

Tasmanian Government
2012 Submission to Nation Building 2 Program

Tasman Highway – Tasman Bridge Eastern Approaches Upgrade

September 2012

<p>Priority assigned by jurisdiction for NB2 funding consideration</p>	<p>Priority three under Connecting People</p>
<p>Details of full scope of project, including objectives, service requirements, project status and project phase(s) seeking funding.</p> <p>Note: It is expected that this will be largely addressed through the main IA submission. However, the Department requires cost estimates to be provided using the Best Practice Cost Estimation Standard and at both P50 and P90. Also to use both 4% and 7% for BCRs.</p>	<p>Information on project objectives, strategic context and options analysis is discussed in the Stage 1-6 template.</p> <p>Information on the technical and delivery aspects of the project, including benefit cost analysis, project risks and delivery program is discussed in the Stage 7 template.</p> <p>BCRs for Tasman Bridge Eastern approaches are:</p> <ul style="list-style-type: none"> • Discount Rate (7%) and P50: 0.78. • Discount Rate (7%) and P90: 0.69. • Discount Rate (4%) and P50: 1.47. • Discount Rate (4%) and P90: 1.30.
<p>Alignment with objectives of NB2</p> <p>Note: This should include how a project aligns with the overarching objective of NB2, as well as how it aligns with the objective of each relevant NB2 subprogram.</p>	<p>The Tasman Highway – Tasman Bridge Eastern Approaches Upgrade project is submitted under the Connecting People theme of Nation Building 2, and also aligns with <i>Safety and Moving Freight</i>.</p> <p>The Tasman Highway carries a high volume of traffic and is the key link between central Hobart and major residential, commercial and industrial areas on Hobart’s eastern shore. The Tasman Bridge is the highest volume road section in Tasmania and is forecast to remain so over the longer term.</p> <p>The objective of the project is to improve safety, access and overall transport efficiency on the eastern approaches to the Tasman Bridge in Hobart.</p> <p>The focus of the project is on upgrades and improvements in road capacity at the eastern approaches to the Tasman Bridge. These upgrades are planned in two stages.</p> <p>Further details are contained under Goal Definition (Stage1-6 template).</p>
<p>Alignment with broader Commonwealth and state/territory policies and plans</p> <p>Note: Specific plans/policies to be</p>	<p>The project aligns with a number of Infrastructure Australia’s strategic priorities, including:</p>

<p>addressed (at a minimum) include the Commonwealth's Infrastructure Investment Framework; the National Urban Policy; the National Ports and Land Freight Strategies; and the Australian Government commitment on the incorporation of ITS for major urban roads (as appropriate).</p>	<ul style="list-style-type: none"> • Increase Australia's productivity • Developing Australia's cities and regions • Improve social equity, and quality of life, in our cities and our regions <p>The project aligns with the National Urban Policy's strategic initiatives of improving the efficiency of urban infrastructure (by improving safety, access and overall transport efficiency on the eastern approaches to the Tasman Bridge in Hobart); and improving labour and capital productivity (by linking the Hobart's eastern and western suburbs, managing the key transport link between workforce supply and demand).</p> <p>The project aligns with the National Land Freight Strategy's priority action of freight infrastructure improvement and access by improving freight efficiency and reliability on a key urban freight connection.</p> <p>Further details are contained under Goal Definition (Stage1-6 template).</p>
<p>Overall financial exposure including identification of other partner funding Note: It is expected that this will be addressed in the main IA submission.</p>	<p>Full details of cost estimates are outlined in the Stage 7 template.</p>
<p>Identification of key strategic risks to the project Note: It is expected that this will be addressed in the main IA submission</p>	<p>A Risk Management Register has been developed for the project. Risks are detailed in the submission under Costs, Risks and Funding (Stage 7 template).</p>
<p>Quantification of the expected benefits from the proposal Note: It is expected that this will be addressed in the main IA submission.</p>	<p>Project benefits are outlined in the Stage 7 template.</p>
<p>Information regarding the extent to which the potential for private sector involvement or investment has been evaluated Note: It is expected that this will be addressed in the main IA submission.</p>	<p>The need for Government funding is discussed in the Stage 7 template.</p>
<p>Likely impacts from the project proposal on citizens and the market Note: Detail is needed on how each proposal will impact citizens and the market</p>	<p>Further details on the impacts are outlined in Problem Identification, Assessment and Analysis (Stage 1-6 template).</p>

(as two distinct groups) – positively or negatively, and the extent of the impact	
Identification of key stakeholders in the project and the complexity of stakeholder relationships	Further details on key stakeholders and relationships are discussed in the Stage 7 template.
Extent of multijurisdictional and/or private sector involvement in the proposal	No other jurisdictions or private sector entities are involved in developing this proposal.
Details of the level of innovation and information technology involved in the proposal, including in relation to information technology requirements to successfully manage/implement the proposal Note: Detail is to include identification of any new/untried methodologies or technologies to be used in the project, as well as IT requirements for the proponent agency to successfully manage or implement the proposal.	An ITS solution is currently being implemented on the Tasman Highway corridor; however this is not of its own sufficient to cater for future traffic demand.
Details of the proposed procurement methods for the proposal Note: It is expected that this will be addressed in the main IA submission.	Procurement methods for the proposal are discussed in the Stage 7 template.
Level of complexity in construction, and any known issues in relation to the construction of the project, including environmental and heritage considerations Note: It is expected that this will be largely addressed through the main IA submission. However, the Department requires sufficient detail to fulfil its probity and accountability requirements, so any additional information not explicitly addressed in the main IA submission should be provided here.	Further details on construction and related issues are discussed in the Stage 7 template.
Any known issues in relation to contractual or service delivery obligations stemming from the proposal Note: This is to include any issues that are not currently present but could reasonably be foreseen.	There are no foreseen contractual or service delivery issues.
Details of the proposed governance arrangements for the proposal	The governance model for this project is outlined in the Stage 7 template.

