

# Lyell Highway Upgrade – Queenstown to Strahan

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	<b>Name</b>	<b>Signature</b>	<b>Date</b>
Authorised by:	Adrian Paine		23 July 2021

# I. Introduction

## I.1. Project Name

Lyell Highway Upgrade Queenstown to Strahan

## I.2. Project Summary

At the 2021 State Election, the State Government announced the **Supporting the West Coast** commitment that included joint Australian and Tasmanian Government funding totaling \$18.8 million for upgrades to the Lyell Highway between Queenstown and Strahan. The funding commitment is for upgrades including stopping bays for slow more traffic, passing lanes and alignment improvements.

Constructed in the late 1960s, the Lyell Highway between Queenstown and Strahan is the most direct route between the two towns and forms part of Tasmania's Western Wilds tourism journey. The highway traverses difficult terrain, winding around the bases of steep hills and ascending and descending into creeks and small rivers. It has many tight curves that do not meet today's current safety standards and guidelines.

The highway width also varies, resulting in ongoing safety issues and impacts to travel time reliability. The long-term strategy is to upgrade the highway width in possible locations, resulting in a consistent sealed pavement that meets today's guidelines.

State Growth has undertaken extensive consultation with the West Coast Council, the Tasmanian Transport Association and freight operators. This provided greater understanding of the safety concerns experienced to help inform highway upgrade design requirements. The plans for the Lyell Highway Safety Upgrade were able to be viewed at various static public display locations in towns on the west coast of Tasmania.

The project involves upgrading nearly 40 kilometres of the Lyell Highway, between Queen River Bridge in Queenstown to the Harvey Street Junction in Strahan, to improve driver safety by providing slow vehicle stopping bays, passing lanes, and where possible, improving the current road alignment by widening highway curves and improving pavement strength.

**Location:** Lyell Highway, between Queen River Bridge in Queenstown to the Harvey Street Junction in Strahan

**Key benefits:** This safety upgrade is focused on improving:

- Safety by creating opportunities for faster moving traffic to overtake slower moving vehicles.
- Travel time reliability for commercial and social purposes between Queenstown and Strahan.
- The driving experience for local road users, freight operators and tourists.
- Alignments by widening curves and improving pavement strength.

**Progress to date:** The design for stage 1 being passing and stopping bays has been completed and is currently being tendered with construction expected to commence in Spring/ Summer 2021. Stage 2 is currently in concept design stage.

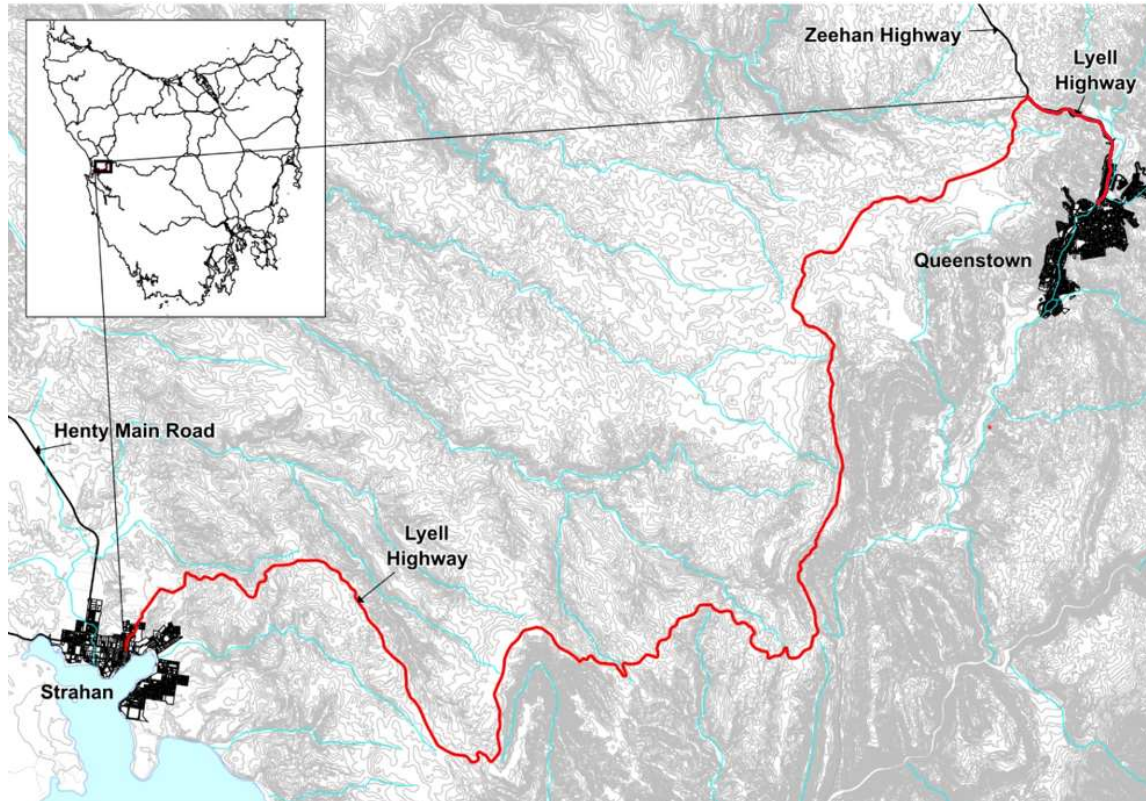
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### 1.3. Project Location

