Gateway Upgrade Project

Executive Summary

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Executive Summary

Introduction

The Queensland Department of Main Roads (MR) is preparing a Business Case for the proposed duplication of the Gateway Bridge and upgrade of the Gateway Motorway, between Mt Gravatt-Capalaba Road and Nudgee Road. The proposed road and bridge works are referred to as the Gateway Upgrade Project (GUP).

The GUP has been developed in the context of the Queensland Government's aim to deliver innovative transport solutions that connect people, goods and services. In particular, the Transport portfolio aims to provide the necessary infrastructure to meet particular transport needs.

The objectives of the project are to improve the transport system in the area of the GUP to:

- Alleviate future forecast traffic congestion in the GUP vicinity;
- Provide improved access to Port of Brisbane and Brisbane Airport;
- Avoid increased congestion on alternative roads through Brisbane City;
- Enable and support continued growth of the local region; and
- Stimulate economic growth of the Brisbane region and South East Queensland (SEQ).

In summary GUP includes:

- A two lane widening to six lanes of the existing Gateway Motorway between Mt Gravatt-Capalaba Road and Wynnum Road;
- A four lane widening to eight lanes of the existing Gateway Motorway between Wynnum Road and Lytton Road;
- A new six lane bridge crossing of the Brisbane River downstream of the existing bridge;
- Removal of the existing toll plaza and the inclusion of full electronic toll collection (ETC) facilities at the existing bridge;
- A new four lane Motorway through the old and new Brisbane Airport site across Airport Drive, Airtrain and Kedron Brook Floodway to reconnect with the existing Gateway Motorway south of Nudgee Road; and
- A new interchange for additional access to Brisbane Airport.

The project has an estimated value of $1.2 - $1.4 ($2002) billion dollars and is expected to generate significant investment and business opportunities to SEQ region and the State.

The Gateway Motorway and the Gateway Bridge are infrastructure that is vital to SEQ region and the Australia TradeCoast (ATC) area, providing access to Brisbane Airport and the Port of Brisbane. The Gateway Bridge and sections of the Gateway Motorway are either at or fast approaching capacity. Travellers are already experiencing significant delays in the morning and evening peaks north and south of the Gateway Bridge.

The Australian Government has announced that the Gateway Motorway and Gateway Bridge will form part of the AusLink National Land Transport Network, and that it will contribute funding for selected nationally-significant projects on the network. The timing for construction of this project is subject to the assessment of the merits of the project and the availability and sources of funding.

The EIS has been prepared by Connell Wagner with the assistance of subconsultants specialising in noise, air quality, cultural heritage, social impact and aquatic biology. The traffic and transportation sections of the EIS were prepared by consultants to the GUP office.

Legal Framework

The GUP has been declared a "significant project" for which an EIS is required which addresses the Terms of Reference (TOR) prepared under the *State Development and Public Works Organisation Act 1971*. The Department of State Development and Innovation (DSDI) is the authority responsible for coordinating the assessment of the EIS for the GUP. The TOR for the EIS were issued by DSDI in April 2004.

The Coordinator-General evaluates the EIS and the submissions received during the submission period, prepares a report evaluating the EIS and decides whether the project should be approved (containing conditions and recommendations if required) or refused. The Coordinator-General report is given to the proponent and the assessment manager as defined under the *Integrated Planning Act 1997*.

The assessment manager for the GUP is the Environmental Protection Agency as development approval is required under *Integrated Planning Act 1997* (IPA) for the following:

- Operational Work that is tidal works in, or above land under tidal water as required under the *Coastal Protection and Management Act 1995*; and
- Material Change of Use for Environmentally Relevant Activities (ERA) as required under the *Environmental Protection Act 1994*.

Prior to construction commencing on the GUP other development approvals may be required under IPA as other State legislation is incorporated into IDAS.

In February 2004, the Commonwealth Minister for the Environment and Heritage declared that the GUP does not constitute a Controlled Action under the *Environment Protection and Biodiversity Conservation Act 1999*. However, the section of the GUP that traverses Commonwealth land (being Brisbane Airport) triggers assessment and approval under the *Airports Act 1996* and it is likely Brisbane Airport Corporation (BAC) on behalf of MR will be required to submit a Major Development Plan to the Commonwealth Department of Transport and Regional Services, for this section of the project.

Title of the Project

The project title is the Gateway Upgrade Project.

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Need for the Project

The Gateway Bridge and sections of the Gateway Motorway in the GUP area are either at or approaching peak traffic capacity in both the morning and evening peak hours with motorists experiencing increasing delays within the area north and south of the Bridge.

