



connecting the western suburbs to the north



# northern

PRELIMINARY ASSESSMENT REPORT **link**

Civic Cabinet Amended  
August 2007



*Dedicated to a better Brisbane*

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# 1 EXECUTIVE SUMMARY

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## 1.1 BACKGROUND

The Northern Link Project (Northern Link or the Project) is identified as part of the Brisbane City Council (Council) *TransApex* program of network initiatives. These initiatives provide a response to the high level of congestion on Brisbane's traffic network and the increasing demand for mobility, by creating new river crossings and transport links that directly connect to Brisbane's existing motorways and arterial roads. Northern Link is a cross-city tunnel designed to link the Western Freeway at Toowong in the west of Brisbane with the Inner City Bypass (ICB) and Kelvin Grove in the north.

Prefeasibility work undertaken by Council concluded that Northern Link should be advanced to the Preliminary Assessment stage. Council has established an Integrated Project Team (IPT) to complete the Preliminary Assessment.

## 1.2 PURPOSE OF THE PRELIMINARY ASSESSMENT

Council has instructed the IPT to undertake a Preliminary Assessment for Northern Link. The overall objective of the Preliminary Assessment is to assess whether it is appropriate that the potential project be progressed to the PPP Business Case Development Stage<sup>1</sup>.

The Preliminary Assessment has been conducted in accordance with the Queensland Government's Value for Money Framework (VfM Framework) for the Preliminary Assessment stage. Also, as the Federal Government's AusLink program highlights the major transport issues within the Brisbane Urban Corridor, the Preliminary Assessment has been conducted so that the Project's development is consistent with the National Guidelines for Transport System Management (NGTSM) Framework for AusLink initiatives.

Section 2 outlines the Terms of Reference for the Preliminary Assessment in more detail.

## 1.3 COUNCIL AND STAKEHOLDER OBJECTIVES

In recent policy documents, each level of government has raised concern over the level of congestion and efficiency in the Brisbane Urban Corridor transport network and the impact that significant population and industry growth in the Western Corridor will have on the already constrained network. Consideration of potential network improvements is now underway to ensure that the transport network is able to keep pace with imminent demand. The strategic objectives of the Project, consistent with each government's strategic direction for the transport corridor, are to:

- Enhance east-west transport efficiency;
- Provide a motorway standard for freight; and
- Create opportunities for enhanced public transport.

The Queensland Government is currently undertaking the Western Brisbane Transport Network Investigation (WBTNI). The Queensland Government's support for Northern Link is likely to be based on the Project's alignment with the SEQRP, the *Brisbane Urban Corridor Strategy* outcomes and whether WBTNI determines that a western bypass for Brisbane is needed.

Section 3 provides further detail on Council, State and Federal Government strategic policies and objectives that support the development of the Project.

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<sup>1</sup> *Public Private Partnerships Guidance Material - Framework*, Queensland Department of State Development, August 2002.

## 1.4 IDENTIFYING THE PROJECT NEED

An assessment of the future transport and planning needs for the inner northern and western suburbs of Brisbane and the Western Corridor extending from Brisbane to Ipswich has been conducted to determine the need for transport infrastructure in this area. This assessment included the specific need for a road link as proposed for Northern Link to cater for the population growth and economic development arising from the implementation of the Queensland Government's South East Queensland Regional Plan (SEQRP) and Infrastructure Plan and Program (SEQIPP). The assessment also considered the strategic themes of the Federal Government's AusLink program and Council's Transport and Growth Management Plans to assess the priority of the Project in meeting the strategic objectives of Council and the State and Federal Governments.

The assessment identified current deficiencies in the transport network which result in network inefficiencies. If these gaps are not addressed, congestion and network inefficiencies will be further exacerbated as network demand continues to increase. The conclusion that Northern Link is required as a priority to address deficiencies in the current network is further supported by the Economic Analysis (Section 5) conducted as part of the Preliminary Assessment.

In summary, the strategic need for Northern Link is closely aligned with the strategic themes in the SEQRP and AusLink program, and can be described as:

- Providing East-West Connectivity;
- Addressing deficiencies in the National Network to improve freight distribution in and around Brisbane; and
- Improving connectivity and additional capacity in the network and public transport operations to cater for future development.

Section 4 provides further detail on the strategic needs assessment process and outcomes.

## 1.5 PRELIMINARY ECONOMIC ANALYSIS

The economic analysis conducted as part of the Preliminary Assessment supports the view that Northern Link is a critical missing link in the Brisbane transport network and is required as a key piece of infrastructure capable of providing economic benefit to the Western Corridor, greater Brisbane and South East Queensland (SEQ). The analysis identifies the following economic impacts of the Project:

- Qualitative impacts as the Project is strategically aligned with local and regional transport strategies and issues.
- The Project's quantifiable impacts from a regional and State perspective including:
  - Direct time savings for commuters, businesses and freight worth slightly over \$500 million in present value terms, which in turn lead to reduced costs to businesses and the freight sector, and future opportunities for investment in expanding production capacity or the load capacity of freight carriers; and
  - Additional value-added benefits on labour, business and freight productivity levels and business investments in SEQ, estimated at around \$230 million in present value terms.
- The Project's expected wider impacts on amenity and urban regeneration including:
  - Enhancement to the economy's responsiveness to structural changes;
  - Connection of suppliers and markets;
  - Agglomeration benefits;

- Business investment and innovation;
- Improved residential amenity and quality of life;
- Public transport benefits; and
- A more efficient overall transport network for public and private transit by allowing direct SW/NE movements clear of the CBD that were never feasible previously.

Section 5 provides an overview and high level results from the economic analysis undertaken.

## 1.6 THE PROJECT OPTIONS

### 1.6.1 Option A

The technical solution presented for the Project (Option A) is an update of the bored option outlined in Council's *TransApex Prefeasibility Report* in 2005. Option A provides a connection from the Western Freeway near the Toowong roundabout to the ICB at Kelvin Grove, and also provides connectivity between the Toowong precinct and the Kelvin Grove precinct.

The key traffic impacts of Option A include:

- 60,500 vehicles per day (Average Week Day Traffic) in the tunnel in 2026;
- Increases in traffic on the Western Freeway by +4% and the ICB by +21%;
- Combined reduction in traffic on Milton Road/Coronation Drive of -21%

### 1.6.2 Option B

While the Preliminary Assessment process has focused on the delivery of Option A, an alternate option has also been identified for Northern Link which involves a direct connection from Toowong to Kelvin Grove (Option B). Option B provides connection from the Western Freeway west of the Toowong roundabout to the ICB east of Kelvin Grove Road but does not provide connectivity of the Toowong or Kelvin Grove local precincts.

The key traffic impacts of Option B include:

- 39,500 vehicles per day (Average Week Day Traffic) in the tunnel in 2026;
- Increases in traffic on the Western Freeway by +7% and the ICB by +22%;
- Combined reduction in traffic on Milton Road/Coronation Drive of -18%

The potential for public transport solutions to be built into these options will be investigated further at the Business Case stage.

Section 6 provides further discussion on these options.

### 1.6.3 Public Transport Impacts

The inner west and the western suburbs currently have a strong level of bus patronage with significant growth potential. There are limited bus priority measures between the western suburbs and the CBD, and there is no active planning for a Western Busway in the short-medium term. Buses are constrained by traffic congestion on the arterial roads such as Coronation Drive and Milton Road and this will worsen over time.

Northern Link could provide a connection that offers buses with busway standard travel times between the Western Freeway and the Inner Northern Busway connecting to the CBD and northern suburbs. Preliminary modelling indicates that commuters could experience daily travel time savings of up to 26 minutes in 2016 (a 45% saving) for bus travel between the western suburbs and the CBD if express buses were to use Northern Link. Operational efficiencies would also be realised.

## 1.7 RISK ANALYSIS

A preliminary risk analysis has been conducted by the IPT as part of the Preliminary Assessment, consistent with the State Government's VfM Framework. The major risks identified as part of this analysis will be further assessed during the Business Case stage to determine the likely impact on the Project. The primary categories of risk identified are summarised in the table below.

