

Northern Link

1. Introduction



Northern Link

Phase 2 – Detailed Feasibility Study

CHAPTER 1

INTRODUCTION

- September 2008

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1. Introduction

This chapter addresses Part B, Section 1 of the Terms of Reference (ToR). The ToR are provided in Appendix A in Volume 1 of the EIS. This Chapter describes the background to the project, the project proponent, the purpose of the Environmental Impact Statement (EIS) and the EIS process. It also summarises the consultation process undertaken for the project. A detailed report on the consultation undertaken is provided in Appendix B, Volume 1 of the EIS.

1.1 Background

The South East Queensland (SEQ) Regional Plan anticipates population growth and increased economic activity in the region for the planning period to 2026. This growth will lead to increased travel demand for the movement of people and goods between activity centres, such as Brisbane Central Business District (CBD), the Australia TradeCoast (ATC) including Brisbane Airport, industrial centres in northern Brisbane and the Western Corridor, principal activity centres such as Indooroopilly, Springfield, and Ipswich and the regional activity centre at Toowong. In planning for sustainable population growth and economic development, the Queensland Government prepared the *South East Queensland Infrastructure Plan and Program 2005 to 2026* (SEQIPP) as its program to guide infrastructure investment.

At the local level, Brisbane City Council has updated and adopted the *Transport Plan for Brisbane 2002-2016*. This plan supplements the *TransApex* initiative and with it seeks to develop a balanced approach to investment in the City's transport infrastructure.

These plans include initiatives for private transport, freight movement, public transport and active transport such as walking and cycling. In terms of the road network, there is provision for a system of motorway-standard orbital (ring) roads to address the transport needs of Brisbane, as part of a balanced solution with public transport.

Northern Link is identified in strategic plans¹ as significant strategic infrastructure necessary to address, in part, the road network deficiencies of greater Brisbane.

Northern Link is a key 'missing link' in Brisbane's motorway network serving the major activity centres and growth areas. Northern Link would close the gap in the motorway network connecting the Ipswich Motorway in the south-west via the Centenary Highway, Western Freeway to the Inner City Bypass, Airport Link and East-West Arterial to the Gateway Motorway in the north-east.

1.2 Brisbane's Transport Challenge

Under the pressure of population and employment growth, the estimated growth in the travel task (in terms of person trips) and vehicle travel demand in the Brisbane transport network is significant. Even with enhanced mode share for public transport, an increase in vehicle trips is forecast. By 2026, with a forecast population of 2.58 million in the metropolitan area (compared to 1.77 million in 2004), total travel demand, including commercial vehicles, is forecast to be 45% higher than current levels, reaching 5.5 million vehicle trips on an average weekday.

Associated with this overall increase in vehicle travel will be very strong growth in demand to key trip generators within the catchment of the proposed Northern Link. The Central City has a forecast increase of over

¹ Queensland Government, 2007c, *South East Queensland Infrastructure Plan and Program*, Brisbane, Brisbane City Council, 2007, *Transport Plan for Brisbane*, The Council, Brisbane

55% in vehicle demand due to the importance of the area as a Primary Activity Centre and employment node. Particularly strong growth is anticipated in the Australia TradeCoast (ATC) North region, which produces approximately 40% as much traffic as the Central City. By 2026, the vehicle demand associated with this area is forecast to be over 300% higher than current levels, and almost 80% of the level of Central City vehicle traffic generation.

A general increase in congestion is predicted on the Brisbane road network over the years to 2026. Vehicle travel demand and peak period journey travel times are forecast to increase significantly compared to the current level. Average travel speeds and network performance are forecast to decline significantly. Much of the traffic congestion on Brisbane's radial road system of the inner west is caused by traffic wanting to get "somewhere else", and being forced to use the roads through the suburbs.

Within the inner north area a range of transport improvements have been implemented over many years as a result of past investigations by Brisbane City Council and the State Government in consultation with the community. Examples of key transport projects completed over the last 15 years include provision of an inbound T3 lane on parts of Lutwyche Road to improve public transport operations and the opening of Airtrain to provide high quality public transport access to Brisbane Airport. These transport infrastructure initiatives have benefited both the local community and the wider travelling public within the Brisbane area. However, the pressures of growth in population and travel generation associated with activity centres is placing increasing pressure on the transport system, and in particular the area's road network.