Weekday traffic volumes in the vicinity of the Bridge are approaching 100,000 vehicles per day (vpd), with a count of 100,584 vpd for the Bridge on 20 February 2004. These traffic volumes are considered to be at the capacity of the Bridge with its current toll plaza configuration.

The Gateway Motorway is experiencing significant annual traffic growth rates. Traffic modelling for the GUP has predicted 25% growth in cross river trips between 2001 and 2021, based on population and employment growth estimates and current trip patterns.

In addition to the constraints posed by the Gateway Bridge capacity, the section of the Motorway between Nudgee Road in the north to Mt Gravatt-Capalaba Road in the south is rapidly approaching full capacity with congestion already occurring intermittently on several sections. This section of road requires immediate increased capacity.

The 2003 Gateway Motorway and Second River Crossing Planning Study assessed the existing and future demands of the Gateway Bridge and the approaches. The investigation found an immediate need for additional approach capacity both north and south of the river, with augmentation of river crossing capacity to follow. The analysis for augmenting capacity on the northside indicated that a new deviation is preferred, rather than upgrading the existing Gateway Motorway alignment.

Traffic analysis using 2001 traffic volumes indicates that the following sections of the Motorway are at or above capacity:

- Gateway Motorway between Airport Drive and Kingsford Smith Drive;
- The section of the Motorway between the on/off ramps south of Kingsford Smith Drive and the Gateway Bridge; and
- Gateway Motorway between Old Cleveland Road and Wynnum Road.

The analysis also shows that some other sections are approaching their capacity. They include:

- Gateway Motorway between Airport Drive and Toombul Road;
- East West Arterial Road/Airport Drive between Nudgee Road and Lomandra Drive; and
- Other sections of the Gateway Motorway between the Pacific Motorway and the Gateway Bridge.

Future development in the ATC area associated with increased activity at the seaport and airport requires efficient and convenient landside transportation links. However, without improvements to rectify emerging constraints in the Gateway Motorway corridor, including the Gateway Bridge, the following negative impacts are predicted to occur:

- Unacceptable delays in traffic, causing traffic to divert to other river crossings closer to the CBD and local arterial roads, with attendant traffic intrusion into local communities;
- Increasing accident rates in the corridor, and attendant road user and social costs, as traffic volumes exceed acceptable design standards;
- Reduced accessibility to the Port of Brisbane and to the Brisbane Airport at a time when seaport trade throughput and passenger movements are growing strongly;
- Unacceptable economic outcomes for the ATC area resulting from loss of opportunities for strategically important and commercial development; and
- Failure to achieve acceptable service and performance requirements on this strategically important transport corridor.

There is therefore a clear need for the GUP to:

- Alleviate future forecast traffic congestion;
- Provide improved access to Port of Brisbane and Brisbane Airport;
- Avoid increased congestion on alternate local roads through Brisbane City;
- Enable and support continued growth of the local region; and
- Stimulate economic growth of the Brisbane Region and SEQ.

The Proposed Development

The physical works of the GUP involve the upgrading of the existing Gateway Motorway corridor between Mt Gravatt-Capalaba Road and Kingsford Smith Drive, including the duplication of the existing Gateway Bridge and construction of a new Motorway and interchange through the sites of the old and new Brisbane Airport and across Kedron Brook Floodway.

The proposed works include a two lane widening (to six lanes) of the existing Gateway Motorway between Mt Gravatt-Capalaba Road and Wynnum Road and a four lane widening (to eight lanes) between Wynnum Road and Lytton Road. To improve river crossing capacity, a new six lane bridge across the Brisbane River to the east (downstream) of the existing Gateway Bridge will be constructed. The introduction of full ETC facilities for toll collection works will include the removal of the existing toll plaza from its current position north of Lytton Road.

