

# MIDLAND HIGHWAY PERTH LINK ROADS

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## Table of Contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	BACKGROUND.....	1
1.2	PROJECT OBJECTIVES.....	2
1.3	PROJECT LOCATION.....	2
1.4	STRATEGIC CONTEXT OF THE PROJECT.....	2
<b>2</b>	<b>PROJECT DETAILS .....</b>	<b>6</b>
2.1	PROPOSED WORKS .....	6
2.2	DESIGN SPEED.....	7
2.3	ROAD SAFETY IMPROVEMENTS.....	7
2.4	ROAD CROSS SECTION .....	7
2.5	DRAINAGE.....	8
2.6	UTILITIES.....	8
<b>3</b>	<b>SOCIAL, ENVIRONMENTAL IMPACTS AND STAKEHOLDER ENGAGEMENT .....</b>	<b>10</b>
3.1	PROPERTY ACQUISITION.....	10
3.2	NOISE.....	11
3.3	FLORA .....	11
3.4	FAUNA.....	12
3.5	ABORIGINAL HERITAGE .....	12
3.6	HISTORIC HERITAGE .....	13
3.7	LANDSCAPE AND VISUAL IMPACTS.....	13
3.8	STAKEHOLDER ENGAGEMENT .....	14
3.9	DEVELOPMENT APPROVALS .....	16
<b>4</b>	<b>PROJECT PROGRAM AND COSTS .....</b>	<b>17</b>
4.1	PROJECT PROGRAM.....	17
4.2	COSTS .....	17
<b>5</b>	<b>CONCLUSION.....</b>	<b>19</b>

## Appendices

- APPENDIX A. DRAWINGS
- APPENDIX B. P50 / P 90 COST ESTIMATES
- APPENDIX C. PHOTOMONTAGES OF PROPOSED WORKS

## Authorisation

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# 1 Introduction

## 1.1 Background

The Perth Link Roads project is a component of the staged upgrade of the Midland Highway from the South Esk River Bridge (south of Perth) to Breadalbane. The first stage, which commenced in 2016 and is due for completion in 2018, duplicates the highway between Perth and Breadalbane.

It is a key project of the Midland Highway Upgrade Program, a 10-year plan with a total commitment of \$500 million from the Australian Government and Tasmanian Government to upgrade the Midland Highway.

This project comprises construction of the Southern and Western Links, which will realign the Midland Highway around Perth and provide a new connection to Illawarra Main Road.

Once completed, the Perth Link Roads will remove significant volumes of traffic from the middle of Perth, as there are currently three key roads moving traffic through the township. Additionally, it will provide for more efficient movement of inter-regional traffic between the south, north and north-west.

The Midland Highway currently passes through the centre of Perth and is a critical freight connection providing access from the southern region to the State's northern ports. It is also the major passenger transport link between the north-west, northern and southern region. The Highway also provides a commuter link for Perth and Longford residents to and from Launceston.

There is also a connection from the Midland Highway to the Bass Highway in Perth (via Illawarra Main Road and Drummond Street). Illawarra Main Road is part of the National Land Transport Network and provides the link from the Midland Highway to Bass Highway for freight and passenger vehicles travelling between the north-west and south of Tasmania. These roads are both two-lane single carriageway roads with a high number of direct property accesses, road intersections and an at grade rail crossing.

Both the Midland Highway through Perth and the Drummond Street connection to Illawarra Main Road do not meet National Land Transport Network standards and are deficient in terms of current and future productivity needs. Heavy vehicles travelling through the town day and night also have a detrimental impact on the safety and amenity of residents.



## 1.2 Project Objectives

The objectives of the project are to:

- Address capacity constraints and provide for additional capacity for projected traffic volumes through to 2043;
- Provide a National Land Transport Network standard 110 km/h speed environment;
- Provide a minimum 3-star AusRAP rating for this section of the Midland Highway;
- Improve freight transport efficiency;
- Improve intersection safety and efficiency.

The key outcomes intended from this project will be to achieve the objectives outlined above, while managing the infrastructure assets to deliver an appropriate level of service and visual amenity, within the agreed budget and program.

## 1.3 Project Location



Figure 1 Locality Plan Base image by TASMAP [www.tasmap.tas.gov.au](http://www.tasmap.tas.gov.au) © State of Tasmania

## 1.4 Strategic Context of the Project

The Midland Highway is on the National Land Transport Network, and currently runs through the middle of the historic township of Perth. Planning commenced in the mid-1980s to investigate options to upgrade the Midland Highway from the South Esk River Bridge to the Breadalbane roundabout and many options have been investigated previously.

