



Transport
for NSW

MEMO

TO: General Manager, Greater Sydney Program Office, RMS
FROM: Executive Director, Group Finance
DATE: 11 ~~Apr.~~ March, 2017
PRIORITY: ROUTINE

Windsor Bridge Replacement Final Business Case Assurance Review Report

Attached is the Expert Review Panel Report for the Windsor Bridge Replacement. Please pass on my thanks to the Project Team for their attendance and input.

The project sponsor (General Manager, Greater Sydney Program Office, RMS) is responsible for organising a formal response within 14 days of receipt as follows:

- Provide a Project Team Response and Action Plan (template provided) to manage and close out recommendations.
- Submit to the Manager, Assurance - Roads

In your response you may choose to deal with any observations or concerns the review report raises.

Progress on actions must be formally reported to the Manager, Assurance on the 25th of each month. Monthly status updates continue until all actions have been closed out.

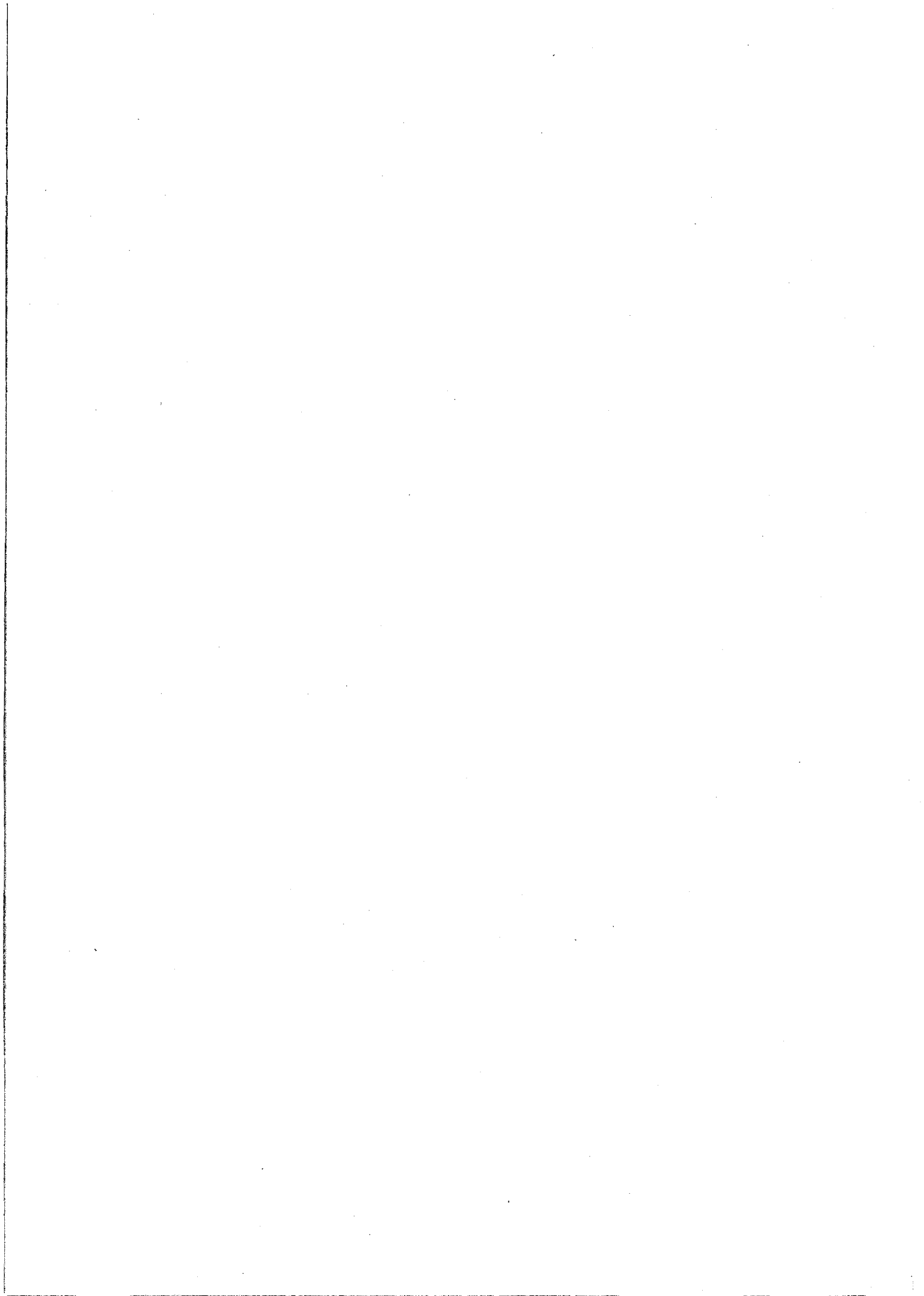
Note that Expert Review Panels are generally not privy to internal Transport issues such as availability of funding, and the Report should be considered in this context.

Authority to access capital funds within the TfNSW TAM is conditional on each capital investment having:

- An approved business case and implementation plan;
- Endorsement from Evaluation & Assurance to submit the business case to the Finance and Investment Committee (FIC) for approval; and
- Approval from the FIC.

Sincerely,

Stéphen Fox
Executive Director, Group Finance





Transport
for NSW

Windsor Bridge Replacement

Final Business Case Assurance Review Report

Date: March 2017

Author: Review Panel

Revision: 1.1

Status: Final

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1 Executive Summary

An Expert Review Panel (ERP) undertook a Final Business Case Review of the Windsor Bridge Replacement project between 22 February 2017 and 2 March 2017.

The request is to increase total funding from [REDACTED] to [REDACTED]. RMS PMO tabled an estimate during the review that was [REDACTED] at P50 level including escalation and contingencies.

The project review had the following objectives:

- To assess and provide constructive feedback on the adequacy of the Final Business Case to achieve its purpose particularly in demonstrating alignment with NSW Government transport objectives;
- To assess and provide constructive feedback on how value for money for Government has been optimised in the project; and,
- To assess whether the key risks have been identified and if appropriate management measures have been put in place.

Overall the ERP considers that the Business Case (subject to addressing the Review recommendations) supports the Government's decision to continue to develop and deliver the project.

The Assurance Review has found that the Project's key positive aspects are:

- The new alignment will allow trucks to pass without any passing and speed restrictions.
- The orientation of the bridge allows landscaping of the Thompson Square to improve community access to the river front and The Terrace.
- Two intersections that are subject to peak period delays and heavy congestion will be improved.
- A new modern bridge that replaces an old structure.