Table 1 Key Project Risks

Risk Category	Description	Potential Impact
Site Risk	This includes the impact of site conditions on construction; cost of land acquisition; cost of environmental compliance; approvals; and community action.	Increased Project time and cost.
Design, Construction and Commissioning Risk	This includes the risk of design not meeting Project requirements; construction program overruns; and inability to commission the Works on completion.	Increased Project time and cost.
Sponsor and Financial Risk	This includes the risk of inability to raise Project funding; forecast refinancing benefits not realised; and market fluctuations.	Increased Project time and cost.
Operating Risk	This includes the risk of Project availability problems; and inadequacy of design or construction.	Decreased toll revenue and increased operating and maintenance costs.
Market Risk	This includes the risk of lower demand for road usage than forecast; impact of changing demographics on demand; and economic downturn.	Decreased toll revenue.
Unplanned Risk	This includes the risk of dispute between contract parties; impact of road network changes; impact of law and regulation changes; and force majeure.	Suspension / termination of Project; increased Project time and cost; and decreased toll revenue.

The risk analysis also included a preliminary quantification of risks as an input into the Preliminary Public Sector Comparator (PSC) analysis. This involved the quantification of risk at the different confidence intervals for each scenario (Best Case = P10, Most Likely Case = P50, Worst Case = P90).

An overview of the risk analysis process undertaken for the Preliminary Assessment and further detail on the risks identified is provided in Section 7.

## 1.8 PRELIMINARY PUBLIC SECTOR COMPARATOR

The VfM Framework requires that a 'Preliminary' PSC is developed to calculate the Net Present Cost (NPC) of the Project. The Preliminary PSC analysis considers the cost impact of Project Options A and B. The June 2006 dollar analysis is consistent with the results of the *TransApex Prefeasibility Report* to provide a like for like comparison and is used through-out this report. Where appropriate, the Preliminary PSC has also been presented as at June 2007 to provide current day costs of the Project.

The key cost assumptions in relation to these options are outlined in the following table:

Northern Link Phase 2: Preliminary Assessment Report

Table 2 Project Cost Inputs

Input - \$'000 (June 2006)	Option A	Option B
Construction Expenditure	1,154,548	813,016
Construction Risk	248,655	248,655
Land Costs	49,085	9,817
Pre-Construction Costs	39,268	39,268
Non-Construction Costs	32,151	32,151
<b>Total Capital Costs</b>	<b>1,523,707</b>	<b>1,142,907</b>

Input - \$'000 (June 2007)	Option A	Option B
Construction Expenditure	1,218,048	857,731
Construction Risk	262,331	262,331
Land Costs	50,313	10,063
Pre-Construction Costs	40,250	40,250
Non-Construction Costs	32,955	32,955
<b>Total Capital Costs</b>	<b>1,603,897</b>	<b>1,203,330</b>

All scenarios maintain consistent tolling assumptions that are summarised in the table below. These assumptions are described in greater detail in Section 8.3.5.

Table 3 Toll Assumptions

Toll Assumptions	\$ (June 2006)	\$ (June 2007)
Motor Cycle Toll (incl. GST) (not modelled)	1.86	1.90
Car Toll (incl. GST)	3.71	3.81
LCV Toll (incl. GST) (not modelled)	5.57	5.71
HCV Toll (incl. GST)	9.83	10.09
Bus Toll (incl. GST) (modelled free)	nil	nil

The Preliminary PSC results have been presented as a range of potential NPC outcomes, reflecting the inherent uncertainty in the expected final costs and traffic forecasts. Multiple scenarios were also assessed to give a representation of the range of projects that will be considered should the Project progress to the Business Case stage. In addition to the PSC-related costs, other costs which will be incurred by Council in undertaking the Project such as land acquisition and procurement costs were also included in the analysis in determining the total Project cost.

The analysis below shows that based on the technical option selected (i.e. Option A or Option B), the range of the most likely project costs is from \$672 million to \$861 million:

Northern Link Phase 2: Preliminary Assessment Report

Options	Most Likely PSC – T3 Lanes on Milton/Coro (2006 \$'000's NPC <sup>2</sup> )	Most Likely PSC – No T3 Lanes on Milton/Coro (2006 \$'000's NPC <sup>3</sup> )
TransApex Prefeasibility	596	N/A
Option A	762	861
Option B	672	756

Options	Most Likely PSC – T3 Lanes on Milton/Coro (2007 \$'000's NPC <sup>4</sup> )	Most Likely PSC – No T3 Lanes on Milton/Coro (2007 \$'000's NPC <sup>5</sup> )
TransApex Prefeasibility	653	N/A
Option A	836	944
Option B	736	828

Detailed PSC analysis was undertaken on Option A and concluded the following key points:

- The total Project cost range (i.e. including land and procurement costs) for Option A is \$464 million to \$889 million in NPC in 2006 dollars, with a Most Likely Case of \$762 million<sup>6</sup>;
- A comparison of the analysis results relating to Most Likely Case of the Project Options is shown in Table 4.

Table 4 Project Scenario Analysis

PSC NPC (\$million 2006) <sup>7</sup>	T3 lanes	No T3 Lanes
<i>TransApex Prefeasibility Report</i> <i>Direct driven tunnel, connectivity to Toowong and Kelvin Grove</i>	596	N/A
Option A <i>Direct driven tunnel, connectivity to Toowong and Kelvin Grove</i>	762	861
Option B <i>Direct driven tunnel</i>	672	756
E&C Motion 1 <i>2002 \$2.00 toll (incl. GST) over a 35 year operating period</i>	N/A	1,036
E&C Motion 2 <i>2002 \$3.30 (incl. GST) toll over a 35 year operating period</i>	N/A	892

<sup>2</sup> Discounted at the nominal PSC discount rate of 9.6% as at a base date of 30 June 2006. This makes the analysis consistent with the results of the *TransApex Prefeasibility Report* and allows a like for like comparison.

<sup>3</sup> Discounted at the nominal PSC discount rate of 9.6% as at a base date of 30 June 2006. This makes the analysis consistent with the results of the *TransApex Prefeasibility Report* and allows a like for like comparison.

<sup>4</sup> Discounted at the nominal PSC discount rate of 9.6% as at a base date of 30 June 2007.

<sup>5</sup> Discounted at the nominal PSC discount rate of 9.6% as at a base date of 30 June 2007.

<sup>6</sup> This represents the Most Likely shortfall of the costs and revenues associated with the project in NPC terms (2006\$).

<sup>7</sup> Discounted at the nominal PSC discount rate of 9.6% as at a base date of 30 June 2006.

PSC NPC (\$million 2007) <sup>8</sup>	T3 lanes	No T3 Lanes
<i>TransApex Prefeasibility Report</i> <i>Direct driven tunnel, connectivity to Toowong and Kelvin Grove</i>	653	N/A
Option A <i>Direct driven tunnel, connectivity to Toowong and Kelvin Grove</i>	836	944
Option B <i>Direct driven tunnel</i>	736	828
E&C Motion 1 <i>2002 \$2 toll (incl. GST) over a 35 year operating period</i>	N/A	1,135
E&C Motion 2 <i>2002 \$3.30 toll (incl. GST) over a 35 year operating period</i>	N/A	978

Section 8 provides further detail on the methodology and outcomes of the Preliminary PSC and financial analysis, including a reconciliation with the *TransApex Prefeasibility Report*.

## 1.9 PRELIMINARY AFFORDABILITY ANALYSIS

While the financial analysis outlined in Section 9 considers the impacts of the Project in NPC terms, the affordability and whole of life impact that the Project funding requirements will have on Council's annual operations has also been assessed. Key findings include:

- The affordability outcomes for Council under a BOOT should be considered in the context of the NPC of the PSC rather than the cost of construction as is the case under a traditional procurement approach;
- Consistent with conclusions reached in the *TransApex Prefeasibility Report*, alternative funding options should be considered, including:
  - Considering alternative delivery models, whereby the private sector funds the upfront construction costs (e.g. the BOOT model) consistent with the *TransApex Prefeasibility Report*; and
  - The requirement for external funding from the Federal and/or State Government for the Project to proceed.

These options will be considered in greater detail at the Business Case Stage, as outlined in Section 1.11.

## 1.10 DELIVERY MODEL ANALYSIS

A range of traditional, publicly funded models and privately financed or Public Private Partnership (PPP) models have been identified for the Project:

### Traditional/Publicly Funded Models

- Alliance Model;
- Design & Construct (D&C); and
- Design, Construct, Maintain plus Operate (DCM+O).