Lyell Highway, Queen River Bridge, Queenstown – Lat. -42.07745 / Long. 145.55625

Lyell Highway, Strahan – Harvey Street Junction – Lat. -42.15159, Long. 145.32801

The project extents are shown in Figure 1



**Figure 1 – Project Location Plan**

### 1.4. Related Projects and Strategic Context

The section of the Lyell Highway is located within the Cradle Coast Region. The Cradle Coast Integrated Transport Strategy was jointly developed by the Tasmanian Government and Cradle Coast Authority in 2006 to provide a coordinated and strategic framework to address transport issues over the coming twenty years.

The strategy identifies this section of the Lyell Highway to be a “strategic road” providing access to the touring and nature-based tourism markets. The works proposed in this project are a response to the strategy’s objectives of:

- Understanding trends in tourist vehicle road use, including volumes, types and routes, and the consequences for road design.
- Improving the strategic provision of roadside facilities, including lookouts and rest areas, which enhance visitor experience of the Region and better cater to visitor needs.
- Undertaking road infrastructure and design improvements that strengthen inter- and intra linkages within the tourism clusters that enhance transport efficiency.

The proposed upgrades to the Lyell Highway between the Zeehan Junction and Strahan directly aligns with the objectives of the Roads of Strategic Importance (ROSI) initiative by:

- Better connecting the regional businesses, such as the aquaculture, to local and international markets.
- Improving the connection between the regional communities of Queenstown and Strahan by making travel times more reliable and improving safety.
- Providing an opportunity for greater regional employment and business growth, particularly in the tourist industry

The section of the Lyell Highway between Queenstown and the Zeehan Junction is an approved road on the Tasmanian Higher Mass Limits (HML) Network and directly links to the Murchison Highway. The proposed upgrade to this section of the Lyell Highway is consistent with similar projects recently undertaken by the Department of State Growth on the Murchison Highway for the purposes of both safety upgrades and improving accessibility for heavier vehicles to parts of the state road network.

## 2. Project Scope

### 2.1. Problem/ Opportunity Statement

The Lyell Highway between Queenstown and Strahan is 39.6km long and traverses difficult terrain resulting in many tight curves that do not meet current design guidelines and the highway width varies between 5.5m and 7.0m. This section of the highway was constructed in the 1960s and there has been no substantive construction work undertaken since that time, other than localised remedial works to stabilise landslips.

The Department of State Growth has consulted with the West Coast Council, the Tasmanian Transport Association and transport operators regarding the operational performance of the highway. Through this consultation, it is understood that due to the safety concerns of operators travelling on the section of highway and travel time reliability some residents and commercial operators choose to travel the additional 35km from Queenstown via the Zeehan Highway to Zeehan and then Henty Main Road to Strahan, and vice versa to avoid driving this section of the Lyell Highway.

There is a high proportion of tourist traffic using the road including vehicles towing caravans and recreational vehicles which are typically lower powered causing them to be slow moving in steep and winding terrain.

This section of road can be characterised as a low speed rural road with many curves with tight radii and low operating speeds on curves. The difficult terrain and the associated improvement costs preclude the adoption of a higher standard geometry for the complete length of the road.

Pavement seal width has been identified as a deficiency by the community through West Coast Council and heavy vehicle industry users. The seal width varies between 5.25m and 7.05m with an average width of 6.43m. The current seal width is well below recommended widths given the current traffic volumes including heavy vehicle usage.