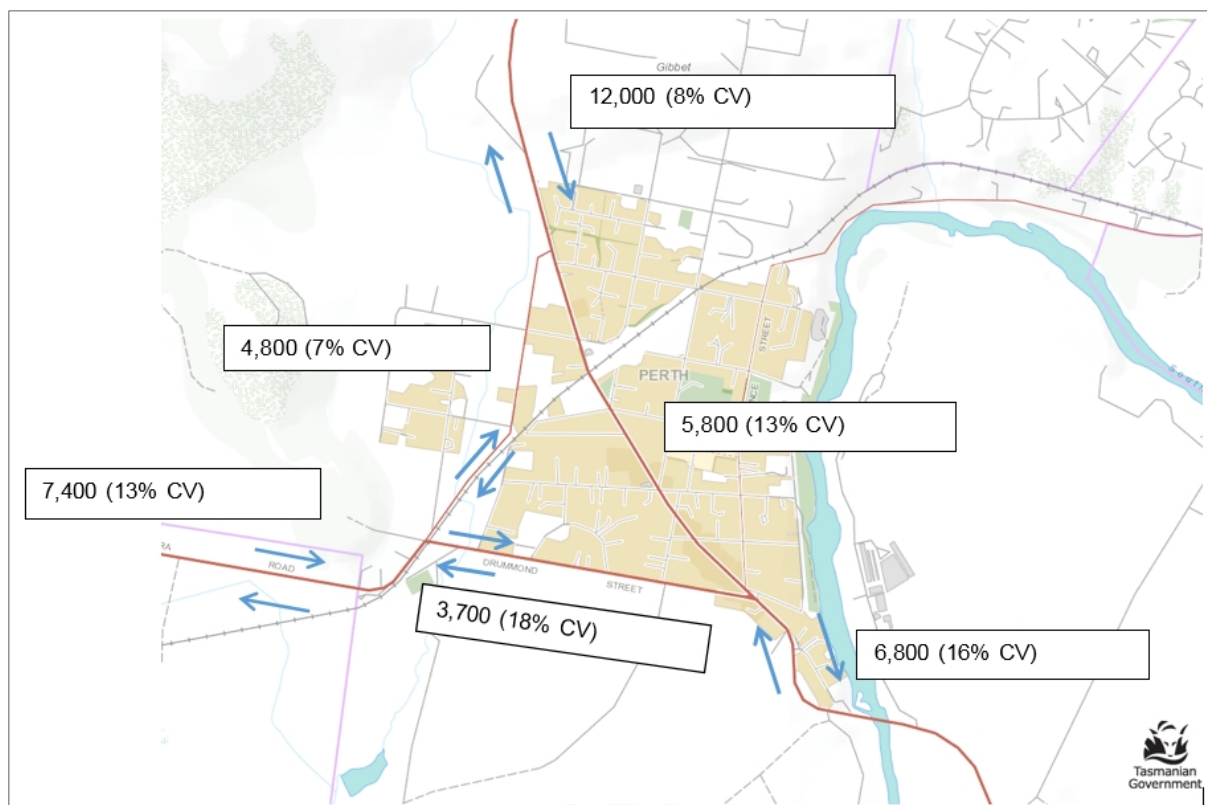


The current Midland Highway through Perth has continuous commercial and residential accesses, frequent cross-street intersections, a relatively restricted cross section due to on-street parking and 40 km/h (school times), 50 km/h and 60 km/h speed limit. A level railway crossing with the major rail line between Western Junction and the North West is located within the 60 km/h speed limit at the northern end of the town. The Midland Highway north of Perth carries 11 400 vehicles per day currently (8% heavy vehicles), and is forecast to increase to 15 900 vehicles per day by 2043.

Illawarra Main Road is also on the National Land Transport Network and provides a key link from the Midland Highway to the Bass Highway for freight and passenger vehicles between southern Tasmania, and the north-west. As the majority of interstate and international freight moves through the two north-west ports (Burnie and Devonport), the Illawarra Main Road is critical for freight.

The Drummond Street connection (to Illawarra Main Road) has a 70 km/h speed limit, a high number of direct residential accesses, five street intersections and a level railway crossing. Current traffic volume (AADT) on Illawarra Main Road is 7200 vehicles per day (14% heavy vehicles) and is forecast to increase to 9200 vehicles per day in 2043.

Youl Main Road is also part of the Perth street network, contains numerous accesses to residences along its length and has speed limits of 60 km/h and 70 km/h accordingly. During periods of high rainfall, it is prone to intermittent minor flooding. Youl Main Road also provides a key linkage for vehicles travelling to Launceston from areas to the west of Perth.





A large proportion of the crashes observed within the existing road network in the past 5 years have been associated with the high number of intersections, private accesses and commercial development. This section of the National Land Transport Network cannot be given an AusRAP rating in its current form, due to the design speed and number of intersections. Overall, it is deemed to be substandard and residents suffer amenity and safety impacts from traffic, particularly from heavy vehicles throughout the day and night.

The proposed link roads will provide a limited access 110 km/h road corridor with overtaking opportunities. This will achieve a 4-star AusRAP rating and will substantially improve amenity and safety for the Perth community and road users.