<p>Note: This should be largely addressed in the main IA submission. However, the Department requires an explicit statement about the experience of the management team in delivering similar proposals and whether there are any expected knowledge gaps or training needs to successfully implement the proposal.</p>	
<p>Details of the proposed delivery timetables and whether there are any known challenges to achieving those timeframes Note: It is expected that this will be addressed in the main IA submission.</p>	<p>The delivery timetable is outlined in the Stage 7 template.</p>
<p>Details of any significant interdependencies for the project Note: It is expected that this will be addressed in the main IA submission.</p>	<p>The key interdependencies for the project are outlined in the Stage 7 template.</p>

Proposal Summary

Initiative Name:	Tasman Highway –Tasman Bridge Eastern Approaches Upgrade
Location (State/Region(or City)/ Locality):	Hobart
Name of Proponent Entity:	Tasmanian Department of Infrastructure, Energy and Resources (DIER)
Contact (Name, Position, phone/e-mail):	David Spence, General Manager Infrastructure Strategy Department of Infrastructure, Energy and Resources Tel: (03) 6233 2089 Email: david.spence@dier.tas.gov.au
Executive summary	<p>The Tasman Highway, which includes the Tasman Bridge, from central Hobart to Hobart International Airport carries a high volume of traffic and is the key link for major residential and commercial areas on Hobart’s Eastern Shore. The Highway is a Category 1 Road under the <i>Tasmanian Road Hierarchy</i>, and is part of the National Network. The Tasman Bridge is the highest volume road section in Tasmania and is forecast to remain so over the longer term.</p> <p>The objective of the project is to improve safety, access and overall transport efficiency on the eastern approaches to the Tasman Bridge in Hobart.</p> <p>The focus of the project is on upgrades and improvements at Rosny Hill Road (Rosny Hill interchange) and the East Derwent Highway (Montagu Bay interchange). For vehicles moving from/to these two roads onto the Tasman Highway, access and safety have been long standing issues. Existing merging and weaving manoeuvres are sub-optimal for a corridor with the volumes and functional importance of the Tasman Highway.</p> <p>The proposed improvements would separate east-bound and west-bound through movements on the Tasman Highway from cross movements between the East Derwent Highway and Rosny Hill Road. The arrangement would remove the need for traffic to perform complex weave manoeuvres to enter the correct lane.</p> <p>The improvements are proposed in two, distinct stages:</p> <p>Stage 1:</p> <ul style="list-style-type: none"> ▪ Extension of the existing East Derwent Highway to Tasman Highway (east-bound) on-ramp, ▪ Construction of new on-ramp from East Derwent Highway, under the Montagu Bay interchange to connect directly to the right hand lane on the Tasman Highway (east-bound), and ▪ Lane modification for the Tasman Highway to East Derwent Highway (north-bound) off-ramp. <p>Stage 2:</p> <ul style="list-style-type: none"> ▪ Modification of lane configuration for the Rosny Hill Road to Tasman Highway (west-bound) on-ramp, and ▪ Construction of a new ramp from Rosny Hill Road connecting directly to East Derwent

Highway (north-bound) off-ramp, including a new bridge over the Tasman Highway and lane in the existing median

The upgrades have been identified through a detailed planning study, including traffic modeling of different options and scenarios.

The Australian Government has committed \$15M in funding to improve access on the eastern approaches to the Tasman Bridge, focused initially on the Montagu Bay Interchange. This funding makes a significant contribution to the completion of Stage 1 of the project, with additional funding sought to complete Stage 1 and to undertake all of Stage 2.

Is this a new submission?	Yes
Estimated cost of problems?	Detailed information on project costs and benefits, to the extent that they can be quantified, is contained in the Stage 7 template.
Estimated Capital Cost of Initiative by Proponent (\$M, nominal, undiscounted):	\$45.6M <ul style="list-style-type: none"> • \$16.8M stage 1 • \$27.8M stage 2
Commonwealth contribution sought by Proponent (\$M, nominal, undiscounted):	\$30.6M in two stages: <ul style="list-style-type: none"> • \$1.8M for stage 1 (additional to the \$15M already committed by the Australian Government) • \$27.8M stage 2
Other funding (source/amount/cash flow) (\$M, nominal, undiscounted):	Cost reflective pricing for heavy vehicle access to the road network and road funding reform is being considered as part of the national Heavy Vehicle and Investment Reform agenda, and the Tasmanian government will continue to actively participate in this reform process. Tasmania has many attributes for a pilot study of approaches developed through national processes. It is considered that a national approach to funding and financing transport infrastructure, supported by all levels of government, is critical to effectively address long term transport infrastructure needs. In this context, the recent Infrastructure Australia's Finance Working Group's report "Infrastructure Finance and Funding Reform" is an important lead for national discussion. Tasmania is not in a position currently to adopt a unilateral approach. Further work is required on project financing and the issue of cost reflective pricing in small regional economies
BCR by Proponent excluding Wider Economic Benefits	0.69
Estimated program	<ul style="list-style-type: none"> • Detailed project planning phase 2011-12- 2012-13; • Stage 1 and 2 development in 2013-14; • Stage 1 construction completed 2014-15; • Stage 2 construction completed 2015-16.

Goal Definition

The goal of the project is to improve safety, access and overall transport efficiency on the eastern approaches to the Tasman Bridge, Hobart.

The Tasman Highway, which includes the Tasman Bridge, from central Hobart to Hobart International Airport carries a high volume of traffic and is the key link for major residential and commercial areas on Hobart's Eastern Shore. The Highway is a Category 1 Road under the *Tasmanian State Road Hierarchy*, and is part of the National Network.

The Tasman Bridge is the highest volume road section in Tasmania and is forecast to remain so over the long term. This reflects the critical role of the Tasman Bridge as the key connection between Greater Hobart's major commercial and administrative centre in the Hobart CBD and high growth residential and commercial areas on the Eastern Shore.

The focus of the project is on upgrades to the Tasman Highway corridor around Rosny Hill Road (Rosny Hill interchange) and the East Derwent Highway (Montagu Bay interchange).

- The East Derwent Highway joins the Tasman Highway at the Montagu Bay interchange and is the major arterial road along the Eastern Shore of the Derwent River. This road provides the connection to established residential areas at Lindisfarne, new growth areas at Geilston Bay, and linking through to the Bowen Bridge and Midland Highway at Bridgewater. It is a major feeder road onto the Tasman Highway at the Tasman Bridge, carrying a high number of passenger vehicles.
- Rosny Hill Road joins the Tasman Highway at the Rosny Hill interchange, 750m east of the Montagu Bay interchange. The Road is a major four-lane feeder road, carrying high numbers of vehicles to/from the Eastern Shore's major commercial precinct, Rosny Park, to established residential suburbs south of the Tasman Bridge, and to major primary and secondary schools.

For vehicles moving between to these two roads, on the Tasman Highway, access and safety have been long standing issues. Existing merging and weaving between on-ramps and off-ramps are sub-optimal for a corridor with the volumes and functional importance of the Tasman Highway. The proposed upgrades deliver improved access arrangements and safety outcomes, together with some travel time savings for through movements.

Positive contribution to Nation Building 2 and Infrastructure Australia strategic priorities

The project aligns with the following Infrastructure Australia objectives:

- ***Improving the efficiency of connections to major road and rail freight corridors to facilitate domestic trade and international exports*** – the Tasman Highway provides a critical link to Tasmania's major passenger airport, Hobart International Airport. The Airport is key for the movement of high value, low volume quality produce, particularly to the Asian export market. The Highway also connects to major industrial and commercial precincts in the Cambridge area, which is rapidly expanding.

- **Achieving better utilisation of existing infrastructure** – the proposed improvements will enable the existing infrastructure to cater for projected growth in both passenger and freight vehicles over the medium term.
- **Developing our cities** – the Tasman Highway is the gateway to Hobart from Tasmania’s major airport – Hobart International Airport. A large proportion of the Hobart CBD workforce lives on the Eastern Shore, travelling on the Tasman Highway and through the Rosny Hill and Montagu Bay interchanges to access work. It is critical for Hobart’s future economic growth that this part of the Tasman Highway operates efficiently to meet forecast demand increases.