The long-term strategic approach for upgrading this section of the Lyell Highway is to provide a consistent sealed width that meets contemporary guidelines along the full length with the objective of:

- Improving consistency of travel environment through widening to consistent seal width.
- Improving safety by progressively upgrading the road alignment
- Improving visitor travelling experience
- Improving levels of social and commuter use between Strahan and Queenstown
- Improving travel time reliability for local traffic
- Improving rest and fatigue management
- Reducing levels of maintenance intervention, particularly edgebreak.

This project will also result in safety improvements for all road users travelling on the Lyell Highway between Queenstown and Strahan.

### 2.2. Options Evaluation

A high-level Options Analysis Report was completed which identified different combinations of options for shoulder and curve widening, improvements to alignment, and opportunities to provide passing and stopping bays for slower moving vehicles in order to maximise the benefit to the road corridor working to the proposed budget. The options development incorporated input and feedback from key stakeholders including West Coast Council and the Tasmanian Transport Association, the identified improvement opportunities include:

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1. Stopping bays for slow moving traffic to pull over and stop at regular intervals along the section of the Lyell Highway between the Zeehan Highway junction and Strahan.
2. Passing lanes for faster moving traffic to pass slower moving traffic along the Lyell Highway between Queenstown and the Zeehan Highway intersection and from this intersection to Strahan.
3. Alignment improvement including localised curve widening at locations based on a review of available data where there is significant drop in operating speed and the width is insufficient larger vehicles to pass.
4. Improvements to delineation.

The report also summarised and provided preliminary analysis of all existing data which could be obtained for the road corridor. This includes consultation with Council and industry, traffic volumes, existing and target road widths, construction and seal history, structures in the road corridor, services, and crash history.

Following the options analysis process further investigation works has been undertaken to refine and adequately inform which option will maximise the benefit to the road corridor. The staged delivery will allow the scope to be further refined to deliver maximum benefit within the proposed total project budget.

### 2.3. Scope of Project

The proposed program for the project aims to stage the design and delivery of the work.

The design of the Stage 1 package, comprising the passing lanes and stopping bays, has been completed. The following works are proposed:

#### ***Passing Lanes***

*Westbound Carriageway* two locations

*Eastbound Carriageway* two locations

#### ***Stopping Bays***

*Westbound Carriageway* three locations

*Eastbound Carriageway* five locations

Signage is provided 300m before the stopping bay

In parallel with construction of the Stage 1 package, the design for the Stage 2 works will be finalised and then proceed to construction. The proposed works comprises:

- A slow turn out lane on the section of the Lyell Highway between Queenstown to the Zeehan Highway junction
  - Alignment and delineation improvements in the section of road between Zeehan Highway Junction to Strahan. The work will be prioritised where there are significant drops in the operating speed at a curve.
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### 3. Project Cost

#### 3.1. Overall Project Cost Summary Table

This Lyell Highway Queenstown to Strahan upgrade is jointly funded by the Australian and Tasmania Governments. The Australian Government has committed \$15 million under its Roads of Strategic Importance initiative and the Tasmanian Government has committed a further \$3.75 million towards the project.

*Table 1 – P50 and P90 Cost Summary*

	<b>P50 (\$m AUD)</b>	<b>P90 (\$m AUD)</b>
<b>Base Cost Estimate</b>	12.983486	12.983486
<b>Contingency</b>	2.959414	4.433114
<b>Total Project Cost Estimate</b>	15.942900	17.416600
<b>Escalation</b>	1.143336	1.249021
<b>Total Outturn Cost Estimate</b>	17.086236	18.665621

#### 3.2. Budget profile for the Project

The following forecast milestone requirement is based on the P90 estimate.

*Table 2 – Budget Profile*

P50/P90 Outturn (or Actual as appropriate) 14,932,498		<b>2020/21</b>	<b>2021/22</b>	<b>2022/23</b>	<b>Balance of Commitment ** (\$m)</b>
		<b>(\$m)</b>	<b>(\$m)</b>	<b>(\$m)</b>	
	<b>Australian Government contribution</b>	1.696026	8.214526	5.021946	14,932,498
	<b>State Government contribution</b>	0.424006	2.053631	1.255487	3,733,123
	<b>Other contribution (provide detail)</b>	0.000000	0.000000	0.000000	0
<b>Total</b>	2.120032	10.268157	6.277433	18,665,621	