The Assurance Review's key recommendations are:

- Complete 100% Design Cost estimate and update quantified risk assessment.
- Proactively manage the delivery of the planning approval conditions.

The project was rated against nine criteria as set out below. The rating scale is also set out below, based on a 'traffic light' system of red – amber - green.

OVERALL PROJECT SCORECARD

Rating Scale

The Expert Review Panel assessment findings for each of the project review elements were rated using the following 'traffic light' scoring mechanism.

Red	<i>Critical and urgent</i> Immediate action on identified shortcomings and recommendations is required to achieve success of the project.
Amber	<i>Important and urgent</i> The project should go forward with action on recommendations.
Green	<i>Important and of Benefit</i> The program or project may benefit from implementation of recommendations, if applicable.

Project Business Case – Expert Review Panel Rating

Description	Rating	No. of Recommendations
Business Need and Benefits	Amber	1
Funding and Value for Money	Amber	2
Sustainability	Green	1
Governance	Green	1
Risk Management	Amber	6
Project Delivery	Amber	4
Stakeholder Management	Green	1
Change Management	Green	1
Cost Management	Amber	4
Other	NA	NA

2 Introduction

Purpose

The purpose of the Assurance Review of this Business Case is to give confidence to the NSW Government that the Business Case (subject to addressing any Review recommendations) supports the Government's decision to continue to develop and deliver the project.

The Expert Review Panel (ERP) reviewed key documents associated with the Business Case and interviewed key project personnel.

Expert Review Panel

The Expert Review Panel was made up of the individuals outlined in Appendix A.

3 Project Context

Background and Objectives

The project is located at Windsor in the Hawkesbury local government area about 57 kilometres northwest of Sydney. Windsor is a major historic town, with European settlement dating back to the late 1700s. Today it is predominantly rural, although there is extensive and expanding urban development to the south and west of the town. The existing Windsor Bridge was opened in 1874 and is the oldest existing bridge across the Hawkesbury River. It provides an important local link for communities on each side of the river, as well as an important regional link between western Sydney, the Blue Mountains and the Hunter region. Around 19,000 vehicles use the bridge each day, with around seven per cent of these being heavy vehicles.

This is the first Assurance Review as this project commenced before 2013 when the Assurance Review process was adopted by RMS.

Parts of the existing bridge are over 140 years old and are deteriorating as a result of age and heavy use. Elements of the bridge have deteriorated substantially and it is not practical to replace or repair these elements. The existing bridge and adjacent intersections no longer meet the demands of current peak hour traffic volumes or current road standards. The level of maintenance required to maintain the bridge is no longer cost effective and it is therefore regarded that the bridge has reached the end of its economic life.

In June 2008, in recognition of the condition of the existing bridge and the volume of traffic it carried, the New South Wales (NSW) Government announced funding for its replacement. Preliminary investigations of potential bridge replacement options along with stakeholder consultations were completed in 2012, followed by completion and public display of the Environmental Impact Statement (EIS) exhibition.

The table below summarises the history of the project's estimated cost and time savings benefits.

Date	Activity	Capex \$m	PVC \$m	PV Time \$m	BCR
Jun-08	NSW Government Announcement	\$ [REDACTED]	\$ -	\$ -	-
Aug-11	Options Study Report (RTA) Option 1	\$ [REDACTED]	\$ [REDACTED]	\$ 148.32	4.5
Nov-12	EIS Submitted (SKM/RMS) Option 1	\$ [REDACTED]	\$ [REDACTED]	\$ 548.80	14.6
Oct-16	Final Business Case (SKM/RMS) Option 1	\$ [REDACTED]	\$ [REDACTED]	\$ 582.90	12.6

4 Review Process

Review Approach

The Assurance Review was completed in accordance with the requirements of the TfNSW Assurance Review Process.

This review process has been developed to meet the specific needs of transport projects and projects in New South Wales. It is a coordinated transport wide assurance system that provides a robust review mechanism for ensuring that the prerequisites for project success are in place.

Key documents made available to the ERP were as follows:

Document Title (and version)	Author	Date of Publication
00 Windsor Bridge FBC – Document Title and Author Register	RMS	February 2017
01 Windsor Bridge FBC – Gateway Review Schedule	RMS	February 2017
02 Windsor Bridge FBC – Interviewee Listing	RMS	February 2017
03 Windsor Bridge Replacement – Final Business Case	RMS	October 2016
04 Windsor Bridge FBC – Appendix 1 Cost Management Plan	Jacobs	October 2016
05 Windsor Bridge FBC – Appendix 2 Economic Appraisal	Jacobs	September 2016
06 Windsor Bridge FBC – Appendix 3 Benefits Realisation Strategy	RMS	October 2016
07 Windsor Bridge FBC – Appendix 4 Design Report Refer Appendix 7 EIS	RMS	October 2016
08 Windsor Bridge FBC – Appendix 5 Options Report	RTA	August 2011
09 Windsor Bridge FBC – Appendix 6 Value Management Report	ACVM	April 2012
10 Windsor Bridge FBC –	SKM	November 2012

Document Title (and version)	Author	Date of Publication
Appendix 7 Environmental Impact Statement		
11 Windsor Bridge FBC – Appendix 8 Project Management Plan	RMS	January 2017
12 Windsor Bridge FBC – Appendix 9 Risk Management Plan	RMS	January 2017
13 Windsor Bridge FBC – Appendix 10 Risk Register	RMS	October 2016
14 Windsor Bridge FBC – Appendix 11 Procurement Plan Refer To Appendix 8 Project Management Plan		
15 Windsor Bridge FBC – Appendix 12 Community and Stakeholder Management	RMS	January 2017
16 Windsor Bridge FBC – Appendix 13 Change Management Plan	RMS	January 2017
17 Windsor Bridge FBC – Appendix 14 Asset Bridge Condition Report	RMS	April 2015
18 Windsor Bridge FBC – Project Schedule	RMS	January 2017
19 Windsor Bridge FBC – MPPC Submission Final	RMS	March 2016
20 Windsor Bridge FBC – MPPC Meeting Outcomes	RMS	March 2016
21 Windsor Bridge FBC – IPIC Submission	RMS	October 2016
22 Windsor Bridge FBC – Project Update December 2016	RMS	December 2016
23 Windsor Bridge FBC – Project Update August 2016	RMS	August 2016
24 Windsor Bridge FBC – Project Update March 2016	RMS	March 2016

Review Interviews

During the review, interviews were held with members of the Project Team. The people interviewed including key stakeholders were as follows:

Interviewee	Position	Organisation	Program role
Graham Standen	Senior Project Manager	Roads and Maritime Services	<ul style="list-style-type: none"> - Business Needs and Benefits - Funding and Value for Money - Governance - Change Management
Margy Andrews	Manager Program Controls	Roads and Maritime Services	<ul style="list-style-type: none"> - Funding and Value for Money
Basil Pazpinis	Engineering Estimator	Roads and Maritime Services	<ul style="list-style-type: none"> - Cost Management
Kumar Srinivasan	Risk Specialist	Roads and Maritime Services	<ul style="list-style-type: none"> - Risk Management
Lauren Nicholls	Liaison Manager	Roads and Maritime Services	<ul style="list-style-type: none"> - Stakeholder Management
Andrew Blackman	Liaison Manager	Roads and Maritime Services	<ul style="list-style-type: none"> - Stakeholder Management
Suzette Graham	Environment Officer	Roads and Maritime Services	<ul style="list-style-type: none"> - Sustainability / Environment
Tim Rodham	Major Projects Executive	Jacobs	<ul style="list-style-type: none"> - Business Needs and Benefits - Design and Tender Documentation
David Lowe	Technical Director, Traffic Engineering	Jacobs	<ul style="list-style-type: none"> - Business Needs and Benefits
Ngebo Gwebu	Economist	Jacobs	<ul style="list-style-type: none"> - Business Needs and Benefits
Daryl Hard		Jacobs	<ul style="list-style-type: none"> - Design and Tender Documentation
Bruno Dalla-Palma		Jacobs	<ul style="list-style-type: none"> - Design and Tender Documentation
Jackie McCloud		Department of Planning and Environment	<ul style="list-style-type: none"> - Sustainability and Environment

The following Sections of the Report set out the ERP's findings in relation to the nine criteria.

5 Business Need and Benefits

Observations and Recommendations

The Expert Review Panel (ERP) noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
BN1	<p>When the project commenced in FY08/09, it was with the RTA's asset management area; focussed on lowering the cost of ongoing maintenance through a bridge replacement project. This is the first Assurance Review conducted on the project.</p> <p>The FBC outlines four underlying reasons for development of the project:</p> <ol style="list-style-type: none"> 1. The bridge's useful life has been exceeded 2. The bridge's lane widths are narrow by current road standards 3. Traffic efficiency improvements for vehicles travelling through Windsor. 4. Increase flood immunity of the bridge. <p>The FBC reports a BCR of 12.6 with NPV of \$637.3 million.</p>	Refer BN9.
BN2	<p>The bridge condition report indicates that the bridge has reached the end of its design life. The cost to rectify by remedial works is estimated to be over \$18m which may extend the operational life for 25 years.</p>	Refer BN9.
BN3	<p>The traffic efficiency argument is not strong. The lane widths of 3m have been in place for 100 years. The traffic flow arrangements for crossing the bridge are informal and results in trucks stopping on the approach if another truck is on the bridge. This results in traffic delays of about 15 to 20 seconds per event. The benefits from widening the lanes in terms of traffic delays would only be small.</p>	Refer BN9.
BN4	<p>Savings in maintenance costs as included in the economic appraisal are minimal, about \$150k per year. This annual saving could support a capex of about \$2m.</p>	Refer BN9.

Ref	Observation	Recommendation (N/A if not applicable)
BN5	<p>The cause of over \$690m worth of benefits as estimated in the economic appraisal is unclear.</p> <p>The benefits come from changing the uncontrolled intersection at Freemans and Wilberforce to a roundabout and changing the roundabout in George St to a signal controlled intersection.</p>	Refer BN9.
BN6	<p>The biggest benefit results from an assumption that traffic volumes will increase by 25% in 2026. This accounts for over 80% of the discounted benefits in the appraisal. This assumption is not supported by the available evidence. RMS traffic counts in Bridge Street shows minimal change in the daily or peak hour traffic from 2008 to 2016.</p> <p>The Sydney Strategic Traffic Model (SSTM) forecasts adopted for the project's traffic growth forecasts were taken from models based on land use data forecasts applicable at June 2010. These forecasts would have been based on Journey to Works (JTW) and census data of year 2006.</p> <p>The ERP make reference to the current BTS information which shows that forecast land use changes on the north side of the Hawkesbury river are only small. For travel zones 4212, 4221, 4209 the combined zonal population forecast is estimated to increase from 7833 persons in year 2016 to about 8332 in year 2026 only a 499 increase or 6.4%. This pattern is also reflected in the forecast of employment and workforce numbers. The ERP are concerned that a 25% increase in traffic by 2026 as used in the economic appraisal may not be supported by the current land use forecasts.</p>	Refer BN9.

Ref	Observation	Recommendation (N/A if not applicable)
BN7	<p>The 25% increase in traffic volumes in 2026 (from 2011 levels) translates into visual simulation (VISSIM) modelling a 260% increase in base case vehicle hours in the PM peak which then translates into a 158% increase in annual vehicle hours. It is this exponential change in vehicle hours in the network that converts into value of time in the economic analysis. Other factors include; the VISSIM modelling reported in Figure 4.1 that average distance travelled in the network is over 2.0 kms, while the road distance from George Street to Freemans Road is 0.65kms. VISSIM results Table 2.5 report modelled base PM Peak of 12,562 vehicles in 2016, while the model can only load 8,598 vehicles in 2026, unusual outcome. Furthermore the modelling includes delays associated with Macquarie Street intersection which is not part of the project scope of works.</p> <p>The economic appraisal shows the annual value of time for the base case going from \$22.8 million in 2016 to \$91.7 million in 2026. This growth component accounts for more than 80% of the present value of the time benefits. While the value of time for the option 1 goes from \$19.4 million to \$25.9 million.</p>	Refer BN9.
BN8	<p>The base case appears to be distorted resulting in user costs that are exceptionally high.</p> <p>The base case has assumed \$18m will be spent on upgrading the bridge, but have not included any benefits to users coming from this, e.g. trucks would be allowed to cross the bridge at 50kph instead of 40kph. The timing of this capex expenditure is FY17/18 and FY18/19. Whereas a realistic timing would be 2020 to 2022.</p> <p>The base case has no improvement in Freemans intersection over the 30 years resulting in exponential growth in delays for traffic using the Freemans road. A reasonable base case would assume that as traffic delays and accidents increased RMS would upgrade the intersection to a roundabout before 2025.</p>	Refer BN9.
BN9	<p>The ERP are of the view that given the extreme variability in the VISSIM modelled outcomes if adjustments (particularly for traffic growth) were incorporated into the economic analysis a more realistic BCR would be reported.</p>	RMS to carry out a due diligence review of the economic appraisal.