The project is submitted under Connecting People and also aligns with Safety and Moving Freight:

- **Connecting People**

The upgrades will provide more reliable travel times for passengers (both public transport and private vehicles) travelling from major residential areas on the Eastern Shore into the Hobart CBD, as well as for localised movements into the Rosny Park commercial precinct, adjacent schools and on/off the East Derwent Highway. It will deliver particularly good improvements in reliability and travel times between suburbs north and south of the interchanges by providing a combination of dedicated lanes and increased merge distances. Any improvements to the efficiency of through-movements and safety of merging arrangements will also benefit tourists and passengers accessing Hobart International Airport.

- **Safety**

The Tasman Bridge is the highest volume road link on Tasmania’s road network. The proposed upgrades will reduce the safety risks associated with continued high traffic growth over the next decade on this part of the network. Accidents on the approaches to the Bridge have major flow-on effects in terms of traffic flows and congestion across the eastern section of the Tasman Highway and on major interchanges (e.g. Mornington and Acton).

- **Moving Freight**

Upgrade of the Tasman Bridge eastern approaches will improve freight efficiency and reliability on a key urban freight connection. The efficiency of through movements for freight vehicles will be improved; freight vehicles using the Montagu Bay and Rosny Hill interchanges will also benefit from significantly improved access arrangements.

National Land Freight Strategy

The proposed capacity and efficient improvements are consistent with the key strategic priorities contained in the draft National Freight Strategy, including reducing freight bottlenecks and creating improved efficiencies across the National Freight Network.

Alignment with State Government policy and planning frameworks

Tasmanian Infrastructure Strategy

The *Tasmanian Infrastructure Strategy* coordinates the major economic sectors of transport, water, energy and digital infrastructure, and recognises the critical role land use planning has in the location and provision of infrastructure investments. Upgrade to interchanges on the eastern approaches to the Tasman Bridge is included as a priority project under the objective “Tasman Highway to Hobart International Airport – Upgrade of Interchanges”.

Tasmanian Road Safety Strategy

The *Tasmanian Road Safety Strategy 2007 – 2016* provides the strategic direction and key initiatives to eliminate fatalities and serious injuries on Tasmanian roads. Upgrade of the eastern approaches to the Tasman Bridge will follow Safe System design principles to minimise safety risks in the context of forecast increased traffic volumes.

Draft Tasmanian Transport Policy and Draft Tasmanian Freight Strategy

Strategic fit with the State’s draft Transport Policy and Draft Freight Strategy is addressed in the Tasmanian Government Submission Overview.

Southern Integrated Transport Plan

The *Southern Integrated Transport Plan (SITP)*, released in 2010, is a collaborative initiative between the Tasmanian Government, Southern Tasmanian Councils Authority, and twelve member councils. It provides a coordinated and strategic framework to recognise and address transport issues within the Southern Region over the next twenty years.

Improvements to the Tasman Highway contribute to two key objectives under the SITP:

- Improve known infrastructure weaknesses along strategic urban freight routes, and
- Improve travel time reliability on key urban transport corridors

The SITP identifies two key strategies for the Tasman Highway consistent with these objectives:

- Targeted infrastructure upgrades to sections of road and major intersections with high freight volumes and forecasts (including Tasman Highway)
- Better utilisation of available road space through improved access to key urban transport corridors at specific locations through targeted intersection upgrades.

Location and Road Network Configuration

The Tasman Bridge is a key link in Greater Hobart’s urban road network, providing the major connection between Hobart’s administrative and commercial centre on the western side of the Derwent River, with major residential, commercial and industrial areas on the Eastern Shore.

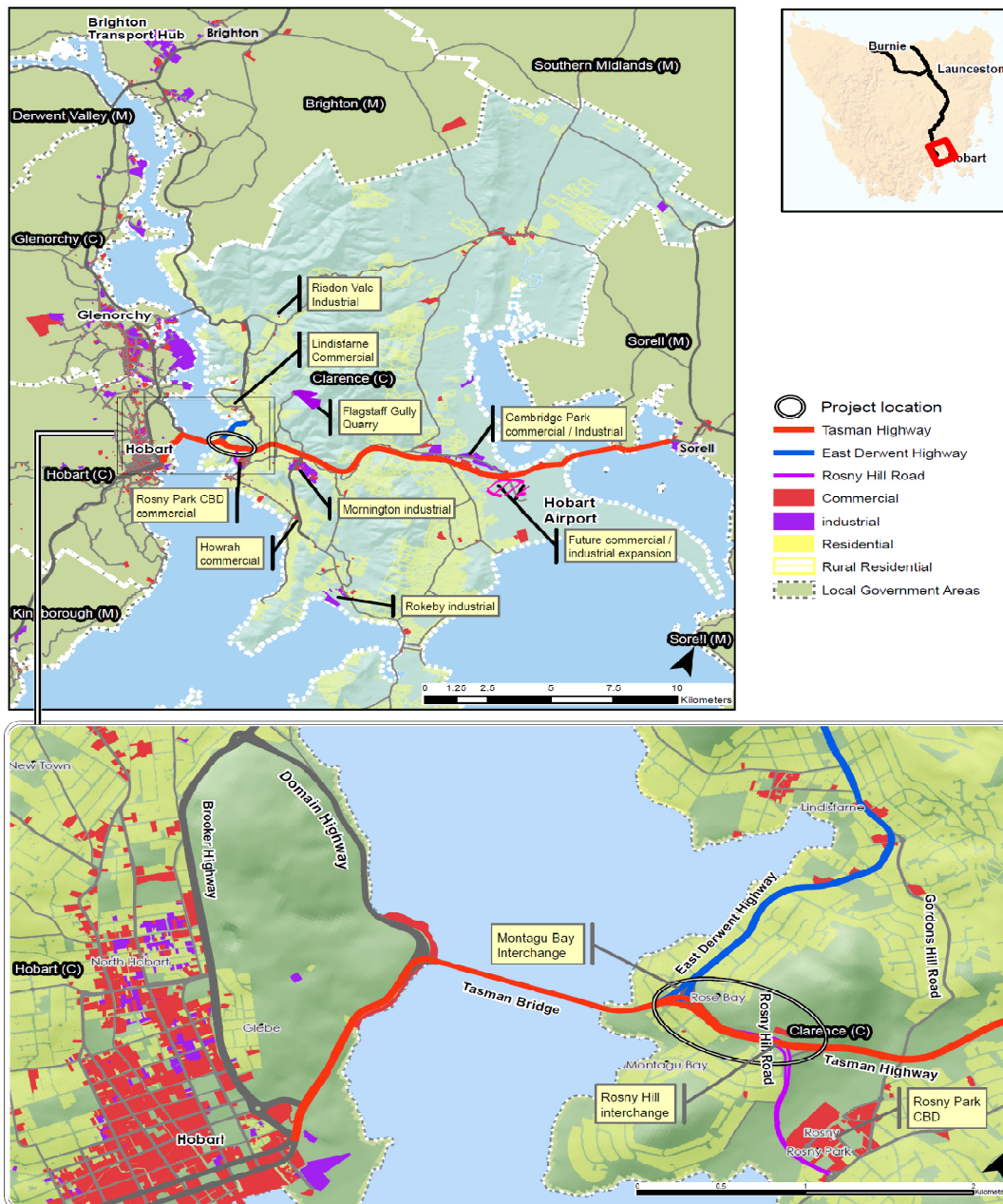
The Tasman Highway at this location carries over 72,000 vehicles per day on weekdays and an average of 66,000 vehicles per day throughout the whole week making it the highest volume part of the Tasmanian road network. In terms of freight, this section of the Highway carried an estimated average of 1.4 million tonnes of freight at a value of over \$800 million per annum (2009).