The SEQ Regional Plan (OUM, 2005) identifies a number of Activity Centres to serve growth in the region. The Brisbane CBD, immediately to the southeast of the Northern Link corridor, is the SEQ Region's Primary Activity Centre. Other important Activity Centre examples near the Project include Toowong, a regional activity centre, Indooroopilly, a Principal Activity Centre with a major regional shopping complex and the Royal Brisbane Hospital and University of Queensland at St Lucia, Specialist Activity Nodes. To the east, Brisbane Airport is a Specialist Activity Centre and the Australia TradeCoast precinct an area of major economic importance to the region. The Project will serve the Western Corridor with its Principal Activity Centres of Springfield and Ipswich and the Major Activity Centres of Goodna and Ripley.

Brisbane City Council's *Transport Plan for Brisbane 2002-2016* examined the challenges facing Council in keeping their transport network operating effectively into the future, and supporting the vision of *Living in Brisbane in 2010*. From this comprehensive strategic analysis of the transport system, the importance of addressing gaps in the strategic road network and strengthening the structure by creating an orbital road system in Brisbane (including additional cross river road capacity) emerged.

1.3 Detailed Feasibility Study

Brisbane City Council undertook preliminary feasibility studies into the TransApex projects, including Northern Link, with the findings being presented in 2005². For the Prefeasibility Study, a basic requirement for Northern Link was the connection between the Western Freeway at Toowong in the west, and the Inner City Bypass and Kelvin Grove Road in the north. Local connections at both Toowong and Kelvin Grove were considered. The Prefeasibility Report presented two options for Northern Link, namely:

- the 'bored option' proposed a driven tunnel system directly between the Western Freeway and the Inner City Bypass, with connections to Frederick Street and Kelvin Grove Road; and

² Brisbane City Council, 2005b, *TransApex Prefeasibility Report*, March 2005, Brisbane.

- the 'railway option' proposed a combination of cut-and-cover and driven tunnels following a less-direct route generally to the south of the bored option and in part following the Western Railway.

Following the TransApex Prefeasibility Study the Brisbane City Council undertook a Preliminary Assessment of the Northern Link project to assess whether Northern Link should progress to a Detailed Feasibility Study. The Preliminary Assessment Report was prepared in 2007³. The Preliminary Assessment was conducted in accordance with the Queensland Government's Value for Money Framework (VfM Framework) and to ensure that the project's development is consistent with the National Guidelines for Transport System Management (NGTSM) Framework for AusLink initiatives.

The initial review of the Prefeasibility Study options concluded that the preferred technical solution for further development was the Bored Option outlined in Council's *TransApex* Prefeasibility Study in 2005. Reasons supporting the decision to eliminate the Railway Option during the assessment was that it did not sufficiently meet the traffic, engineering and environmental criteria.

Development of the strategic options presented by the Bored Option (Option 1) were undertaken in order to further consider the key constraints, and the regional and local opportunities for the development of the Reference Project. Bored mainline corridor options were initially identified to cater for identified strategic needs by providing a motorway standard link between the Western Freeway and the Inner City Bypass. Precinct connections via the local road network were also considered in the development of the strategic layouts.

