

WORKING ASSESSMENT FOR BENEFIT COST RATIO MODERATION 2008/09								
<b>Project name</b>	Pacific Highway Corridor Upgrade							
<b>Project code</b>	Project 3.7							
<b>Brief project description</b>	The project involves upgrading the Pacific Highway. This result in a four lane divided highway connecting Melbourne, Canberra, Sydney and Brisbane.							
<b>Reported BCR @ 7%DR</b>	1.52 (1.73 with WEBs)							
<b>Capital cost total</b>	\$7.476 billion							
<b>% costs bid for (where relevant)</b>	The proponent has requested that the Commonwealth fund 86% of the project's costs							
	1. Reported information (lift text directly if possible)	2. Supporting information provided (list key documents, not content)	3. Extra information required / requested / received	4. Benchmark / Questions / Things to look for	5. Assessment of variance or methodological weaknesses	6. Notes re: degree of variation to BCR (any calculation / reasoning)	7. One line summary of argument / rating	8. Rating
<b>Guidance</b>	"Cut and paste" text from proforma if possible	List supporting materials not included in proformas but included with bids (formally and informally)	List all information requested by IA: please note which materials were, and were not provided by jurisdictions	See below	Insert the explanation of any differences or issues with theory, methodology or data used by the jurisdiction	Use this column, if required, to explain any reasoning for making an assessment of the scale of impact on the BCR, using figures if possible	Please insert one sentence summary of argument and conclusion reached	Significantly overstated; slightly overstated; broadly neutral; slightly understated; significantly understated; poor information
<b>Robustness of demand forecast</b>								
<b>1. Has demand been modelled in a robust and 'bottom-up' manner?</b>	Traffic demand is forecast to increase at 2.5% per year. This is based on BITRE estimates.	BITRE		<ul style="list-style-type: none"> <li>Has demand been modelled by a reputable transport modelling organisation?</li> <li>Evidence of use of a city wide travel model which adds the proposal as a new option &amp; measures diversions</li> <li>How close to capacity is the service in the high AM peak hour</li> <li>Have different fare levels &amp; elasticity been evaluated &amp; will service offer customer VFM against alternatives?</li> </ul>	The demand forecast is based on a working paper done by BITRE in relation to broad regional traffic demand growth. This appears to be a reasonable figure.	This is envisaged to have a small impact on the BCR.	The forecast appears to be reasonable	Broadly neutral
<b>2. Are the underpinning residential, employment and economic growth figures robust?</b>	The demand forecast is based on BITRE estimates. The assumptions underpinning the forecasts have not been outlined here.			<ul style="list-style-type: none"> <li>Are current State or ABS projections used?</li> <li>Are central growth forecasts used?</li> <li>Are the transport demand forecasts directly linked to this data?</li> </ul>	It is in our view that based on the predicted growth of 30% population for the NSW mid and far north coast regions by 2030, the impact may be bigger.	This is envisaged to have a small impact on the BCR.	The assumptions have not been mentioned in the submission	Broadly neutral

<p>3. Achievability of the demand forecast?</p>	<p>Traffic demand is forecast to increase at 2.5% per year. This is based on BITRE estimates.</p>			<ul style="list-style-type: none"> <li>■ Is the forecast justified by an in-depth analytical paper?</li> <li>■ Is the forecast endorsed by independent Expert Peer Review?</li> <li>■ Does forecast feature a gradual ramp-up (i.e. &gt;4yrs)?</li> <li>■ What % of patronage is induced demand (should typically be &lt;20%)</li> <li>■ Forecast patronage has been benchmarked to be broadly consistent with outcomes achieved on similar services?</li> <li>■ Has the proponent factored the costs of greenhouse gas emissions into their economic planning, including obligations under the Carbon Pollution Reduction Scheme?</li> </ul>	<p>The project case demand growth is reasonable and assumes the same growth rate as the base case.</p>	<p>This is envisaged to have a small impact on the BCR.</p>	<p>The forecast appears to be reasonable</p>	<p>Broadly neutral</p>
<p>4. Sensitivity of BCR to demand</p>	<p>The project has conducted a thorough testing of different sensitivity analyses</p>			<ul style="list-style-type: none"> <li>■ Does a 30% drop in demand significantly alter the BCR?</li> </ul>	<p>The project is able to sustain a BCR higher than 1.27 in all of the sensitivity analyses conducted in the submission.</p>	<p>This is envisaged to have a small impact on the BCR.</p>	<p>The sensitivity tests are reasonable and show that the project will likely achieve a BCR of above 1.</p>	<p>Broadly neutral</p>
<p>5. Is the base case realistic and fundable?</p>	<p>Current and planned upgraded works will complete dual carriageway between Hexham and Port Macquarie and from Ballina to the Queensland border, as well as on the highly trafficked section immediately to the north and south of Coffs Harbour. After the currently planned works are completed, the mainly two-lane, two-way single carriageway highway would remain between the Oxley Highway near port Macquarie and Raleigh and also from just north of Woolgoolga to the Bruxner Highway south of Ballina.</p>			<ul style="list-style-type: none"> <li>■ What is Base Case patronage growth - is it in line with historical trends?</li> <li>■ From the available information, is the base case capex and patronage a likely scenario, or is it overly loaded or light?</li> </ul>	<p>The base case is reasonable. It incorporates all the currently planned upgrade works.</p>	<p>This is envisaged to have a small impact on the BCR.</p>	<p>The base case is reasonable and has incorporated all the currently planned upgrade works.</p>	<p>Broadly neutral</p>
<p>6. Does hourly patronage profile match conventional AM &amp; PM peak flows</p>	<p>The forecasts are based on a BITRE working paper. The assumptions are not explicitly mentioned here.</p>			<ul style="list-style-type: none"> <li>■ Is the model scaled up to full year in a justifiable manner (e.g. annual patronage is normally 250-300 times AM high peak hour)?</li> </ul>	<p>The assumptions underpinning the model are not mentioned here. However, it is expected that the BITRE forecasts would have details related to AM/PM peak flows and profiles.</p>	<p>This is envisaged to have a moderate impact on the BCR.</p>	<p>Not enough information has been provided in the submission</p>	<p>Broadly neutral</p>
<p>7. Robustness of capex forecasts</p>	<p>Capital costs of project were developed by the RTA in accordance with its Estimating</p>			<ul style="list-style-type: none"> <li>■ Is the capex estimate supported by significant in depth work?</li> <li>■ Was it produced by a reputable independent organisation?</li> </ul>	<p>The details of how the Capex estimates were derived have not been provided in the submission. However, it was estimated in accordance with RTA guidelines and then independently reviewed by an independent consultant.</p>	<p>This is envisaged to have a moderate impact on the BCR.</p>	<p>The cost estimates appear to be based on robust analysis but the details have not been provided in this</p>	<p>Broadly neutral</p>

