Project Background

The Midland Highway Improvement Projects are designed to upgrade the northern approaches to Hobart between Dysart and Granton. The upgrading includes the provision of two bypasses (Bagdad/Mangalore and Pontville/Brighton), construction of an intermodal transport hub at Brighton and replacement of the Bridgewater Bridge.

These projects represent the largest strategic infrastructure development undertaken in Tasmania’s history and will deliver significant benefits to the Tasmanian community in terms of safety, efficiency and economic advantages. Specifically the Brighton Transport Projects will relieve increasing traffic congestion and improve safety on the region’s key traffic corridor and improve efficiency of freight movement into and out of Southern Tasmania.

The Bridgewater Bridge is a recognised landmark on the Southern Tasmanian landscape as a gateway to Tasmania’s capital city. The existing bridge is limited in its ability to perform the function of the Midland Highway, part of the National Land Transport Network.

Planning works for the replacement of the Bridgewater Bridge have been ongoing for a number of years. DIER has been building on this previous work to prepare a preferred design for the new bridge.
Environmental Considerations

Environmental Impacts

Flora and Fauna
Botanical Surveys were completed in winter, spring and summer and identified a number of vegetation communities within the study area, including six threatened plant species.

Fauna Habitat Assessments were also undertaken in the study area. Species directly observed during the surveys included mainly water birds. Some fauna may use the vegetation within the investigation corridor as habitat. It is considered unlikely that there will be any measurable impacts to fauna populations as a result of the bridge replacement. This is due to the poor quality of the habitat and the small extent of clearing of native vegetation required by the development.

The design and location of the new bridge has been selected in order to limit impacts on the identified flora and fauna populations. Relevant State and Federal approvals will also be sought where necessary before any work commences.

Aquatic Ecology
The section of the river in the study area is part of the Derwent River Conservation Area.

An Aquatic Assessment undertaken in July 2009 did not identify any threatened estuarine fauna. Some species, including the Australian Grayling, were not sighted during survey work however it is known that this species occupies the River Derwent periodically. The risk of these species being impacted upon will be largely minimised by the development of an appropriate Construction Environmental Management Plan (CEMP). Relevant State and Federal approvals will also be sought before any work commences.

Climate Change
DIER has also recognised the importance of including a Climate Change Risk Assessment as part of the Planning Study. This assessment was undertaken in accordance with the Department of Primary Industries, Parks, Water and Environment’s guidelines for coastal and marine development.

Sea level rise is identified as a particular risk to the bridge due to its location in the Derwent Estuary. As the existing Bridge and Causeway has been flooded in an extreme sea level event in the past, the current risk of such an event occurring is relatively high. Extreme sea level events are the only risks which pose an immediate threat to the operation of the existing Bridge and Causeway.

The replacement bridge will take into account the recommendations presented in the Climate Change Report. The majority of the risks associated with service quality and public safety may be avoided by building the replacement bridge in a location which is not prone to erosion.
Heritage Considerations

Aboriginal Heritage
The local area is known to have sites and artefacts of significance to the Aboriginal community. While initial investigations and surveys are complete, further sub-surface work is required and an archaeologist has been engaged to undertake this work.

There have also been discussions with the Aboriginal community and its representative groups, including approval body Aboriginal Heritage Tasmania. These discussions will continue as the design process progresses.

European (Historic) Heritage
The Derwent River crossing at Bridgewater is an area with known historic heritage sites and values. The existing bridge and causeway are listed on both the Tasmanian Cultural Heritage Register and the Register of the National Estate and ideally need to remain in service.

Several Historic Heritage assessments have been undertaken, including an Historic Heritage Precinct Assessment, which identified three separate precincts within the study area that are considered to be of heritage significance. These precincts include:

• The Black Snake Precinct (considered to be of moderate heritage significance);
• The Convict Places Precinct (considered to be of high significance); and
• The Bridge Precinct (considered to be of moderate-high heritage significance).

Historic heritage values will be carefully considered in the final design in order to acknowledge the heritage values of the area, and to retain and enhance these values where possible.
Preferred Alignment

The Bridgewater Bridge Replacement Planning Study has used previous planning reports, investigations and supporting studies to inform the development of a preliminary design and proposed alignment for a new Bridgewater Bridge crossing the River Derwent.

A thorough and objective evaluation of potential crossing options of the River Derwent has been undertaken through this phase of the Bridgewater Bridge Replacement Planning Study. Each of the inter-related technical issues have been individually investigated in detail to review available solutions, and identify the optimum solution for each technical element.

This evaluation has led to the conclusion of a preferred concept design which has received endorsement by the Minister.

The following criteria and relative weightings were considered and analysed when deciding on the preferred alignment:

- Highway Connectivity: 25%
- Bridge Size / Complexity: 20%
- Property Impacts: 15%
- Local Road Connectivity: 15%
- Heritage: 10%
- Environmental Impacts: 10%
- Alignment Standard: 5%

Each alignment was assessed against these criteria. A ranking was given for each aspect and an overall assessment for each alignment provided. This process was known as a Multi-Criteria Analysis.

The draft design elements for the new bridge so far include:

- A two-lane bridge (one lane each way), with the capacity for this to extend to four lanes when required in the long-term;
- A higher speed limit than the existing bridge;
- Connecting roads will be likely to have traffic lanes and speed limits consistent with the existing network;
- Local road connectivity for both short-medium and long term;
- River traffic navigation will be provided at a 16.2m clearance (consistent with that of the Bowen Bridge).

The existing Bridgewater Bridge will remain in use for rail, pedestrians and cyclists, and local traffic.
Future Activity

Further studies and surveys, particularly in the area of Aboriginal heritage, are ongoing. A number of approvals are also being sought, including environmental and planning, before the final alignment can be confirmed and funding for construction sought.

DIER is currently seeking feedback from key stakeholders and the community on the concept design. Upon receipt of this feedback, DIER will consider the issues raised and review and amend the concept design where necessary. It is expected that the final design will be ready to submit to the Australian Government in mid 2011 for approval and consideration for funding under the Nation Building Program.
View of the Eastern Shore including the East Derwent Highway
View towards Granton with the existing bridge in the background.
View from the Western Shore towards Bridgewater
View towards the Western Shore showing the location of the old bridge