Ref	Observation	Recommendation (N/A if not applicable)
BN10	The new bridge will reduce flooding events from flooding from 1:2 to 1:5 impact. There has been a minor change in the probability of flooding but there is still a high chance the bridge will be flooded at any time in the future including during the construction period.	Refer BN9.

Business Need Assessment

The Expert Review Panel rated the Project in relation to this criterion as follows (apply shading using 'traffic lights' as above):

Amber	<p><i>Important and urgent</i></p> <p>The project should go forward with action on recommendations.</p>
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6 Funding and Value for Money

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
F1	<p>As of August 2016 TAM allocation is [REDACTED] with [REDACTED] already expended to 30 June 2016. The request is to increase total funding to [REDACTED] and to accelerate timing of construction activities with Contractor procurement fast tracked to 17/18 FY with commensurate cashflow to meet this fast tracked program.</p> <p>The ERP received formal advice from RMS PMO regarding their review of the cost estimates, their review was undertaken based on the concept design level documentation. Their estimate at P50 level is [REDACTED] inc escalation and contingencies.</p> <p>The overall contingency is estimated at 33% which is considered appropriate for concept estimates. RMS PMO acknowledges that the detailed design documentation will be available soon and that information will potentially result in the overall contingency being reduced to a level appropriate for 100% design estimate. Given the uncertainty about satisfying the EIS Approval Conditions the ERP were advised that RMS would prefer to maintain the high level of contingency at this stage of the project.</p>	<p>Given the status of the project at this point that a project estimate of [REDACTED] be adopted for TAM application.</p>
F2	<p>The approved TAM funding profile of Aug 16 had construction starting in FY18/19. The ERP have not seen compelling evidence that would support accelerating the program by one year. In light of the delays to date in satisfying the planning approval conditions the ERP is of the view that construction could be delayed to FY18/19.</p>	<p>Revise the cash flow to support [REDACTED] capex and delay in awarding of the construction Contractor to the second half of 2018.</p>
F3	<p>The project is not currently fully funded in the forward estimates period.</p>	<p>N/A</p>

Funding and Value for Money Assessment

The Expert Review Panel rated the Funding and Value for Money aspect as follows:

Amber	<i>Important and urgent</i> The project should go forward with action on recommendations.
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7 Sustainability

Ensuring the program/project meets the social, economic and environmental needs of the community today and protected and maintained for future generations. The NSW Government Sustainability Policy outlines how the Government will lead by example in sustainable water and energy use, reducing greenhouse gas emissions, waste and fleet management and sustainable purchasing.

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
S1	<p>The Windsor Bridge is listed under the Heritage Act - s.170 NSW State agency heritage register.</p> <p>The heritage register states: <i>"The Windsor Bridge represents the oldest extant crossing of the Hawkesbury River. Together with the successive crossings upstream at Richmond, this bridge has played a major role in shaping the history of the Hawkesbury area, which is defined by the life of the River. The Windsor Bridge has landmark qualities as one of only two bridge crossings of the Hawkesbury River in the Hawkesbury area. As such it defines the surrounding network of roads."</i></p>	The FBC should outline the potential risk if demolition of the existing bridge is not approved.
S2	The ERP were advised by DPE that condition A4 had already been satisfied because of the minor works that RMS has already undertaken on the site. Condition A4 relates to the 5 year consent lapse period as part of the planning approval conditions.	N/A
S3	<p>A major program of works has been established to further investigate heritage items such as aboriginal and non-aboriginal heritage.</p> <p>The only major change that came out of the EIS determination was to lower the road at the Southern end by 1m. The project has otherwise been accepted in regards to engineering design.</p>	N/A

Ref	Observation	Recommendation (N/A if not applicable)
S4	The following planning approval conditions have been approved by the Department of Planning in October 2016: <ul style="list-style-type: none"> B3 – Archaeology B4 – Partially approved which includes salvage items. The Aboriginal heritage items have been approved by DPE. 	N/A
S5	The proposed design actually enhances the Thompson Square precinct by physically connecting the east side with the west side which is separated by the Bridge Street cutting.	N/A
S6	The ERP were advised that the new bridge will improve the visual and physical access between the square and the river foreshore by infilling the Bridge Street cutting and reshaping the landform to create a more regular grassed slope connecting George St to The Terrace.	N/A
S7	An urban design and landscape plan is being prepared as part of the development approval conditions.	N/A
S8	Flood management plan has been developed for the construction period. This will be a requirement of the Contractor tender documents. RMS will identify a suitable site and comply with DPE for a construction site which is less flood prone.	N/A

Sustainability Assessment

The Expert Review Panel rated the project Sustainability aspect as follows:

Green	<p><i>Important and of Benefit</i></p> <p>The program or project may benefit from implementation of recommendations, if applicable.</p>
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8 Governance

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
G1	The organisational chart in the Final Business Case does not depict how the project will be delivered. Refer to Fig 5.1 of the Final Business Case. It should show that professional services contractors (PSC's) are reporting directly to the Project Manager (implementation). RMS is adopting a new structure based around a PMO approach which was introduced last year. This project is being managed within the new framework.	Update the organisational chart in the Final Business Case to depict how the project will be delivered.

Governance Assessment

The Expert Review Panel rated the project Governance aspect as follows:

Green	<i>Important and of Benefit</i> The program or project may benefit from implementation of recommendations, if applicable.
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9 Risk Management

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
RM1	The risk register is yet to be complete and full probabilistic risk evaluation needs to be completed. This is not satisfactory for a Final Business Case. PMO cannot undertake a full probabilistic P50 and P90 assessment without the risk register being completed.	Complete the risk register including a full probabilistic risk evaluation.
RM2	WH&S and design Risk items have not been included in the risk assessment at the moment. This task will identify what risks are held with RMS and what is being transferred to the Contractor. This will be completed as part of developing the next cycle of risk assessment.	N/A
RM3	Progress on key risk assessment activities has stalled due to the delay in acceptance of the heritage salvage management plans.	N/A
RM4	Timing or completion of the condition items is a high risk. The target is June 2017 which is already at risk as the task is significant and the actions are extensive.	N/A
RM5	1:5 year Flooding risks are evident and real. The risk strategy in regards to flooding during construction is not defined nor clear. The potential cost to RMS and Contractor in the event of flooding should be included in the probabilistic risk evaluation to establish that the contingency is sufficient to cover the most likely event.	Include in the probabilistic risk evaluation the cost to RMS and Contractor in the event of flooding.
RM6	Community issues, lack of support from Council and Heritage issues are key, and the costs associated with each are still being determined. RMS have some controls in place to address these issues. A probabilistic risk evaluation capturing the risk cost needs to be carried out.	Include in the probabilistic risk evaluation the risk and costs of community issues, lack of support from Council and Heritage issues.

