Tasmanian Government
2012 Submission to Nation Building 2 Program

Domain Highway Planning

(Part of Brooker Highway Upgrades submission to Infrastructure Australia)

September 2012

Department *of* Infrastructure, Energy *and* Resources

Tasmania
Explore the possibilities

Priority assigned by jurisdiction for NB2 funding consideration	Priority three under Innovation
Details of full scope of project, including objectives, service requirements, project status and project phase(s) seeking funding. 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.	Information on project objectives, strategic context and options analysis is discussed in the Stage 1-6 template.
Alignment with objectives of NB2 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.	The Domain Highway Planning project is submitted under the *Innovation* theme of Nation Building 2, and also aligns with *Connecting People* and *Moving Freight* themes. The Domain Highway is a key urban freight and passenger connection in Greater Hobart. The Highway has two major high-volume interchanges with the Brooker Highway and Tasman Highway. The Domain Highway Interchange with the Brooker Highway is one of two key capacity bottlenecks on the Highway. This project will develop detailed design options at the Domain Highway Interchange. Further details are contained under Goal Definition (Stage1 - 6 template).
Alignment with broader Commonwealth and state/territory policies and plans Note: Specific plans/policies to be 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).	The project aligns with a number of Infrastructure Australia's strategic priorities, including: • Increase Australia's productivity • Developing Australia's cities and regions • Improve social equity, and quality of life, in our cities and our regions 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 of the Domain Highway); 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). 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. Further details are contained under Goal Definition (Stage1-6 template).
Overall financial exposure including identification of other partner funding Note: It is expected that this will be addressed in the main IA submission.	The project is low-cost and considered low-risk.
Identification of key strategic risks to the project Note: It is expected that this will be addressed in the main IA submission	Key strategic risks will be further considered in the project planning phase.
Quantification of the expected benefits from the proposal Note: It is expected that this will be addressed in the main IA submission.	The benefits associated with this project are ongoing and relate to improved strategic planning, strategy development and investment decision-making.
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.	Funding models will be considered in the project planning phase.
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 (as two distinct groups) – positively or negatively, and the extent of the impact	Further details on the impacts are outlined in Problem Identification, Assessment and Analysis (Stage 1-6 template).
Identification of key stakeholders in the project and the complexity of stakeholder relationships	Key stakeholders will be further identified in the project planning phase.
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	Potential ITS solutions will be considered in the project planning phase.

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.	
Details of the proposed procurement methods for the proposal Note: It is expected that this will be addressed in the main IA submission.	Procurement in accordance with the Tasmanian Government's procurement guidelines.
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.	To be determined in the project planning phase.
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.	No contractual or service delivery issues are expected.
Details of the proposed governance arrangements for the proposal 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.	To be determined in the project planning phase.
Details of the proposed delivery timetables and whether there are any known challenges to achieving those timeframes	To be determined in the project planning phase.

Note: It is expected that this will be addressed in the main IA submission.	
Details of any significant interdependencies for the project Note: It is expected that this will be addressed in the main IA submission.	There are no significant interdependencies for this project.

Proposal Summary

Initiative Name:	Domain Highway Interchange Planning
Location (State/Region(or City)/ Locality):	Hobart, Southern Tasmania
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	

The Domain Highway is a key urban freight and passenger connection in Greater Hobart. The Highway is part of the National Land Transport Network and is a Category 1 Trunk Road under the Tasmanian State Road Hierarchy. The Highway is a key link for freight and passengers moving between Glenorchy and Hobart's Eastern Shore, including between major industrial centres at Glenorchy and Cambridge; and to access Hobart International Airport.

The Highway has two major high-volume interchanges with the Brooker Highway and Tasman Highway. The Domain Highway Interchange with the Brooker Highway is one of two key capacity bottlenecks on the Highway. There is insufficient capacity at the Interchange, with significant traffic queuing and delays on approaches to and from the Interchange. The Interchange itself has significant constraints.

The Tasmanian Government is seeking $5 million to develop detailed design options at the Domain Highway Interchange. This will include review of upgrade options, development of a concept design, and geotechnical, environmental, planning and heritage investigations, to support identification of a final concept.

Is this a new submission?	Yes
Estimated cost of problems?	The strategic framework and transport system problems to which this project responds are outlined in the Overview document and within this submission. 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):	$5M
Commonwealth contribution sought by Proponent ($M, nominal, undiscounted):	$5M
Other funding (source/amount/cash flow) ($M, nominal, undiscounted):	N/A
BCR by Proponent excluding Wider Economic Benefits	N/A
Estimated program	2015-2016

Goal Definition

The goal of the project is to improve freight efficiency, safety and connectivity on the Domain Highway (Brooker Highway to Tasman Bridge).