The project focuses on the eastern approaches to the Tasman Bridge between the Montagu Bay interchange (East Derwent Highway) and Rosny Hill interchange (Rosny Hill Road) (see Figure 1).

The Tasman Highway and East Derwent Highway are part of the State Road network, planned and managed by the Tasmanian Government. Rosny Hill Road is owned and managed by Clarence City Council.

Between the two key interchanges, the Tasman Highway is five lanes for most of its length, alternating between 2 and 3 lanes in each travel direction, with additional on and off-ramps. The East Derwent Highway and Rosny Hill Road are both four lanes, with two lanes in each travel direction.

Figure 1: Project location



The **Montagu Bay interchange (Figure 2)** is a major grade separated interchange providing connectivity between the East Derwent Highway and the Tasman Highway. Traffic signals control the merge on the westbound approach to the Tasman Bridge, with the far left Tasman Highway lane a continuous lane.

Figure 2: Montagu Bay interchange



Short merges exist on the ramps from East Derwent Highways onto the Tasman Highway and also from the Tasman Highway onto the East Derwent Highway. Vehicles travelling from the East Derwent Highway to further east on the Tasman Highway need to weave across to the right hand lane of the Tasman Highway in a short distance.

The **Rosny Hill interchange (Figure 3)** consists of a two lane, off-ramp from the Tasman Highway (eastbound) onto Rosny Hill Road; a two-lane on-ramp from Rosny Hill Road onto Tasman Highway (westbound); and an off-ramp from the Tasman Highway (westbound) onto Rosny Hill Road. The eastbound left lane on the Tasman Highway connects directly to Rosny Hill Road. There is no provision for vehicles from Rosny Hill Road to access the Tasman Highway in an eastbound direction, with an alternative route being via Cambridge Road further east along Rosny Hill Road.

Figure 3: Rosny Hill interchange



West-bound traffic from Rosny Hill Road merging with the Tasman Highway has a dedicated left hand lane, however the right hand lane is required to make a right side merging manoeuvre onto the Tasman Highway with a short merge taper. The right hand lane is typically used by vehicles wishing to turn onto the East Derwent Highway. This movement requires vehicles to perform a merging manoeuvre from Rosny Hill Road then cross two lanes of traffic in a short distance to access the ramp to the East Derwent Highway.

Problem identification, assessment and analysis

As the main access route from the Eastern Shore and Hobart Airport to the Hobart CBD, the Tasman Highway is a key strategic link. It is important that efficiency, safety and reliability along this corridor are maintained and improved over the long term.

The Tasman Bridge carries the highest volumes of any road on the State Road network, with over 72,000 vehicles per day on weekdays and an average of 66,000 vehicles per day throughout the whole week.

Capacity constraints on the Tasman Bridge are the key limiting factor to meet current and forecast traffic growth between the Eastern Shore and Hobart. This is a particular issue during the peak am and pm periods. Once capacity is reached on the Bridge, congestion and queuing along the Tasman Highway and at major interchanges, increases.

Several studies^{1,2} have identified major capacity and road safety issues at the Montagu Bay and Rosny Hill interchanges, particularly in relation to merging and weaving manoeuvres for vehicles not using the Tasman Bridge. As traffic volumes increase, the difficulties in undertaking these movements increase. The five key access issues identified are:

- i. At the Montagu Bay interchange, east and south bound traffic moving from the East Derwent Highway to the Tasman Highway has to merge with rapidly moving traffic coming over the Tasman Bridge, via a single lane, on-ramp with a very short merge taper which has inadequate merge distance.
- ii. In addition, for the east-bound traffic the distance between the ramp from the East Derwent Highway and the point where the Tasman Highway diverges from Rosny Hill Road is relatively short. This creates a situation where east-bound traffic often undertakes a dangerous manoeuvre in order to weave across to the outside lane.

Figure 4: Access issue (i)



Figure 5: Access issue (ii)



¹ Pitt and Sherry – four separate reports (1999-2000)

² GHD (2012) – Tasman Highway Access Improvements Strategic Review of Corridor

- iii. The Montagu Bay interchange is also deficient for traffic moving from the Tasman Highway to the East Derwent Highway. The interchange has a single lane underpass with a short merge taper which has insufficient sight and merge distances.

Figure 6: Access issue (iii)



- iv. At the Rosny Hill interchange, traffic in the right hand lane from Rosny Hill Road merging with the Tasman Highway is required to make a dangerous right side merging manoeuvre.

Figure 7: Access issue (iv)



- v. In addition, for west-bound traffic from Rosny Hill Road exiting at East Derwent Highway the distance is relatively short and requires vehicles to cross two lanes of traffic to access the ramp to the East Derwent Highway – in effect weaving with west-bound Tasman Highway traffic using the Tasman Bridge.

Figure 8: Access issue (v)



Improvements that address these issues and facilitate more efficient cross-movements between the Tasman Highway, East Derwent Highway and Rosny Hill Road have been identified as a key strategy to deliver significant, broader travel benefits on the eastern approaches to the Tasman Bridge.

Function and role

The **Tasman Highway** forms part of the National Network and is a key urban freight and passenger corridor. Its key functions are:

- As a primary road connection between high growth residential suburbs and commercial areas on the Eastern Shore and the Hobart CBD, along with other major employment zones such as Glenorchy on the western side of the Derwent River. The Tasman Highway east of the Rosny Hill interchange provides the connection to rapidly expanding residential areas in the suburbs of Howrah, Rokeby, Acton, Midway Point, Sorell and the southern beaches.
- As an urban freight road and strategic link in the National Network, providing the major freight connection between industrial and commercial centres on the Eastern Shore

and the Southern Region's major industrial area at Glenorchy, along with other industrial areas and the future Brighton Transport Hub.

- As the major link to/from Hobart International Airport, Tasmania's major passenger airport.