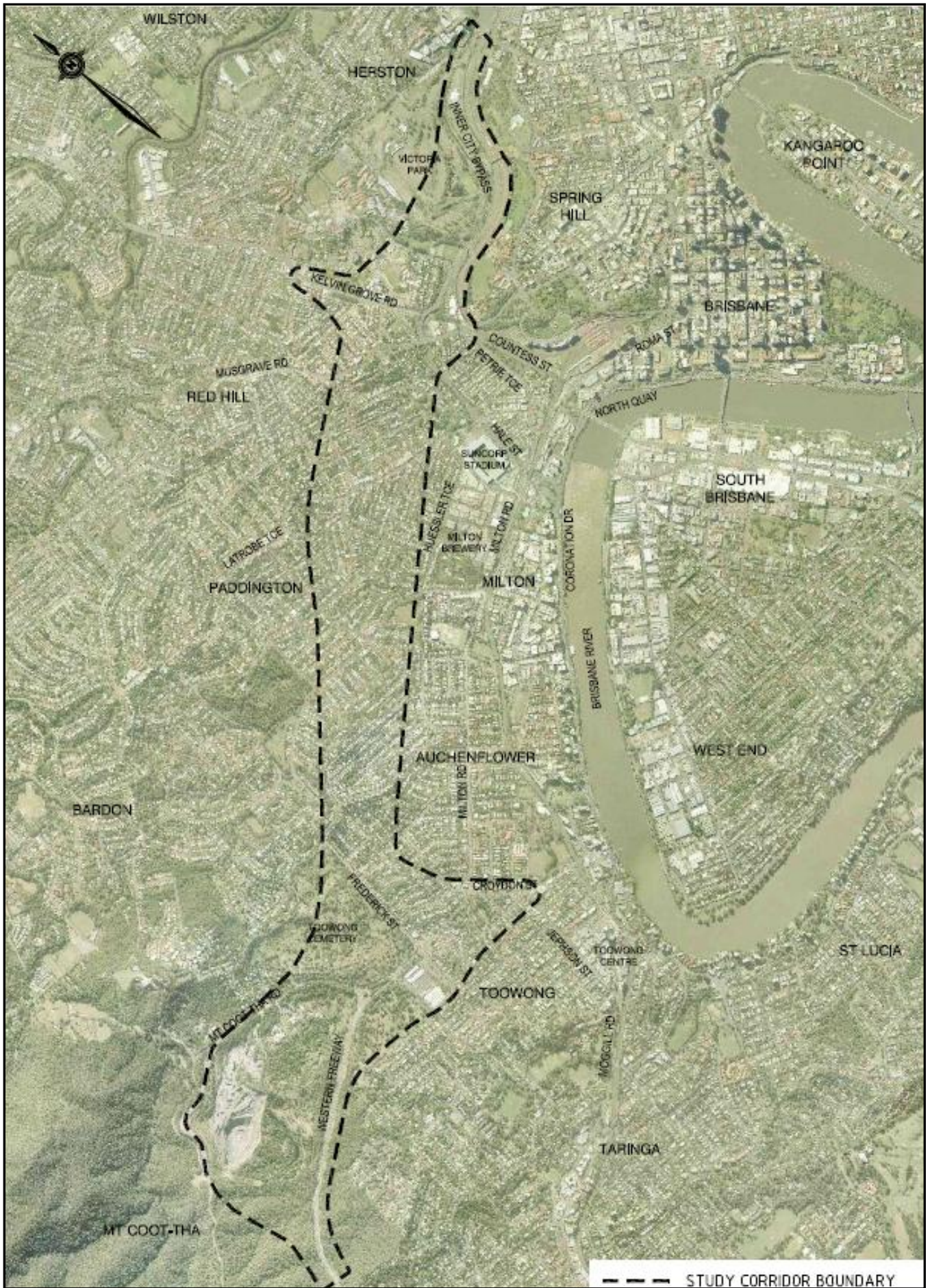
The Preliminary Assessment concluded that the Northern Link project should proceed to the Detailed Feasibility Study with further detailed investigations to be undertaken for Option 1 (Pre-feasibility Bored Option) and Option 2 (Straight Through – no local connections).

Brisbane City Council prepared and submitted an Initial Advice Statement (IAS) to the Coordinator-General in September 2007. The Coordinator-General declared Northern Link to be a project of State significance on 31 October 2007 for which an EIS would be required. The Coordinator-General went on to notify draft terms of reference for the EIS on 1 December 2007, and following consideration of submissions received, issued final terms of reference (ToR) on 18 April 2008.

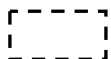
The study corridor for Northern Link for the purposes of this EIS is shown in **Figure 1-1**.

Further detailed investigations have been undertaken since the Preliminary Assessment of both the mainline tunnels and the precinct connections. The developed design of the mainline tunnel alignment, with the local connections, has been taken forward as the Reference Project for the EIS, and is shown in **Figure 1-2**.

³ Brisbane City Council, 2007g, *Northern Link Preliminary Assessment Report*, August 2007, Brisbane.



