

NORTHERN LINK

CONNECTING THE WESTERN SUBURBS TO THE NORTH

1:100 A-2 786398768375676876876876647465983169384756

Final Business Case
20 September 2010



Dedicated to a better Brisbane

DISTRIBUTION LIST

		MEDIA	
COPY	HOLDER	EMAIL	PAPER
1	Colin Jensen		
2	David Askern		
3	Greg Evans		
4	David Cox		
5	Barry Broe		
6	Scott Stewart		
7	Justin Bold		
8	Peter LIVESey		
9	Gregg Buyers		
10	Zoran Radosevic		

TABLE OF CONTENTS – FINAL BUSINESS CASE

GLOSSARY

1	EXECUTIVE SUMMARY
2	INTRODUCTION
3	SCOPE
4	COSTS
5	ECONOMIC ANALYSIS
6	FINANCIALS
7	LEGAL AND LEGISLATIVE ISSUES
8	PROJECT DELIVERY
9	CONCLUSIONS

APPENDIX A	PROJECT SUMMARY SEPTEMBER 2009
-------------------	---------------------------------------

GLOSSARY

AADT	Average Annual Daily Traffic.
ABS	Australian Bureau of Statistics.
ACHA	<i>Aboriginal Cultural Heritage Act 2003 (Qld).</i>
Northern Link	It is part of Brisbane City Council's Transport Plan, also identified in TransApex and the Queensland Government's South East Queensland Infrastructure Plan and Program.
ALA	<i>Acquisition of Land Act 1967 (Qld).</i>
ARI	Average Recurrence Interval.
ARMS	Australian Risk Management Standard (AS/NZS 1460).
AS/NZS	Australian Standard / New Zealand Standard.
ATC	Australia Trade Coast precinct.
AWE	Average Weekly Earning.
BC	Business Case.
BCC	Brisbane City Council.
bcm	Bank cubic metres.
BCR	Benefit Cost Ratio.
BMTMC	Brisbane Metropolitan Traffic Management Centre.
BOOT	Build, Own, Operate and Transfer.
BPI	Building Price Index, a measure of price escalation.
bps	Basis points, the term given for describing interest rate changes for example, a change in interest rates from 4% to 5% is described by 100 basis points (1%).
BSD	Brisbane Statistical Division.
BSTM	Brisbane Strategic Transport Model.
Business Case	The Business Case was prepared in line with the State's Value for Money Framework and supporting guidance documents. Its role is to encapsulate consideration of the Project to enable the Project Team to confirm project viability, affordability and preferred delivery model.
CBA	Cost Benefit Analysis.
CBD	Central Business District.
CBRC	Cabinet Budget Review Committee.
CCTV	Closed circuit television.
CHMP	Cultural Heritage Management Plan – this will be negotiated with the native title claimants and registered with the Chief Executive of the DNRME prior to grant of approval, or as a condition of such approval.
CIE	Commission Internationale de l'Eclairage (International Commission on Illumination).
CIE Standards	Standards for in-tunnel illumination as recommended by the CIE.
CJT	Clem Jones Tunnel (formerly North-South Bypass Tunnel)
COBA	<i>City of Brisbane Act 1924 (Qld).</i>
COG	Coordinator-General. The Office of the Coordinator-General.
Concession	Means the right to the right to invest in the construction, maintenance or operation of the Project.
Concessionaire	The holder of a Concession.
Concession Period	Means the period from when the Concession is signed until the Concession expires.
Contractual Close	The date at which the contract with the short-listed consortia is completed. This will be followed by Financial Close when the financier locks in their project financing arrangements.
Council	Brisbane City Council as defined under the <i>City of Brisbane Act 1924</i> .

CPI	Consumer Price Index.
CRG	Community Reference Group.
CV	Commercial Vehicle(s).
dBA	A-weighted decibels.
DBFO	Design, Build, Finance and Operate.
DBO	Design, Build and Operate.
D&C	Design and Construct.
DCMO	Design, Construct, Maintain and Operate.
DES	Department of Emergency Services.
DITRDLG	Department of Infrastructure, Transport, Regional Development and Local Government.
DMR	Department of Main Roads.
EPBC Act	<i>Environmental Protection and Biodiversity Conservation 1999 (Cth).</i>
EIS	Environmental Impact Statement.
EOI	Expression of Interest.
EPA	<i>Environmental Protection Act 1994 (Qld).</i>
EPA	Environmental Protection Agency.
ETC	Electronic Toll Collection.
EWAG	East-West Arterial Gateway project.
Financial Close	Contractual close of all financing documents for the Project. This occurs some time after Contractual Close, when the private sector financier completes their financing arrangements.
GOC	Government Owned Corporation.
GUP	Gateway Upgrade Project.
GST	Goods and Services Tax.
Handback	Time at which private ownership of the asset ceases, following the concession period and hand back in a pre-agreed condition.
HCV	Heavy Commercial Vehicle(s).
ILUA	Indigenous Land Use Agreement.
ICB	Inner City Bypass.
IPA	<i>Integrated Planning Act 1997 (Qld).</i>
JV	Connell Wagner and SKM Joint Venture being Council's technical adviser for the Project.
km	Kilometre.
Km/hr	Kilometre per hour.
KPI	Key Performance Indicator.
LCV	Light Commercial Vehicle(s).
LGA	<i>Local Government Act 1993 (Qld).</i>
LGOC	Local Government Owned Corporation.
MVKT	Million Vehicle Kilometres of Travel.
MW	Mega Watts.
NEPM	National Environment Protection Measure developed by the National Environment Protection Council to implement the National Pollutant Inventory.
NFPA	National Fire Protection Association.
NGTSM	National Guidelines for Transport System Management.
NIEIR	National Institute of Economic and Industry Research.
NL	Northern Link.

Northern Link – Final Business Case

NNTT	National Native Title Tribunal.
NPC	Net Present Cost.
NPV	Net Present Value.
NSBT	North-South Bypass Tunnel. This incorporates the tunnel from Woolloongabba to Bowen Hills and associated works.
NTA	<i>Native Title Act 1993</i> (Cth).
O&M	Operations and Maintenance.
Output Specification	Document that sets out the service requirements and associated performance requirements of the Project.
PA	Preliminary Assessment.
Partnership Model	A hypothetical financial model that acts as a “proxy” for a potential PPP bid.
PIARC	Permanent International Association of Road Congresses - PIARC is the world forum in the exchange of knowledge on roads and road transport policy and practices within an integrated sustainable transport context.
PIFU	Planning Information and Forecasting Unit.
PPP	Public Private Partnership. In general terms any number of a range of relational contract arrangements between the public and private sectors. Often used more specifically to describe an arrangement that includes long-term private sector involvement in public sector infrastructure through equity risk i.e. either partly or fully funded by the private sector.
PPP Delivery Option	PPP delivery model where the private sector delivers the project including traffic demand risk.
Practical Completion	Completion of the Project construction and commissioning to a practical level with some outstanding omissions and defects. (Compare with Final Completion).
Preliminary Assessment Project	Council’s Northern Link Preliminary Assessment Report published in August 2007.
Project Team	The project team for the delivery of Northern Link.
PSC	Public Sector Comparator.
PT	Public Transport.
PVB	Present Value of Benefits.
PVC	Present Value of Costs.
Raw PSC	Raw Public Sector Comparator, the costing of the Reference Project without risk allowances.
QML	Queensland Motorway Limited a private toll road company of DMR.
QPS	Queensland Police Service.
QR	Queensland Rail
QT	Queensland Transport.
QTC	Queensland Treasury Corporation.
QUT	Queensland University of Technology.
Raw cost	Cost item unadjusted for Project risks.
RCM	RiverCity Motorway Consortium.
RFP	Request for Proposal.
Road header	A mobile rock excavating machine employing a rotating cutter head mounted on a movable boom.
RTA	Roads and Traffic Authority of New South Wales.
SBFA Act	<i>Statutory Bodies Financial Arrangements Act 1982</i> (Qld).
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i> (Qld).
SEQ	South East Queensland.
SEQIPP	South East Queensland Infrastructure Plan and Program.
SEQRP	South East Queensland Regional Plan.