### Privately financed/PPP Models

- Service Payment Model;
- Shadow Toll Model; and
- Build, Own, Operate, Transfer (BOOT) Model.

<sup>8</sup> Discounted at the nominal PSC discount rate of 9.6% as at a base date of 30 June 2007.

The identification of potential delivery options has been undertaken with consideration of the *TransApex* Prefeasibility undertaken by Council and relevant State and Federal Government guidelines. Section 10 provides a discussion and high-level review of the advantages and disadvantages of each of the models identified. While the *TransApex Prefeasibility Report* identified the BOOT model as a likely PPP delivery model, the financial analysis conducted as part of the Preliminary Assessment indicates that a significant subsidy may be required if the Project is delivered under a BOOT style model (refer Section 10 for further detail). Further assessment and recommendation of a preferred procurement model will occur during the Business Case stage.

## 1.11 MARKET REVIEW AND PRELIMINARY TRANSACTION STRATEGY

Section 11 provides a preliminary assessment of private sector interest in the Northern Link Project and outlines a preliminary transaction strategy.

This assessment suggests the following:

- The bidding market has broadened, including potential for new players entering the market since North South Bypass Tunnel (NSBT) reached Financial Close. This is demonstrated by the number of bidders (four) that have formed for Airport Link / Northern Busway;
- Queensland has successfully captured the Australian market's attention by delivering a deal pipeline: NSBT, Gateway Upgrade, Hale Street Bridge and Airport Link / Northern Busway. There is an opportunity for Northern Link to capitalise on this rolling 'pipeline';
- There is significant market appetite for toll road projects. This has not been affected by the Cross City Tunnel situation in NSW; and
- Based on current known project timeframes in other States, accelerating the Northern Link Business Case and procurement timetable would increase the chances for the Project to have a clear bidding 'window' whereby it could be the sole major toll road project in procurement. This will maximise market interest.

## 1.12 RECOMMENDATIONS AND OUTSTANDING ISSUES FOR THE BUSINESS CASE STAGE

This Preliminary Assessment Report recommends that the Project is progressed through to the Business Case stage because, in accordance with the Queensland Government's VfM Framework, this Preliminary Assessment has:

- Identified the Technical Solutions that meet the Project's service requirement;
- Identified the appropriate delivery options for each Technical Solution to determine the potential for a PPP arrangement; and
- Developed a preliminary assessment of market interest and preliminary transaction plan in preparation for the Project Business Case stage.

This Report further recommends that:

- The issues or gaps summarised below and outlined in Section 12.2 are addressed during the Business Case stage to strengthen and enhance the development of the Project; and
- The IPT investigates accelerating the transaction timetable to ensure that the bidding market for the Project is optimised in light of the timing of other major projects (i.e. construction to commence in 2010), as discussed in Section 11.

Several Council considerations have also been identified which will be addressed during the development of the Business Case. In summary these issues include:

- Strategic Issues: Timing of the Project and securing State and Federal Government support.

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- **Delivery Options:** The delivery option which offers the greatest potential for value for money will be selected as the preferred method of delivering the Project.
- **Traffic and Tolling:** Enhancements to the traffic modelling and tolling analysis.
- **Technical and Environmental Issues:** Refinement of the Project strategic options, capital costs, risk analysis, environmental requirements, geotechnical investigations, planning and other approvals.
- **Financial and Economic Issues:** The cost, affordability and expected benefits of the Project require further analysis, including consideration of any private sector finance structuring.

## 2 TERMS OF REFERENCE

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### 2.1 BACKGROUND

Northern Link is a key 'missing link' in the Brisbane Urban Corridor and has been identified as a crucial project to relieve congestion on arterial roads and improve the cross-city connectivity of Greater Brisbane. Northern Link also has a significant strategic role in delivering State infrastructure strategies, including the SEQRP, SEQIPP and development of the Australia TradeCoast. The Brisbane Urban Corridor is part of the AusLink National Road Network and Northern Link is considered to align closely with the National AusLink Program objectives of sustainable growth as well as national and regional economic growth.

Prefeasibility work undertaken by Council during the preparation of the *TransApex Prefeasibility Report* (March 2005), concluded that Northern Link is critical to Brisbane's transport infrastructure upgrade program and will deliver substantial financial, economic and social benefits both locally and nationally.<sup>9</sup>

The Preliminary Assessment conducted for Northern Link provides an update of the analysis undertaken at the Prefeasibility stage and has been undertaken in accordance with the Queensland Government's VfM Framework and is broadly aligned with the objectives of the Australian Government's NGTSM.

Council intends, through the Major Infrastructure Projects Office (MIPO), to conduct the detailed Business Case stages in accordance with the principles of the Queensland Government's VfM Framework. It is envisaged that this work will commence over the next 12 months.

### 2.2 PURPOSE OF THE PRELIMINARY ASSESSMENT

#### 2.2.1 Terms of Reference

Council has instructed the IPT to undertake a Preliminary Assessment for Northern Link.

The overall objective of the Preliminary Assessment is to assess whether it is appropriate that the potential project be progressed to the PPP Business Case Development Stage.<sup>10</sup> The Queensland Government's VfM Framework guidance outlines the following actions to be undertaken as part of a Preliminary Assessment:

- Refinement of Technical Solutions that meet the project's service requirement.
- Identification and assessment of the appropriate delivery options for each Technical Solution to determine the potential for a PPP arrangement, including:
  - Initial cost estimates on a whole of project life basis;
  - Preliminary identification and notional allocation of risks;
  - Economic and financial analysis;
  - Identification of environmental, planning, cultural heritage and native title issues;
  - Identification of employee, employment and skills development issues;
  - Preliminary public interest assessment; and
  - Assessment of potential private sector interest.
- Development of a Project Resource Plan in preparation for the Project Business Case stage.
- Consideration and approval of the project to proceed to the Business Case stage.

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<sup>9</sup> Including the *TransApex Strategic Context Report*, Brisbane City Council, February 2005.

<sup>10</sup> *Public Private Partnerships Guidance Material – Framework*, Queensland Department of State Development, August 2002.

The above tasks have been considered as part of the Preliminary Assessment process and can be grouped together to define the Terms of Reference for the Preliminary Assessment:

#### Assessment of Northern Link

The conceptual corridor for Northern Link presented in the *TransApex Strategic Context Report* in February 2005 was further assessed and refined and the results documented in the *Northern Link (Western Freeway, Toowong to Inner City Bypass, Kelvin Grove) Options Investigation Report* (the Investigations Report) by Sinclair Knight Merz/Connell Wagner Joint Venture (SKM/CW) in January 2005. The 'Bored Option' presented in the Investigations Report has been further assessed to ensure that the options presented in the Preliminary Assessment best meets the service requirements of the Western Corridor. This option (Option A) is the focus of the Preliminary Assessment and is described in Section 6. An assessment of possible alternative Project scenarios created by further enhancing Option A has also been undertaken and these options are described in Section 6.

#### Identifying the Project's Service Need and Priority

The *Planning Needs Assessment Report* prepared by SKM/CW in May 2007 assesses the future transport and planning needs for the inner northern and western suburbs of Brisbane and the Western Corridor, to determine the need for transport infrastructure in this area.

The *Preliminary Economic Analysis Report* prepared by Ernst & Young (EY) for the Preliminary Assessment further assesses and identifies the likely need and expected economic impact of the Project. The report also consider the role that the corridor plays in freight, business and commuter movement within SEQ, to assess the need and priority of the Project from a regional and State perspective.

These Reports identify the service need of the Project to address road capacity constraints in the western corridor and to improve the orbital road network in Brisbane. The priority of the Project is supported by the fact that continued growth in the population and economic activity in SEQ will result in increased freight movement, business and personal travel demands for already significantly congestion routes within the corridor.

#### Preliminary Financial Assessment

A Preliminary PSC has been developed for the Northern Link Option A, to provide a preliminary assessment of the risk-adjusted cost to Council of undertaking Northern Link under traditional procurement. To assist Council in assessing the financial viability of the various technical options identified, a range around the Preliminary PSC has also been developed representing the Best Case, Most Likely Case and Worst Case scenarios. This will provide Council with a preliminary indication of where to set the affordability envelope for the Project. This envelope will be updated following the completion of detailed analysis during the Business Case stage.