The **East Derwent Highway** and **Rosny Hill Road** are major arterial roads, connecting to the Tasman Highway on the eastern approaches to the Tasman Bridge. Vehicles using these two roads contribute close to 40% of the total vehicles crossing the Tasman Bridge. The two interchanges also perform a localised role, supporting cross-movements between residential suburbs, schools, the major commercial zone at Rosny Park, and commercial and industrial zones at Mornington and Cambridge.

Supporting key commercial activities and industrial freight movements

Industrial and commercial zoned land in the Clarence municipality covers approximately 300 hectares. Figure 1 identifies the location of industrial and commercial areas using the Tasman Highway, with key locations including Hobart Airport, Rosny Park retail and commercial precinct, Mornington industrial estate, Rokeby industrial estate, and the Cambridge commercial and industrial precinct.

These industrial areas support a range of freight generating industries, including manufacturing, light industrial activities, warehousing and waste disposal. In addition, a major quarry operates from an existing 30 hectare lease located at Flagstaff Gully, approximately 3km from the Tasman Highway, with an adjacent 22 hectare lease able to provide supply for a further 30 years. Fuel distribution from Hobart's major petrol storage facility at Self's Point uses the Tasman Highway to access Eastern Shore locations.

The role of Clarence's industrial areas in the Southern Region's freight task has increased rapidly over the past 10 years and is expected to continue. The Southern Region is experiencing a shortfall in industrial land over the medium to long-term, in the context of continued high uptake and limited suitable available land. Over 55% of currently zoned and easily developable vacant industrial land in the Southern Region is located in Clarence³. 44% of potential future industrial area, but not currently zoned industrial, is also located in Clarence⁴. The majority of this land and current proposals for commercial and light industrial development is located in Cambridge and adjacent to Hobart Airport.

Facilitating passenger movements within Greater Hobart and its surrounds

The Tasman Highway directly connects the Clarence and Sorell local government areas to Hobart, and to Glenorchy via the Domain and Brooker Highways.

With a population of 51,580 (2011), Clarence is the largest local government area in southern Tasmania. In 2011, Sorell had a population of 13,200, but is projected to experience reasonably high population growth at 1.5%.

Journey to work trips contribute a major proportion of trips on the Tasman Highway, particularly in peak periods. Overall, more than 50% of all journeys to work trips in Greater Hobart were into the Hobart LGA. The majority of work trips from Clarence and Sorell – 48%

³ Southern Tasmania industrial Land Study – Stage 1 Draft Report. For STCA by SGS consulting (2011)

⁴ Southern Tasmania Industrial land Strategy – Version 1 report for STCA by SGS consulting (2012)

and 34% respectively – were to the Hobart LGA, demonstrating the importance of the Tasman Highway as a key commuter route (**Table 1**).

Table 1: Journey to Work between Eastern Shore and Hobart

Journey to Work		Work LGA	
Home LGA	Hobart	Clarence	Sorell
Clarence	48%	32%	2%
Sorell	34%	19%	28%
Hobart	78%	6%	0%

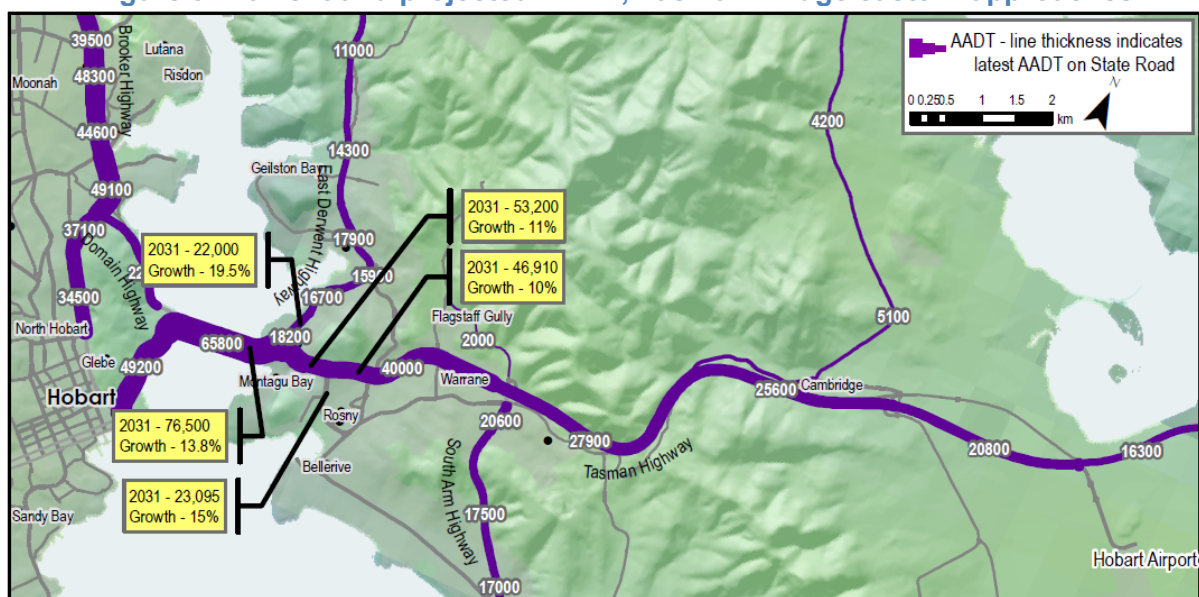
The Tasman Highway is also a key public transport route. Over 400 bus services operate daily across this part of the network. Through the Tasmanian Urban Passenger Transport Framework, the Tasmanian Government is pursuing a range of initiatives to improve public transport options, including to/from the Eastern Shore. A critical factor in the further development of services is improving efficiency and maintaining a consistent traffic flow on the eastern approaches to the Tasman Bridge.

Current and future transport demand

The Tasman Bridge carries the highest volumes of any road on the State Road network, with over 72,000 vehicles per day on weekdays and an average of 66,000 vehicles per day throughout the whole week. Directly east of the Montagu Bay interchange, the Tasman Highway carries 48,000 with a further 9,500 on the Rosny Hill Road off-ramp.

By 2031, projected increases in average daily traffic will see the Tasman Bridge grow by 14% to 76,500, the East Derwent Highway grow by 20% from 18,200 to 22,000, and Rosny Hill Road grow by 15% from 20,000 to 23,000 (**Figure 9**).

Figure 9: Current and projected AADT, Tasman Bridge eastern approaches



In the peak periods, modelling to 2031 indicates the Tasman Bridge is projected to reach approximately 15,200 vehicles in the AM peak or a 9% increase from 2009 volumes. Growth in peak flows on East Derwent Highway and Rosny Hill Road are higher at 19% and 16% respectively (**Table 2**).