Northern Link – Final Business Case

SPV	Special Purpose Vehicle.
State	Also means the State of Queensland or the State Government.
Straight Through Option	Is also called the Reference Project for Northern Link. It provides a direct connection from the Western Freeway, west of Toowong Roundabout, to the Inner City Bypass east of Kelvin Grove Road. However, no connectivity to the local precincts is provided resulting in a lower construction risk and impacts on existing infrastructure.
TBM	Tunnel boring machine.
TCC	Tunnel Control Centre.
TI Act	<i>Transport Infrastructure Act 1994 (Qld).</i>
TPC Act	<i>Transport Planning and Coordination Act 1994.</i>
Traditional Delivery Option	Delivery of the Project using current procurement standards and practices that is non-privately financed.
TransApex	<i>TransApex</i> is a plan to promote free-flowing traffic in Brisbane's inner and middle suburbs by creating a formal ring road system to divert cross-city traffic away from the CBD.
TransLink Transit Authority	An initiative of the Queensland Government to meet the public transport needs of the region.
TTA	TransLink Transit Authority.
UPS	Uninterruptible Power Supply.
VFM	Value for Money.
VFM Framework	The State Government Framework for the development of projects in line with the State's PPP Policy. The Business Case has been developed within this framework.
VHT	Vehicle Hours Travelled.
VKT	Vehicle Kilometres Travelled.
V/C	Volume on Capacity.
VOC	Vehicle Operating Cost.
vpd	Vehicles per day.
WACC	Weighted Average Capital Cost.
WBTNI	State Government's Western Brisbane Transport Network Investigation.

1 EXECUTIVE SUMMARY

1.1 BACKGROUND

Northern Link has been subject to detailed assessment throughout a range of studies. Assessment commenced in 2005 with the prefeasibility study and continued through to September 2009 when Civic Cabinet and Council gave approval to proceed to procurement on the basis of the Northern Link Project Summary September 2009.

The procurement process is complete and the Project Finalisation Committee (the Project's senior governing body) has recommended Civic Cabinet select a preferred tender.

In accordance with the Project Summary and the State Government's Value for Money (VFM) framework, the business case has been updated to reflect changes resulting from the procurement process.

1.2 PURPOSE

The purpose of this Business Case is to highlight the key changes that have occurred as a result of the procurement process. In doing so it will:

- Confirm the project scope;
- Confirm the project budget, and financial and economic outcomes
- Provide sufficient information to enable Council decision makers to confidently proceed with the Preferred Project.

This Business Case has been developed in accordance with the State's Value for Money (VFM) Framework and the National Guidelines for Transport System Management (NGTSM).

1.3 KEY CHANGES TO THE BUSINESS CASE BASED ON THE REFERENCE DESIGN

The key changes to the previous business case include:

- Scope, including;
 - improvements to the tunnel alignment,
 - upgrades to Moggill Rd over and above those required by the Coordinator General's EIS Report, subject to an appropriate contribution by DTMR,
 - enhancements to the Mt Coot-tha Botanic Gardens, and
 - a higher level of urban design outcomes,
- A \$300m reduction in forecast capital expenditure;
- A reduction in operating costs of approximately 20%;
- An increase in the Benefit Cost Ratio (BCR) from 1.96 to 2.08 highlighting the improved economic outcomes from the reduced capital requirements;
- A 23% decrease in the net present cost of the project from \$906m to \$699m; and
- Confirmation of delivering the project via a Design, Construct, Maintain and Operate contract.

1.4 CONCLUSIONS

This Business Case demonstrates the following in relation to the Preferred Project

- is technically viable and ready to build;
- being substantially the same as the Reference Project, it provides substantial travel times savings of up to 66% in 2026 for a trip between the Centenary Motorway and the Inner City Bypass;
- generates undiscounted economic benefits of up to \$10.5bn and a benefit cost ratio of 2.08 to 2.52. This is an increase from a range of 1.97 to 2.39 as reported in the Project Summary September 2009;
- is financially sustainable for Council and, based on over \$300m in capital cost savings, provides improved flexibility for managing downside traffic risks;
- has a 23% reduction in net present cost to Council from \$906m to \$699m;
- could withstand actual start-up traffic demand at 52% of the forecast 24,000 vehicles per day and maintain financial operating performance in the range approved by QTC in the 2009 Credit Review;
- has a robustly developed project budget based on a fixed price DCMO Contract with reputable firms; and
- has a project implementation team under development that will possess strong project and contract management credentials.

2 INTRODUCTION

2.1 BACKGROUND

Northern Link has been subject to detailed assessment throughout a range of studies. Assessment commenced in 2005 with the prefeasibility study and continued through to September 2009 when Civic Cabinet and Council gave approval to proceed to procurement on the basis of the Northern Link Project Summary September 2009.

The procurement process is complete and the Project Finalisation Committee (the Project's senior governing body) has recommended Civic Cabinet select a preferred tender.

In accordance with the Project Summary and the State Government's Value for Money (VFM) framework, the business case has been updated to reflect changes resulting from the procurement process.

The procurement process was structured to promote a competitive environment for the negotiation, evaluation and selection of a Contractor to undertake the responsibility to design and construct the project and maintain and operate the tunnel for the first 10 years of operations. The contract expressly excludes the responsibility to design, build and operate the tolling systems. These will be procured separately as was the case for the Go Between Bridge.

2.2 PURPOSE

The purpose of this Business Case is to highlight the key changes from the Project Summary September 2009 (including some elements that were determined to be commercial-in-confidence) that have occurred as a result of the procurement process. In doing so it will:

- Confirm the project scope;
- Confirm the project budget, and financial and economic outcomes;
- Provide sufficient information to enable Council decision makers to confidently proceed with the Preferred Project.

This Business Case has been developed in accordance with the State's Value for Money (VFM) Framework and the National Guidelines for Transport System Management (NGTSM).

2.3 APPROACH

The approach in preparing this Business Case was to report by exception. The procurement process was intended to deliver on the outcomes of the business case and therefore, where assumptions, methods, data and outcomes are consistent or not materially different from the Project Summary September 2009 there is limited commentary or update.

Accordingly, the Preferred Project provides significant improvements to the transport network in line with the strategic objectives of Council, State and Australian Government including:

- Functioning as a cross-city route for moving people and freight;
- Relieving traffic congestion on strategic, arterial and local routes including Milton Road and Moggill Road-Coronation Drive corridors;
- Providing significant travel time savings; and
- The demand for Northern Link is robust with the following characteristics:
 - Sensitivity tests having little to no impact in early years of operations;
 - Implied long term growth rates lower than actual growth rates by term (10-20 years) experienced in key parts of the network.

3 SCOPE

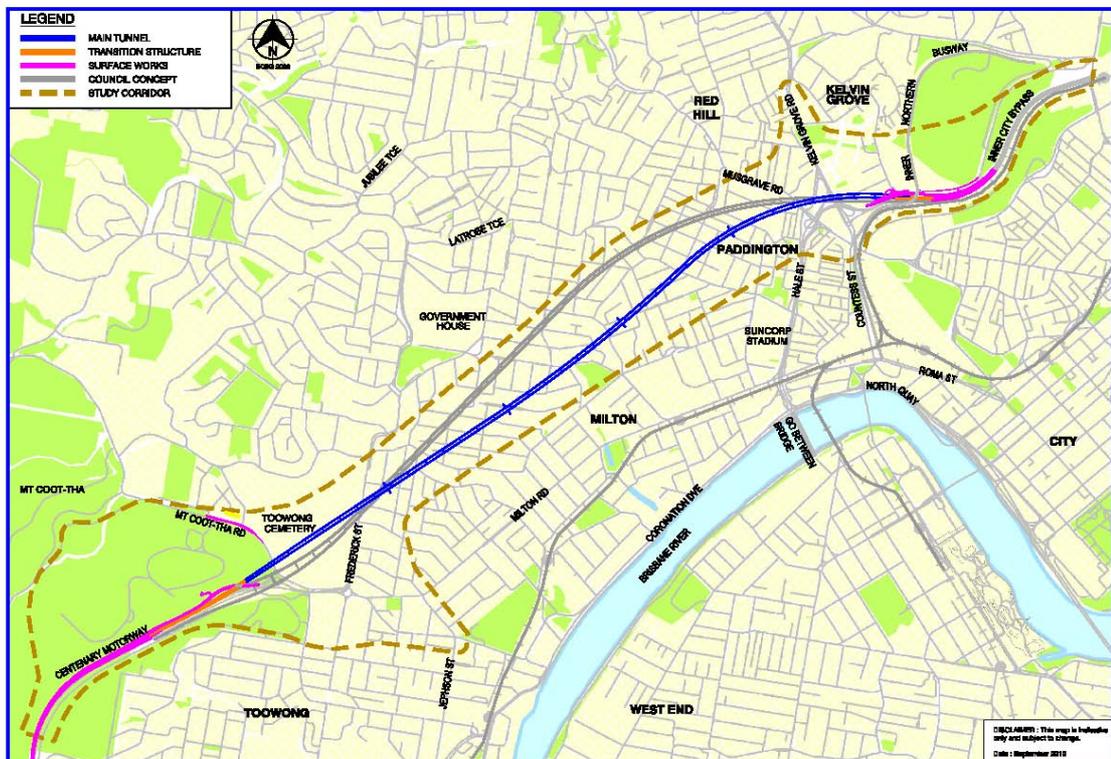
3.1 GENERAL DESCRIPTION OF PROJECT SPECIFICATION MODIFICATIONS

The Preferred Project is substantially the same as the Reference Project in terms of meeting the Project Objectives as shown in the map below. A number of changes to the Reference Design have been proposed and include;

- improvements to the alignment of the tunnels and their configuration with the surface road network connections,
- the location of tunnel portals and the provision of more detailed conceptual design and siting of supporting infrastructure such as the Tollroad Control Centre (TCC),
- pedestrian and cycle access routes,
- a higher level of urban design and landscape outcomes, particularly at the Botanic Gardens which occupies an important western gateway position within the inner suburbs of Brisbane, and
- upgrades to Moggill Rd over and above those required by the Coordinator General's EIS Report, subject to an appropriate contribution by DTMR.