LEGEND



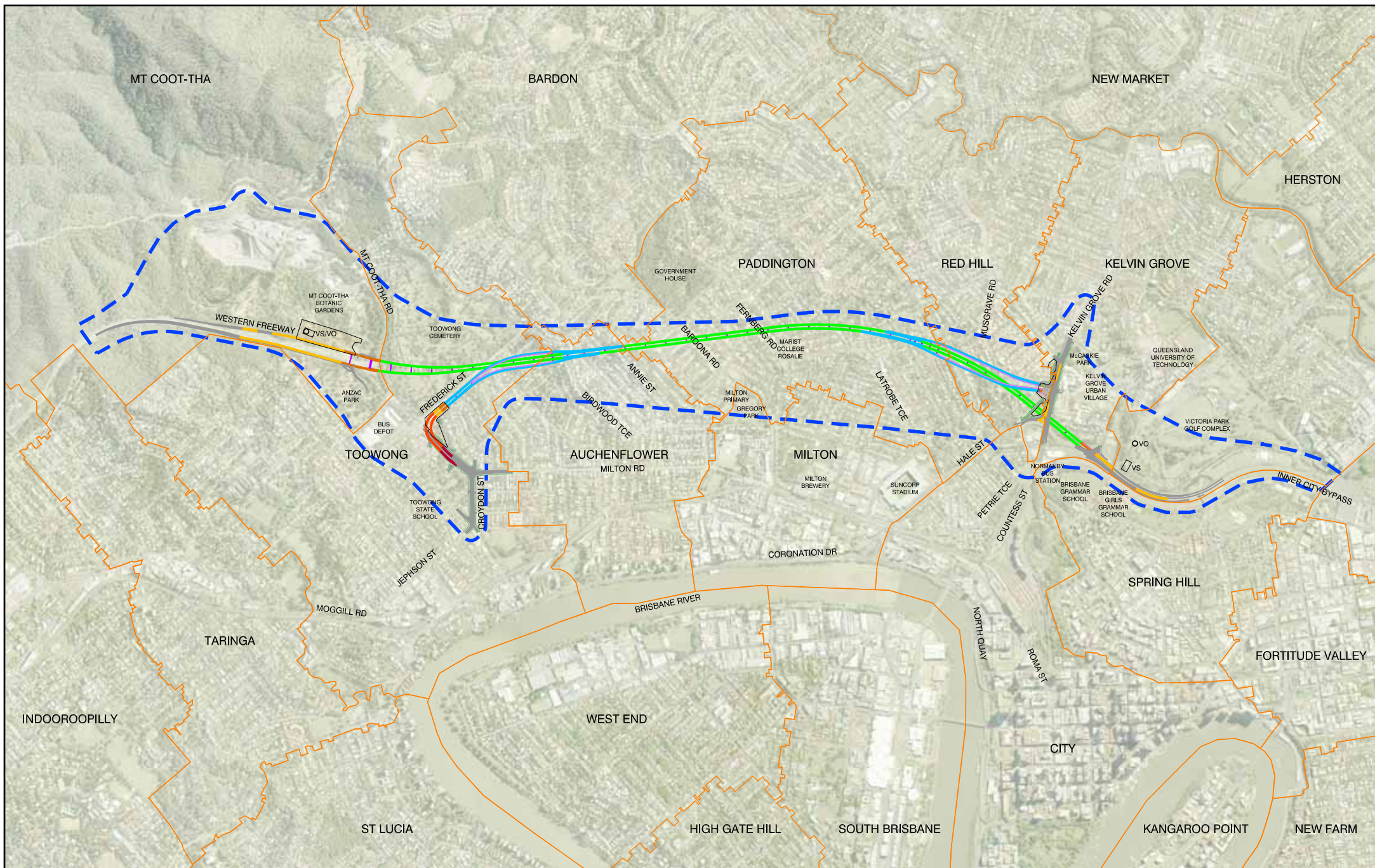
Northern Link Study Corridor

NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 1-1

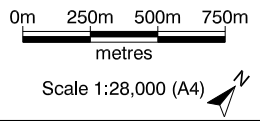
Northern Link Study Corridor





Legend	
	INVESTIGATION AREA
	TUNNEL (ROADHEADER)
	TUNNEL (TBM)
	TUNNEL (CROSS PASSAGE)
	CUT AND COVER
	TRANSITION STRUCTURE
	OVERPASS
	SURFACE WORKS
	EARTHWORKS

	REINFORCED STRUCTURAL SOIL (RSS)
	PROPOSED WORKSITE
	PROPOSED VENTILATION STATION (VS)
	PROPOSED VENTILATION OUTLET (VO)



NORTHERN LINK
ENVIRONMENTAL IMPACT STATEMENT

Figure 1-2
The Reference Project



1.3.1 Consideration of the Project Without Connections

During the development of the project, a design without connections at Toowong and Kelvin Grove has been developed (the 'straight through' option). See **Figure 1-3**.