Table 2: Projected increase in peak period traffic 2009 to 2031

	AM peak traffic		PM peak traffic		Average increase
	2009	2031	2009	2031	
Tasman Highway (Bridge)	13,813	15,090	13,920	15,187	9%
Tasman Highway (east of Rosny Hill Road)	8,141	8,582	7,888	8,646	8%
East Derwent Highway	2,997	3,262	3,263	4,182	19%
Rosny Hill Road	3,905	4,560	3,715	4,264	16%

There are pronounced peak periods on the Highway associated with journey to work trips in the morning and afternoon. As a consequence, travel times are highly variable throughout the day. The merging and weaving movements associated with moving to and from East Derwent Highway and Rosny Hill Road are difficult both during and outside peak periods. In the peak, although more congested, the manoeuvres can be performed at lower speeds, whilst outside the peak it is often more difficult because despite being less congested the through traffic is moving at a higher speed.

DIER has conducted travel speed surveys on key arterial roads leading into Hobart CBD on two occasions, in 2006 and 2011. Travel on all routes, including the Tasman Highway, is slower in the AM peak period than other times of the day reflecting concentration of travel at this time. For the inner 10km of all routes, the Tasman Highway experiences the largest variation in travel times between the AM peak and other periods of the day with travel time over 60% slower. Comparing 2006 and 2011 for the Tasman Highway, travel times have remained steady during the AM peak, however for the PM peak travel times have increased.

Freight

In 2009, the Tasman Highway carried an average of 1.4 million tonnes of heavy freight at a value of over \$800 million per annum. Future growth will see volumes almost double by 2030.

Major commodities included construction inputs, petroleum, agricultural products and mixed consumer goods (**Table 3**).

In addition to heavy freight, the Highway is important for light commercial vehicles involved in the transport of smaller, higher-value goods. Air freight operations adjacent to the Hobart Airport and Australia Post's major mail distribution centre in Mornington are reliant on the Tasman Highway to ensure connectivity with Hobart CBD and other locations on the Western Shore.

Table 3: Key freight tonnages, Tasman Highway at Montagu Bay and Rosny Hill interchanges

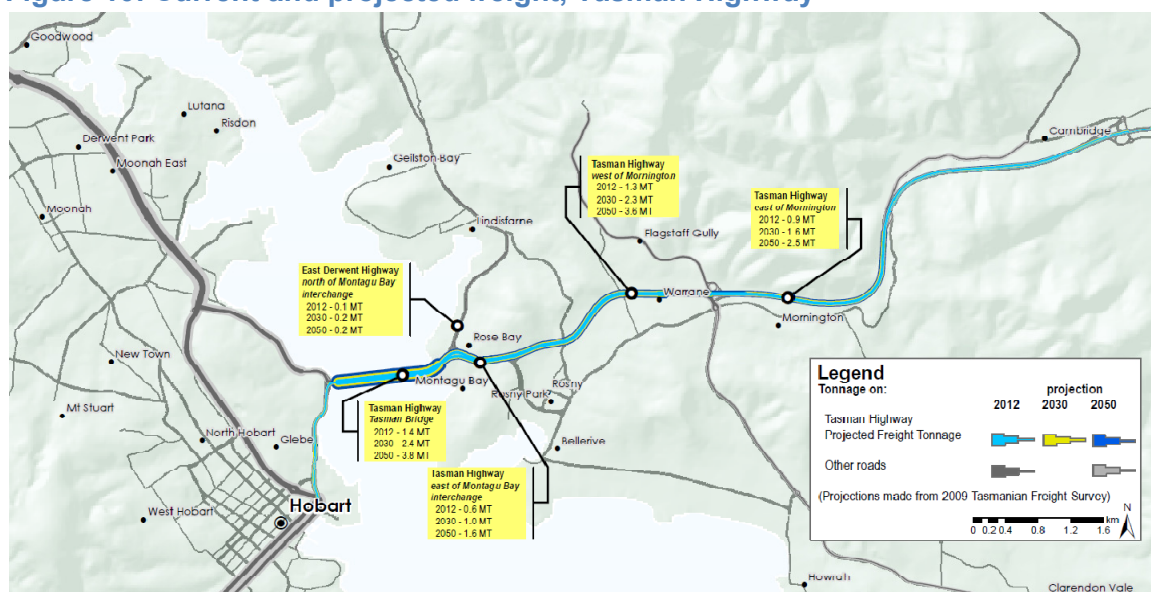
Commodity	Tonnage
Stone, Sand and Clay	580,000
Petroleum and Diesel	130,000
Hardwood Logs	73,000
Animal Feed	66,000
Mixed Consumer Goods	60,000
Other Food	49,000
Cereals	45,000
Premixed Concrete	43,000
Chocolates and Confectionery	36,000
Mixed Groceries	32,000

In southern Tasmania the future expansion of freight generating businesses is likely to be concentrated in the Brighton (at and near the Brighton Transport Hub) and Clarence local government areas. It is important that transport links between these growth areas as well as the existing centres of Glenorchy and Hobart operate efficiently.

Completion of the Brighton Transport Hub, in addition to growth in industrial and commercial development at Cambridge on Hobart’s Eastern Shore, will impact on freight movements on the Tasman Highway. Projected changes in freight flows are indicated in **Figure 10**.

Over the medium to long term, continued expansion in industrial and commercial development on the Eastern Shore at Cambridge and Hobart Airport will see freight volumes increase on the Tasman Highway as well as other parts of the key freight linkage to Brighton and the north of the state - the Brooker Highway and the Domain Highway.