Ref	Observation	Recommendation (N/A if not applicable)
RM7	Flooding during construction needs to be clearly assessed within the risk register and the approach within the GC21 Contract with the Contractor. These may be uninsurable and will impact on time and cost delays to the project.	Include flooding during construction in the probabilistic risk evaluation.
RM8	Contingency levels will have to be reviewed once there is clarity on salvage efforts and impact of the local community.	N/A
RM9	Value for money from the Archaeologist Joint Venture is a real risk issue. Need to establish a plan to bring the investigation works to a timely and cost effective end.	Establish a plan to bring the Archaeologist Joint Venture investigation works to a timely and cost effective end.
RM10	The risk write up in the final business case is generic. The risks are well known but are not well documented in the business case and therefore the cost estimate does not fully incorporate the costs associated with risks on the project.	N/A
RM11	Hawkesbury Council will be required to execute a Deed of Agreement with RMS to transfer assets and any associated compensation in relation to the transfers. In particular, Council will have a strong interest in the landscaping and urban design of Thompson Square Precinct. Council's concurrence with these plans will be required to satisfy B7 and C47 of the planning approval conditions.	Capture in the risk register the transfer of assets and associated compensation.

Risk Management Assessment

The Expert Review Panel rated the risk management aspect as follows:

Amber	<p><i>Important and urgent</i></p> <p>The project should go forward with action on recommendations.</p>
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10 Project Delivery

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
PD1	In 2012 an Alliance delivery arrangement was established between Baulderstone (now Lend Lease) and RMS. This Alliance progressed with the development of a Target Outturn Cost (TOC). SKM (now Jacobs) were contracted directly by RMS to develop the preferred design option with design input and constructability advice from Baulderstone. When the court challenge was filed in April 2014 RMS terminated the Alliance arrangement with Baulderstone. The ERP have not been advised of any special termination arrangement with Baulderstone that may impact awarding future packages of works related to this project.	RMS carry out a due diligence in regards to the termination of the Alliance arrangement in regards to future procurement risks.
PD2	The ERP were advised that the incrementally launched bridge construction methodology proposed was actually proposed and designed by Baulderstone as part of the Alliance arrangements that Baulderstone had with RMS prior to it being terminated.	Confirm that Baulderstone do not have Intellectual or Moral Rights over the bridge design and construction methodology.
PD4	Construction interface is a significant risk – The ERP are unsure how the content related to closing out the EIS approval conditions will be incorporated into the Contractor tender documents. Including the large list of EIS information documents puts the risk on RMS in regards to compliance.	N/A
PD5	RMS has taken on the role as the independent certifier/verifier. Ian Allen is the Principal manager and he will review the documents to make sure it addresses all the protocols and all the correct RMS reps have been consulted and reviewed to progress.	N/A

Ref	Observation	Recommendation (N/A if not applicable)
PD6	<p>SKM (now Jacobs) were contracted to produce the EIS on behalf of RMS. Following public submissions to the EIS SKM were contracted under a PSC (Construction Industry) form of Contract by RMS to prepare detailed design of option 1.</p> <p>The Land and Environment Court challenge submitted by Community Against Windsor Bridge (CAWB) in April 2014 resulted in SKM being put on hold and the termination of the Alliance Arrangement with Boulderstone.</p> <p>Following the favourable Land & Environment Court Decision in October 2015 RMS asked SKM to submit a proposal for a variation to their original PSC Contract. In December 2015 RMS approved the variation to carry out the scope of works. Part of the scope was to complete the Final Business Case. In October 2016 SKM submitted the Final Business Case report to RMS.</p> <p>The ERP were advised there are currently over 30 variations approved between December 2015 and March 2017.</p>	Establish Jacobs roles and responsibilities going forward.
PD7	<p>The ERP have been advised that the form of Contract will be a Construct Only-GC21 Contract which is currently being drafted and was not provided to the ERP to review or comment on. The ERP were advised that there is no change to the risk allocation in the GC21 terms and conditions. The major project specific items will be covered in the technical specifications and appendices with the GC21 Contract.</p>	N/A

Project Delivery Assessment

The Expert Review Panel rated the Project Delivery aspect as follows:

Amber	<p><i>Important and urgent</i></p> <p>The project should go forward with action on recommendations.</p>
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11 Stakeholder Management

Observations and Recommendations


The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
SM1	<p>There is a stakeholder management plan. RMS have been proactive in managing issues related to stakeholder responses. Given the controversial nature of the project enhanced communication arrangements have been established within RMS.</p> <p>The RMS community and stakeholder officers have been directly involved on the project for a long period of time. They have been actively involved with discussions with residents and community groups.</p> <p>There are strong linkages between the RMS Media team and the Project Comms team that ensures very quick response to issues that may arise in the media.</p>	N/A
SM2	<p>The ERP were advised that no trucking organisations have been consulted to date. There are significant numbers of heavy vehicles that use the bridge each day. The trucking companies will be a major beneficiary of the bridge upgrade and their support should be sought.</p>	Consult with trucking groups and minute discussions.

Ref	Observation	Recommendation (N/A if not applicable)
SM3	<p>The ERP were advised that following recent Council elections the local Council does not now support the preferred option. RMS advised that they have a good working relationship with Council Officers.</p> <p>Given the alignment and nature of the project RMS will handover certain assets at the completion of the project to the Council. Consequently there will be a need to execute a Deed of Agreement to transfer assets and any compensation in relation to the transfers. In particular Council will have a strong interest in the landscaping and urban design of Thompson Square Precinct. Council's concurrence with these plans will be required to satisfy B7 and C47 of the planning approval conditions.</p>	N/A
SM4	<p>The ERP noted that DPE control the approval to proceed to construction via the planning conditions approval.</p> <p>Monthly meetings are being held with DPE. The ERP were advised that DPE are supportive of the project and have a good working relationship with RMS. The ERP were advised that approval protocols between DPE and RMS are part of a Memorandum of Understanding between the agencies.</p>	N/A
SM5	<p>The ERP noted that there is a very well organised and focussed community action group opposed to the project. They have a permanent encampment on Thompson Square. They were responsible for the court case appealing the EIS approval conditions. The group's policy agenda appears to be one of keep the existing bridge for community use and build a bypass of Windsor Town Centre incorporating a new bridge. RMS are of the view that the action group do not represent the views of the broader community.</p>	N/A

Stakeholder Management Assessment

The Expert Review Panel rated the project Stakeholder management aspect as follows:

	<p><i>Important and of Benefit</i></p> <p>The program or project may benefit from implementation of recommendations, if applicable.</p>
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12 Change Management

A structured approach to shifting/transitioning individuals, teams, and organisations from a current state to a desired future state. Change management involves understanding the level of operational change that a project or program will cause to an agency, its people and the general public and proactively developing strategies and action plans to manage the impact of that change in order to achieve the benefits of a program or project.