	Manual in 2006. These estimates were reviewed and amended in the same year by Evans & Peck. These cost estimates were then escalated to 2007/08 dollars in the cost benefit analysis undertaken by PWC.						submission.	
8. Robustness of opex forecasts	Operating costs for both the base and project cases have been excluded from the analysis.			<ul style="list-style-type: none"> <li>Is the opex estimate supported by significant in depth work?</li> <li>Was it produced by a reputable independent organisation?</li> </ul>	Opex details have not been provided in this submission.	This is envisaged to have a small impact on the BCR.	This appears to be a reasonable assumption	Broadly neutral
9. Consequential costs	The acquisition of land and private properties may be needed for the project. The associated costs would also vary by region.			<ul style="list-style-type: none"> <li>Are consequential costs to other parts of the network or other stakeholders taken into account?</li> <li>E.g. land acquisition, higher costs due to the need to maintain service continuity &amp; / or constructing around live traffic</li> </ul>	Acquisition of land may be needed for the project. However the submission does not provide enough information to assess if the cost of land acquisition has been included in the analysis.	This is envisaged to have a small to moderate impact on the BCR.	Information on land acquisition is unclear	Broadly neutral
10. Revenue treatment	This project will not generate any revenue.			<ul style="list-style-type: none"> <li>Is the treatment according to ATC guidelines and in line with best practice?</li> </ul>	This project will not generate any revenue.	This is envisaged to have no impact on the BCR.	The project will not generate any revenue	Broadly neutral
11. Construction cost inflation	The Benefit Cost Analysis does not appear to incorporate any construction cost inflation in the analysis.			<ul style="list-style-type: none"> <li>Is the construction cost inflated by a margin above CPI (eg construction cost CPI)?</li> </ul>	The Benefit Cost Analysis does not appear to incorporate any construction cost inflation in the analysis.	This is envisaged to have a small impact on the BCR.	The Benefit Cost Analysis does not appear to incorporate any construction cost inflation in the analysis.	Broadly neutral
12. Inflation rate	The analysis has been conducted in real terms. Inflation rate has thus been assumed to be 0%.			<ul style="list-style-type: none"> <li>What inflation rate is assumed and are any costs or benefits escalated by a different rate?</li> <li>Do values reflect realistic real wages growth (e.g. 1.5% per year)?</li> </ul>	This is consistent with IA guidelines.	This is envisaged to have a small impact on the BCR.	This is consistent with IA guidelines	Broadly neutral
13. Time period used	The period of assessment used is 30 years in accordance with the RTA economic analysis manual and NSW treasury guidelines for projects with a long asset life.			<ul style="list-style-type: none"> <li>Is the period of assessment valid given the lifespan of the project assets?</li> </ul>	This is consistent with IA guidelines.	This is envisaged to have a small impact on the BCR.	This is consistent with IA guideline	Broadly neutral
14. Residual value	The NPV of the residual value is \$164 million. Structures and earthworks have a life of 100 years and 70 years remain after the analysis period. The residual value has been calculated as 70% of the construction cost of those structures discounted from 30 years.			<ul style="list-style-type: none"> <li>Are residual values given when appropriate?</li> <li>Are the values used justified?</li> </ul>	The approach adopted to calculate the residual value is reasonable.	This is envisaged to have a small impact on the BCR.	The approach adopted is reasonable	Broadly neutral