Figure 10: Current and projected freight, Tasman Highway



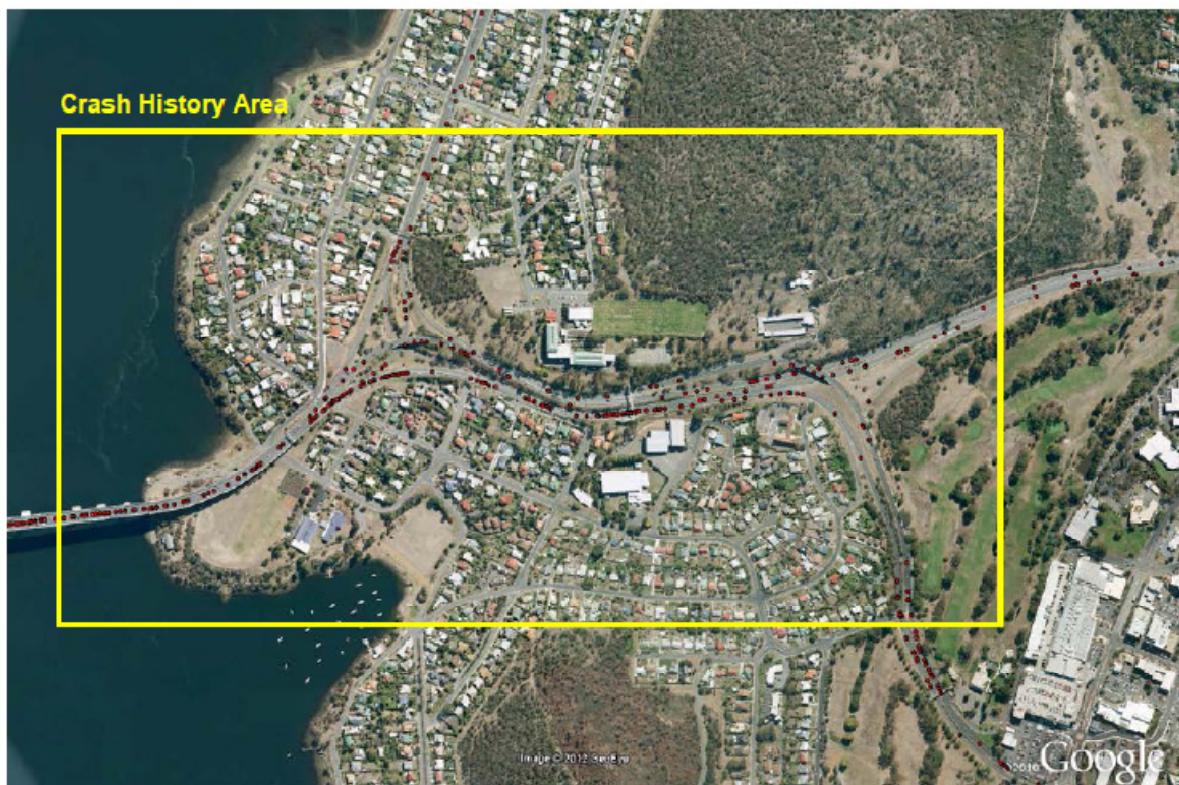
Road Safety Performance

Over the past 10 years there were a total of 382 crashes recorded within the area shown in **Figure 11** which encompasses the Montagu Bay and Rosny Hill interchanges. Of these 71 resulted in injury to one or more persons. Over this time period there were no fatal crashes. The key findings from the crash history were:

- Rear end collisions dominated with 64% (245) of total crashes
- A significant number of rear end collisions (99) and side swipes (25) occurred on the westbound carriageway on approach to the Tasman Bridge, representing 25% of the total crashes in the area
- A large number of crashes were also recorded on Rosny Hill Road, with a high rate of casualty crashes (32%). These are mostly associated with the on-ramp to the Tasman Highway and the Riawena Road intersection further south of this.

Crashes typically correspond with high traffic volumes with the majority of recorded crashes having occurred during either the morning or evening peak periods. The spike in crashes during the morning peak period can be attributed to the high traffic volumes travelling west-bound on the approach to the Tasman Bridge and the associated congestion.

Figure 11: Crash Locations over last 10 years



Option Generation and Assessment

Between 1995 and 2010 DIER has undertaken 12 studies in the Clarence area that include the Tasman Highway. Where shown to be effective and feasible, these solutions have been implemented, including the introduction of variable speed messaging in late 2012; the progressive upgrade of key intersections such as Mornington Roundabout and Acton; signalised entry from Penna Road at Midway Point; and reduced speed limits.

In 2012 GHD prepared the *Tasman Highway Access Improvements Strategic Review of Corridor* for DIER. This report reviewed previous studies, population and traffic growth trends forecast in DIER's Urban Travel Demand Model (UTDM) and made observations on current and future traffic performance of the network.

A PARAMICS micro-simulation model was developed as part of the review to enable assessment of the existing conditions on the Tasman Highway and the surrounding traffic network, and provide a mechanism to test the impact of options on the future transport efficiency.

Preferred Option

The focus of the project is on upgrades and improvements at the East Derwent Highway (Montagu Bay interchange) and the Rosny Hill Road (Rosny Hill interchange). The proposed improvements deliver improved access arrangements and safety outcomes, together with some travel time savings for movements between the interchanges.

The Tasmanian Government has undertaken detailed planning on options to improve efficiency, safety and access on the eastern approaches to the Tasman Bridge. This work has identified the following preferred option, delivered in two stages:

- **Stage 1 (Figure 12):**
 - Extension of the existing East Derwent Highway to Tasman Highway (east-bound) on-ramp,
 - construction of new on-ramp from East Derwent Highway, under the Montagu Bay interchange to connect directly to the right hand lane on the Tasman Highway (east-bound), and
 - lane modification for the Tasman Highway to East Derwent Highway (north-bound) off-ramp.
- **Stage 2 (Figure 13):**
 - Modification of lane configuration for the Rosny Hill Road to Tasman Highway (west-bound) on-ramp, and
 - Construction of a new ramp from Rosny Hill Road connecting directly to East Derwent Highway (north-bound) off-ramp, including a new bridge over the Tasman Highway and lane in the existing median

Stage 1 focuses on Montagu Bay interchange and will address identified issues (i)-(iii), namely merge from East Derwent Highway onto the Tasman Highway (east-bound), weave from East Derwent Highway to Tasman Highway (east-bound) and merge from Tasman Highway west-bound onto East Derwent Highway north-bound.

Stage 2 focuses on Rosny Hill interchange and will address identified issues (iv) and (v), namely merge from Rosny Hill Road onto the Tasman Highway (west-bound) and weave from Rosny Hill Road to East Derwent Highway.

The proposed improvements would separate east-bound and west-bound through movements on the Tasman Highway from cross movements between the East Derwent Highway and Rosny Hill Road. The arrangement would remove the need for traffic to perform complex weave manoeuvres to enter the correct lane.

The design would provide improved connectivity between the suburbs north of the Tasman Highway (Rose Bay, Lindisfarne, etc.) and those south of the Highway (Rosny Park, Mornington, Bellerive, etc.). The arrangement would also improve the general level of safety in the area.

The stages can be constructed independently of each other or as part of one project. As single projects, Stage 1 will require construction prior to construction of Stage 2.

The estimated P50 and P90 total outturn project costs reflecting the Departmental assessment of the quantum of risks for the project are:

- Stage 1: \$13.7 million (P50) and \$16.8 million (P90)
- Stage 2: \$23.6 million (P50) and \$28.8 million (P90)
- Stage 1 and 2: \$37.3 million (P50) and \$45.6 million (P90)