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
CH1	The ERP note that this project has a long history and there have been a significant number of changes to RMS team, consultant and stakeholder individuals. Therefore the historical knowledge of the project may be lost in part. Therefore it is important that the evolution of the project is closely documented including changes in scope of works and cost estimates.	N/A
CH2	The Change Management Plan is generic and needs to incorporate project specific change management items such as the handover of assets to Council at the completion of the project and how the demolition of the existing bridge will be managed.	incorporate project specific change management items such as the handover of assets to Council at the completion of the project and how the demolition of the existing bridge will be managed

Change Management Assessment

The Expert Review Panel rated the project Change Management aspect as follows:

Green	<p><i>Important and of Benefit</i></p> <p>The program or project may benefit from implementation of recommendations, if applicable.</p>
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13 Cost Management

Observations and Recommendations

The Expert Review Panel noted the following observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
CO1	<p>In June 2008 the NSW Government announced the replacement of the Windsor Bridge at a Cost of \$25m. In August 2011 RTA reported on the preferred option to proceed at \$45.4m. In November 2012 RMS reported through the EIS that the cost of Option 1 would be \$50.4m. The Final Business Case presented to the ERP is estimated at [REDACTED].</p> <p>There have been continual cost increases that do not appear to be associated with scope change going from option 1 in 2011 to option 1 in 2016. This is the same scoped option throughout.</p>	The RMS project team prepare a reconciliation establishing how the cost changes have been built up.
CO2	The ERP noted that there is no 100% design cost estimate completed to date.	Provide 100% design cost estimate
CO3	Contingency amounts have not been crossed checked against probabilistic risk assessment contained within the risk register. This analysis is a standard requirement for a Final Business Case.	Undertake a full and complete probabilistic risk assessment of the 100% design costed project.
CO4	The ERP noted that RMS property section included a large contingency for property acquisition. The ERP queried why such a large contingency was required when the majority of properties were already purchased.	N/A
CO5	The Cost estimate as reviewed by PMO RMS was of the concept design and not the 100% design. Consequently PMO have established a contingency of 33% which they consider appropriate concept design.	PMO review 100% design cost and contingency allowance.

Cost Management Assessment

The Expert Review Panel rated the project Cost Management aspect as follows:

Amber	<i>Important and urgent</i> The project should go forward with action on recommendations.
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14 Other Observations and Recommendations

The Expert Review Panel noted the following other observations and recommendations (where applicable):

Ref	Observation	Recommendation (N/A if not applicable)
OTH1	N/A	N/A

15 Sponsor's Debrief – Attendance Register

Name	Position	Organisation	Program role
Ian Allen	Principal Manager, Greater Sydney Program Office	Roads and Maritime Services	Principal Manager & Sponsor's Representative
Graham Standen	Senior Project Manager (Implementation)	Roads and Maritime Services	Senior Project Manager
Janine Leake	Manager Assurance and Coordination Project Development	Roads and Maritime Services	Assurance Review
George Bourtsouklis	Manager Assurance	Transport for NSW	Investment Assurance
Sam Wassef	Project Assurance Manager	Roads and Maritime Services	Assurance Review
Laurie Bowman	Portfolio Controls and Analytics Manager	Roads and Maritime Services	Assurance Review
Stephen Engeler	Senior Analyst, Investment Assurance	Transport for NSW	Investment Assurance

16 Conclusions and Recommendations

The Expert Review Panel concludes that, with action on the above recommendations, the Windsor Bridge Replacement project is ready to proceed to the next stage.

This report has been compiled by the Expert Review Panel members nominated in Appendix A. The content, conclusions and recommendations of this report are intended solely for use by Transport for NSW.

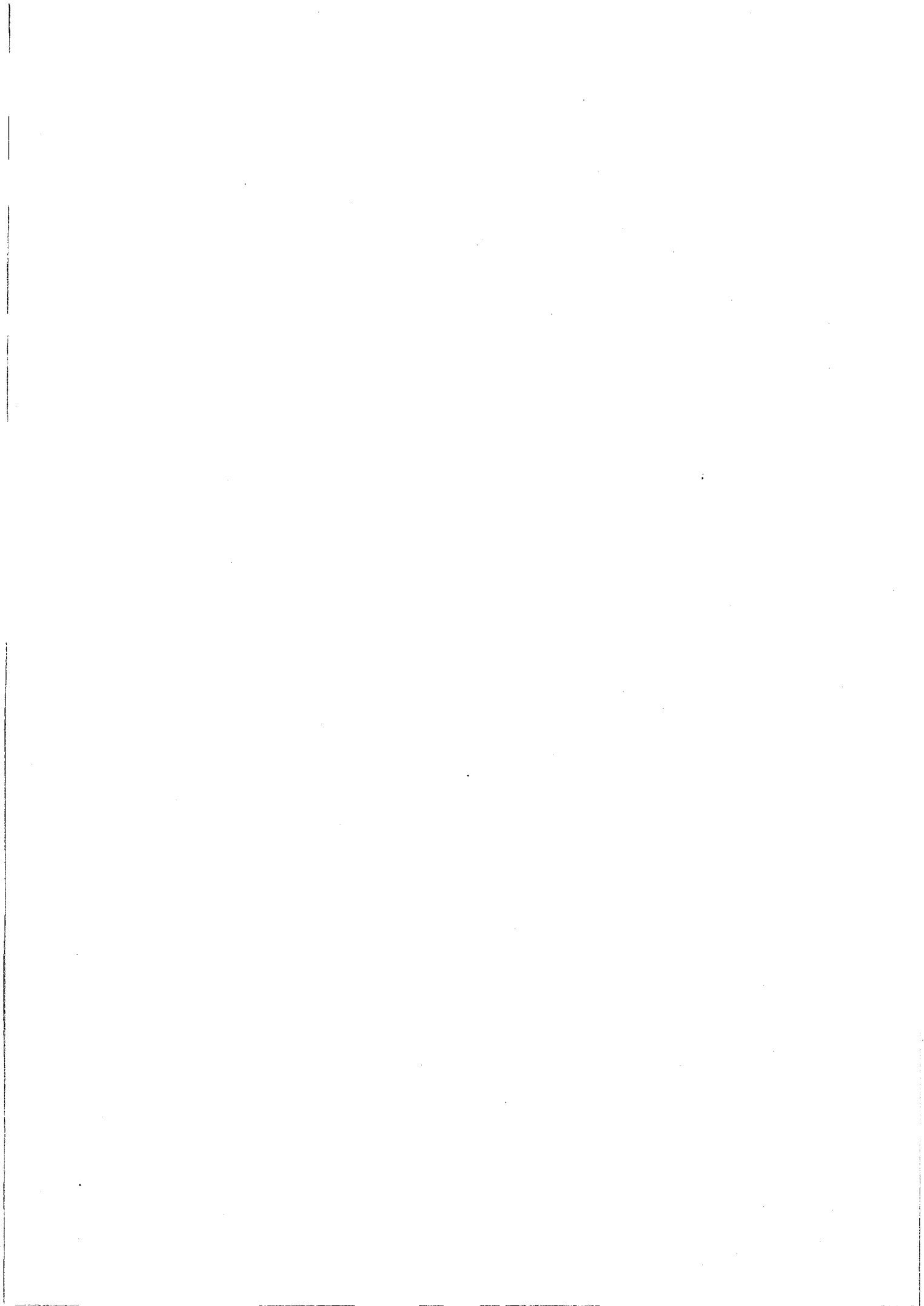
Danny Graham (Chair)