The Domain Highway is a key urban freight and passenger connection in Greater Hobart. The Highway is part of the National Land Transport Network and is a Category 1 Trunk Road under the Tasmanian State Road Hierarchy.

The Highway is a key link for freight and passengers moving between Glenorchy and Hobart's Eastern Shore, including between major industrial centres at Glenorchy and Cambridge; and to access Hobart International Airport (see Map 1).

The Tasmanian Government is proposing to upgrade the southbound off-ramp from the Brooker Highway onto the Domain Highway to improve safety and reduce queuing. Upgrade of the access onto the Lower Domain Highway to address safety and improve traffic flows is also identified as a priority on the Highway to improve safety and through traffic flows. Depending on the outcomes of the planning study, part of the funding may be used to upgrade this intersection.

Positive contribution to Infrastructure Australia's strategic priorities

The project aligns well with Infrastructure Australia's strategic objectives, including:

- ***Improving the efficiency of connections to major road and rail freight corridors to facilitate domestic trade and international exports*** – the Domain Highway is a key link in Hobart's major urban freight corridor, which connects the Brighton Transport Hub, Glenorchy industrial centre and the Cambridge Industrial area.

Positive contribution to Nation Building 2's strategic priorities

The project aligns with the following Nation Building 2 objectives:

- ***Moving Freight***

  Planning for improvements to this key link will support improved freight efficiency for heavy vehicles.

- ***Connecting People***

  Planning will assess opportunities to improve safety and access for passenger vehicles.

Alignment with State/regional strategic plans

Tasmanian Infrastructure Strategy

The *Tasmanian Infrastructure Strategy* coordinates the major economic sectors of transport, water, energy and digital infrastructure. It provides an integrated, long-term framework to guide future infrastructure priorities and decision-making in Tasmania. Planning for improvements to the Domain Interchange is identified as a project under the transport theme of the Strategy.

Southern Integrated Transport Plan

The *Southern Integrated Transport Plan* – 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.

The Domain Highway is identified as a key urban corridor in the Plan, with planning objectives focused on improving known infrastructure weaknesses, improving travel reliability and improving freight efficiency. Strategies include undertaking targeted infrastructure upgrades and ensuring an appropriate road standard to support heavy vehicles.

Problem identification, assessment and analysis

Strategic connections

The Domain Highway forms part of the National Network and is a key urban freight and passenger link in Greater Hobart. It connects to the Brooker and Tasman Highway, both high-volume roads that play a critical role in Hobart's urban freight and passenger network.

In 2009, the Highway carried just under 1 million tonnes of freight, and this is forecast to increase to over 1.5 million tonnes by 2030 (Map 1). Current AADT is around 25 000 vehicles per day.

The Highway is the shortest and most direct route between established residential and industrial areas at Glenorchy and growing residential, commercial and industrial areas on Hobart's Eastern Shore.

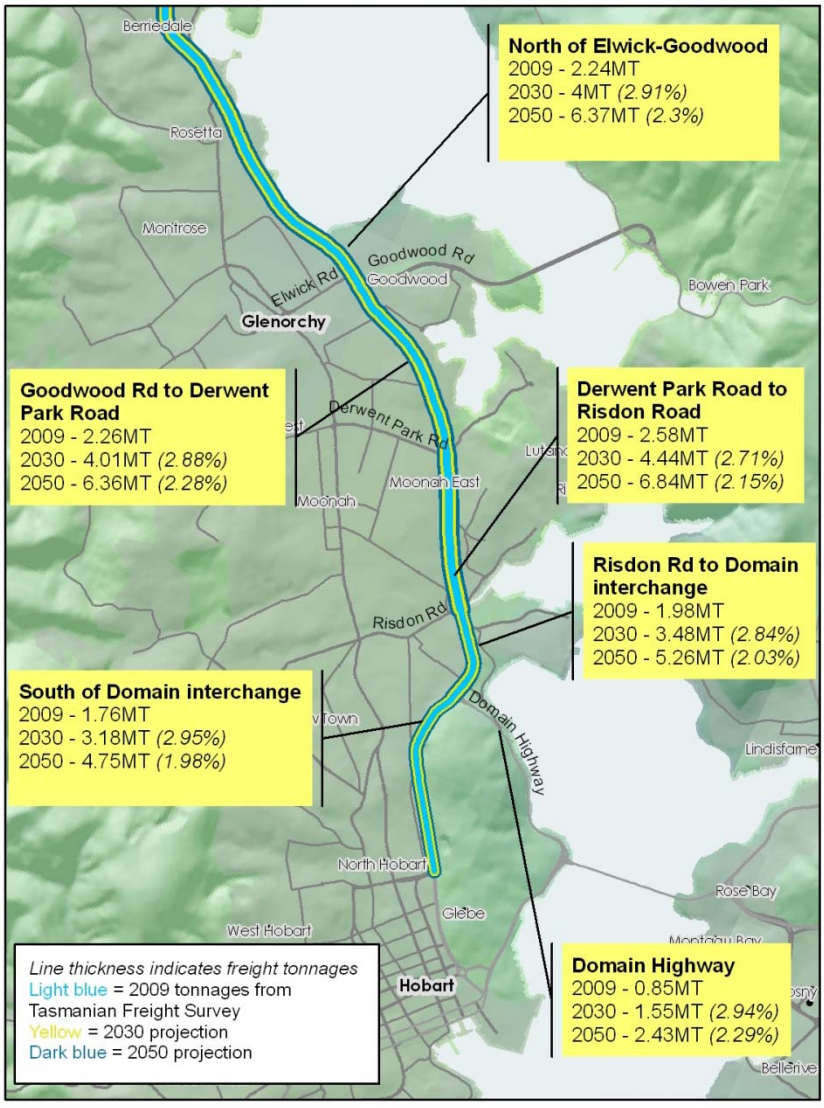
The Glenorchy industrial centre covers 455 hectares of industrial-zoned land north of central Hobart. It includes major industrial and manufacturing uses, and a broad range of freight generating industries, including light industrial activities, warehousing and distribution centres, and heavy industry. The importance of the Glenorchy area as an industrial centre is expected to continue over the long-term, reflecting the locational advantages of the area relative to transport networks and consumers, as well as the significant shortfall in available industrial land within the Greater Hobart region.