#### **1.4.1 Alignment with Approved Strategies**

Upgrading of the Midland Highway is a priority for the Tasmanian Government and the Australian Government. The Perth Link Roads are a key component of the Midland Highway Action Plan. This Plan identifies both parts of the Perth Link Roads project, including:

- southern link from the South Esk River Bridge to Illawarra Main Road, and
- the western link, connecting Illawarra Main Road to the Perth-Breadalbane section

The Perth Link Roads project is also consistent with the Tasmanian Integrated Freight Strategy. One of the key directions of this Strategy is to provide high-standard, responsive land freight connections.

The Strategy also identifies the road networks between Burnie and Hobart as one of Tasmania's most significant freight corridors. This freight corridor is also listed as a Priority Initiative on Infrastructure Australia's Infrastructure Priority List. While significant investment has been made this road corridor, the investment in the Perth Link Roads project will further improve road freight transport efficiency at a key connection for freight moving between Tasmania's three key regions.

Continued growth in freight through Tasmania's three northern ports, supported by a changed direction of trade from the southern region, will impact on the land transport system. Over the past two decades, freight throughput at Hobart port has declined significantly and the southern region is now reliant on the northern ports for exports/imports.

The Midland Highway south of Perth carried 2.3 million tonnes in 2015, with 1.6 million tonnes along the Illawarra Main Road, and 1.4 million tonnes on the Midland Highway north of Perth. Freight on these three sections are forecast to increase significantly, with more than 2% growth per annum forecast for all three of the above sections. Without the Perth Link Roads project, there will be significantly increased volumes of freight vehicles on an already constrained section of road.



#### 1.4.2 Alignment with Planning Policies and Themes

The *Perth Structure Plan* (developed by Northern Midlands Council) establishes a preferred pattern for future residential growth for Perth, along with a framework for revitalisation of the town centre, acknowledging its historic values and strong relationships with other nearby activity centres. The Perth Link Road will ease pressure on local streets and improving amenity within the town, in terms of traffic generation and noise, and constrain future development which will benefit urban consolidation around the existing Perth town centre.

The Plan recognises the growth opportunities provided by the Perth Link Roads project, and the Plan defines future growth areas, developed in consultation with Department of State Growth. The Perth Link Road will define the boundary of the Perth growth areas in accordance with the Perth Structure Plan and consolidate growth within the existing urban land use framework of Perth.

The *Northern Integrated Transport Plan* was developed collaboratively by the Tasmanian Government, the eight local councils of the Northern Region, Northern Tasmanian Development (NTD) and broad community consultation. It provides a coordinated and strategic framework, reflecting current challenges and addressing high priority regional transport issues over the next 20 years.

The southern link of the Perth Links Road is a priority project in the *Northern Integrated Transport Plan 2013*. During development of the Perth Link Road, there were additional construction efficiencies, and additional benefits to both freight and passenger movements, identified by undertaking both the western and southern link roads as a single project.

The *AusRAP Star Rating Australia's National Network of Highways 2013* report found that the majority of the Midland Highway rated either only 1 or 2-star, in its 5-star safety rating scale. The Midland Highway section through Perth was not given an AusRAP rating in its current form, due to the design speed and number of intersections.

A large proportion of the crashes observed within the existing road network in the past 5 years have been associated with the high number of intersections, private accesses and commercial development. Overall, the Midland Highway through Perth is substandard and residents suffer amenity and safety impacts from traffic, particularly from heavy vehicles throughout the day and night.

The Perth Link Road will provide a limited access 110 km/h road corridor with overtaking opportunities. This will achieve a 4-star AusRAP rating and will substantially improve amenity and safety for the Perth community and road users.

This is also consistent with the 'Safe System' approach which has been adopted by all Australian state and territory road authorities to achieve the minimum 3 star AusRAP rating. The approach recognises that drivers will make mistakes which result in crashes and road infrastructure needs to be designed to take account of these errors.



## 2 Project Details

### 2.1 Proposed Works

The Perth Link Roads project is the final component of the staged upgrade of the Midland Highway from the South Esk River Bridge (south of Perth) to Breadalbane. The first stage, which commenced in 2016 and is due for completion in 2018, providing dual carriageway between Perth and Breadalbane.

The project will realign the Midland Highway around Perth and provide a new connection to Illawarra Main Road. This will remove significant volumes of traffic from the residential areas of Perth, provide for more efficient inter-regional traffic movement and improve safety.

The Perth Link Roads project involves construction of three new junctions and a 5 km road to move traffic from the existing Midland Highway to west of Perth on the new link road.

The Perth Link Road includes two distinct sections of dual carriageway:

- Southern Link - South Esk River Bridge to Illawarra Main Road; and
- Western Link - Illawarra Main Road to the beginning of the Perth-Breadalbane duplication.

The Western Link aims to remove most of the vehicles currently using Youl Main Road, the majority of traffic travelling through Perth onto the Midland Highway, and remove a level railway crossing from the National Land Transport Network (the level crossing will still exist, but only crosses the local road).

The Southern Link aims to shift most of the vehicles currently using Drummond Street to the new road, along with vehicles from the existing Midland Highway through Perth.