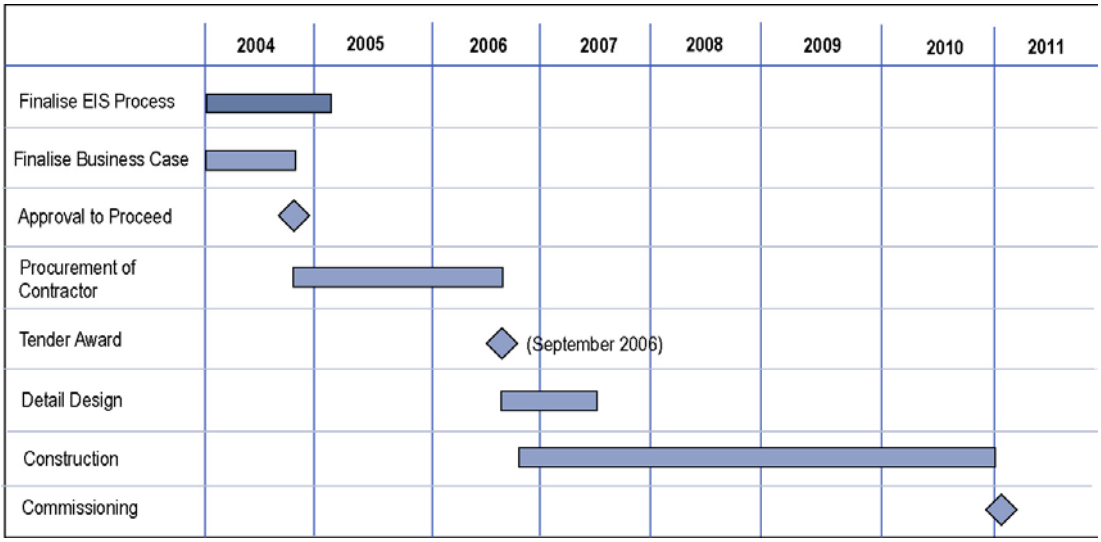
To improve the alignment of the Gateway Motorway north of the river and to provide additional access to the Brisbane Airport, a new four lane Motorway “deviation” will be constructed. This deviation will run from the northern end of the Gateway bridge/s (near Lavarack Avenue) through the old and new Airport sites, across Airtrain, Airport Drive and Kedron Brook Floodway to reconnect with the existing Gateway Motorway just to the south of Nudgee Road. Interchange connections at each end, will be required to provide for movements to and from the existing Gateway Motorway carriageways.

A new interchange to provide a northern access to the Brisbane Airport will be constructed, just to the south of the proposed Kedron Brook crossing and north of Airport Drive.

Project Program

The current GUP program is shown below. The key features of the program are:

- Finalisation of the EIS process by early 2005;
- Completion of the Business Case by the end of August 2004;
- Procurement of contractor/s to deliver the works;
- Design and construction; and
- Commissioning of the project by 2011.



Project Delivery

The development of the Business Case for the GUP is currently proceeding. The potential for the project to be delivered through a Private Public Partnership (PPP) process is being explored within the Business Case as part of the value for money assessment. The PPP process is a mechanism to provide public infrastructure through appropriate risk sharing between public and private sector parties. The purpose of the PPP Business Case development stage is to:

- Identify the project delivery options most likely to provide the best value for money outcome;
- Provide information regarding the available project delivery options, sufficient to enable Government to determine the preferred project delivery option; and
- Make commitments regarding funding of the potential project.

Alternative Options Considered

The planning for the GUP has included consideration of a broad range of options for design and implementation. A Planning Study was undertaken between 2001 and 2003 to investigate the provision of a second river crossing in the vicinity of the existing Gateway Bridge, and upgrading of the Motorway between Mt Gravatt-Capalaba Road and Nudgee Road.

The preferred alignment of the Gateway Motorway upgrade between Mt Gravatt-Capalaba Road and Lytton Road has been significantly influenced by the alignment of the existing Motorway. The selection of the preferred northern deviation alignment was based on the following criteria:

- Engineering feasibility (constructability and staging);
- Minimising construction costs;
- Minimising property impacts;
- Traffic operations;
- Minimising the number and significance of services affected;
- Maximising benefits/travel time savings and vehicle operating cost savings; and
- Minimising environmental and social impacts.

EIS Findings

The key findings of the EIS are:

- 29 property owners will be directly affected by the project. Properties include residential, industrial, Royal Queensland Golf Club, Brisbane City Council (old airport site, Bulimba Creek and Kedron Brook floodplain) and BAC land.

- The project is consistent with the key State and Local Government land use and transport planning policies, strategies and guidelines.

- The project is not significantly constrained from a geotechnical aspect. Extensive embankments on weak soils are required north of the Brisbane River, and these will need to be designed in accordance with good engineering practice in terms of stability and settlement characteristics.

- Erosion of soils within the project corridor can be adequately mitigated by implementing best practice erosion and sediment control measures during construction.

- Potential Acid Sulphate Soils (ASS) occur within Bulimba Creek floodplain and north of the Brisbane River. Potential impacts from disturbing these soils will be mitigated by minimising disturbance in high risk areas and by implementing an ASS Management Plan during construction.