A number of changes are also anticipated through the delivery or construction of the project associated with the changes to the alignment of the tunnels, the layout and access to construction worksites, the handling and haulage of spoil and meeting requirements for adequate off-street workforce car parking.

Figure 3-1



3.2 MODIFICATIONS TO TUNNEL/SURFACE ROAD CONNECTIONS AND ALIGNMENTS

The Project would continue to take road traffic underground between the Centenary Motorway just west of the Mt Coot-tha roundabout at Toowong, to the Inner City Bypass (ICB) east of Kelvin Grove Road at Herston. The horizontal alignment varies by some 300m from the Reference Design but continues to pass beneath the suburbs of Toowong, Auchenflower, Paddington, Red Hill, and Kelvin Grove within the study corridor.

There is no change to the length of the project being approximately seven kilometres long including all new line markings and surface road works. The tunnel configuration is also generally unchanged consisting of two separate, parallel road tunnels of uniform cross-section, each with two lane carriageways. The management systems for the tunnel's operation, including mechanical, electrical and ventilation systems and fire and life safety systems remain as described for the Reference Design.

As for the majority of the Reference Design, the two tunnels would be aligned next to each other, at least 10 metres apart and connected by cross passages every 120 metres along their length. The eastbound tunnel remains approximately 4.6 km long while the westbound tunnel length would be shorter at approximately 4.5km due to a significant reduction in the length of cut and cover construction along the ICB enabled by a realignment of the eastbound lanes of the ICB to the north.

At the western end, the connections to and from the Changed Project would no longer be separated on the outside of the motorway. They would be brought together on the inside of the motorway, with the inbound lanes of the motorway realigned further north. These lanes would come back over the tunnel connection to rejoin the motorway to the west of the Mt-Coot-tha Roundabout. The tunnel portals would now be located together on the northern side of the motorway.

The outside of the two outbound motorway lanes would merge into one lane prior to merging with the outside lane of the two lane tunnel. The outside lane of the motorway heading east would provide a diverge initially to the outside lane of the realigned motorway, with a further downstream diverge to the inside lane of the realigned two way motorway. The centre lanes of the motorway would continue unobstructed as the two lane entry to the tunnel.

Provision continues to be allowed for the future extension of the motorway to three lanes each way, but on the outside of the motorway rather than within the median area. The Department of Transport and Main Roads (TMR) has agreed that there is some benefit to the network in making the motorway to Northern Link the primary traffic and freight route, rather than motorway to Milton Road.

At the eastern end, the outer and centre lanes of the three-lane ICB westbound continue as the ICB with only the inner lane dedicated to the project as described for the Reference Design. The centre lane on the ICB heading west allows for a diverge right into the outer lane of the two-lane tunnel but remains dedicated to the ICB. The effect continues to give priority to the ICB traffic lanes. However, the diverge would occur further to the west, as would the transition to the tunnel and the tunnel portal which would be located in line with Victoria Park Road.

The major road design change at the eastern end would be a realignment of the eastbound lanes of the ICB over the eastbound tunnel lanes allowing the tunnel lanes to now merge with the inside lanes of the ICB. The eastbound tunnel portal would remain just west of the Inner Northern Busway (INB) overpass but on the inside of the ICB. The INB overpass would be widened through an additional bridging structure to take the realigned eastbound lanes of the ICB. Maintenance access to the ventilation

3.3 SUMMARY OF CHANGE

The construction or delivery of the Changed Project would involve:

- Changes from tunnel design alignments on affected properties during construction and regenerated noise and vibration effects;
- Changes to the particular layout of the Western worksite as well as its extent, being extended to the boundary of Mt Coot-tha Road.
- Definition of construction worksites and activities at the eastern end.
- Minor changes to spoil haulage quantities, routes and placement areas
- Changes to placement at the Quarry being for rehabilitation rather than re-use
- Changes to the alignment of the Spoil Conveyor to the Quarry
- Further definition of dedicated workforce parking areas to include Anzac Park.
- Changes to material use and energy requirements.

4 COSTS

4.1 CAPITAL COSTS

The competitive tender process has resulted in significant savings to Council, including a reduction in Capital Expenditure of \$300 million as summarised in the table below. This represents a reduction of 16% compared with Council's estimate for the Reference Project.

Table 4-1 – Capital Costs

Nominal Cost	Was ¹	Now
Construction costs	\$1.7bn ¹	\$1.2bn
Other costs ¹	\$0.1bn ¹	\$0.3bn
Total Capital Cost	\$1.8bn	\$1.5bn

Notes:

¹ Project Summary 2009 reported \$1.8bn, the breakdown between Construction costs and other costs was commercial-in-confidence.

² Other costs include allowance for contingency and risk, land, project management and associated project works.

4.2 OPERATING COSTS

The tender process has also generated substantial operating cost savings during the first 10 years of operations. The costs are incorporated in the DCMO contract.

Table 4-2 – Operating Costs

Nominal Cost	Was	Now
Operating costs (Yrs 1-10)	\$350m	\$280m

5 ECONOMIC ANALYSIS

5.1 INTRODUCTION

From an economic perspective, the Northern Link project aims to achieve the following:

- Improved transport efficiency (i.e. travel time savings, reduced vehicle operating costs, reducing congestion and enhancing road safety) for the community, business and transport suppliers;
- Improved journey time reliability of the network so that it will enhance the competitiveness of regional and state economies;
- Wider economic impacts including better accessibility and corridor investment;
- Noise, air quality, health (road safety) and other amenity improvements; and
- Value for money from any public expenditure to be allocated to the Project.

5.2 RESULTS

Whilst the benefit cost ratio was already very strong at the time of preparing the Project Summary September 2009, the significant capital cost and operating cost reductions achieved during the procurement process has improved the economic value of delivering Northern Link. The Benefit Cost Ratio has improved from 1.96 to 2.08 (up 6%) and from 2.39 to 2.52 including wider economic benefits (up 5.4%).

Table 5-1

Present value	Was ¹		Now	
	Standard	Standard & WEBS	Standard	Standard & WEBS
Analysis				
Benefits	2,158	2,578	2,059	2,452
Costs	1,230	1,230	1,097	1,097
Benefit/cost ratio ²	1.96	2.39	2.08	2.52

Notes:

1 Project Summary September 2009

2 BCR calculated using ATC Guidelines Approach

5.3 APPROACH TO CBA

5.3.1 Project Guidelines

As with the analysis conducted for the Project Summary September 2009, the following guidelines have been used to produce the analysis on the Northern Link project:

- Austroads (2007) "Update of RUC Unit Values to June 2007", TP8349;
- Australian Transport Council (2006) "National Guidelines for Transport System Management in Australia", Commonwealth of Australia, 2007; and
- Infrastructure Australia (2008) "Outline of Infrastructure Australia's Prioritisation Methodology".

5.4 CBA INPUTS AND CALCULATIONS

5.4.1 Operating Costs

The Northern Link operating costs have been developed through the procurement process and form part of the Contractor's responsibility for the first 10 years. The per annum operating costs assumed in the economic assessment are shown in the table below.

Table 5-2 - Annual operating costs

Year	Northern Link (\$'m)
2015	12.5
2026	31.6
2040	34.4

5.4.2 Other Costs

The vehicle operating costs, travel time costs, road accident costs and environmental costs have not materially changed since the Project Summary September 2009 analysis. For completeness, the new results are presented below.

Table 5-3 - Vehicle operating cost outcomes

Year	Base Case (\$'m)	Northern Link (\$'m)
2014	18,146	18,062
2026	23,696	23,559
2040	32,157	31,933

Table 5-4 - Travel time cost outcomes

Year	Base Case (\$'m)	Northern Link (\$'m)
2016	9,679	9,623
2026	12,708	12,621
2040	18,755	18,599

Table 5-5 - Road accident cost outcomes

Year	Base Case (\$'m)	Northern Link (\$'m)
2016	3,643	3,631
2026	4,518	4,502
2040	6,132	6,102

Table 5-6 - Environmental cost/benefit outcomes

Year	Base Case	Northern Link (\$'m)
2016	2,111	2,148
2026	2,619	2,606
2040	3,554	3,532

5.4.3 Residual value

The residual value represents the capacity of the asset to accrue benefits past the end of the analysis period. In this case the value of ongoing benefits has been estimated using a straight line depreciation method for the Northern Link, assuming an asset life of 40 years.