Access to Perth and other destinations will be provided for in one of the three junctions. The three junctions proposed are:

- Southern Roundabout – a roundabout at the southern entrance to Perth, including local access for Eskleigh and other properties to the south of the Link Roads
- Western Service Interchange – a grade-separated service interchange between the new junction of Illawarra Main Road and the Link Roads (Midland Highway), including on and off ramps for vehicles travelling between the north-west and south
- Northern Interchange – a grade separated interchange, with two roundabouts to provide access from the Midland Highway to the north of Perth

The design also includes a pedestrian and cycle path from Drummond Street to Illawarra Main Road, which incorporates an underpass to separate pedestrians and cyclists from the new dual carriageway.



## 2.2 Design Speed

The design speed adopted for the project is 110 km/h, consistent with the adjacent sections of the National Land Transport Network. It is anticipated that the posted speed will be 110 km/h for the majority of the length of the Perth Link Roads. The roundabout at the southern entrance to Perth will be posted at a 60 km/h speed limit, consistent with the existing speed limit across the South Esk River bridge.

## 2.3 Road safety improvements

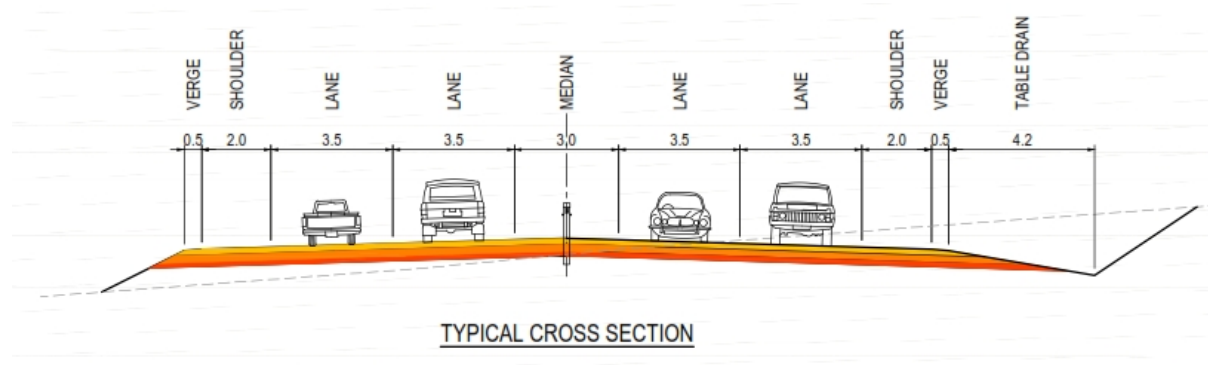
In conjunction with the Perth-Breadalbane project, the Perth Link Roads will provide dual carriageway for the entire length between southern Perth and Launceston on the Midland Highway. This project would provide wider lanes, improved road geometry, unrestricted overtaking opportunities and a median flexible safety barrier to improve safety for traffic along this section of the Midland Highway.

The Perth Link Roads are forecast to decrease crash frequency on the Midland Highway, Youl Main Road and Drummond Street, with 10 fewer crashes per year. In terms of casualty crashes, where a person is injured, these are forecast to decrease by more than 3 injury crashes per year.

## 2.4 Road Cross Section

The majority of the project will be a four-lane highway, with two 3.5m traffic lanes in both directions. The road cross section will vary between different sections of the project, such as the main highway, ramps, and service roads. The typical cross section for the main highway is indicated in Figure 1.

Figure 1 - Typical cross section





## 2.5 Drainage

The main creek in the project area is Sheepwash Creek. The alignment for the Perth Link Roads crosses Sheepwash Creek in two locations – at the northern end (near the northern interchange) and near the eastern side of the Illawarra Main Road interchange.

Stormwater drainage culverts will be installed across the new highway in two separate locations to maintain the flow of water through these waterways. The crossings of the existing waterway have been maintained in their current location where practicable, and localised diversion of the waterway has been minimised.

There are some existing localised flooding issues around Sheepwash Creek. Northern Midlands Council has recently commissioned a flood study for this area. The results of this study have been used to inform the drainage design for the Perth Link Roads, and the main culverts crossing Sheepwash Creek have been designed to convey flows for a 1-in-100 year flood and maintain the existing flow of water.

The two culverts are adjacent to proposed stock underpasses, provided to allow access between land each side of the highway for light vehicles and stock. These underpasses have been designed to provide additional capacity in high flow events.

Where applicable, stormwater drainage from the new pavements will be diverted through new culverts or more typically along the new table drains constructed at the base of the new road embankments. The stormwater drains will eventually discharge into the existing waterways.

The project has adopted a fauna-friendly culvert design, to maintain habitat connectivity for frogs across the local landscape. The design adopted is similar to that used for the Perth-Breadalbane duplication, with drainage culverts designed and constructed in accordance with the Department's "Green and Gold Frog Management Guidelines".