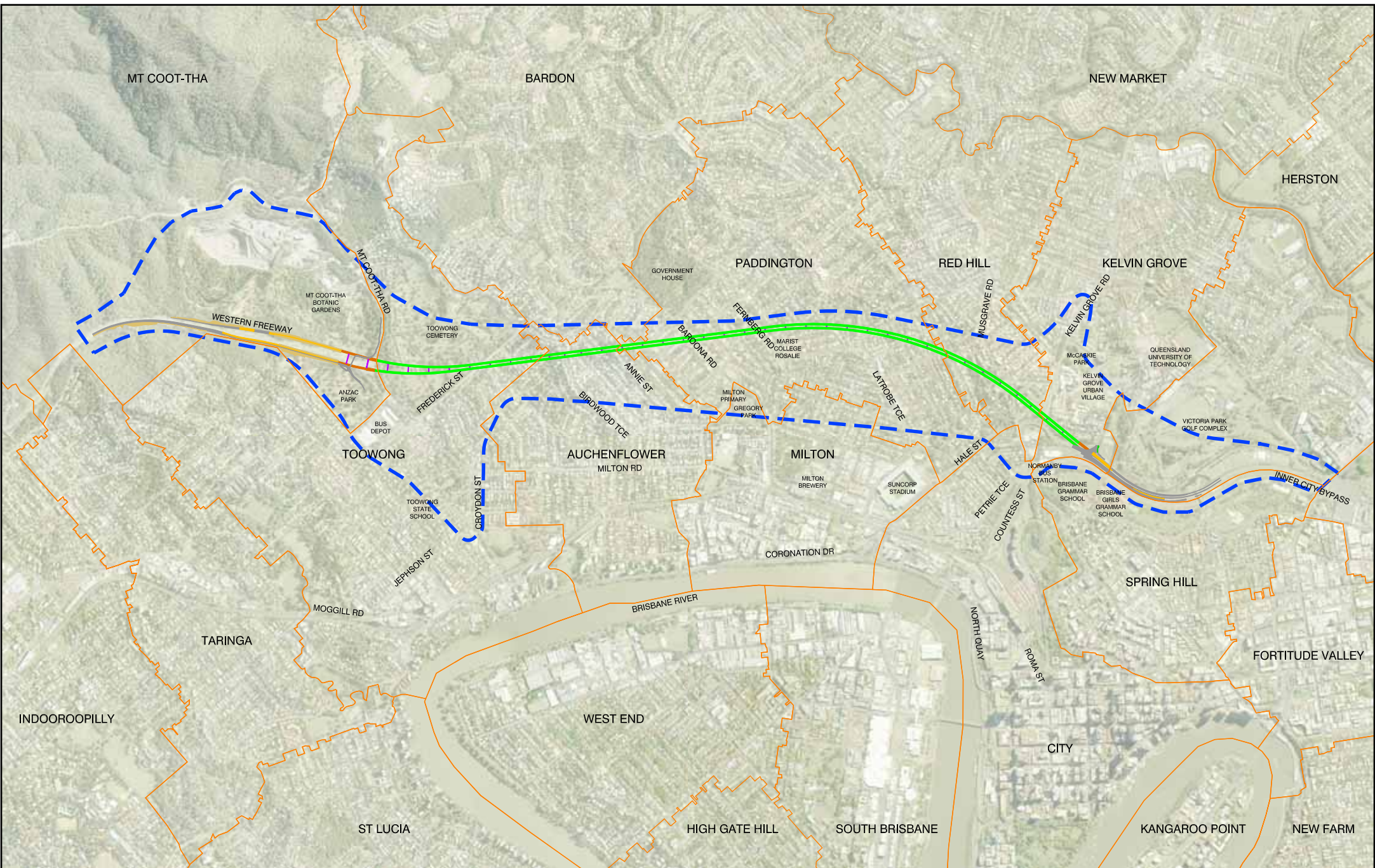
This option is capable of meeting the strategic needs of the project and work to date indicates that it could produce an acceptable outcome for Council while maintaining significant local community support.

In exploring the opportunities for the project, it needs to be recognized that despite the popularity and acceptability of the straight through option with Council and the local community, by seeking innovation through the tendering process these localised connections may provide presently unrecognised benefits for Council and the community. To this end, the Reference Design submitted for consideration includes connections at Toowong and Kelvin Grove. The reasons for this include:

- It would involve a more comprehensive assessment of the project's benefits and impacts than omitting them - and in the interests of the community these impacts and benefits need to be fully understood.
- It would give the community a complete assessment of the project with connections and a good understanding of the project without connections

It is important to note delivery of the project would proceed as a Public Private Partnership and will allow for bidding consortiums to innovate and propose solutions that lead to design improvements over the EIS Reference Design. Public submissions to the EIS will help the consortiums understand local concerns and aid in the potential development of alternative solutions. While there is some initial preference by Council and the local community for the final design not to contain connections at Kelvin Grove and Toowong (as currently detailed in the reference design), it is possible that through the innovative PPP process, proponents may develop solutions that address the concerns of Council and the local community while still providing some form of localised access to the tunnel.

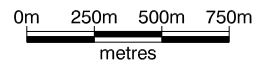
The preferred tenderer is likely to be announced in mid 2009. In order to achieve the best outcome for Council and the community, tenderers need scope to submit proposals that differ from the EIS Reference Design. Consequently, a Request for Project Change may be lodged with the Coordinator General for public comment at that time.