Table 5-6 - Residual value outcomes

	Base Case (\$'m)	Northern Link (\$'m)
Residual Value	-	380.8

5.5 WIDER ECONOMIC BENEFIT METHODOLOGY AND OUTCOMES

The standard BCA analysis measures the direct impact of investment, in this case road investment. Wider Economic Benefits (WEBs) attempt to capture impacts that may not be captured due to imperfect competition. In addition, changes in the operation of transport networks may have implications for employment and productivity within an economy. The estimates of WEBs include:

- agglomeration economies;
- increased competition, which is assumed to be zero;
- imperfect competition;
- additional tax revenue arising from:
 - increased supply of new workers;
 - existing workers working longer hours, which is assumed to be zero; and
 - workers relocating to more productive jobs.

Wider Economic Benefit outcomes

The outcomes of the WEB analysis are shown in the table. The outcomes are shown in the table below undiscounted.

Table 5-1- Undiscounted Wider Economic Benefits

Year	Agglomeration (\$'m)	Imperfect Competition (\$'m)	Labour supply (\$'m)	Productivity (\$'m)
2016	24.5	3.9	4.3	4.9
2026	28.4	5.7	7.9	5.7
2040	35.7	10.2	23.3	7.1

5.6 COST BENEFIT ANALYSIS AND WEB RESULTS

The overall CBA and WEB results for the Northern Link initiative are shown in the table below. The results present an incremental assessment of Northern Link compared with not proceeding with the Project.

Table 5-8 - Preferred Project – BCA outcomes

Decision Criteria	Standard Economic Assessment (\$'millions)	Including Wider Economic Benefits (\$'millions)
Present Value of Costs	1,097	1,097
Present Value of Benefits	2,056	2,452
Net Present Value (NPV)	959	1,356
BCR using Australian Transport Council Methodology	2.08	2.52
NPV/I	1.08	1.52
Internal Rate of Return (IRR)	13.1%	15.2%
FYRR	12.7%	15.6%

A breakdown of the benefits and costs are shown in more detail below

Table 5-9 - Breakdown of costs and benefits

Present Value of Costs & Benefits	Value	Percentage (%)
Costs		
Capital Cost	892.1	81%
Operating Costs	204.5	19%
Total Costs	1,096.7	100%
Benefits		
Vehicle Operating	1,081.8	44%
Travel Time	720.3	29%
Accidents	144.2	6%
Environmental	109.7	4%
Agglomeration	230.3	9%
Imperfect Competition	46.8	2%
Increased Labour Supply	73.2	3%
Productivity Impacts	46.1	2%
Total Benefits	2,452.4	100%

5.7 SENSITIVITY TESTING

Sensitivity tests were undertaken for a wide variety of potential outcomes to determine the robustness of the results. The results of this sensitivity analysis are presented below.

Table 5-10 - BCR sensitivity testing results

Variation	BCR	% Increase from '0'
Discount rate 4%	4.11	63%
Discount rate 10%	1.70	-32%
Capital costs +20%	2.10	-17%
Capital costs -20%	3.15	25%
Delayed construction date	2.22	-12%
Operating & Maintenance cost +20%	2.47	-2%
Operating & Maintenance cost -20%	2.57	2%
Traffic demand +20%	2.99	19%
Traffic demand -20%	2.05	-19%
Benefits +20%	3.08	22%
Benefits -20%	1.96	-22%

5.8 CONCLUSIONS

Northern Link is an integral part of the Brisbane North Urban Corridor and will significantly reduce travel times to the Australia TradeCoast and reduce traffic volumes on local suburban roads:

- Northern Link is estimated to generate between \$9 billion and \$10.5 billion of undiscounted economic benefits over the economic evaluation period in terms of travel time savings, vehicle operating costs, road safety savings and environmental benefits, and WEBS;
- The Project returns a robust BCR of between 1.70 and 4.11 based on discount rates of 4-10%;

- In the 7% analysis VOC savings contribute 44% of the total discounted benefits. Travel time savings contribute 29% of the total discounted benefits. Other benefits streams are road safety benefits at 6% of total discounted benefits and environmental externalities at 4% of total discounted benefits. The sum of the WEB's contribute 16% to the total benefits stream;
- Other non-monetised benefits including public transport travel time and waiting savings, some bus fleet operational efficiencies, land value capture along the corridor and a number of other secondary benefits would serve to improve the benefits of the Project and hence the BCR.

In conclusion, under the assumptions that have been adopted, the CBA modelling results present a robust economic justification to proceed with Northern Link.

6 FINANCIALS

6.1 NET PRESENT COST

In accordance with the Queensland Government's Value for Money framework, the business case has been updated to reflect changes resulting from the procurement process.

6.2 METHODOLOGY

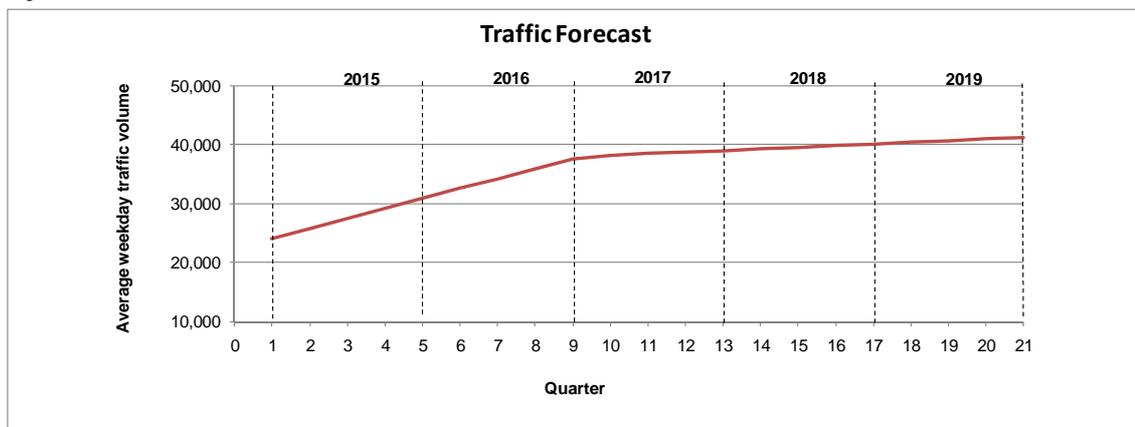
The process for calculating the Net Present Cost is similar to that used in the analysis at the time of the release of the Project Summary September 2009. Key differences comprise:

- The fixed price contract sum has been used as the basis for the construction cost therefore it is no longer a project team estimate,
- Inflation adjustments to raw construction costs are no longer required as this is included in the Contract Sum,
- The risk assessment only considers retained risk (as opposed to all unplanned risks) as the Contract Sum includes the Contractor's price for risk

6.3 TRAFFIC FORECAST

The traffic forecast is consistent with the Project Summary September 2009. At start-up forecast traffic is 24,000 vehicles per day rising to 38,000 vehicles per day by the end of 2016.

Figure 6-1



6.4 RESULTS

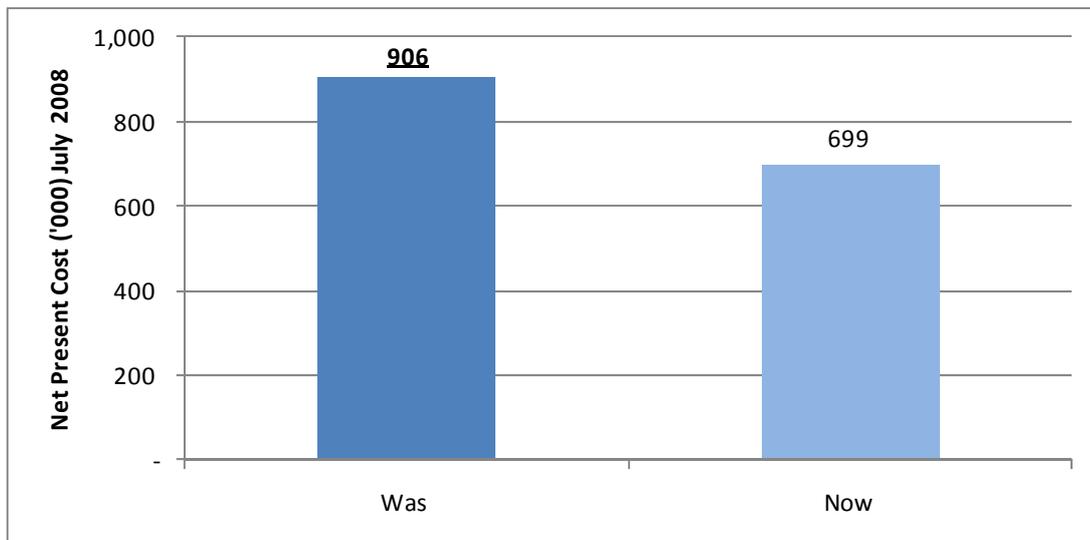
The procurement process yielded construction cost savings of approximately \$300m and substantial operating cost savings that combine to improve the investment decision by reducing the Net Present Cost by \$210m (NPC) - a reduction of 23%. Table 5.1 sets out the components of the Net Present Cost.