#### Assessment of Potential Delivery Models

Alternative Delivery Models, including potential PPP models, require consideration as per the VfM Framework. The Preliminary Assessment has identified a number of potential models and undertaken a preliminary assessment of the suitability of the models identified.

#### Material Gaps and Outstanding Issues

A review of work completed to date for the Northern Link Project has been conducted. Material gaps or issues spanning strategic, technical, traffic, financial/commercial and legal disciplines have been identified. This is designed to provide Council and the IPT with a focused action plan of key issues that need to be addressed as part of the Business Case (refer Section 12).

### 2.2.2 Key Outputs

The key outputs to be delivered by the Preliminary Assessment can be summarised as follows:

- Update of the Base Case technical option identified in the *TransApex Prefeasibility Report*;
- Development of a preliminary PSC;
- Preliminary identification of key risks;
- Identification and preliminary assessment of potential delivery models;
- Preliminary assessment of economic impacts of the Project;
- Identification of the key gaps across all disciplines that require focus during the Business Case stage; and
- A market review and preliminary transaction strategy.

### 2.2.3 Key Contributors

The Preliminary Assessment has been prepared by the IPT comprising:

- Brisbane City Council;
- SKM/CW - Technical Advice; and
- EY - Financial, Commercial and Economic Advice.

### 2.2.4 Project Workshops

A number of workshops have also been held with key Council staff and members of the IPT to discuss:

- The purpose of the Preliminary Assessment;
- The suitability of the technical options identified;
- Preliminary identification and assessment of Project risks; and
- The suitability of various traditional and PPP delivery models.

## 3 STRATEGIC OBJECTIVES

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### 3.1 OVERVIEW OF COUNCIL'S CORPORATE STRATEGY

Council actively engages with the community to guide the city's future growth and development and Council's corporate strategy has been developed with extensive consultation with the community.

The *Living in Brisbane 2026* vision aims to ensure that Brisbane is a great city to live in, now and in the future. This vision is reflected in Council's eight *Living in Brisbane 2026* themes:

- Accessible and connected city;
- Active and healthy city;
- Well designed and subtropical city;
- Friendly and safe city;
- Clean and green city;
- Vibrant and creative city;
- Regional and world city; and
- Smart and prosperous city.

*Living in Brisbane 2026* develops a vision based upon Brisbane's position as a highly liveable city, where Council's regional responsibilities, particularly regarding planning and innovation, are recognised.

The *Living In Brisbane 2026* themes are carried forward into a range of Council operational plans, including the *Transport Plan for Brisbane 2002-2016* and the *TransApex Prefeasibility Report*. An overview of these and other strategic plans is provided in the following section.

### 3.2 COUNCIL'S STRATEGIC PLANS AND OBJECTIVES

#### 3.2.1 Transport Plan for Brisbane 2002-2016

In 2002, Council released the *Transport Plan for Brisbane* (the Plan), which provides critical information on the transport challenges facing Brisbane to 2016 and also presents transport strategies and actions to address these challenges. The Plan builds on the *Evolution in Motion* integrated transport strategy released in 1998.

#### Transport Challenges

Brisbane is expected to experience considerable congestion, specifically urban congestion, as a result of rapid population growth, causing increased travel demand. Congestion impacts on people's lifestyle as well as the State's overall economy by causing delays to goods and increased business operating costs, accidents and environmental costs. The cost of this congestion for Brisbane is expected to reach \$9.3 billion per annum by 2015, if upgrades to the transport system to address the increasing transport needs are not implemented.

The Plan states that Brisbane's population has grown by 1.4% annually and estimates that by 2016, the Brisbane metropolitan area will contain more than two million people, with over three million people predicted to be living within the SEQ region. This growth in population will be most significant in Brisbane's outer suburbs and surrounding government areas such as Logan, Ipswich, Redlands and Pine Rivers. By 2016, around 50% of Brisbane's population is expected to live in the outer suburbs and more than one million people will live within local government areas, commuting into Brisbane for work and leisure. Employment growth within the Brisbane City and TradeCoast is expected to grow by 95% to 2016, with 90% of Brisbane residents and 50% of surrounding local government residents working within these areas.

The Plan also states that traffic volumes on Council roads have increased by 1.8% annually and 2.3% annually on State Government roads. Public transport patronage has also increased, however to a lesser extent than overall travel demand, resulting in a decrease in public transport mode share from 11% in 1976 to 6.9% in 2000. The Plan outlines that the preference for private vehicle transport is expected to continue, with the number of vehicle trips within Brisbane expected to increase by 30% to 2016 and the total kilometres travelled increasing by 41% over the same period.

#### Strategies and Actions

The Plan's strategies and actions for managing the emerging transport issues for Brisbane are outlined under the following strategic objectives:

- Quality Public Transport;
- Managed travel demand;
- Coordinated transport and land use;
- A safe and efficient road network;
- Delivering the goods on time to the right place; and
- More clean and green personal transport.

The Plan also sets out the key Council initiatives for implementing the above strategies. The following initiatives outlined in the Plan are of most relevance to Northern Link:

- **Transport investment supporting Brisbane's major centres and integrating with land use:** Increasing access and connectivity between a high quality transport network, Brisbane's diverse residential communities, employment areas and the City's major centres including Toowong and Indooroopilly in the North Urban Corridor.
- **An effective road network and freight hierarchy that supports industrial and commercial growth areas:** With 90% of Brisbane's freight movement occurring by road, and the level of freight expected to double by 2016, this initiative seeks to balance the needs of industry, the environment and residents by establishing policies on road capacity, economic efficiency, road safety, residential liveability and asset management. Many routes in the Urban Corridor are identified as primary freight routes, which cater for urban and local traffic.
- **High quality orbital road network (including NSBT) delivered as a sustainable package including bus priority, cycle, pedestrian and inner city urban design improvements:** Upgrades to regional access roads from the metropolitan area will place greater pressure on the metropolitan orbital road network. This network has significant deficiencies, especially in providing cross-city access. By upgrading the orbital road network, cross-city traffic will be moved away from major centres, the CBD, residential areas and lower order roads, easing the demand on these roads and improving access to regional access roads.

#### Funding Options

The Plan identifies funding needs of \$16.6 billion over 15 years and it is anticipated that this funding will come from various government sources and the private sector. The funding options for implementing the plan include:

- Tolls in major corridors to manage peak demand and provide additional investment for transport investment;
- Australian Government funding for deficiencies in the National highway network; and
- Adopting PPPs tied to government payment streams and access charges for commuters.

### 3.2.2 Brisbane Transport Plan Update 2006-2026

In 2006, the *Transport Plan for Brisbane Update 2006-2026* (the Update) was released, to update the *Brisbane Transport Plan 2002-2016* to account for policy documents such as the *TransApex Prefeasibility Report* (Section 3.2.4), SEQRP (Section 3.3.1) and *CityShape* (Section 3.2.3) that have been developed since 2002. The Update takes a longer-range focus and provides more detail around the public transport services and infrastructure needed for a sustainable future.

The Update is structured under the same strategic objectives as the 2002-2016 plan (refer Section 3.2.1) and sets out additional actions that all governments need to take to ensure that Brisbane does not face the same congestion future as many other cities. The initiatives relevant to Northern Link are:

- Strategic Objective 1 – Quality Public Transport: Providing a high level of access to facilities and services in Brisbane, reducing the need to use a car.
- Strategic Objective 3 - Coordinated Transport and Land Use: Appropriate transport access to major economic growth areas such as the Australia TradeCoast and Western Gateway.
- Strategic Objective 4 - A Safe and Efficient Road Network: The need to establish an orbital road network, especially in Western Brisbane.
- Strategic Objective 5 - Delivering the Goods on Time to the Right Place: Northern Link is mentioned as an initiative to improve freight movement around Brisbane.

The funding needs for the initiatives identified in the plan are estimated to be worth \$37 billion dollars (2006 dollars) for all capital, operating and maintenance costs

### 3.2.3 CityShape - Brisbane's Local Growth Management Strategy

In June 2005, SEQRP was released by the Queensland Government to provide a framework for managing population growth and development in the region to 2026. SEQRP required all councils in SEQ to prepare a Local Growth Management Strategy. The *Draft CityShape Implementation Strategy* is Council's response to the SEQRP's requirements and acts as Brisbane's Local Growth Management Strategy. The Local Growth Management Strategy translates policies, targets and planning concepts in SEQRP into practical strategies that can be implemented by the Councils.