- Legend**
- - - INVESTIGATION AREA
 - TUNNEL (TBM)
 - TUNNEL (CROSS PASSAGE)

- CUT AND COVER
- TRANSITION STRUCTURE

- SURFACE WORKS
- EARTHWORKS



Scale 1:28,000 (A4)



NORTHERN LINK ENVIRONMENTAL IMPACT STATEMENT

Figure 1-3

The Project without local connections

1.4 The Reference Project

The Northern Link Reference Project comprises a two tunnel road system and associated surface connections. The Project links the Western Freeway west of Mount Coot-tha Road to the Inner City Bypass at Kelvin Grove with connections to Milton Road at Toowong and to Kelvin Grove Road. The mainline tunnels would be approximately 5km long with on and off ramps of approximately 700m at the Toowong and Kelvin Grove connections. The on and off ramps vary between one, two and three traffic lanes to facilitate efficient traffic flow and safe driving.

The mainline tunnels would each accommodate two traffic lanes. All tunnels would have a shoulder of sufficient width to allow traffic to pass disabled vehicles. The reference design does not provide for pedestrian or bicycle traffic to use the tunnels for safety reasons.

The system would be mechanically ventilated by drawing air into the tunnels at all portals and forcing it through with the assistance of roof mounted jet fans and extraction points about 150m before the exit of the mainline tunnels. The ventilation system is designed to meet international standards for in tunnel air quality. The tunnel air would be vented to the atmosphere via two elevated tunnel outlets, one at the western connection and one at the Victoria Park. The tunnels would be equipped with fire and life safety measures such as cross-passages, emergency service facilities, tunnel control and traffic management facilities.

The Project is a large and complex construction project in which works may be conducted simultaneously on the either end of the tunnel system. Worksites would be developed with measures to contain, minimise and mitigate the construction impacts on near neighbours. Upon completion of construction, these worksites would be rehabilitated and available for other land use.

The Project would be constructed by a combination of road tunnel techniques including:

- excavation with limited drilling and blasting to break the surface and establish cut and cover and other road heads;
- use of road header machinery for tunnelling and to cut particular tunnel profiles at certain locations; and
- use of Tunnel Boring Machinery (TBM).

The construction period is likely to be around four years commencing in mid 2010.

1.5 The Proponent

Brisbane City Council is the proponent for the Northern Link project. The Brisbane City Council is unique amongst Australian local governments in that it alone provides and operates a public transport system as well as providing and maintaining a comprehensive network of roads, consisting of arterial, sub-arterial, district, neighbourhood and local roads. The Council fulfils this commitment in the fastest growing region, and in the fastest growing city of Australia. Coincidentally with these responsibilities, the Brisbane City Council also delivers a comprehensive range of services and facilities to meet current and future needs of its residents. The Council has a track record as a responsible custodian of the environment through the delivery of numerous services. Indeed, the Council was responsible for the construction and delivery of the successful Inner City Bypass project as well as a number of environmental enhancement programs (eg: Healthy Waterways).

1.6 Environmental Impact Statement

The objectives of the EIS are to identify:

- the existing environment of the area through which the tunnel passes and the surrounding area;

- the potential environmental, social and economic impacts and to ensure that adverse impacts are avoided or mitigated and managed where possible; and
- the potential community benefits, including environmental, social and economic benefits.

The EIS identifies and addresses the legislation and other non statutory guidelines administered by the Commonwealth, State and Brisbane City Council which are relevant to the environmental aspects for the planning, construction and operation of the tunnel.

Potential adverse impacts of the Project are examined fully and remedial measures proposed so that the development of the Project, including the definition of the Project specification, is based on sound economic, social and environmental protection and management criteria.

1.6.1 The EIS Process

Northern Link is a major infrastructure project exempt from assessment under the Brisbane City Council planning scheme. An Initial Advice Statement (IAS) was prepared and submitted to the Coordinator General in September 2007 to determine whether or not the Project was a significant project under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and would require an EIS.

The IAS is required so as to:

- enable determination of the significance of the Project; and
- provide information to enable advisory bodies and the public to have input in to the draft ToR for the EIS.

The Coordinator General declared on 31 October 2007 that the Project was ‘a significant project for which an EIS is required’, and an EIS was to be prepared to satisfy the requirements of the SDPWO Act. The ToR for the EIS were drafted and exhibited from 1 December 2007 to 31 January 2008. Based on the requirements of relevant agencies and submission from the community, the ToR were finalised in April 2008 and a copy is attached as Appendix A in Volume 1 of the EIS.