Table 6-1

Present value July 2008	Was ¹	Now
Construction costs	1,217	1,077
Revenue	(649)	(646)
Operating and Maintenance	338	268
Net present cost	906	699

Note: These figures were commercial-in-confidence at the time of the Project Summary 2009

Figure 6-2



6.5 SENSITIVITY ANALYSIS AND AFFORDABILITY

Council's financial sustainability model is currently being updated for the 2010 credit assessment. Accordingly, a high level sensitivity analysis has been conducted on the basis of QTC's Brisbane City Council Credit Review August 2009.

Of importance is the downside 'stress tests' that QTC conducted to determine whether Council was able to manage significant impacts to key variables such as capital cost and revenue. QTC assessed three key scenarios relating to Northern Link:

- 30% reduction in revenue due to less than forecast traffic
- A worst case DTMR traffic scenario
- A 10% capital expenditure increase

Of these scenarios, the 30% revenue reduction and DTMR worst case traffic scenario were, according to QTC, "*identical... and has a more limited impact on BCC*" than a 10% increase in capital expenditure.

Further, QTC's Brisbane City Council Credit Review August 2009 states that "*the impact of lower traffic volumes is relatively small because Northern Link toll revenue is forecast to be a relatively small part of BCC's consolidated revenue*".

Given the cost savings achieved during the procurement process, a high level sensitivity test of revenue was conducted to determine the impact of lower than expected traffic. The net operating result as a percentage of BCC rates revenue was a key metric used by QTC to establish whether revenue impacts could be borne by Council. It averaged approximately 4% for the base case and 5.5% for the downside scenarios.

Using this metric, the Preferred Project is able to withstand traffic levels at start-up of just 52% of forecast demand and achieve the same operating result as the 30% reduction in revenue scenario assessed by QTC for the Reference Project. This provides a substantial improvement in financial sustainability for Council with improved flexibility to manage general operations under even extreme traffic scenarios. Figure 6-3 graphically represents this downside traffic scenario as a proportion of Council's forecast.

Figure 6-3

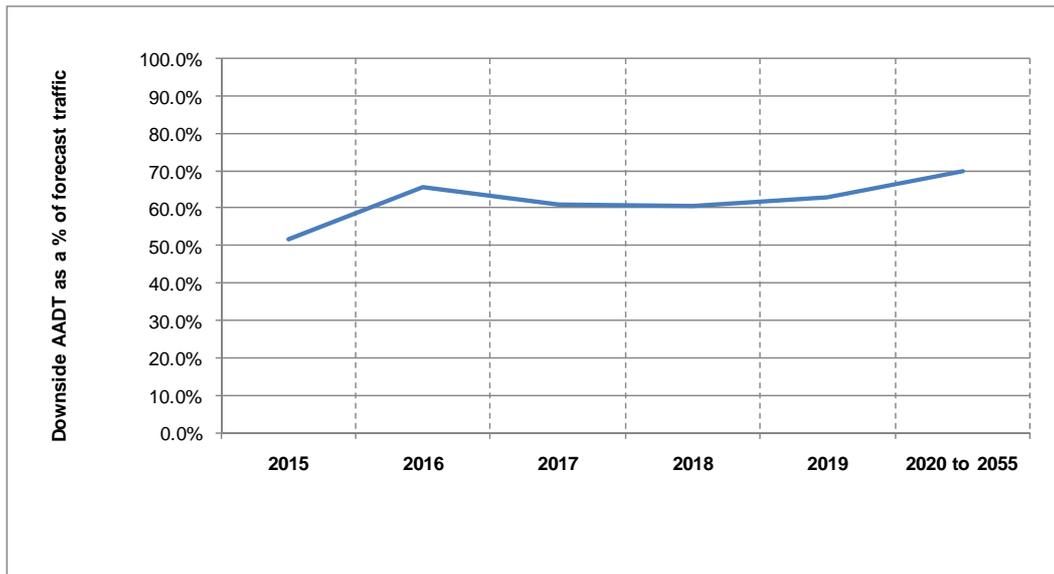


Figure 6-4

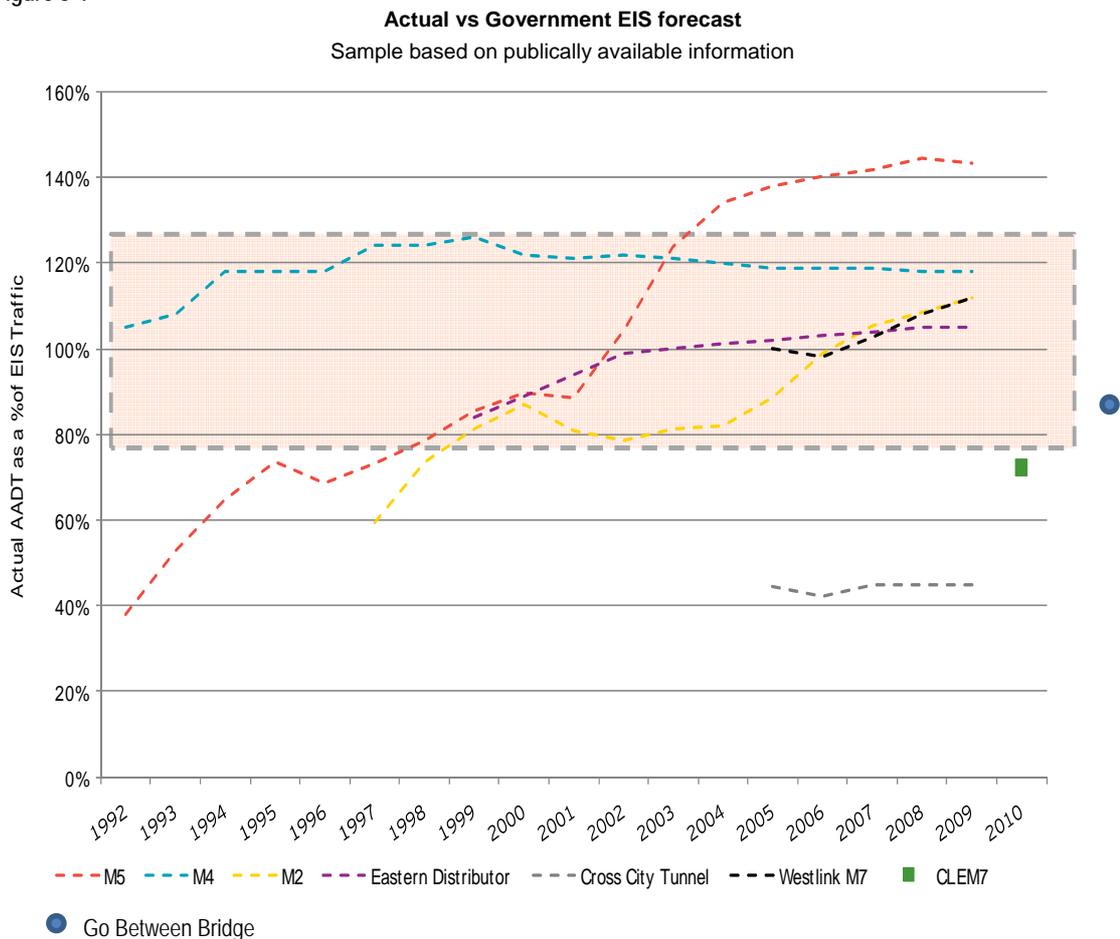
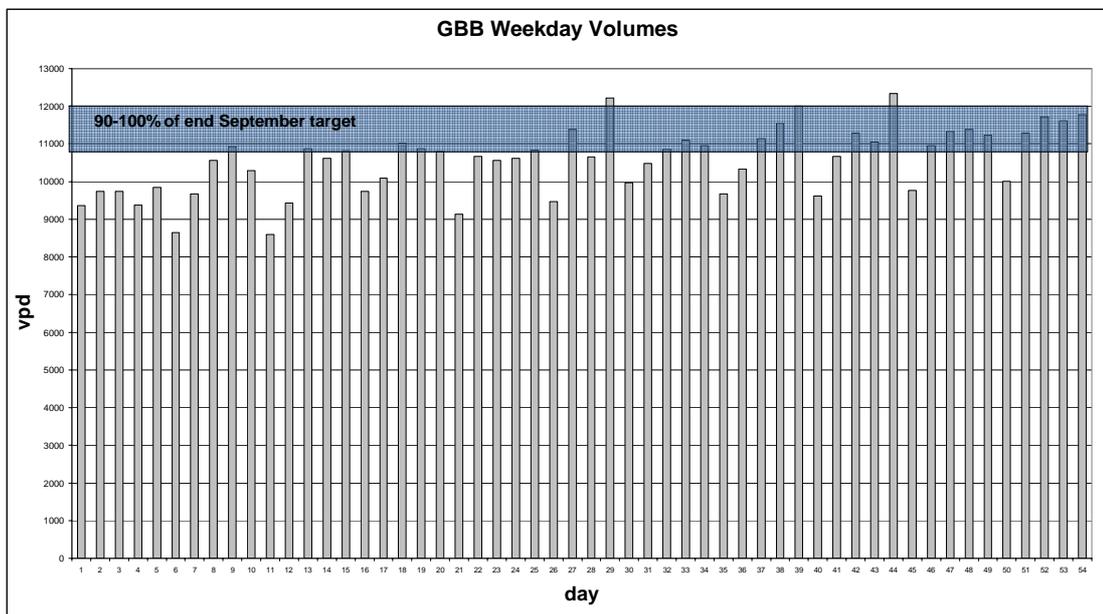