Christopher Wassef

Appendix A: Expert Review Panel

<p>Danny Graham Infrastructure Advisor <i>(External)</i></p> <p><i>Business Needs and Benefits, Funding and Value for Money and Procurement</i></p>	<p>Danny has over 40 years industry experience in the planning, assessment and delivery of major infrastructure projects. Danny was Director of the NSW Treasury PPP team from 2000 to 2011 and established the Treasury Branch which is the leading provider of advice to the NSW Government on PPP policy and projects. He assisted with the establishment of the National PPP working group and was Chairman of that group.</p> <p>He has overseen all the PPP projects, worth more than \$15 billion, undertaken by the NSW Government between 1995 and 2011.</p> <p>Danny's Assurance Review experience includes the following projects:</p> <ul style="list-style-type: none">• Northern Beaches Hospital Road Upgrade• Northconnex (M1 to M2)• Airport Precinct Program of Works• New England Highway: Singleton Bypass• Sydney Ferries Program (FBC and Contract Award)• Parramatta Transport Corridor Strategy• Edmondson Park Activation• Leppington Activation• Sydney Ferries (Tranche 2)• Safety and Congestion Program• Nelson Bay Corridor Upgrade• Parramatta River Ferries
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<p>Christopher Wassef <i>(External)</i> <i>Project Director</i> <i>Civil Engineering</i> <i>Large complex infrastructure projects</i> <i>Procurement Management</i> <i>Stakeholder Management</i></p>	<p>Christopher is a civil engineer by background having started his career working for tier one contractors then progressing to leading teams and infrastructure projects for a number of client side management consultancies. Christopher has also worked for himself and was engaged directly to lead the Port Botany & Sydney Airport Short Term Action Plan for Transport for NSW prior to joining Aurecon.</p> <p>Christopher is currently Market Leader Infrastructure, NSW and acting as Project Director on multiple infrastructure commissions within the Aurecon Sydney Transport team. Past projects include Defence projects such as the \$275m RAAF Base Williamtown Redevelopment Stage 2 and the \$250m Site Maribyrnong Remediation project. Current clients include Transurban, Transport for NSW (TfNSW) and Roads and Maritime (RMS).</p> <p>Mr Wassef's previous Review Panel experience includes:</p> <ul style="list-style-type: none"> • Nepean River Green Bridge • Bridges for the Bush (3 projects) • Kings Highway Route Safety Engineering Program • Wickham Transport Interchange • Alford's Point Road Widening, Brushwood Drive to Georges River • Flood Mitigation and Noise Abatement Programs • Wynyard Station Upgrade. • Mulgoa Road/Castlereagh Road Corridor Upgrade-Between Glenmore Parkway and Andrews Road
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Transport
for NSW

Windsor Bridge Replacement Project

Investment Assurance Review Project Team Response and Action Plan

Date: 20 November 2017

Author: Graham Standen, Senior
Project Manager

Revision: 1.1

Status: Edited for Close-out

Contents

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1 Expert Review Outcomes

1.1 Overall Review Project Rating

The Expert Review Panel assessment findings for each of the project review elements were rated using the following 'traffic light' scoring mechanism.

Red	<i>Critical and urgent</i> Immediate action on identified shortcomings and recommendations is required to achieve success of the project.
Amber	<i>Important and urgent</i> The project should go forward with action on recommendations.
Green	<i>Important and of Benefit</i> The program or project may benefit from implementation of recommendations.

Project Business Case –

Expert Review Panel Rating

Description	Rating
Business Need and Benefits	
Funding and Value for Money	
Sustainability	
Governance	
Risk Management	
Project Delivery	
Stakeholder Management	
Change Management	
Cost Management	

2 Expert Panel Recommendations and Project Team Response

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations <small>(include location, document name, version number where relevant)</small>	Responsible person	Timeframe	Status <small>(from Sponsor/Project Perspective)</small>	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
Business Needs and Benefits							
BN1	<p>When the project commenced in FY08/09, it was with the RTA's asset management area; focussed on lowering the cost of ongoing maintenance through a bridge replacement project. This is the first Assurance Review conducted on the project.</p> <p>The FBC outlines four underlying reasons for development of the project:</p> <ol style="list-style-type: none"> 1. The bridge's useful life has been exceeded 2. The bridge's lane widths are narrow by current road standards 3. Traffic efficiency improvements for vehicles travelling through Windsor. 4. Increase flood immunity of the 	Refer BN9					

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	bridge. The FBC reports a BCR of 12.6 with NPV of \$637.3 million.						
BN2	The bridge condition report indicates that the bridge has reached the end of its design life. The cost to rectify by remedial works is estimated to be over \$18m which may extend the operational life for 25 years.	Refer BN9					
BN3	The traffic efficiency argument is not strong. The lane widths of 3m have been in place for 100 years. The traffic flow arrangements for crossing the bridge are informal and results in trucks stopping on the approach if another truck is on the bridge. This results in traffic delays of about 15 to 20 seconds per event. The benefits from widening the lanes in terms of traffic delays would only be small.	Refer BN9					
BN4	Savings in maintenance costs as included in the economic appraisal are minimal, about \$150k per year. This annual saving could support a capex of about \$2m.	Refer BN9					
BN5	The cause of over \$690m worth of benefits as estimated in the economic appraisal is unclear. The benefits come from	Refer BN9					