The EIS also provides the Coordinator General with a framework to:

- consider the economic, social and environmental aspects of the Project in the context of legislative and policy provisions and decide whether the Project can proceed;
- set conditions for approval, as appropriate, to seek to achieve economically socially and environmentally sustainable development; and
- recommend appropriate environmental management and monitoring programmes to mitigate any adverse impacts.

The Project was referred to the Australian Department of Environment, Water, Heritage and the Arts for consideration as to whether the Project constitutes a ‘controlled action’ under the *Environment Protection and Biodiversity Act 1999* (EPBC Act) with respect to potential impacts on matters of National environmental Significance (Referral ref:2007/3824). The delegate of the Minister for the Environment, Water, Heritage and the Arts decided on 30 November 2007 that the Project is not a ‘Controlled Action’ under the EPBC Act.

1.6.2 Structure and Presentation of Findings

The EIS aims to provide sufficient information to allow an informed decision on the potential impacts. The document aims to provide interested bodies or persons with a basis for understanding the Project, alternatives

considered, proposed solutions to particular issues, the existing environment, impacts that may occur and measures taken or proposed to mitigate adverse impacts.

The In Brief (Executive Summary) provides a broad overview of Northern Link, the existing environment and the predicted Project impacts. It also provides a summary of the conclusions reached and the recommendations put forward to the Coordinator General. To gain further understanding of the complexities of the Project, its likely impacts, proposed mitigation measures and outcomes of the process, the In Brief should be read in conjunction with the EIS.

The EIS is presented in three volumes.

- Volume 1: The EIS is a detailed summary document which identifies the key issues, the predicted environmental impacts and recommended mitigation measures.
- Volume 2: Detailed engineering drawings to assist in understanding the complexity of the reference design.
- Volume 3: Technical reports dealing with such matters as traffic and transport, and numerous specialist areas of the biophysical and socio-economic aspects of the environment.

1.7 Consultation

1.7.1 Purpose and Scope of Consultation Process

Preparation of the EIS has involved investigation of local conditions, potential benefits and impacts resulting from Northern Link as well as issues of concern related to Northern Link during construction and operation. Community consultation contributes to the EIS by ensuring studies examine areas of interest to members of the community, and by helping to identify ways to minimise potential impacts and maximise potential benefits of Northern Link. A full description of the consultation programme and its findings is provided in **Appendix B**, Volume 1 of the EIS. Further findings and recommendations on community issues and impacts are examined in Technical Report No 13, Volume 3 of the EIS.

Community consultation was integrated with the preparation of the EIS and development of the Project reference design. Community feedback gathered during community consultation was used in the development and refinement of the Project design, the assessment of potential benefits and impacts and in identification of possible mitigation measures.

The purpose of the EIS consultation was to:

- raise community awareness of Northern Link and the EIS process within local communities and the wider Brisbane population, and to seek community engagement in the EIS process;
- provide information about the nature, scale and purpose of Northern Link to government agencies, stakeholders and the community to enable their review of the EIS and Project design;
- provide information and gather feedback on the potential benefits and impacts of Northern Link and identify local issues of concern arising from the construction and operation of the Project;
- provide information and gather feedback on the concept design, to inform the development reference design and ensure a robust preliminary design in which as many impacts as possible have been mitigated or avoided; and
- inform decision makers of agency stakeholder and community concern about Northern Link.

The consultation process sought to engage Brisbane City Council and Queensland Government agencies, which would have either a regulatory or an advisory role in the design, construction or operation of the Project. The Project is subject to the regulatory provision of Commonwealth, State and local laws.

The consultation process also sought to engage a body of stakeholders, as distinct from interested community groups and individuals. Stakeholder groups ranged from indigenous groups through to industry peak bodies (eg: education, transport, construction) and special interest groups (eg: environmental, cultural, professional).

The consultation approach adopted for the Northern Link EIS sought to ensure that those individuals and groups in the vicinity of construction works and surface connections were provided with the highest level of consultation and communication, while also ensuring that the wider Brisbane community were kept informed about the Project and provided with opportunities to participate in consultation activities.

The consultation approach recognised that there would be strong local interest in communities near to the construction worksites, the portals and the ventilation outlets. At the same time, the process recognised that there would be residents with a broader interest in the ongoing development of the City, including the maintenance of its liveability and the timely provision of appropriate infrastructure to meet predicted population growth.