Figure 6-4 illustrates the performance of several Australian toll roads compared with the government forecasts of traffic. It demonstrates:

- Broadly, toll roads have operated within the range of 80% - 120% of the government forecast,

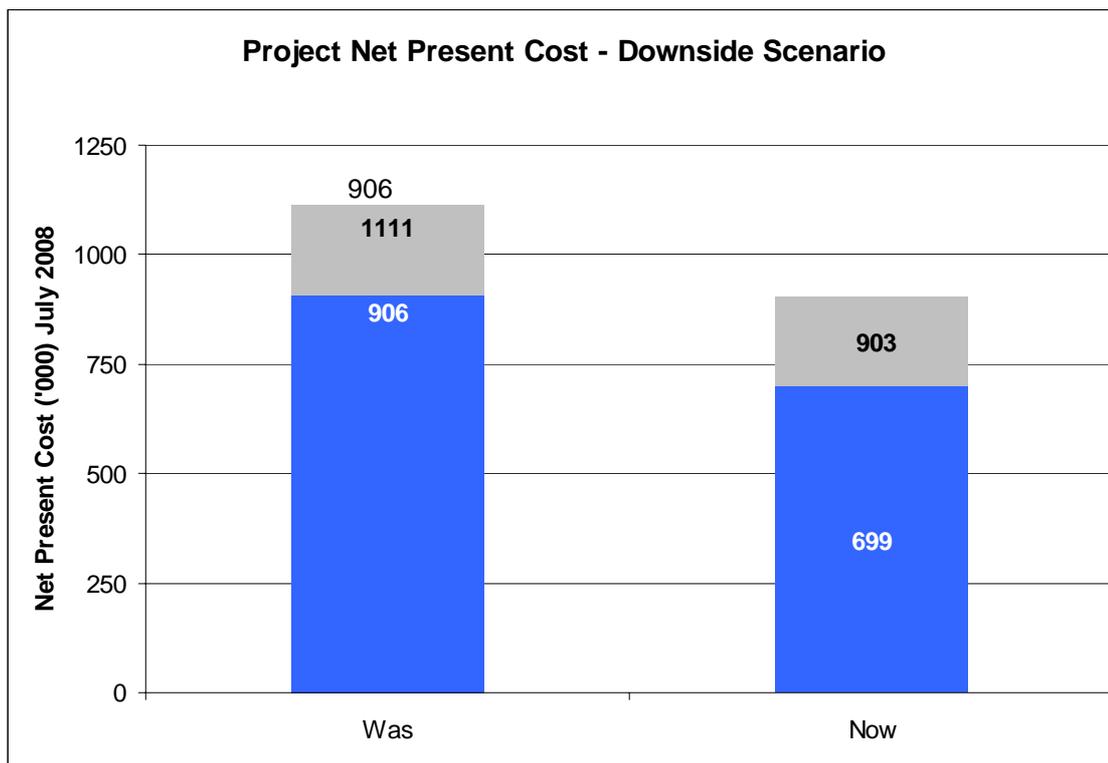
- Actual traffic demand has peaks and troughs relative to the smoother long-run (40yr) forecasts,
- For those roads that have been in operation for more than ten years none of them have traffic below the government forecast,
- CLEM7, being operated by the private sector, is marginally below the 80% - 120% range and not the worst performing road in the sample,
- The worst performing road of the sample at start-up, the M5 in Sydney, has achieved the most significant growth relative to the government forecast. It is now the highest performing road in this analysis,
- Go Between Bridge, for which Council bears the traffic risk, is almost at 100% of Council's forecast.

Figure 6-5



Simply, Northern Link would be able to be the worst performing toll road at startup (compared with government forecasts) and maintain unprecedented low levels of traffic (approximately 70% of forecast) for the life of the project and still meet the financial operating results established by QTC as being manageable. Moreover, even under this scenario the net present cost of the project is comparable to the Project Summary September 2009 base case (see Figure 6-).

Figure 6-6



6.6 FUNDING STRATEGY

Figure 6-7 below presents the proposed funding sources for the Project capital cost plus interest. As presented to QTC in the 2009 Credit Review, Council is allocating \$470m in reserves and capital reprioritisation to minimise Project Specific Borrowings. Importantly, the Australian Government commitment of \$500m is also critical in assisting to maintain Council's project borrowings at sustainable levels.

Figure 6-7

Construction Phase Funding	QTC Review 2009	Now
	(\$'m)	(\$'m)
Funding Requirement		
Capital Requirement	1,673	1,536
Capitalised Interest	197	202
Total Capital Requirement	1,870	1,738
Funding Sources:		
Federal Government Contributions	500	500
Budget Allocation / Capital Reprioritisation & Reserves	470	470
Project Specific Borrowings	703	566
Budget Allocation for Capitalised Interest	197	202
Total Funding	1,870	1,738

Notes / Assumptions

All values are in nominal dollars

Operations costs during construction are excluded from the Capital Requirement amount

\$500m contribution is assumed to be provided by the Federal Government

Northern Link – Final Business Case

Project specific borrowings are assumed to be obtained from QTC with a 30 year term at 6.75% interest rate (inclusive of 0.1% for administration charges; and the Federal Government guarantee charge of approximately 0.35% over QTC cost of funds plus fees).

7 LEGAL AND LEGISLATIVE ISSUES

7.1 INTRODUCTION

The key issues addressed in this chapter are:

- The authority of the Council to operate a tollway;
- The enforcement of tolls and traffic management issues;
- Authority to acquire land and the process for the acquisition of land for the Northern Link Project;
- An outline of the EIS process under the *State Development and Public Works Organisation Act 1971*;
- An outline of the other relevant approvals processes, including addressing cultural heritage and native title issues;
- Interface issues; and
- Federal funding arrangements.

7.2 AUTHORITY TO OPERATE TOLLWAYS

7.2.1 Approved Tollway Project

Council is authorised to operate, or grant a concession to operate, a tollway under the *Transport Infrastructure Act 1994* (TI Act).

Council must first request the Minister to approve a tollway project as an "approved tollway project" under section 105C of the TI Act. The matters to be considered by the Minister are detailed in section 105C(3). Ministerial approval is given by written notice and may be subject to conditions.

The Minister granted approval for Northern Link as an approved tollway project on 3 December 2008. Council has subsequently determined to proceed with Northern Link on the basis of a DCMO model and without the local connections at Toowong and Kelvin Grove. It will be necessary to formally notify the Minister for Main Roads of the changes to the project as approved, and seek an amendment to the "approved tollway project".

7.2.2 Local Government Tollway Corridor Land

Under section 105H of the TI Act, if Council has an approved tollway project, it may ask the Minister to declare certain land to be "local government tollway corridor land". Under section 105J of the TI Act, the local government tollway corridor land becomes unallocated State land and the Minister administering the *Land Act 1994* is taken to have leased the local government tollway corridor land to the State under the *Land Act 1994*.

The State must then lease the local government tollway corridor land to Council for use as a tollway.

7.2.3 Local Government Tollway

If Council has an approved tollway project, and a declaration of local government tollway corridor land has been made, it may then request that the Minister declare a "local government tollway" for the approved tollway project under sections 105G and 105GA of the TI Act. The declaration of a local government tollway under section 105GA of the TI Act is subject to conditions and a compliance regime, monitored by the State, which enables the State to control and enforce the conditions attaching to the tollway declaration.

After the tollway has been declared, section 105ZB of the TI Act requires Council to give notice of certain matters, including the tolls payable and the types of vehicles liable for tolls, before the toll is payable for the use of the local government tollway.