### 3.2.4 TransApex Prefeasibility Report

The *TransApex Prefeasibility Report* was released in March 2005. *TransApex* provides a strategic contribution to achieving the following desired outcomes and sustainable transport planning principles, many of which are aligned with the objectives and initiatives of the *Brisbane Transport Plan*:

- Safer Communities: Safe transport, support personal security.
- Supporting Economic Growth: Efficient and sustainable transport, integrated land use and transport, financially responsible planning.
- Creating Liveable Communities: Road hierarchy related and related transport management, avoid community severance, equitable access to public transport, support for pedestrians and cycling, support for appropriate development, support for community safety.

The purpose of the *TransApex Prefeasibility Report* is to examine the financial and technical viability of several proposed road links in addition to NSBT, which was under development at the time of the Report. The Report proposes a series of tolled tunnels to provide a ring road network around the Brisbane CBD to facilitate new and more efficient traffic movements and river crossings.

Figure 1 TransApex Projects<sup>11</sup>



The *TransApex* projects are:

- NSBT: A cross-river tunnel linking the Pacific Motorway and Ipswich Road at Woolloongabba and Shafston Avenue at Kangaroo Point in the south and Lutwyche Road and the ICB at Bowen Hills in the north. As NSBT was in the process of being procured at the time of the Report, it is not included in the Prefeasibility Report.
- Airport Link: A continuation of NSBT mainly by tunnel north to Stafford Road, Gympie Road and the East-West Arterial, linking to Airport Drive.
- Hale Street Link: A cross-river connection between Hale Street at Milton in the north and Cordelia Street, Merivale Street and Montague Road in South Brisbane.
- Northern Link: A cross-city tunnel linking the Western Freeway at Toowong in the west with the ICB and Kelvin Grove Road in the north.
- East-West Link: A cross-river tunnel linking the Pacific Motorway and O’Keefe Street at Buranda in the east to the Western Freeway and Toowong in the west.

These projects seek to address the gaps in Brisbane’s transport network by providing an alternative route for cross-city trips, to reduce traffic travelling on Brisbane’s CBD and inner city roads and reduce unnecessary congestion on existing roads. This approach to improving Brisbane’s orbital road network and addressing increased congestion on existing roads is consistent with the Council initiatives outlined in the *Transport Plan for Brisbane*. Reduced congestion will also allow for improved public transport to and from the inner city and suburban centres during peak periods and provide urban renewal opportunities along and adjacent to various *tunnel alignments*.

<sup>11</sup> *TransApex Prefeasibility Report*, Brisbane City Council, March 2005.

*The TransApex Prefeasibility Report* builds on the forecasts in traffic and demographics outlined in the *Transport Plan*, to assess the level of congestion already present on many of Brisbane's key arterial roads (2003 data).

For Northern Link, the *TransApex Prefeasibility Report* states that the arterial roads joining the Western Freeway to the ICB were already operating at congested levels during inbound peak periods and close to congested levels during outbound peak periods. It also states that the supporting roads, such as the Western Freeway and ICB, do not experience such congestion during peak travel periods. This trend indicates that major congestion on Brisbane's arterial roads network results from the mix of cross city traffic and peak traffic travelling to the existing arterial road network.

### 3.2.5 Council's Strategic Objectives

Northern Link is a fundamental element of the *Transport Plan for Brisbane* and *TransApex Prefeasibility Report* and supports Council's vision and urban strategy. While Council's specific Project objectives will be further refined during the Business Case stage, the strategic objectives of Northern Link can be described as:

- Reducing CBD traffic by completing the inner-city ring road system and providing a high quality bypass to the north of the CBD. This should provide increased network efficiency, improved journey time and improved reliability of journey time;
- Improving road safety by providing a good quality bypass route. Further to provide improved safety for pedestrian and cycle access along the bypass corridor;
- Environmental improvements, especially in air quality and noise reduction for the residents and communities along the bypass corridor;
- Urban renewal opportunities in key inner city areas;
- Provision in such as a way as to strengthen the Council's ability to fund further transport infrastructure projects in the future based on an affordable project that ensures sustainable asset management;
- Development and delivery of the Project in a manner that is supported by the community, State Government and Federal Government and provides Council with confidence that it is securing a value for money outcome; and
- Targeted public transport enhancements to address congested transport corridors and to reduce delays by public transport vehicles caught in congestion within the CBD and radial corridors.

## 3.3 STATE GOVERNMENT STRATEGIC PLANS AND OBJECTIVES

The State Government is actively improving the level of infrastructure and infrastructure planning in Queensland. It is therefore important that Northern Link is assessed not only against the priorities of the local Brisbane network but also the wider State and National infrastructure network. It is also important that if Northern Link is developed as a toll road that the structure of the Project and the tolling mechanism developed is consistent with the State's tolling policy.

### 3.3.1 South East Queensland Regional Plan and Infrastructure Program and Plan

The SEQRP is the statutory regional planning strategy that guides growth and development in SEQ. The SEQRP was released by the Queensland Government and the South East Queensland Regional Organisation of Councils on 30 June 2005.

In October 2006, the State Government released several amendments to the SEQRP. The amendments included a change in the long term population growth projections to reflect the State Government's updated population data from July 2006. This update resulted in the long-term medium population growth average moving from 50,000 to 60,000 people per year.

To support the SEQRP and guide the preferred pattern of development, the Queensland Office of Urban Management prepared the SEQIPP, which outlines the State's multi-billion dollar investment blueprint to fund regionally significant infrastructure projects over the next 20 years.

SEQIPP sets out the future pattern of development for the region and outlines the preferred urban structure to guide this development, and to protect the environmental values and liveability of the region as well as supporting economic development. The aim of this structure is to develop a sustainable future for the region.

SEQIPP outlines priority infrastructure projects and key strategic directions for the region. The key strategic directions are:

- A more compact urban form: Increasing population density around activity centres to make efficient use of land, infrastructure and services.
- Development in the Western Corridor: Encouraging major industry development and employment growth due to available, unconstrained land in the corridor.
- Sub-regional self containment: Encourage the use of local services to reduce traffic on the region's road system, improve communities and reduce environmental impacts.

For the Greater Brisbane region, SEQIPP outlines an investment program to meet the strategic needs of the area:

- Quality public transport connections between Principle Activity Centres;
- Better transport links to industrial and logistics centres, particularly to the Australia TradeCoast; and
- Orbital road networks that link centres outside the inner city reduce traffic congestion and provide a sound basis for future traffic management.

The first phase of the investment program from 2006-07 to 2009-2010 outlines projects to be developed to meet these strategic needs, and includes such projects as NSBT, Airport Link and investigations to improve the orbital road network and bypass road networks in Western Brisbane. Subsequent programs will build on the projects outlined in the investment program to further address the strategic needs of the area. Northern Link is identified as a potential road infrastructure improvement to service the Brisbane metropolitan area and it is anticipated that Northern Link will be considered as a key project requiring implementation under future SEQIPP investment programs.

### 3.3.2 State and Federal Governments - Brisbane Urban Corridor Strategy

The *Brisbane Urban Corridor Strategy* (the Strategy) is a statement of the shared strategic priorities of the Australian and Queensland Governments for the long term development of the corridor. The corridor itself covers the Brisbane City Council and local government areas of Ipswich City, Logan City and Pine Rivers.

The purpose of the Strategy is to provide guidance on the development of network initiatives and to assist the development of subsequent AusLink National Land Transport Plans. The Strategy assesses the current profile of the corridor, the changes expected in the corridor by 2030 and the resulting transport challenges that the corridor is likely to face.

The key challenges for the corridor are centred on five strategic themes:

- East-west transport efficiency, safety and reliability across the broad corridor extending from the Ipswich and the western growth area to the CBD, Australia TradeCoast and Pacific Motorway.
- Efficient, safe and reliable transport for the broader corridor extending from the expanding Gold and Sunshine Coast areas, to the CBD and Australia TradeCoast precinct.
- Improved freight distribution and travel within and around Brisbane, including key links that support the AusLink national network.
- Preparing for future passenger and freight transport needs for road, rail and intermodal terminal expansion and development.
- Efficient operation of the rail system to support significant growth in both freight and passenger tasks.