1.7.2 Agency and Stakeholder Consultation check

Consultation with government and stakeholder groups is critical to the preparation of an EIS if key issues are to be identified early in the process for input into the development of the Project design and the impact assessment. For this EIS, consultation with the government agencies and stakeholders commenced prior to the ToR being finalised and continued through the preparation of the EIS. It is intended to continue this consultative process through the EIS notification period and beyond to resolve any outstanding issues.

The agency and stakeholder process included:

- briefings to individual agencies and stakeholder groups in relation to the ToR, EIS processes and technical matters;
- collective briefings to all relevant State Government agencies and all relevant Brisbane City Council Sections to provide information about the construction and operational aspects of Northern Link and to identify issues of concern; and
- working groups to resolve particular issues, including traffic and transport, air quality, land use and planning, and urban regeneration, and to identify existing policy requirements, strategic directions and to resolve technical issues.

Input received from these sessions was incorporated into the development of the project reference design on which this EIS was based. These inputs also assisted the impact assessment and mitigation work necessary for the EIS. Particular thanks are extended to the following agencies and stakeholders for their contribution:

- Jagera and Turrbal people;
- Department of Infrastructure and Planning (general EIS matters, approvals, air quality);
- Department of Main Roads and Queensland Transport (road network and transport aspects of construction & operational phases of NL);
- Environmental Protection Agency (air quality, approvals, licences and contaminated land);
- Queensland Health (air quality, health risk assessment);

- Brisbane City Council (Active Transport, City Design, City Planning, Community and Economic Development, Major Infrastructure Projects Office, Urban Management, Urban Renewal Task Force).
- Department of Emergency Services (design issues around fire and life safety issues and emergency access)
- Queensland University of Technology (Kelvin Grove Campus development and operation)

1.7.3 Community Consultation

Community consultation is critical in terms of community participation in shaping the City and also in terms of project delivery. Consultation allows local knowledge to be tapped, to identify issues and effects from the perspective of the community that would experience the effects.

The purpose of the EIS consultation was to engage community members in informed discussion about what Northern Link would mean to their neighbourhoods and the City. This approach required regular detailed information about the project design and potential impacts, and multiple opportunities for the nominated community members to participate in consultation.

Consultation addressed multiple interests including property owners, residents near the proposed Project tunnel and surface works, community members and stakeholder groups throughout the inner western suburbs and Brisbane motorists and residents in general. A three tier strategy was employed, with:

- direct engagement with residents, property owners, businesses, community groups and community facilities in neighbourhoods closest to the proposed works, through local neighbourhood consultations, meetings with property owners, businesses, community facilities and other stakeholders, community liaison group meetings, community information sessions and staffed library displays;
- direct engagement with residents, business owners, community groups and community facilities in those suburbs closest to the tunnel alignment, through community liaison group meetings, community information sessions and staffed library displays; and
- provision of information to the greater Brisbane community through newsletters, public displays, a 1800 Project information line, email, website, postcards and media releases.

The consultation process was supported by the broader Project team, enabling a high level of information to and personal contact with residents, businesses and property owners.

1.8 Submissions to the EIS

The declaration by the Coordinator-General of the Project as a significant project under the SDPWO Act sets the statutory framework for the EIS to be prepared for the Project. The EIS is required to be prepared for consideration by the Coordinator-General to ensure that the environmental values of the study corridor are recognised and any project-related impacts adequately managed. In particular, the Coordinator-General's report may:

- state conditions that must apply to a development approval under the IPA;
- recommend requirements for inclusion in a community infrastructure designation under the IPA;
- make recommendations for other approvals; and
- impose conditions.

Further information on the relationship between the EIS and other approvals processes is provided in Chapter 4 of Volume 1 of the EIS.

The EIS for the Northern Link Reference Project is now available for public comment. Written submissions received in relation to the EIS are also taken to be submissions relating to a subsequent development application for impact assessment under the *Integrated Planning Act 1997*.

The Coordinator-General will assess the EIS against the Terms of Reference and must take into account all properly made and other submissions accepted about the EIS. The Coordinator-General may ask the Proponent for additional information in response to matters raised in submissions.

A properly made submission is defined in Section 24 of the SDPWO Act, to mean that the submission:

- (a) is made to the Coordinator-General in writing; and
- (b) is received on or before the last day of the submission period; and
- (c) is signed by each person who made the submission; and
- (d) states the name and address of each person who made the submission; and
- (e) states the grounds of the submission and the facts and circumstances relied on in support of the grounds.

Submissions to this EIS should be addressed to:

The Coordinator-General

c/- EIS Project Manager – Northern Link Road Tunnel

Infrastructure Development Division

Department of Infrastructure and Planning

PO Box 15009 City East Qld 4002

northernlink@dip.qld.gov.au