- Potential contaminated soil may occur on industrial properties, the old airport site and BAC land. Potential impacts from disturbing these soils will be mitigated by minimising disturbance in high risk areas, undertaking further contaminated land investigations and implementing Site Remediation Plans approved by the Environmental Protection Agency during construction.

- The potential impacts of the proposed upgrade works upon flood levels within the Bulimba Creek and Kedron Brook floodplains have been assessed using detailed 2-dimensional hydraulic modelling. As there are many properties already adversely affected by flooding in these areas, mitigation of the impacts was considered essential.

- A range of mitigation options have been investigated for both waterways using the detailed hydraulic model. The solution at both crossing locations involves localised earthworks in the immediate vicinity of the Bulimba Creek crossing and downstream of the Kedron Brook Floodway crossing. The introduction of these solutions fully mitigates against the impacts of the proposed upgrade works.

- Potential impacts on surface water quality will be minimal due to the implementation of appropriate construction erosion and sediment control measures and the implementation of a "treatment train" approach to operational stormwater management.

- Based on existing data, the groundwater resource potential within the project corridor is low and there is generally poor groundwater quality. Groundwater monitoring will occur on BAC and Council land during construction to ensure the project does not impact on the groundwater resource.

- The overall impact of the project will result in a slight increase in air quality impacts for receptors close to the Motorway however all predicted concentrations are below the relevant guidelines.

- Compliance with operational noise criteria can be achieved through the upgrade of noise barriers along the corridor if required. Construction noise and vibration can be adequately mitigated by implementing a Construction Noise and Vibration Control Plan and associated mitigation measures.

- No significant flora and fauna species are located within the project corridor. Koalas and wallabies occur in the adjacent bushland areas associated with the Koala Coast Area (east of Motorway) and Belmont Hills Bushland (west of Motorway) and move between the two areas. Fauna exclusion fencing and fauna underpasses will be installed where needed to minimise the potential for road kills of koalas and wallabies, and improve road safety for road users.

- The potential impact on a small area of Lewin's Rail habitat on BAC land will be mitigated by minimising construction activities in this area and rehabilitating the area early in the construction program.

- A relatively small number of mangroves and other marine plants will need to be cleared in the Bulimba Creek and Kedron Brook areas. The areas to be lost are small in comparison with the extent of similar marine plant communities associated with each of these waterways and other communities present within the region.

- Minor aquatic habitat loss will occur as a result of the project. The potential impact on aquatic flora and fauna in the vicinity of watercourse crossings and downstream are manageable.

- No Indigenous and European cultural heritage sites are directly affected by the project. A Cultural Heritage Management Plan will be implemented during construction to minimise the potential impact on cultural heritage items being disturbed during earthwork activities.

- The social impacts of the proposal on residents will be relatively small due to the containment of much of the physical property impacts within or close to the existing alignment of the Motorway. Some minor recreation facilities will be affected, as will access to these areas. There will be disruption effects on a number of businesses due to construction activities and the need for relocation of some businesses.

- The direct economic impacts of the project on the Brisbane Moreton region include:
  - direct effects will be $1.4 billion in additional Gross and Queensland Output and be $683 million in Gross Regional Product (GRP) from the construction;
  - the direct labour effects from the construction phase will be in 5,919 new jobs (fulltime equivalent) which will generate $465 million in wages and salaries; and

  - the direct economic impacts annually from the operation of the project will be $24.6 million in additional Gross Output, $15.4 million in additional GRP and 258 full time equivalents resulting in wages and salaries of $11.7 million annually.

- The Benefit Cost Ratio (BCR) of 3.83 has been calculated for the project which represents a Net Present Value (NPV) of $3.597 billion over the 30 year assessment period providing a strong economic justification for proceeding with the project.

- Visual impacts are expected to be low given the proposed planting of native species endemic to local conditions and integrating urban design and ornamental lighting strategies to improve the aesthetics of interchanges and bridge structures.

- The GUP presents a significant opportunity to deliver a major component of planned pedestrian and bicycle networks in the form of a river crossing in the area of the Gateway Bridge in accordance with the objectives of Cycle South East, the Integrated Regional Cycle Network Plan and the Moreton Bay Cycleway.

Conclusion

With the effective implementation of the Environmental Management Plan during detailed design, construction and operation, the environmental impact assessment carried out for the GUP has identified no significant environmental impacts which can not be managed.

Local community impacts are anticipated to be minimal and the project will provide significant traffic and economic benefits for the ATC area, Brisbane Airport, the Port of Brisbane and the regional community of SEQ.