Figure 12: Stage 1 improvements

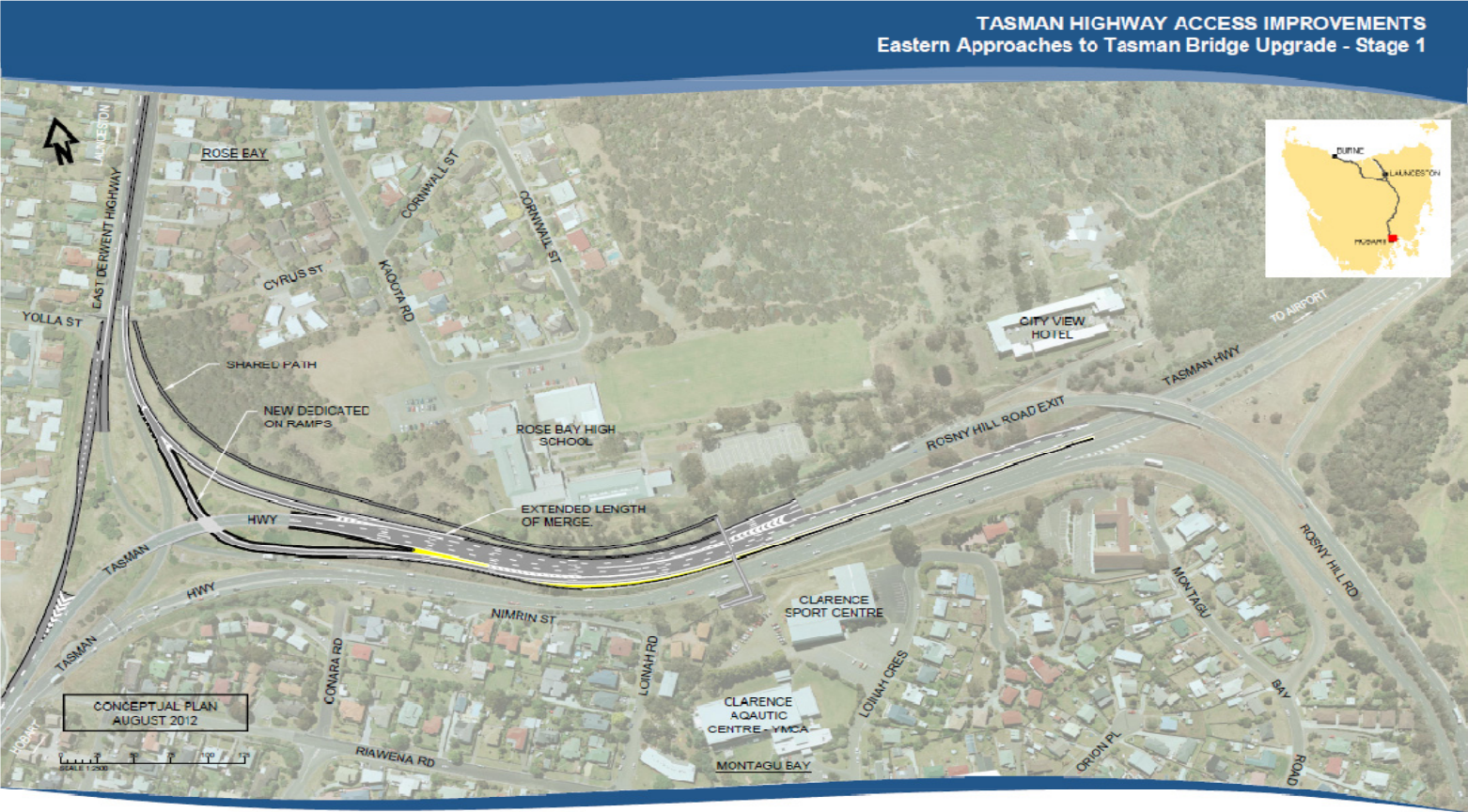
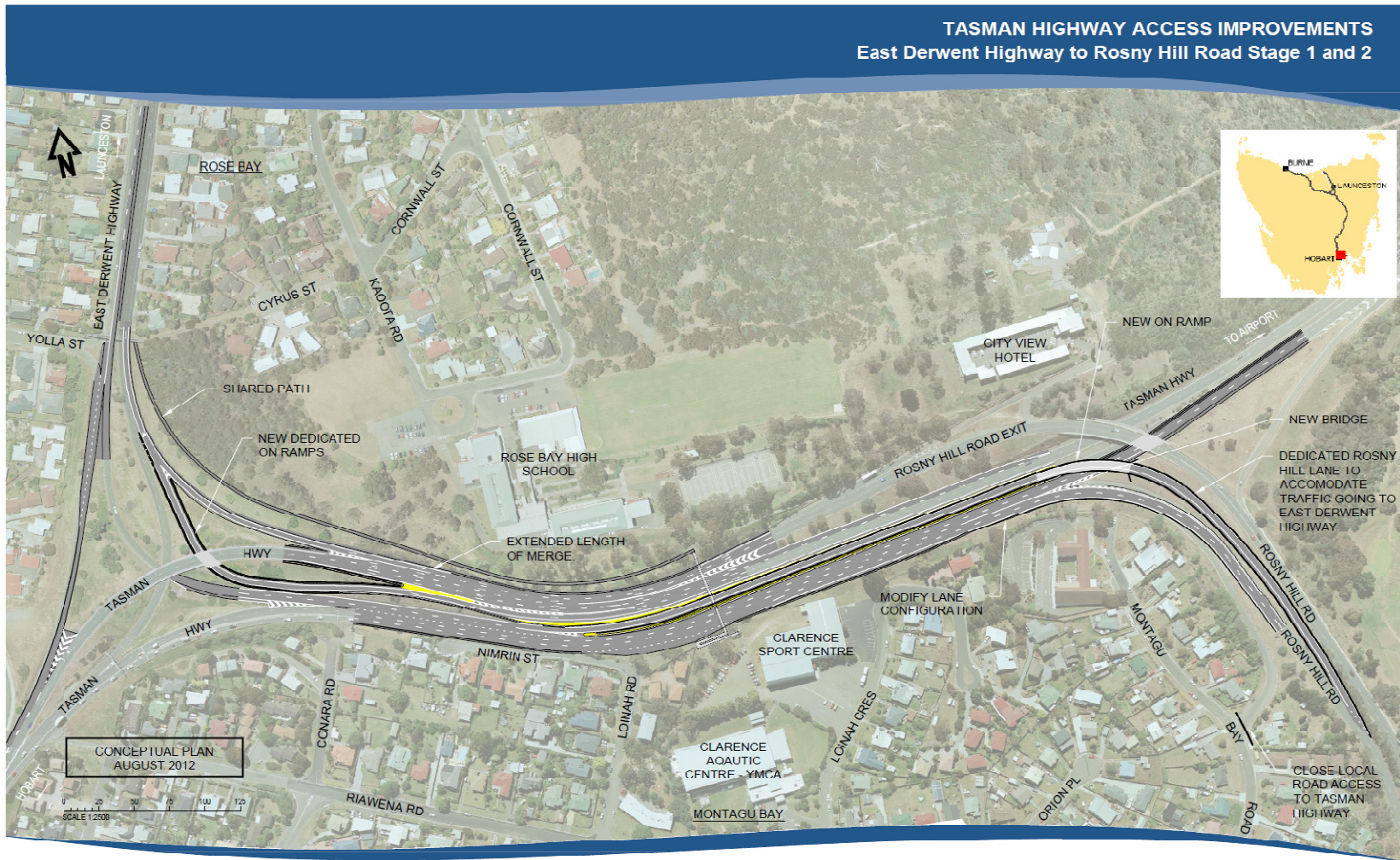


Figure 13: Stage 1 and 2 improvements



Department of Infrastructure, Energy and Resources