Map 1 Location of Domain Highway in metropolitan network

Over the past five years, there has been strong growth in industrial and commercial development in the Cambridge Industrial area (122 hectares) on Hobart's Eastern Shore. Compared to other metropolitan industrial centres in Hobart, the Cambridge area has some capacity for future expansion. The adjacent Hobart Airport has also identified future significant commercial development on airport land.

This area will generate significant freight volumes in the future, which will require a good connection to industrial areas in northern suburbs and the Brighton Transport Hub, via the Domain Highway, Domain interchange and Brooker Highway.

The Brooker Highway is one of Tasmania's highest tonnage freight corridors, with around 2.7 million tonnes of freight carried in 2012. Future growth will see volumes almost double by 2030. The section between Elwick and Domain incorporates all major local freight roads, connecting to major industrial areas either side of the Brooker Highway. Overall freight flows along the Brooker Highway are forecast to grow strongly in future, growing by nearly 2.5 times current flows by 2050. The strongest growth is expected on the section between the Elwick-Goodwood junction and the Domain interchange.



Map 2 Forecast freight flows, Brooker-Domain freight route

Road infrastructure

The Domain Highway connects the Brooker Highway with the Tasman Highway (Tasman Bridge) via the eastern side of the Queens Domain. It has a single lane of traffic in each direction, and has a 70 km/h speed limit. Major grade-separated interchanges connect the highway to the Brooker Highway (west) and the Tasman Highway (east).

In addition to through freight and passenger movements, the Highway facilitates access to the Botanical Gardens (via Lower Domain Highway), one of Tasmania's key tourism attractions, and to local suburbs at New Town via the Queens Walk. The Tasmanian Government has upgraded the right-turn access into the Queens Walk to improve safety and reduce queuing, however the turning arrangements into the Lower Domain Highway from both directions remain sub-optimal from a safety perspective, with broader impacts on traffic flows associated with queuing vehicles.

Traffic modelling has identified the Domain Highway at the southern end of the Brooker Highway as the key intersection affecting broader corridor performance. Short exit and entry lanes create traffic banking, significantly impacting on network flows along the remainder of the Brooker Highway. The Domain Highway Interchange is a high volume intersection that experiences significant traffic queuing and delays on approaches to and from the Interchange. The Interchange itself has significant constraints, due to the surrounding topography and its proximity to surrounding residential areas.

In its Nation Building 2 submission to Infrastructure Australia, the Tasmanian Government identified upgrade of the Elwick-Goodwood-Howard Road intersection together with planning for the future upgrade of the Doman Highway Interchange as key priorities for the Brooker Highway (Brooker Highway Upgrade Package). The benefit of these two projects to the Brooker Highway is shown below in terms of travel time benefits for all vehicle classes.

The Tasmanian Government is seeking $5 million to develop detailed design options at this interchange under Nation Building 2. This will include review of upgrade options, development of a concept design, and geotechnical, environmental, planning and heritage investigations, to support identification of a final concept.