7.2.4 Timing of Declarations

Because Council has chosen a DCMO model for Northern Link, the TI Act does not currently allow the local government tollway declaration (which is the formal authorisation to toll) to be made until after the local government tollway corridor land declaration has been made. This means that the right to toll will be dependent on finalisation of survey plans for the final tunnel alignment. It will be necessary to manage the process carefully to ensure that there are no delays which might impact on Council's ability to toll as soon as the road is operational. A request has been made to the State for amendment of the TI Act to allow tolling once the tollway is operational and before the local government tollway corridor land declaration is made, however, this may not be implemented prior to the opening of Northern Link to traffic.

7.3 ENFORCEMENT ISSUES

7.3.1 Tolling Enforcement

The local government tollway operator is able to recover the amount of any unpaid toll or user administration charge under section 105ZC of the TI Act and to recover an administration charge under section 105ZG of the TI Act. The "local government tollway operator" will be Council because it is procuring the project under a DCMO Contract, and has retained the right to receive tolls.

7.3.2 Traffic Management Issues

Once constructed and operating, normal traffic rules will apply to the Project.

The legislative regime will allow for the DCMO contractor to operate the tollway, although appropriate authorities and delegations will need to be given to the contractor, and some regulations with respect to traffic management may need to be made.

7.4 LAND ACQUISITION

7.4.1 Power of Council to Acquire Land for Toll Roads

Section 28D of the *Transport Planning and Coordination Act 1994* (TPC Act) provides that a Local Government may acquire land for an approved tollway project or a local government tollway under the TI Act.

Section 28D(1) of the TPC Act provides that the Local Government may acquire land for an approved tollway project, or a local government tollway, with the intention of disposing of it to another person to operate as a tollway, and subsequently may dispose of land acquired by the Local Government to another person.

Section 28D(4) provides that the power to acquire land under section 28D includes power to acquire land or an easement or other interest in land above or beneath the surface without acquiring rights in the surface (i.e. a volumetric take).

It will be necessary to seek an amendment to the approved tollway project granted by the Minister for Main Roads before commencing land acquisitions for the Project in its final contracted design.

7.4.2 The Acquisition Process Under the Acquisition of Land Act 1967

The Council must follow the acquisition of land process which is set out in the *Acquisition of Land Act 1967* (ALA):

- Under section 7 of the ALA, a constructing authority must issue a notice of intention to resume to each person who will be entitled to claim compensation, or is a mortgagee of the land;

- A person served with a notice of intention to resume may object in writing to the taking of the land (see section 7(3)(d) of the ALA);
- The constructing authority must consider all objections received. If the constructing authority is of the opinion that the land is required for the purpose for which it is proposed to be taken, the constructing authority may apply to the Minister that the land be taken as prescribed by section 9 of the ALA;
- The Governor in Council may by gazette notice declare that the land is taken for the purpose mentioned in the gazette notice;
- The land taken vests in the constructing authority from the date of publication of the gazette notice, and the estate and interest of every person entitled to the land or any part of the land is converted into a right to claim compensation under the ALA; and
- Section 20 of the ALA sets out the principles to be applied when assessing compensation.

The compensation provisions in the ALA state that a person whose land is compulsorily acquired will be entitled to claim compensation. This principle applies even where the acquisition is of subterranean land with little or no impact on the enjoyment of the surface land.

Under section 20 of the ALA, a person who had an interest taken or affected by the taking is entitled to claim compensation for the value of the interest in the land taken. A number of other items (such as professional fees for experts engaged to advise the person, relocation costs, and loss of amenity if there is a partial resumption) may also be claimed in appropriate circumstances.

The taking of a volumetric parcel of land can be achieved under the process set out in the ALA. The same compensation assessment principles apply to volumetric acquisitions as for surface acquisitions.

7.4.3 State Land

To the extent that any land owned or controlled by the State is required for construction and operation of the tollway, it will be necessary for Council to negotiate with the relevant State agencies to obtain access for those purposes. The requirements of the *Land Act 1994* (Qld) will need to be complied with in relation to any such land.

7.5 EIS AND APPROVALS PROCESSES

The Project has been declared a "significant project for which an EIS is required" under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

Draft Terms of Reference for the EIS were published for public comment. The public submissions period closed on 31 January 2008. The final Terms of Reference were issued on 18 April 2008.

7.5.1 Outline of EIS Process

Section 32 of the SDPWO Act provides that the proponent (Council) must prepare the EIS and address the Terms of Reference to the satisfaction of the Coordinator-General within two years of the finalisation of the Terms of Reference.

The EIS must be made available for public consultation for the period set by the Coordinator-General. During this time, the public is invited to make submissions on the EIS, in accordance with sections 33 and 34 of the SDPWO Act.

The EIS was submitted to the Coordinator-General and was publicly notified from 27 October until 22 December 2008. Council submitted a supplementary report to the EIS, to the Coordinator-General on 9 June 2009.

The Coordinator-General evaluated the relevant material and his Report was completed and approved on 21 April 2010. The Coordinator-General decided that the Project can proceed subject to the conditions contained in the Report.

7.5.2 Scope for Amendments to an EIS

Amendments to an EIS may be made after the Coordinator-General has prepared the report evaluating the EIS. Under sections 35B, 35C and 35D of the SDPWO Act, the proponent for a Project may request the Coordinator-General to evaluate the environmental effects of a proposed change to the Project or a condition of the Project.

The Coordinator-General may require the proponent to publicly notify the proposed change in a way decided by the Coordinator-General, and invite submissions about the proposed change and its effect on the Project. The Coordinator-General must then prepare the "Coordinator-General's change report" which evaluates the environmental effects of the proposed change to the Project. The change report can state conditions, amend conditions and make recommendations for the Project. The Coordinator-General's change report prevails over the Coordinator-General's EIS evaluation report to the extent of any inconsistency.

7.5.3 Other approvals

Following the EIS process, a range of other approvals (as identified in Chapter 4 of the EIS) will be required for the Project. These approvals include development permits and registration certificates for environmentally relevant activities ("ERAs") (including the new ERA for road tunnel ventilation stack operation) as well as a range of construction ERAs and heritage approvals.

7.5.4 Cultural Heritage Process

The Terms of Reference for the EIS have specifically identified cultural heritage as an issue to be addressed as part of the EIS process. Cultural heritage assessments under the *Queensland Aboriginal Cultural Heritage Act 2003* and the *Queensland Heritage Act 1992* will need to be undertaken for the land affected by the Northern Link Project. The Terms of Reference also require that a Cultural Heritage Management Plan be prepared to provide for a process for the management of Aboriginal Cultural Heritage objects and places within the Project study area.

7.5.5 Native Title Process

The issue of native title rights and interests which may exist over the land affected by Northern Link will need to be considered. The provisions of the *Native Title Act 1993* (Cth) and the *Native Title Act 1993* (Qld) will apply. It is anticipated that section 24KA of the Native Title Act can be utilised to suppress native title for the purposes of construction however the current advice from Crown Law on this issue is that native title will need to be resumed (or an indigenous land use agreement entered into) to permit the long term leasing of the Project to Council and any third party.

7.5.6 Environment Protection and Biodiversity Conservation Act Approval

Northern Link was referred to the Commonwealth Environment Minister for a decision as to whether Northern Link was a "controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

By decision dated 30 November 2007, the Minister's delegate decided that Northern Link was not a controlled action requiring assessment and approval under the EPBC Act.

However, if alterations to the design of the Project are made which are outside of the scope of the referral to the Commonwealth Minister for the EPBC Act decision, this issue may need to be reconsidered.

7.5.7 SBFA Act Approval

In the event that it is necessary for Council to borrow funds for the purposes of Northern Link, a Treasury approval under the SBFA Act will be required.

7.6 INTERFACES

Northern Link will have a number of interfaces which will need to be managed including its connection to State-controlled and local roads.

Other interfaces which may need to be managed include:

- QR-ICB;
- Victoria Park Road Golf Course;
- Toowong Cemetery;
- Botanical Gardens; and
- ENERGEX and other utilities.

These issues will be dealt with during the procurement process.

7.7 FEDERAL GOVERNMENT FUNDING

The Federal Government is providing funding of \$500m to the Project. Council will enter into a "Funding Agreement" with the Commonwealth of Australia which will set out the terms upon which that funding is provided.

The Federal Government also requires that any contractor be accredited under the "Australian Government Building and Construction OHS Accreditation Scheme". At this stage foreign contractors which have not previously worked in Australia are not accredited, and it will be necessary to establish a contractual mechanism under the DCMO arrangements pursuant to which any such foreign contractor will guarantee performance of the contractors under the DCMO Contract until such time as the foreign contractor is accredited and subsequently accedes to the DCMO Contract.

7.8 WAY FORWARD

The Queensland legislative framework allows for the development of Local Government tollways and that framework can be utilised to progress the Project under the DCMO form of procurement.