## **4. Project Benefits**

### **4.1. Expected positive outcomes and benefits to be delivered by the Project**

The proposed improvement solutions will deliver the following benefits:

- Improved safety through improved curve delineation and targeted seal widening
  - Improved time savings through improved traffic management
  - Minor but useful vehicle operating cost savings
  - Improved visitor travelling experience
  - Job creation leading to increased tax revenue (more attractive to tourists)
  - Improved transport system resilience
-

## 5. Finance and Procurement

### 5.1. Preferred procurement method for the Project

The preferred procurement method is separate design only and construct only contracts. The design contract will be awarded using the Department's standard consultant panel. The construct only contract is to use the Department's standard public tender and evaluation process, open to tenderers who meet the National prequalification requirements.

### 5.2. Project Timeline

The key dates based on this delivery approach are outlined in the Table below. The proposed program would result in the project being fully delivered by June 2023.

**Table 3 – Project Key Dates**

Activity	Timeline
<b>Stage 1 Package (Passing Bays and Stopping Bays)</b>	
Design Development	December 2020 to June 2021
Tendering	July 2021 to August 2021
Construction	September 2021 to April 2022
<b>Stage 2 Package (Alignment delineation improvements)</b>	
Design Development	June 2021 to February 2022
Tendering	March 2022 to May 2023
Construction	June 2022 to June 2023

## 6. Risk and Sustainability

### 6.1. Major risks, and proposed mitigation strategies

A project risk register has been produced. A risk workshop was conducted to inform this risk register. The activities proposed for the Development Phase aim to investigate these risks further and mitigate them where possible.

Table below outlines the impacts and proposed mitigation strategies for some of the key risks identified to enable successful delivery of the project.

**Table 4 - Major Project Risks and Proposed Mitigation Strategies**

<b>Risk Event</b>	<b>Potential of Risk Impact</b>	<b>Risk Mitigation Strategy</b>
Scope of the project outputs cannot be delivered within the allocated project budget or cash flows	The project is over budget	<p>Solution is scalable as some of the medium priority re-alignment options can be discarded</p> <p>High level estimates to be completed at Concept completion.</p> <p>Preparation of P50 &amp; P90 estimates at Detailed Design completion.</p> <p>Refinement of scope with better information and design definition</p> <p>Consider engaging specialist to undertake independent first principles estimate.</p>
The available time for construction is limited due to the project being located in a heavy rainfall area on the west coast of Tasmania.	The project cannot be completed within the designated timeframes.	<p>Thorough constructability review in Detailed Design - including areas which will remain wet in summer.</p> <p>Identify early areas for work.</p> <p>Open more construction fronts.</p> <p>Allow work to be fast-tracked - investigate possibility of closing road during construction.</p>
Unsafe or difficult management of traffic during construction due to the narrow and winding nature of the road.	Safety incident at a worksite	<p>Contract docs emphasise importance of traffic management</p> <p>Construction staging to be clearly documented</p> <p>Contractor CEMP to clearly identify processes for traffic management for Superintendent acceptance as a Hold Point.</p>
Testing of the existing pavement identifies significant areas of underperforming pavement that may require diversion of funds for road widening to pavement rehabilitation	The project goes over budget	<p>Deflectograph testing early during development phase to identify and cost additional remediation of existing pavement.</p> <p>Solution is scalable as some of the medium priority re-alignment options can be discarded.</p> <p>Staging of project will identify funding available for Stage 2 after Stage 1.</p>

Council and/or TTA requests for additional project scope through the consultation process	Increases in project scope, cost and delivery schedule.	Early discussions have been undertaken with Council and TTA to understand their specific requests.  Continue engagement during the Development Phase.
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## **6.2. Major dis-benefits including likely impacts to the community and environment**

Possible negative externalities associated with the project could include the need to remove threatened species to accommodate road widening. Environmental investigations along with topographic survey collection and road design modelling have been completed for Stage 1 and no impact is anticipated. Stage 2 investigations are continuing to confirm the extent of any impacts.

## **6.3. Detail any sustainability strategies that will be adopted**

The safety improvements will provide community benefits in the form of lower impacts on the community and as a consequence reduced resource demand to treat injured persons and repair damaged vehicles and infrastructure.