The Strategy then outlines the short term strategic response to addressing these challenges in the long-term, as well as looking at longer term priorities from 2015. Northern Link is identified as a short term response to address the east-west transport challenge: "Investigate the transport network in Brisbane's inner west to explore possible network links including expansion of the Brisbane Urban Corridor to include the Centenary Highway and its connections to the existing AusLink network (e.g. Northern Link)."<sup>12</sup>

In May 2007, Council submitted a response to the Strategy. Council agreed that the Strategy, along with the implementation of Northern Link, would complete a major, high quality east-west road corridor north of the Brisbane River, meeting the needs of a rapidly growing population and economy. It would ease congestion, link key inter-state and intra-state corridors and integrate with land use planning to deliver travel safety, security, amenity, reliability and efficiency benefits to industry and the community. Council also agreed that the Strategy and Northern Link would provide a highly effective response to the challenge of providing a better national land transport system for the Brisbane urban region, which could be implemented in the short-term (e.g. in the period 2009 to 2015) subject to funding support from the AusLink program.

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<sup>12</sup> *Brisbane Urban Corridor Strategy*, Australian Government Department of Transport and Regional Services and Queensland Department of Main Roads, 2007, Page 27.

Council recommended that the following acknowledgements and amendments be made to further enhance and strengthen the Strategy:

- Recognition of Council's significant role in addressing the transport and congestion challenges facing SEQ by way of:
  - Assisting with the provision of strategic responses to transport challenges facing the Brisbane Urban Corridor, via its on-going role in planning for passenger and freight travel needs; and
  - Corporate plans and strategies, such as the *Brisbane Transport Plan Update 2006-2026*, *TransApex Prefeasibility Report* and *CityShape*.
- Recognition of the role of the Brisbane Urban Corridor and Northern Link in addressing the transport and congestion challenges facing SEQ and that both the investigation and implementation of the Northern Link Project within Brisbane's inner west represents a network upgrade that will:
  - Directly form part of a possible future route of the AusLink national network through Brisbane (part of an extended Brisbane Urban Corridor); and
  - Provide a vital support function to the existing AusLink network.

### 3.3.3 State Government Strategic Objectives

The Queensland Government is currently undertaking the Western Brisbane Transport Network Investigation (WBTNI). WBTNI is looking at how the western metropolitan transport network meets the growing city's needs to assist in developing transport strategies to address:

- Current transport problems in the west and north-west of Brisbane, including traffic congestion and ineffective road and public transport networks; and
- The impact of expected future growth in population and employment in SEQ on these areas.

WBTNI is assessing all modes of transport, including road, rail, public transport, walking and cycling. It is also considering how existing transport corridors (which the Queensland Government holds in reserve) might be used, and if any new transport corridors are required. WBTNI is focusing on an area extending from Brisbane's inner west suburbs, south to the Ipswich Motorway and Warrego Highway, west to the Brisbane Valley Highway and north to Caboolture.

The following diagrams illustrate the need for Northern Link within the existing road transport network.

Northern Link Phase 2: Preliminary Assessment Report

Figure 2

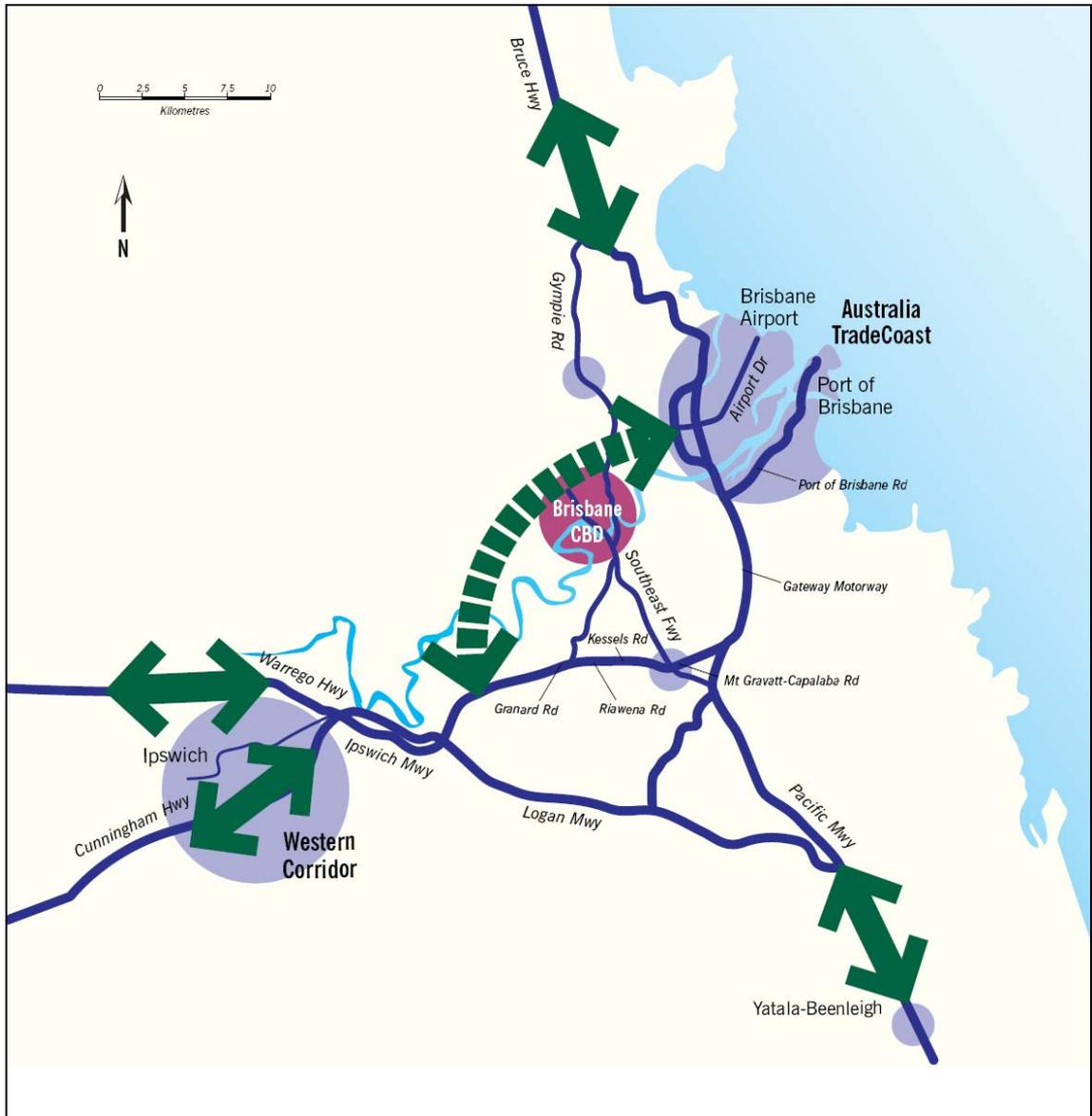
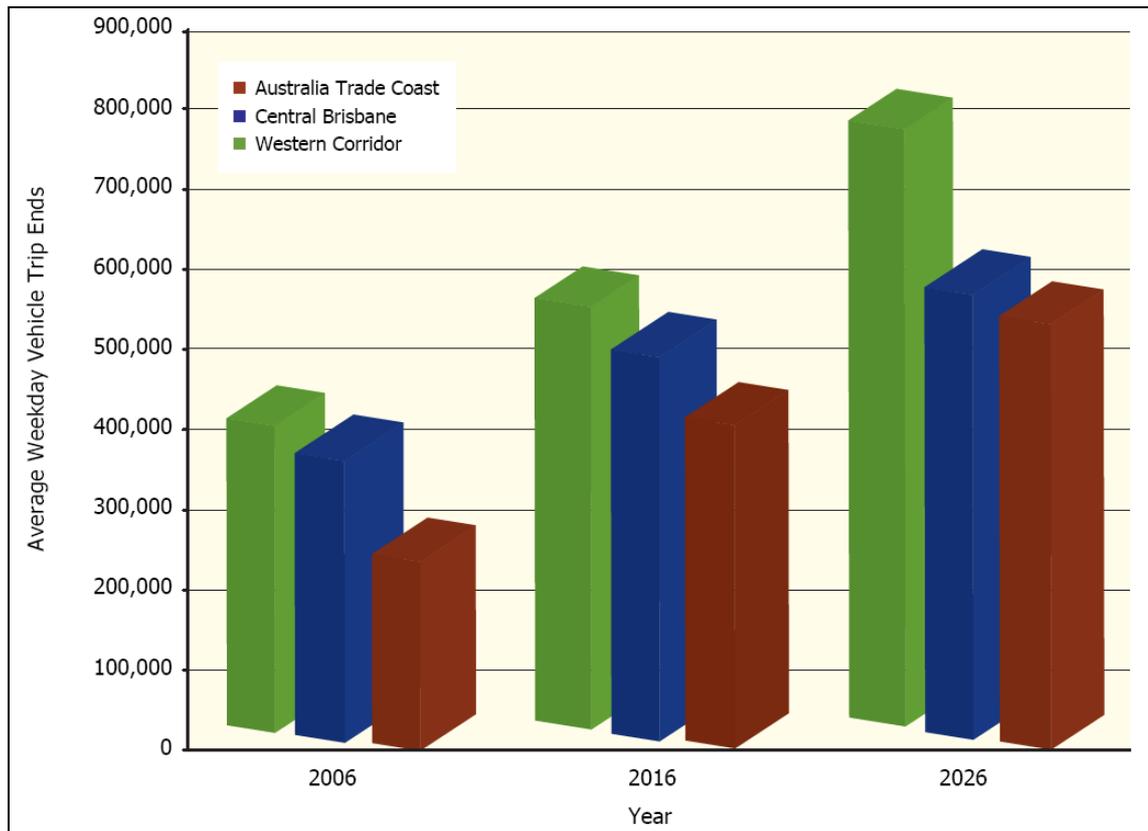