## 2.6 Utilities

### 2.6.1 Overhead Power (and lighting)

There are a number of overhead power lines and support poles around the southern, western and northern junctions on the Perth Link Roads.

The majority of these will need to be relocated to enable the construction to proceed. Some sections will be replaced with underground conduits due to local site conditions and constraints. The Department is in consultation with TasNetworks regarding the proposed design and the construction program for works.

Street lighting will be required for many of the new junctions. The Department is also in consultation with TasNetworks regarding design and installation of new street lighting at appropriate locations across the project. A key consideration for the detailed lighting plan will be to minimise light spill into surrounding areas, and implement shielding, where required.



### **2.6.2 Telecommunications Cables**

There are a number of existing telecommunication cables (including fibre-optic cable) that will be affected by the proposed highway. The Department is currently consulting with relevant infrastructure owners on relocation of these service utility assets.

### **2.6.3 Sewer and Water**

TasWater has confirmed there are water and sewer assets located in the area that will be affected by the roadworks. The Department is currently consulting with TasWater on relocation of these service utility assets.



## 3 Social, Environmental Impacts and Stakeholder Engagement

### 3.1 Property Acquisition

Under the Perth Link Roads project, the new highway will be re-located to the west of Perth township and the existing highway. The Perth Link Roads is almost wholly outside the existing road reserve, and will require significant acquisition from a number of properties. The land to be acquired is generally from large rural blocks, which limits the number of properties to be acquired.

The properties affected by property acquisition have been listed in Table 1, along with the approximate area to be acquired. The Department has been consulting with affected landowners on any accommodation works required, including re-location of existing accesses and provision of stock underpasses.

**Table 1 Proposed Property Acquisition**

Title	Address	Owner	Extent of works	Approximate area of acquisition (m <sup>2</sup> )
151007/1	Lot 1 Midland Highway, Perth	Scone Pty Ltd	Re-alignment of Eskleigh Road to new Southern Interchange	22,700
114189/1	Lot 1 Main Road, Perth	Gibson, Taylor and Knights	New southern roundabout and Access works	23,200
139742/1	'Glen Ireh' – 35 Drummond Street, Perth	Einoder	Southern Link Road and Access works	82,200
100598/1	Illawarra Road, Perth	Kelly	Southern Link Road	38,900
250051/1	'Mountford' – 389 Illawarra Road, Longford	Mountford Nominees Pty Ltd	Southern Link Road	53,000
131035/1	390 Illawarra Road, Longford	Mountford Nominees Pty Ltd	Western Interchange	184,200
171217/1	Illawarra Road, Perth	Mackinnon	Western Interchange, Western Link Road Access works Northern Interchange	249,240
152534/1	Illawarra Road, Perth	Mackinnon	Western Link Road	19,400
170425/1	Illawarra Road, Perth	Mackinnon	Western Link Road	6,300



## 3.2 Noise

It is expected that the Perth Link Roads will change the road traffic noise environment around Perth. Generally speaking, properties in the area will experience a reduction in existing noise levels due to relocation of the highway further to the west away from neighbouring residential properties.

An assessment of the road traffic noise environment has been performed in accordance with the Department's State Road Traffic Noise Management Guidelines. The Guidelines are endorsed by the Environmental Protection Authority (EPA) Tasmania as the Department's strategy for managing traffic noise.

The assessment consisted of development of a noise model for the project area, along with monitoring at selected sites throughout the area to measure existing noise levels and calibrate the noise model. The predicted noise levels were modelled for using future traffic volumes and the proposed road design, and assessed against the acceptable limits outlined in the Guidelines.

Five scenarios were modelled:

- Current (2017)
- Post-construction (2019), without Perth Link Roads
- Post-construction (2019), with Perth Link Roads
- 10 years post-construction (2029), without Perth Link Roads
- 10 years post-construction (2029), with Perth Link Roads

The modelling showed that 89% of receivers assessed experienced a decrease in noise levels, when comparing no-build and build scenarios 10 years after construction. This includes some properties that were adversely impacted by increased traffic noise from the Perth to Breadalbane duplication.

The majority of residences that will experience increased noise are on Napoleon Street on the western side of Perth. However, the noise assessment determined that only two properties are eligible for noise mitigation, based on the Guidelines. The most appropriate solution for these properties are individual property treatments, such as noise-reducing window treatments. The Department is currently consulting with the affected landowners on the nature of these treatments.

## 3.3 Flora

The Perth Link Roads project will have minimal impact on native flora, as the construction footprint generally crosses existing cleared land, with relatively little native vegetation. Flora surveys in the project area identified two species listed under the *Threatened Species Protection Act 1995*. No flora species or vegetation communities listed under the Federal *Environment Protection and Biodiversity Conservation Act 1999* were found during surveys.



It is likely that a small number of plants will be impacted by construction works, and an application for a Permit to Take Threatened Flora (under the *Threatened Species Protection Act 1995*) will be submitted to DPIPWE prior to commencement of works.