## **7. Stakeholder Engagement**

### **7.1. Public and Stakeholder participation and consultation**

A Stakeholder and Community Engagement Plan (SCEP) has been prepared for this project in accordance with the State Roads Stakeholder and Community Engagement Framework and adopts the practices developed by the International Association of Public Participation (IAP2). A copy of the SCEP is provided in Appendix B.

The SCEP is a whole of project document that will be updated and managed throughout each phase of the project.

The SCEP identifies the timing and outcomes of consultation as part of a transparent and well-planned decision-making process and inform stakeholders throughout the project.

### **7.2. Record of Stakeholder Consultation**

Stakeholder engagement and Public Consultation has been undertaken in with local government, local landowners, and affected transport operators in the region of the road corridor to ensure all relevant considerations are included in the design process.

The key project stakeholders identified include:

- West Coast Council (Council)
- Tasmanian Transport Association (TTA)
- Tasmanian Transport Council
- Government stakeholders
- Landowners
- Sustainable Timber Tasmania
- DPIPWVE Parks & Wildlife
- West Coast Railway
- Tourism Tasmania
- TasNetworks
- Telstra

Project information was on display at the following locations from 8 July 2021 to 23 July 2021:

- Derwent Bridge Wilderness Hotel
- Derwent Bridge Tourist Information Board
- West Coast Council Office, Queenstown
- West Coast Council Shopfront, Strahan
- West Coast Visitor Information Centre
- Queenstown Library
- Strahan Library
- Zeehan Library

### **7.3. Directly affected landowners and property acquisition**

There is no land acquisition required for the nominated works.

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As there is no designated road corridor for this section of the Lyell Highway, the road is located on Crown Land managed by one of the following:

- Department of Primary Industries, Parks, Water and Environment (DPIPWE),
- Parks and Wildlife Service (PWS) and
- Sustainable Timber Tasmania (STT).

Landowner consent is currently being sought from these entities for the nominated works.

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## 8. Compliance

### 8.1. List Commonwealth or State legislation triggered by the Project

Commonwealth and State legislation triggered by the project has been investigated during the Scoping Phase for the project. A Natural Values Assessment has been completed along the Lyell Highway between Queenstown and Strahan to assess impacts on threatened species or habitat no impact has been identified.

Desktop investigations indicate that Aboriginal and historic heritage legislation are unlikely to be triggered by the project. This will be confirmed as part of ongoing design development

### 8.2. Noise

The Department uses the Tasmanian State Road Traffic Noise Management Guidelines to manage traffic noise on State Roads. The Guidelines have been endorsed by the Environment Protection Authority (Tasmania).

The Department has applied the Guidelines and determined that the project does not trigger any requirements for noise mitigation, being a safety upgrade of an existing road. Notwithstanding this and the nature of the proposed works, the operational noise generated once construction is completed is not considered likely to increase significantly.

### 8.3. Environment (Flora, Fauna, Landscaping and visual amenity)

The Natural Values Assessment identified:

- There are no impacts to threatened ecological communities listed under the Tasmanian Nature Conservation Act 2002 (NCA).
- There are no impacts to threatened ecological communities listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBCA).
- No species listed under the Tasmanian Threatened Species Protection Act 1995 (TSPA) or the on the EPBCA have been recorded from within or in the immediate vicinity of the site
- No threatened fauna has been confirmed from the study area. The site is not considered to contain any critical habitat elements that are likely to impact the persistence of threatened fauna species within the local area
- Six declared weeds have been observed within the survey area. Five of the declared weeds are classed as Zone B species in the West Coast Council, with the other one not zoned.

The Natural Values Assessment recommended:

- Ensure no impact to water quality by construction (i.e.: include sediment and erosion control measures that adequately protect the multiple small streams in the area
- Prepare a Weed Management Plan to control 'declared' weeds throughout the works area and environmental weeds within patches of native vegetation.
- Avoid dumping of fill under trees or root compaction by machinery within 4 m of any trees intended to be retained.

These works are expected to have low landscape and visual impacts on the surrounding area.

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#### **8.4. Heritage (Aboriginal and Historic)**

Desktop investigations indicate that Aboriginal and historic heritage legislation will not be triggered by the project.

#### **8.5. Planning Approvals**

The proposed works are located within the municipality of the West Coast Council and is subject to the West Coast Interim Planning Scheme 2013.

A development application has been submitted for the nominated Stage I work and is currently in the process of being assessed by Council.

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# Appendix A: Public Display Plans



# **Appendix B: Stakeholder Consultation and Engagement Plan**