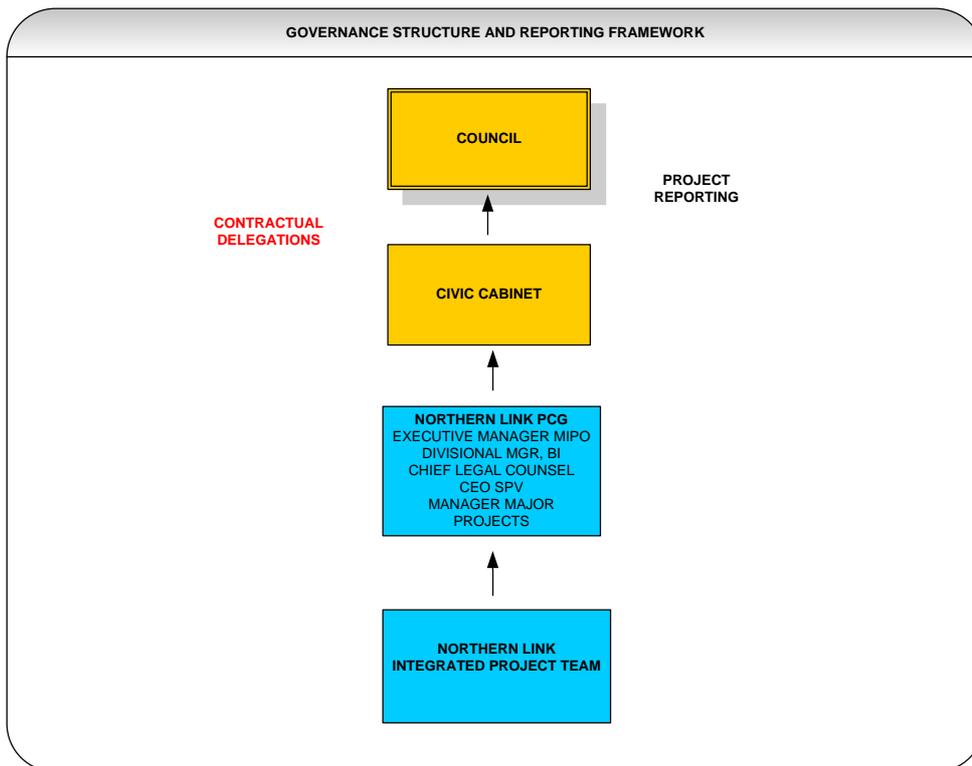
8 PROJECT DELIVERY

8.1 GOVERNANCE AND ORGANISATION CHART

The Project Director for the Delivery Phase has been appointed and is in the process of developing the Governance Plan to be submitted for approval.

The Draft Governance Structure and Framework is presented in the diagram below.

Figure 8-1



The Integrated Project Team is currently being formed from internal and external sources. A number of staff involved in the Feasibility and Transaction Phases of the project will proceed to the Delivery Phase providing continuity of project knowledge and working relationships.

8.2 DELIVERY PROGRAM

The main difference to the project program since the last Business Case is that the project completion date is five months later. This is attributable both to the delayed procurement process due to the global financial crisis as well as a slightly extended delivery program for the Preferred Proponent. The envisaged delivery program for Northern Link is shown in Table 1.

Table 8-1 – Delivery Program

Task	Target Date
Design Commences at Contractors risk	September 2010 to December 2011
Conditions Precedent satisfied: construction Commencement achieved	December 2010
Assemble TBMs	October 2011 to April 2012
Excavate Tunnels	January 2012 to February 2013
Tunnel Fitout	February 2013 to November 2013
Tunnel Mechanical and Electrical Installation	July 2013 to June 2014
Tunnel Finishing	May 2014 to September 2014
Tunnel Systems	March 2014 to December 2014
Project Completion	December 2014

8.3 CONTRACT MANAGEMENT

A Project Management Plan will be developed covering all areas of administration and Council's interest. This will involve the development of a series of sub plans as outlined below:

Table 8-2 – Plans

No	Plan Title	Scope of Plan
100	Project Management Plan	(This plan) - Overarching document setting out required plans
150	Project Governance Plan	Responsibilities of the project governance bodies
200	Safety Plan	Project safety requirements
250	Employee Management Plan	How resource requirements are met and how existing employees will be managed
300	WBS and associated documents management Plan	Management of the project Work Breakdown Structure and the associated chart of accounts and filling system
350	Contract Management Plan	Management of subcontracts
400	Communications Management Plan	Protocols governing the communication between project team members and the public
450	Quality Management Plan	Project quality requirements
500	Risk Management Plan	Framework for evaluating and managing project risks
550	Key Personnel Plan	Identification of key Project personnel
600	Document Management Plan	Control of internal and external documents
650	Disaster Recovery Plan	Project strategy for information recovery in the event of a major disaster
700	Project Reporting Plan	Project reporting requirements
750	Environmental Management Plan	Environmental project compliance requirements

8.4 REPORTING

A monthly report will be presented from the Project Director to the Project Leadership Group. This report will cover such areas as:

- Areas of concern and mitigation measures
- Safety
- Quality
- Performance against program
- Variations
 - Variations Submitted to date and estimate of exposure
 - Anticipated Variation
- Risk Review
- Budget Status

8.5 KEY RISKS OF THE DCMO AND MEASURES TO BE PUT IN PLACE TO DEAL WITH THOSE RISKS

Risk will be managed via the risk register and associated Risk management plan. Specifically, this plan will outline the Risk Management Process to be employed on the Project providing a structured method for:

- identifying and analysing potential risks that may impact the project objectives;
- devising and implementing treatment plans appropriate to the potential impact of those risks;
- quantifying the effects on the project objectives of key risks; and
- recording and reporting on the above activities.

Monthly meetings will be held at which the risk profile of the project and associated management plans will be updated.

8.6 MANAGEMENT OF INTERFACES WITH DTMR, COORDINATOR GENERAL, INDUSTRIAL RELATIONS AND LOCAL STAKEHOLDERS

DTMR

A project team member will be dedicated to the DTMR/Project interface. In addition weekly co-ordination meetings are planned between the Project Director, the Construction Manager and DTMR representatives.

Coordinator General

Monthly Updates will be held between the Project team and Coordinator General or his delegate.

Industrial Relations

A Project team member will be dedicated to ensure that the head contractor complies with the IR and training requirements of the contract and that those requirements are passed on in all the major subcontracts that he issues .

Local Stakeholders

In addition the contract contains specific provision regarding local stakeholder notification and involvement in the project progress.

To ensure these requirements are being met a dedicated interface management team reporting directly to the Deputy Project Director will ensure that these requirements are being followed and deal with the Local stakeholder and community needs.

Tolling Contractor

The DCMO Contractor is not required to deliver the tolling system as part of the contract. A separate Tolling Contractor will be appointed via a dedicated procurement process in a similar manner to that for the Go Between Bridge. Accordingly, a number of measures have been placed in the DCMO contract to provide access to the site for the Tolling Contractor. Managing this interface will be critical.

9 CONCLUSIONS

This business case demonstrates the following in relation to the Preferred Project:

- it is technically viable and ready to build;
- being substantially the same as the Reference Project, it provides significant improvements to the transport network in line with the strategic objectives of Council, State and Australian Government including;
 - substantial travel times savings of up to 66% in 2026 for a trip between the Centenary Motorway and the Inner City Bypass;
 - functions as a cross-city route for moving people and freight;
 - relieves traffic congestion on strategic, arterial and local routes including Milton Road and Moggill Road-Coronation Drive corridors;
 - improves freight movements around Brisbane; and
 - robust traffic demand with the following characteristics:
 - sensitivity tests having little to no impact in early years of operations;
 - implied long term growth rates lower than actual growth rates by term (10-20 years) experienced in key parts of the network.
- it generates undiscounted economic benefits of up to \$10.5bn and a benefit cost ratio of 2.08 to 2.52. This is an increase from a range of 1.97 to 2.39 as reported in the Project Summary September 2009;
- it is financially sustainable for Council and, based on over \$300m in capital cost savings, provides improved flexibility for managing downside traffic risks;
- it has a 23% reduction in net present cost to Council from \$906m to \$699m;
- it could withstand actual start-up traffic demand at 52% of the forecast 24,000 vehicles per day and maintain financial operating performance in the range approved by QTC in the 2009 Credit Review;
- it provides several valuable enhancements to the Project Scope including;
 - improvements to the tunnel alignment and configuration with the surface road connections
 - the location of tunnel portals and the provision of more detailed conceptual design and siting of supporting infrastructure such as the Tollroad Control Centre (TCC),
 - pedestrian and cycle access routes,
 - a higher level of urban design and landscape outcomes, particularly at the Botanic Gardens which occupies an important western gateway position within the inner suburbs of Brisbane, and
 - upgrades to Moggill Rd over and above those required by the Coordinator General's EIS Report.
- has a robustly developed project budget based on a fixed price DCMO Contract with reputable firms; and

Northern Link – Final Business Case

- has a project implementation team under development that will possess strong project and contract management credentials;

Council is committed to delivering Northern Link under a DCMO contract with the Preferred Proponent.