### 3.4 Fauna

The Perth Link Roads project will have minimal impact on native fauna, as the construction footprint generally crosses existing cleared lands. There are two key threatened fauna species with potential to occur in the project area, which have been specifically considered as part of the project.

The construction works footprint will impact a small number of large eucalypts, which are potential habitat for the Tasmanian masked owl (*Tyto novaehollandiae* subsp. *castanops*). The Tasmanian masked owl is listed under the *Threatened Species Protection Act 1995* (endangered) and the *Environment Protection and Biodiversity Protection Act 1999* (vulnerable). Some of the large eucalypts within the project area are considered to be potential habitat trees for masked owl.

The Department has undertaken a number of surveys of potential habitat trees, and no evidence of the species was found (e.g. pellets, prey remains under hollow-bearing trees). Based on the above surveys, presence of the masked owl is considered unlikely, and the Department has developed a protocol for management of potential habitat trees, which will be implemented during construction.

There is also potential habitat for green and gold frog (*Litoria raniformis*) in the waterways and ponds around the project area. The green and gold frog is listed under the *Threatened Species Protection Act 1995* (vulnerable) and the *Environment Protection and Biodiversity Protection Act 1999* (vulnerable). The Department has undertaken a number of surveys within the project area, and no evidence of the species was found.

Based on the above surveys, presence of the green and gold frog is considered unlikely, and the Department will implement its Green and Gold Frog Management Guidelines. These Guidelines will assist all phases of the project (design, construction and subsequent maintenance activities) to limit any potential impacts. A key design feature will be providing frog-friendly culverts to allow for passage of frogs beneath the new highway, and maintain connectivity across the landscape. The culverts will have both a wet section and a dry section that will also allow other fauna to utilise the crossing.

### 3.5 Aboriginal Heritage

An Aboriginal Heritage Survey of the project area was undertaken in December 2013 and November 2014. This survey found two isolated artefacts, and identified three Potential Archaeological Deposit (PAD) from predictive modelling of the project area. Further investigation (including test pitting) of PAD sites within the project footprint was undertaken in May 2017, and no artefacts were found.



One isolated artefact will be impacted by the proposed works, and a permit will be required under the *Aboriginal Relics Act 1975*. The proposed footprint also crosses three PAD sites identified in the above surveys. The Department is currently consulting with Aboriginal Heritage Tasmania and the Aboriginal Heritage Council to obtain relevant approvals.

In addition, all Aboriginal heritage is protected under the *Aboriginal Relics Act 1975*, and an Unanticipated Discovery Plan will be implemented during construction to manage any unanticipated discoveries of Aboriginal heritage.

### **3.6 Historic Heritage**

No properties listed under the *Historic Cultural Heritage Act 1995*, nor any properties listed under the Northern Midlands Interim Planning Scheme 2013, will be impacted by the proposed alignment of the Perth Link Roads.

### **3.7 Landscape and Visual Impacts**

The proposed alignment runs through farmland to the south of Perth, and through rolling hills to the north and west of Perth.

The Illawarra Main Road – Midland Highway interchange will require significant embankment construction, as the Midland Highway will need to be raised by up to 15 metres above the existing ground level to allow grade-separation of access ramps to Illawarra Main Road and the freight rail line. This interchange will also require significant areas of excavation, with a cut of around 5 metres into the hill to the west of Perth.

As such, parts of the alignment will have a relatively large amount of fill material to be placed to raise the existing ground level to the finished road surface level. The visual impact of high embankments is being considered throughout the design and minimised wherever possible.

Specific consultation with stakeholders that are adversely affected by the visual impacts of the altered landscape are part of ongoing discussions of agreed accommodation works and, in some cases, property acquisition.

To improve effective and accurate presentation of the proposed design, a series of photo-realistic images were created from photos of the site at critical locations combined with the design road model. Some of these images are provided at Appendix C.

The Department has been in discussion with Northern Midland Council regarding landscaping and is currently considering select replacement planting within the broader project area.

A concept landscaping plan has been developed for establishment of a series of landscape plantings post-construction. Its key objectives are to highlight the entrances to Perth and provide visual screening of the highway; be simple to maintain and have tidy appearance; be safe for both road users and maintenance crews; and be cost effective to establish.

The broad elements of the plan include road landscaping at the following locations:



- Avenue tree plantings beside Main Road at the town entrances.
- Road landscaping at the southern and northern roundabouts (dependent on safety and maintenance requirements).
- Row plantings along the new carriageways on the Perth side,

Row plantings along the new carriageway comprise a strip of minimum 20 metres wide of dense native vegetation with scattered tall trees. This will help screen the view of the new highway from houses and reduce light spill from vehicle and intersection lights.

The Department will continue to work with the construction contractor, Council and landowners to finalise landscaping works during detailed design and construction.

### **3.8 Stakeholder Engagement**

State Growth has undertaken active engagement with stakeholders, including the Northern Midlands Council (both salaried staff and elected members), local residents, Heritage Tasmania, bus operators, RACT, Tasmanian Transport Association, Perth Local District Committee, property owners, business owners and commercial operators.

