence stops rocks and stuff falling out onto the road. It is quite an expensive exercise to do all that.*

### **Submission of Mrs Christine O'Halloran**

The Committee referred the witnesses to the concerns raised in the written submission of Mrs O'Halloran which related predominately to the junction of Rowbottoms Road with the Lyell Highway. The Committee observed that all of her concerns had



appeared to have been addressed in the design but suggested that officers of the Department of Infrastructure, Energy & Resources communicate the design solution directly with her.

### **Submission of Mr Tim Morris MP**

Mr Morris made the following submission to the Committee:-

*My history on this goes back quite a long way to my time on the council. DIER and the council were involved in a study called the Derwent Valley Strategic Planning Study 2001. It identified, as best as we knew at the time, all the issues for probably the next 25 to 30 years in relation to the Lyell Highway. There were issues from getting the surfaces sorted out - the bumpy bits - to getting the sight distances straightened out, and the accesses were all a problem. It has had a very bad history of serious accidents. We managed to identify all those and I think by and large the department has taken those on board very well.*

*However there is one area, which my submission specifically concerns, which is cycling. It appears to me, from all the documentation I have seen, that they have completely ignored the whole issue of cycling and cycling safety in relation to that road, or certainly have not taken it seriously. As we saw this morning, there really is no option of putting a separate cycle lane in from Granton to New Norfolk, even though New Norfolk has been included in the Bicycle Strategy for Southern Tasmania. Therefore the only option that we see as viable is to have cycling lanes along the side of the highway.*

*It seems that in the work that was done to smooth out the bumpy bits a couple of years back, there was no shoulder sealing, despite that being identified as a key issue. There was no provision of bicycle lanes whatsoever, so there was a lot of money spent but no improvement for safety for cyclists whatsoever on the road. In the work that is currently going on, again at the New Norfolk end in particular, it is patently obvious that again there is no consideration for cyclists.*

*As was told to us by DIER this morning, even where there is a sealed shoulder, cyclists do not like using it because it ends up with a fair bit of rubble and coarse material. The department contractors do not keep that area clean, so cyclists tend to be forced back onto the main lane of the road for a few reasons, including not wanting punctures and the like. We seem to have a situation where we have had this once-in-a-generation opportunity with a road upgrade to have incorporated the cycling infrastructure that had been identified a number of years back. We had an expectation, wearing my council hat from years ago, that cycling would be factored into this road in this upgrade. However, nothing I heard this morning from our tour would give me any confidence that anything whatsoever is being done. I do not know from the documentation whether cycling has even got a mention in relation to the department's planning. So I am extremely disappointed in what I am seeing*

*Yes, where there is a 1.2-metre wide shoulder, it will provide some opportunity for cyclists to be on the outside of the white line, but that will not be consistent along the road. The sections where they are not going to work, which are the bumpy bits which they are not going to go back over and the other bits that they will not be touching, will not have a sealed shoulder. So even though they have said there will be a sealed shoulder provided from Granton to New Norfolk, that in fact is not going to happen. It is going to happen only in parts and inconsistently. I am looking again at the section they have just done at the New Norfolk end. There will be places there where there will not even be a 1.2-metre shoulder, so we would be lucky to get 600 millimetres in a couple of places.*

*It is rather disappointing that that is not going to be dealt with because our next opportunity probably will be 20 years away, unless specific works are undertaken to have cycling included. I think it is interesting that it is World Environment Day today. Climate change and how we are dealing with that has been on the agenda solidly for the last year and yet that message does not seem to be getting through to the department loudly and clearly.*

*The other thing that I very much worry about in the way that the works are being done is that they seem to be driven by an amount of money being pulled out of the air as an election commitment, and then that is the amount of money that has to do the work. Some \$14 million worth of work is done, and everything else will have to fit around that. This is not being done from an engineering point of view about what is an appropriate safe road, then coming back and assessing how much money that will cost or whether it is even necessary to spend the \$14 million. We saw the massive earthworks that are going on there today; I believe that that is serious overkill for what is needed on that highway. Yes, it needs a better road surface and better sight distances, but they could have perhaps de-engineered that quite a lot, perhaps moved the 80kph zone 200 metres further up the road and saved a whole lot of money. At most it would have cost 10 seconds in driving time. It is the Government's call on what it does and it is disappointing that we are not getting the best result that I believe we can out of this highway.*

*I am happy that the work to upgrade the highway is being done. I just think that we could potentially have had a better outcome for a greater range of road users. We will be fighting uphill to get safe cycling conditions along that road in line with the strategy that has been identified by the councils in the southern region.*

## **DOCUMENTS TAKEN INTO EVIDENCE**

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

- Lyell Highway – Granton to New Norfolk Projects 2 and 3 – Submission to Parliamentary Standing Committee on Public Works, May 2008;
- Lyell Highway A0197 – Granton to New Norfolk Works Project 3 Roadworks, Contract No. TBA, Preliminary Design Drawings;

- Tim Stredwick
- Christine O'Halloran
- Tim Morris MP

## **CONCLUSION AND RECOMMENDATION**

The evidence presented to the Committee clearly demonstrated the need for the proposed work to go ahead. Once complete, the works 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 improvements to pavement drainage and the strengthening of the pavement.
- Improved transport efficiency through providing a consistent speed environment; reduction in interruptions to the through traffic by providing junctions upgrading improved access to adjacent properties; and vertical and horizontal alignment improvements.

The Committee notes that despite the recommended standard for this category of road being 1.5 metres, the design provides for only 1.2 metre sealed shoulders because of the additional cost involved in providing the additional width. Notwithstanding this matter, the Committee is satisfied that the proposed works will be a significant improvement to the existing infrastructure.

The Committee recommends the project, in accordance with the documentation submitted, at an estimated total cost of \$11,200,000.

**Parliament House  
HOBART  
4 July 2008**

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