Figure 3



The Queensland Government advises that no route for a western bypass has been chosen and there is currently no recommendation to build one. Rather, WBTNI will determine if a western bypass of Brisbane is needed. If a bypass is required, then a further investigation into where it should be located would be required following the completion of the Investigation. A route would only be chosen after extensive community consultation and after carefully considering all its impacts and benefits. All options would be considered in the zones west of Mt Cootha to the D'Aguilar Range and in the Brisbane Valley.

The Queensland Government's support for Northern Link is likely to be based on the Project's alignment with the SEQRP, the *Brisbane Urban Corridor Strategy* outcomes and whether WBTNI determines that a western bypass for Brisbane is needed. If this occurs, then the State's support for Northern Link will also depend on the Project's ability to act as an inner ring road route by using a combination of existing and planned infrastructure to link to the northern regional routes, Brisbane Airport and the Australia TradeCoast.

Another important requirement for Northern Link to proceed is for the State Government to grant tolling powers to Council. In this regard, the State Government is likely to provide support for the Project if compliance with the State's tolling policy occurs and the State's risk exposure is minimised.

### 3.4 FEDERAL GOVERNMENT STRATEGIC PLANS AND OBJECTIVES

Northern Link's alignment with the Federal Government's AusLink program is the primary driver for the Federal Government's support of the Project. The decision for the State and Federal Government to undertake the Brisbane Urban Corridor Study outlined in Section 3.3.2 was provided under the first AusLink five year plan (2004-2009).

#### 3.4.1 AusLink White Paper

In 2004, the Australian Government released the *AusLink White Paper* (the White Paper). AusLink is a strategic approach to ensuring that Australia's land transport network meets the future challenges associated with growth population. AusLink is designed to achieve better national transport planning, funding and investment decision-making, to increase investment in land transport, improve long-term planning, encourage the best ideas and solutions and target investments to achieve the best outcomes.

The White Paper identifies the first five year plan for the National Land Transport Plan and identifies Federal funding for transport priorities. Other key features include:

- Focus on national and inter-regional transport corridors, including connections through urban areas, links to ports and/or airports.
- Identifies the AusLink National objectives (refer Section 3.4.3).
- Defines the AusLink National Network, which is a shared responsibility between the Federal and State Governments that seeks to improve passenger flows and logistics chains.
- Enables a wide range of eligible organisations to gain Federal funding.

#### 3.4.2 AusLink 2

The Australian Government will invest \$22.3 billion in Australia's land transport system from 2009-10 to 2013-14, under the second stage of its National Land Transport Plan, AusLink 2.

AusLink 2 will include \$16.8 billion over five years for projects on the AusLink National Network, 22,500 km of roads and 14,000 km of intercapital rail lines. These projects will make it quicker, safer and cheaper to travel between our major cities and will make it easier for exporters to get their products to the docks. Expenditure on maintenance of the road elements of the network will increase to \$400 million a year.

While the budget for AusLink 2 has been released, further details of AusLink 2 projects and revised strategic objectives are expected to be released in due course. The projects are likely to reflect the results of the AusLink corridor studies that the Australian Government is conducting with the states and territories, including the *Brisbane Urban Corridor Strategy*. These studies will set out the strategic investment priorities to make our major transport links work more efficiently.

The following diagram shows how Northern Link would fit into the AusLink network.

Figure 4 Brisbane Urban Corridors



### 3.4.3 Federal Government Strategic Objectives

While Northern Link did not receive funding under the AusLink investment program (2004-2009), the issue of congestion in the Brisbane corridor south of the river, particularly caused by the level of freight traffic, was highlighted as a concern and the *Brisbane Urban Corridor Strategy* was developed as a result. Discussions with the Australian Government for Northern Link to be considered for AusLink 2 funding have occurred and will continue to occur during the Business Case development stage.

The Northern Link Preliminary Assessment confirms that the Project is strategically aligned with the AusLink National objectives:

- Improving national, interregional connectivity for people, communities, regions and industry;
- Improving national, interregional and international logistics;
- Enhancing national, interregional and international trade;
- Enhancing health, safety and security;
- Being consistent with our obligation to current and future generations to sustain the environment;
- Being consistent with viable, long-term economic and social outcomes; and
- Being linked effectively to the broader transport network.

### 3.5 SUMMARY

The strategic objectives for Northern Link as supported by Council, State and Federal Government strategic plans can be summarised as follows:

- Enhance east-west transport efficiency;
- Provide a motorway standard for freight; and
- Create opportunities for enhanced public transport.

## 4 STRATEGIC NEEDS ASSESSMENT

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### 4.1 OVERVIEW

The strategic need and priority of Northern Link was recently assessed as part of the preparation of the *Northern Link Planning Needs Assessment Report* (PNA Report), which was completed by SKM/CW in May 2007. The PNA Report presents an assessment of the current and future transport and planning needs to 2026 for the inner northern and western suburbs of Brisbane and the Western Corridor extending from Brisbane to Ipswich. The objective of the PNA Report is to determine the need for transport infrastructure in this area, including the specific need for a road link as proposed for Northern Link, to cater for the continued population growth and economic development arising from the implementation of the SEQRP and SEQIPP (refer Section 3.3.1).

#### 4.1.1 Western Corridor Transport Upgrades

The road network in the Western Corridor region has been the focus of numerous studies since the 1920s. These studies have highlighted two critical issues in the network that limit its ability to cater for increased demand:

- The restricted road network capacity; and
- The limited connectivity between the Western Corridor and other areas of Brisbane due to few river crossings being available.

Since the 1920s, several initiatives to improve road capacity for routes serving the Western Corridor have been recommended. These have included the concept of a ring road to link the Western Corridor with Brisbane's inner northern suburbs, new bus initiatives and priorities to improve public transport and new river crossings to link Toowong to areas such as West End and St Lucia. However, while numerous initiatives have been identified, few upgrades have occurred on the region's major routes in recent times, due to a lack of available funding or strong community opposition to proposed projects.

### 4.2 EXPECTED TRAFFIC AND POPULATION CHANGES

The PNA Report provides an update on the population growth and travel demand changes expected in the SEQ region. The PNA Report estimates that 3.8 million people, equivalent to a 43% increase in the population from 2006, will be living in the region by 2026. The largest population growth rate is expected in the Western Corridor (including Ipswich City) which is expected to experience a 137% increase in population.

The PNA Report also identifies the current network gaps and limitations of the Western Corridor as:

- The discontinuation of the Western Freeway at the Toowong roundabout; and
- The current national road network route from the West to the Gateway Motorway is a highly congested route.