Stakeholder engagement activities undertaken have included briefings to Councillors and management (including the Perth Local District Committee), individual meetings with key stakeholders, multiple meetings with individual landowners, telephone discussions, two public displays of the preliminary design, an online forum seeking feedback as well as correspondence introducing the project and advertising the public display.

The Department has received considerable feedback from the local community regarding the project. This includes:

- Around 230 people attending two public displays
- 34 comments on an online forum
- Nine (9) letters and emails to the Department

The public displays and online forum were advertised by:

- Web – project webpage and Northern Midlands Council web page
- Facebook sites – Council and RACT
- Email – Council groups, including the local district committees
- Print media adverts – Examiner newspaper
- Poster – local businesses
- Letter drop to houses in Perth (second display only).



## **Public displays**

Two separate events provided community members with the opportunity to view the design plans and project information, and provide feedback. These were held at the Perth Community Centre with approximately 110 people attending the first on the afternoon of Saturday, 18 March 2017 and around 120 attending the second on the evening of Wednesday, 17 May 2017.

Project team members were available to answer questions and to actively seek and record feedback from attendees.

The design was also displayed at the Northern Midlands Council offices in Longford from 20 March to 3 April 2017.

## **Online forum**

An online forum (Social Pinpoint) was available from 10 - 17 May 2017. Social Pinpoint allowed the public to provide general feedback about the project or to 'pin' specific comments to a location of their choice on the design plan, with the ability for others to like or dislike comments made. 34 comments were made and 30 likes and 1 dislike of the comments recorded.

## **Direct contact with the Department**

Nine (9) individual letters and emails relating to the project were sent directly to the Department.

## **Summary of feedback**

The majority of feedback received at the public displays, via correspondence and Social Pinpoint was positive, with participants seeing the proposal as an opportunity for the town to unite. Positive feedback also related to the timing of construction (bringing it forward), safety improvements (heavy vehicles away from Main Street), and the cycleway. A number of comments congratulated the Department on a "great design". Reasons given for this included taking heavy vehicles off the Perth main street and providing Perth residents with a high standard road for the future. Respondents were often keen for the project to commence as soon as possible.

Concerns were raised over the impact of noise and light on residential amenity, the potential impact of stormwater and flooding, the bridge not being replaced as part of the project, and tree plantings and screenings.

The local access at the Illawarra Road interchange was the most commented upon issue. It was raised as both a positive (improved amenity and safety) and negative (increased travel time for west Perth residents on the journey between Perth and Longford). Across the public displays, Social Point and correspondence, the feedback recorded showed the majority (68%) of respondents not wanting local access at the Illawarra Road interchange, and 32% in favour of local access at the Illawarra Road interchange into west Perth.



Concerns about noise impact from the highway came mainly from residents around the outskirts of Perth. This theme was closely related to calls for screening and landscaping. There was also concern that the design could exacerbate existing stormwater issues. Some participants wanted to ensure commercial activity in Perth was not reduced and that visitors were still attracted into Perth. Some respondents wanted the South Esk River Bridge upgraded to 4 lanes. There was also considerable interest in the design of the cycleway.

Concerns raised through stakeholder engagement, such as noise, light spill and visual amenity, have been considered during the design process for the Perth Link Roads project.

### **3.9 Development Approvals**

The Development Application was submitted to Northern Midland Council in June 2017. A decision by Council, and issue of the planning permit, is anticipated in August 2017.



## 4 Project Program and Costs

### 4.1 Project Program

The current delivery program for the project is based on achievement of the following key milestones:

**Table 2 - Expected Delivery Program Milestones**

Milestone	Completion Date	Critical Path
Development Application approval	August 2017	Yes
Tender for Design Development and Construct Contract	August 2017	Yes
PSCPW approval	September 2017	Yes
Land acquisition	October 2017	Yes
Tender Assessment and Contract Award	December 2017	Yes
Construction begins	February 2018	Yes
Construction completed	June 2020	

### 4.2 Costs

A detailed estimate of the expected out-turn costs has been produced for the project, including probabilistic methods using a Monte Carlo analysis of inherent and contingent risk factors that have been identified by the wider project team, as outlined in the Best Practice Cost Estimation Guidelines (State Growth 2013).

A summary of the cost estimate is outlined in Table 3 and additional information is provided in Appendix B.



**Table 3 - Cost Estimate Summary**

<b>Cost Item</b>	<b>Estimated Value</b>
Development Phase costs (including design, application fees and project management)	\$3,673,739
Property Acquisition (estimated value, final value subject to Valuer-General's determinations)	\$2,120,000
Delivery Phase costs (including contract management, project management, and insurance costs)	\$4,500,439
Estimated construction contract costs, including: <ul style="list-style-type: none"> <li>• Earthworks</li> <li>• Drainage</li> <li>• Pavements</li> <li>• Bituminous surfacing</li> <li>• Bridge structures</li> <li>• Traffic facilities</li> <li>• Landscaping</li> <li>• Other miscellaneous project-specific costs</li> </ul>	\$61,124,815
State Growth supplied construction costs, including: <ul style="list-style-type: none"> <li>• Services relocations</li> <li>• Street lighting</li> <li>• Reseal of pavements</li> </ul>	\$1,735,000
Expected contingency on base estimate outlined above (P50) plus Escalation	\$7,407,185
Expected project out-turn cost (P50)	\$80,562,000

The above is based on the contingency required to provide a P50<sup>1</sup> level of confidence in the cost estimate. The equivalent project out-turn cost for a P90 level of confidence is \$92,321,000.