15. Start and end timing, and phasing	Construction of the first two of the projects could commence in late 2009. Construction of the remainder of the projects would be progressively commenced as permitted by resources and progress on land acquisition. Construction of the last of the remaining projects would be commenced by 2013 and ending in 2016			<ul style="list-style-type: none"> <li>■ Does benefit stream period start at the commencement of operation and cost stream at first expenditure?</li> <li>■ Are construction costs ramped up in according with standard construction timetables?</li> </ul>	The increase in benefits over time appears to be reasonable. The increase in benefits during the construction period is driven mainly by growth in traffic volumes and the staged completion of sections of the road upgrade. This results in the project having benefits prior to the completion of the entire project.	This is envisaged to have a small impact on the BCR.	The approach adopted appears to be R/reasonable	Broadly neutral
16. Benefits allocation	The majority of the benefits are from vehicle travel time savings (72%), vehicle operating costs (15%) and crash costs savings (11%) before WEBs (15%) are taken into account.			<ul style="list-style-type: none"> <li>■ Is the rule of half correctly applied (e.g. to benefits from existing PT users who change modes)?</li> <li>■ Are all significant benefits identified?</li> <li>■ Are all beneficiaries identified (e.g. benefits of roads to non road users?)</li> </ul>	The parameter values used to calculate the benefits have not been presented in the submission. Without further information, it would be difficult to assess the validity of the benefits.	This is envisaged to have a small impact on the BCR.	Not enough information has been provided in the submission	Broadly neutral
17. Sensitivity analysis – risks? (Capital costs - Construction duration - Operating costs - Discount rate at 10% - changes in oil price)	Sensitivity analysis has been conducted for changes in capex costs and changes in key benefits.			<ul style="list-style-type: none"> <li>■ Do the reported sensitivity tests, for instance to the price of oil, suggest significant risks surrounding the central case?</li> <li>■ How significant are +/-20% construction cost variations?</li> <li>■ Does economic viability become negative at a 10% discount rate?</li> </ul>	The sensitivity tests show that the project is likely to have a BCR higher than 1.27 even without considering the WEBs. This shows that the project will likely have a positive net present value to the society.	This is envisaged to have a small impact on the BCR.	The sensitivity tests conducted are reasonable	Broadly neutral
18. Other methodological issues?	None identified			<ul style="list-style-type: none"> <li>■ Any there any other issues regarding the accuracy of methodology used that may significantly impact on the comparability of the BCR?</li> </ul>				
Value benchmarking								
19. Value of time savings: business, non business, freight; and Vehicle operating costs	The parameter values used to calculate the benefits/costs have not been listed in this submission.			<ul style="list-style-type: none"> <li>■ Are the values used recommended by the ATC?</li> <li>■ Are these constant real through analysis period or do they factor in real growth (i.e. caution if real growth is &gt;2%)</li> </ul>	Not enough information has been provided in the submission for detailed analysis, although this area of the cost benefit analysis is based on RTA parameters which are generally robust.	These parameter values have a large impact on the BCR.	Not enough information has been provided in the submission for detailed assessment, although this area of the cost benefit analysis is based on RTA parameters which are generally robust	More detailed information on parameters used would assist analysis in this area.
20. Value of carbon emissions	The parameter values used to calculate the benefits/costs have not been listed in this submission.			<ul style="list-style-type: none"> <li>■ Is there a nexus with the patronage forecast?</li> <li>■ Are the values used recommended by the ATC?</li> <li>■ Has the proponent calculated the direct emissions of their proposal? (i.e. include all carbon emissions from the construction or operation of the structure)</li> </ul>	Not enough information has been provided in the submission	This is envisaged to have a small impact on the BCR.	Not enough information has been provided in the submission	Broadly neutral

				<ul style="list-style-type: none"> <li>Has the proponent calculated indirect emissions of their proposal?</li> </ul>				
21. Death/injury/crash costs, physical fitness and health impacts.	The parameter values used to calculate the benefits/costs have not been listed in this submission.			<ul style="list-style-type: none"> <li>Are the values used recommended by the ATC?</li> </ul>	Not enough information has been provided in the submission	This is envisaged to have a small impact on the BCR.	Not enough information has been provided in the submission	Broadly neutral
22. Noise, particle emissions and other environmental pollutants (NOX, NMVOCs, SOX, CH4, N2O) Noise impacts	The parameter values used to calculate the benefits/costs have not been listed in this submission.			<ul style="list-style-type: none"> <li>Are the values used recommended by the ATC?</li> </ul>	Not enough information has been provided in the submission	This is envisaged to have a small impact on the BCR.	Not enough information has been provided in the submission	Broadly neutral
<b>Overall comments</b>	The overall Benefit Cost Analysis of the project seems reasonable. Due to the size of the project and the BCR figure, a more detail study on demand should be considered.							Broadly neutral