The impact of the network gaps result in several weaknesses in the regional road network including:

- Difficult cross-city and cross river routes from the Western Corridor to the CBD, Brisbane Airport and Northern suburbs;
- An over-reliance on the urban arterial routes of Milton Road, Coronation Drive for all local, radial, regional and cross-city trips;
- Limited ability to bypass the CBD on cross-city trips; and
- Conflicts between regional and local traffic.

The PNA Report estimates the impact of these limitations on future travel times in the Western Corridor, assuming that a solution for the inner west is not implemented. A decline in travel speed for typical regional, radial and cross-city trips during peak travel periods is forecast. A 25% decrease in travel speed is forecast by 2026 for AM peak travel and a 15% decrease for PM peak travel, despite new infrastructure improvements occurring such as the Gateway Upgrade Project and Airport Link to the eastern section of Brisbane. Importantly, it demonstrates that congestion within the western section erodes any benefits derived from these infrastructure improvements for regional east-west demand.

#### 4.3 THE STRATEGIC NEED AND PRIORITY

Table 5 is a summary of the strategic needs identified for the Western Corridor and Brisbane metropolitan area consistent with the SEQRP, the AusLink *Brisbane Urban Corridor Strategy* and the *Brisbane Transport Plan* and assesses how Northern Link responds to these planning needs. It is also important to consider that as these strategies have recently been implemented, the Project's alignment with these strategies emphasises that Northern Link is a priority project in achieving the current policy objectives of Council and the State and Federal Governments.

#### 4.4 SUMMARY

The strategic need for Northern Link is closely aligned with the strategic themes in the SEQRP and AusLink program. In summary, the strategic need for the Project can be described as:

- Providing East-West Connectivity;
- Addressing deficiencies in the National Network to improve freight distribution in and around Brisbane; and
- Improving connectivity and additional capacity in the network and public transport operations to cater for future development.

Table 5 Strategic Needs<sup>13</sup>

Strategic Themes – Local and Regional	Strategic Needs	How Northern Link Responds to the Strategic Themes and Needs
<b>Supporting future population and economic growth</b> identified in the SEQRP 2005-2026	<ul style="list-style-type: none"> <li>■ Support Regional Planning Initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>■ Enhanced connectivity and accessibility to key activity centres, including the CBD, the TradeCoast, Ipswich industrial areas, Queensland University, Queensland University of Technology and the Royal Brisbane Hospital.</li> <li>■ Enhances local amenity and liveability and provides opportunities for the revitalisation of inner west suburbs, by reducing congestion and surface traffic in local areas and improved bus transit services.</li> </ul>
<b>East-West Transport Efficiency, Safety and Reliability</b> in the Corridor between Ipswich and Western Growth area to the CBD, Australia TradeCoast and Pacific Motorway	<ul style="list-style-type: none"> <li>■ Improve East-West Connectivity.</li> <li>■ Improve System Efficiency and Reliability.</li> </ul>	<ul style="list-style-type: none"> <li>■ Provides a motorway standard link between the Western Freeway and the ICB and creates an east-west motorway standard corridor between the Western Corridor and the TradeCoast.</li> <li>■ Provides significant additional road capacity to the Western Corridor.</li> <li>■ Provides congestion relief to the existing regional routes in the inner west.</li> </ul>
<b>Improved Freight Distribution and Travel</b> within and around Brisbane including key links that support the AusLink National Network	<ul style="list-style-type: none"> <li>■ Improved freight distribution in and around Brisbane.</li> <li>■ Improved traffic flow on freight routes.</li> <li>■ Enhance the National Network.</li> </ul>	<ul style="list-style-type: none"> <li>■ Provides significant additional capacity for freight travel through the inner west and relieves traffic flow on the secondary freight routes in the inner west.</li> <li>■ Provides a motorway standard freight corridor between the Ipswich Motorway and the Gateway Motorway.</li> <li>■ Creates an improved motorway standard route for long distance freight traffic from the south-west external AusLink corridors to the CBD, the TradeCoast and the north of Brisbane.</li> </ul>
<b>Prepare for Future Passenger and Freight Transport Needs</b> for Road, Rail and Intermodal Terminal Expansion and Development	<ul style="list-style-type: none"> <li>■ Provide connectivity and additional capacity in the network and public transport operations to cater for future development.</li> </ul>	<ul style="list-style-type: none"> <li>■ Provides a high standard connection from the Western Corridor growth area (including industrial and intermodal terminals) to the CBD, and other growth areas in the east and north of Brisbane.</li> <li>■ Creates opportunities for express bus services to operate from the Western Corridor to the CBD and relieves congestion on current major bus routes from the Western Corridor to the CBD.</li> <li>■ Enhances the network capacity and thus allows balanced management of growth to meet demands.</li> </ul>
<b>Support strategic directions in Local Planning Initiatives</b>	<ul style="list-style-type: none"> <li>■ Enhance Inner City Revitalisation and Urban Renewal.</li> <li>■ Protect cultural heritage and local character.</li> </ul>	<ul style="list-style-type: none"> <li>■ Improves local amenity, local access, pedestrian and cycle environment by reducing congestion and surface traffic in local areas.</li> <li>■ Reinforces the residential character within the inner west by reducing through-traffic on local streets.</li> </ul>
<b>Coordinated Transport and Land Use</b>	<ul style="list-style-type: none"> <li>■ Reinforce role of Centres as major activity areas.</li> <li>■ Promote more efficient use of urban land.</li> <li>■ Encourage Transit Orientated Development.</li> </ul>	<ul style="list-style-type: none"> <li>■ Improves access and connectivity (road and public transport) between activity centres and provides opportunities for the revitalisation of local activity centres, by reducing through-traffic on local streets.</li> <li>■ Improves local air quality and reduced traffic noise by reducing congestion and freight on local streets.</li> </ul>

<sup>13</sup> Northern Link Planning Needs Assessment, SKM/Connell Wagner, May 2007.

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Strategic Themes – Local and Regional	Strategic Needs	How Northern Link Responds to the Strategic Themes and Needs
<b>Provide Quality Public Transport</b>	<ul style="list-style-type: none"> <li>■ Enhance public transport priority to address congested transport corridors and to reduce on-road delays to public transport vehicles within the CBD and radial arterials.</li> <li>■ General improvements to bus, ferry and rail services such as increased frequencies, high quality interchanges and service coordination.</li> </ul>	<ul style="list-style-type: none"> <li>■ Provides opportunity for express bus services to the CBD and relieves traffic congestion on radial bus routes, creating improved transport operational efficiencies.</li> <li>■ Reduced traffic on local road network provides opportunities for additional public transport priority measures.</li> <li>■ Reduces delays for cross-town routes at intersections with radial regional roads.</li> </ul>
<b>Managed Travel Demand</b>	<ul style="list-style-type: none"> <li>■ Encourage travel behaviour changes.</li> </ul>	<ul style="list-style-type: none"> <li>■ Traffic relief on local road network creates opportunity to improve urban environment for walking and cycling for local trips.</li> </ul>
<b>A Safe and Efficient Road Network</b>	<ul style="list-style-type: none"> <li>■ Reinforce the Road Hierarchy and Freight Routes.</li> <li>■ Ensure upgrades support the most efficient movement of peoples and goods.</li> </ul>	<ul style="list-style-type: none"> <li>■ Removes through-traffic from regional radial routes which pass through major centres and residential areas.</li> <li>■ Provides significant additional network capacity and relieves congestion throughout the local area.</li> </ul>
<b>Delivering The Goods On Time To The Right Place</b>	<ul style="list-style-type: none"> <li>■ Move freight efficiently and safely within Brisbane while the liveability of residential areas is protected.</li> </ul>	<ul style="list-style-type: none"> <li>■ New higher order freight route reduces freight demand on inappropriate routes within the local area.</li> <li>■ Creates an uninterrupted motorway standard fright route which improves freight travel efficiencies.</li> </ul>
<b>More Clean and Green Personal Transport</b>	<ul style="list-style-type: none"> <li>■ Provide a clean and green personal transport that is safe and attractive and provides a genuine alternative to driving.</li> </ul>	<ul style="list-style-type: none"> <li>■ Traffic reduction on the local network and at intersections by removing through traffic creates the opportunity to reassign road space to pedestrians and cyclists in the local area and improve cyclists and pedestrian crossings and paths.</li> </ul>