The design and estimate have progressed since an initial cost estimate was provided in March. The estimate has increased due to refinement of civil works quantities and rates, contingent risks and scope.

<sup>1</sup> P50 refers to the value at which there is a 50% chance of the project coming in above this cost and a 50% chance of it coming in below this cost.



## 5 Conclusion

The design for the proposed Perth Link Roads has been carried out in accordance with the appropriate design standards and guidelines. The requirements of abutting landowners, the Perth community, Northern Midlands Council and public utility owners have been incorporated.

Once complete, the works will provide improved safety by providing increased sight distance, a central wire rope safety barrier, a wider pavement with sealed shoulders and will remove access to the highway other than at dedicated interchanges. The completed works will support transport efficiency objectives on the National Land Transport Network by providing additional traffic lanes and better connections with adjacent roads.

It is recommended that the project be approved.



## **Appendix A. Drawings**





## LEGEND

SAFETY BARRIER





LEGEND

SAFETY BARRIER









LEGEND

SAFETY BARRIER



## **Appendix B. P50 / P 90 Cost Estimates**



# PROJECT ESTIMATE

Rates are exclusive of GST

## Midland Highway (A0087) Perth Link Roads

### Project Estimate Summary

Base Date of Estimate:

May 2017

Phase

Preliminary

Item		Amount	
		Totals have been rounded	
1 Scoping Phase			
Not used			
Subtotal: Scoping Phase		Nil	
2 Development Phase			
Design - Concept	\$	50,000.00	
Design - Preliminary	\$	1,150,000.00	
Design - Detailed	\$	-	
Design Applications, Permits, Fees, Advertising etc.	\$	156,000.00	
Dept. State Growth Project Management	\$	2,317,739.42	
Subtotal: Development Phase		\$	3,673,739.42
3 Property Acquisition			
Subtotal: Property Acquisition		\$	2,120,000.00
4 Delivery Phase			
Dept. State Growth Project Management	\$	2,317,739.42	
Consultant Contract Management (and Principal's Engineering Services)	\$	1,900,000.00	
Insurances	\$	282,700.00	
Subtotal: Delivery Phase		\$	4,500,439.42
5	Total Client Costs	\$	10,294,178.83
Construction			
Project Specific	\$	39,310,100.00	
Earthworks	\$	5,227,000.00	
Drainage	\$	1,456,800.00	
Pavement	\$	7,017,400.00	
Bituminous Surfacing	\$	2,012,495.00	
Traffic Facilities	\$	2,732,320.00	
Landscaping	\$	1,402,100.00	
Miscellaneous	\$	1,961,600.00	
Precast Units	\$	-	
Provisional Items	\$	5,000.00	
Note: Direct & indirect costs factored into rates			
Subtotal: Contractor's Costs		\$	61,124,815.00
8 Client Supplied Materials or Services			
Other Contractor	\$	650,000.00	
Nominated Subbies	\$	-	
BE Accommodation - Trees removal	\$	-	
FW Accommodation - New Fence &/or remove old	\$	-	
PUA Service Authorities - Power	\$	375,000.00	
PUA Service Authorities - NBN	\$	80,000.00	
PUA Service Authorities - Communications	\$	80,000.00	
PUA Service Authorities - Reticulated Water	\$	550,000.00	
PUA Service Authorities - Irrigation	\$	-	
PUA Service Authority - Gas	\$	-	
TS Traffic - Workshop Materials	\$	-	
FW Final Linemarking	\$	-	
P Final Seal	\$	-	
Subtotal: Client Supplied Materials or Services		\$	1,735,000.00
9	Total Construction Cost (TCC)	\$	62,859,815.00
10 Base Estimate (Lines 5 + 9)		\$	73,153,994
		P50	P90
12 Total Contingency	\$	6,768,055.04	\$ 18,429,304.08
		9%	25%
Total Contingency		\$ 6,768,055.04	\$ 18,429,304.08
13 Project Estimate (Lines 10 + 12)		\$ 79,922,048.88	\$ 91,583,297.91
Cash Flow: Start Escalation 30/06/2017		Start Construction	31/12/2017
Lead Escalation			
14 (applied to Project Estimate excl. Development Phase)	\$	639,130.27	\$ 736,877.45
15 Total Outturn Cost (rounded to nearest \$1000)		\$ 80,562,000	\$ 92,321,000



## **Appendix C. Photomontages of proposed works**









Google Earth