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	changing the uncontrolled intersection at Freemans and Wilberforce to a roundabout and changing the roundabout in George St to a signal controlled intersection.						
BN6	<p>The biggest benefit results from an assumption that traffic volumes will increase by 25% in 2026. This accounts for over 80% of the discounted benefits in the appraisal. This assumption is not supported by the available evidence. RMS traffic counts in Bridge Street shows minimal change in the daily or peak hour traffic from 2008 to 2016.</p> <p>The STTM forecasts adopted for the project's traffic growth forecasts were taken from models based on land use data forecasts applicable at June 2010. These forecasts would have been based on JTW and census data of year 2006.</p> <p>The ERP make reference to the current BTS information which shows that forecast land use changes on the north side of the Hawkesbury river are only small. For travel zones 4212,</p>	Refer BN9					

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	4221, 4209 the combined zonal population forecast is estimated to increase from 7833 persons in year 2016 to about 8332 in year 2026 only a 499 increase or 6.4%. This pattern is also reflected in the forecast of employment and workforce numbers. The ERP are concerned that a 25% increase in traffic by 2026 as used in the economic appraisal may not be supported by the current land use forecasts.						
BN7	The 25% increase in traffic volumes in 2026 (from 2011 levels) translates into visual simulation (VISSIM) modelling a 260% increase in base case vehicle hours in the PM peak which then translates into a 158% increase in annual vehicle hours. It is this exponential change in vehicle hours in the network that converts into value of time in the economic analysis. Other factors include; the VISSIM modelling reported in Figure 4.1 that average distance travelled in the network is over 2.0 kms, while the road distance from George Street to Freemans Road is 0.65kms. VISSIM	Refer BN9					

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	<p>results Table 2.5 report modelled base PM Peak of 12,562 vehicles in 2016, while the model can only load 8,598 vehicles in 2026, unusual outcome. Furthermore the modelling includes delays associated with Macquarie Street intersection which is not part of the project scope of works.</p> <p>The economic appraisal shows the annual value of time for the base case going from \$22.8 million in 2016 to \$91.7 million in 2026. This growth component accounts for more than 80% of the present value of the time benefits. While the value of time for the option 1 goes from \$19.4 million to \$25.9 million.</p>						
BN8	<p>The base case appears to be distorted resulting in user costs that are exceptionally high.</p> <p>The base case has assumed \$18m will be spent on upgrading the bridge, but have not included any benefits to users coming from this, e.g. trucks would be allowed to cross the bridge at 50kph</p>	Refer BN9					

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	<p>instead of 40kph. The timing of this capex expenditure is FY17/18 and FY18/19. Whereas a realistic timing would be 2020 to 2022.</p> <p>The base case has no improvement in Freemans intersection over the 30 years resulting in exponential growth in delays for traffic using the Freemans road. This probably would not happen, sooner or later RMS would upgrade the intersection to a roundabout.</p>						
BN9	<p>The base case appears to be distorted resulting in user costs that are exceptionally high.</p> <p>The base case has assumed \$18m will be spent on upgrading the bridge, but have not included any benefits to users coming from this, e.g. trucks would be allowed to cross the bridge at 50kph instead of 40kph. The timing of this capex expenditure is FY17/18 and FY18/19. Whereas a realistic timing would be 2020 to 2022.</p> <p>The base case has no improvement in Freemans</p>	RMS to carry out a due diligence review of the economic appraisal.	Economic appraisal revised (Appendix 2) using detailed design estimate, alternate traffic modelling using SIDRA Network with revised assumptions and inputs (Appendix 15. Results from the above have been inserted into revised Section 4.	Senior Project Manager	August 2017	Complete	Acceptable CLOSED

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	intersection over the 30 years resulting in exponential growth in delays for traffic using the Freemans road. This probably would not happen, sooner or later RMS would upgrade the intersection to a roundabout.						
BN10	The new bridge will reduce flooding events from flooding from 1:2 to 1:5 impact. There has been a minor change in the probability of flooding but there is still a high chance the bridge will be flooded at any time in the future including during the construction period.	Refer BN9					
Funding and Value for Money							
F1	As of August 2016 TAM allocation is [REDACTED] with [REDACTED] already expended to 30 June 2016. The request is to increase total funding to [REDACTED] and to accelerate timing of construction activities with Contractor procurement fast tracked to 17/18 FY with commensurate cashflow to meet this fast tracked program. The ERP received formal advice from RMS PMO regarding their review of the cost estimates, their review was	Given the status of the project at this point that a project estimate of [REDACTED] be adopted for TAM application.	The project estimate of [REDACTED] has been adopted for TAM application.	Senior Project Manager	March 2017	Complete	Acceptable CLOSED

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	<p>undertaken based on the concept design level documentation. Their estimate at P50 level is [REDACTED] inc escalation and contingencies.</p> <p>The overall contingency is estimated at 33% which is considered appropriate for concept estimates. RMS PMO acknowledges that the detailed design documentation will be available soon and that information will potentially result in the overall contingency being reduced to a level appropriate for 100% design estimate. Given the uncertainty about satisfying the EIS Approval Conditions the ERP were advised that RMS would prefer to maintain the high level of contingency at this stage of the project.</p>						
F2	The approved TAM funding profile of Aug 16 had construction starting in FY18/19. The ERP have not seen compelling evidence that would support accelerating the program by one year. In light of	Revise the cash flow to support [REDACTED] capex and delay in awarding of the construction Contractor to the second half of 2018.	The milestone to award contract revised to April 2018. As stated above, current TAM is [REDACTED].	Senior Project Manager	August 2017	Complete	Acceptable CLOSED

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	the delays to date in satisfying the planning approval conditions the ERP is of the view that construction could be delayed to FY18/19.						
F3	The project is not currently fully funded in the forward estimates period.	N/A					
Sustainability							
S1	<p>The Windsor Bridge is listed under the Heritage Act - s.170 NSW State agency heritage register.</p> <p>The heritage register states: <i>“The Windsor Bridge represents the oldest extant crossing of the Hawkesbury River. Together with the successive crossings upstream at Richmond, this bridge has played a major role in shaping the history of the Hawkesbury area, which is defined by the life of the River. The Windsor Bridge has landmark qualities as one of only two bridge crossings of the Hawkesbury River in the Hawkesbury area. As such it defines the surrounding network of roads.”</i></p>	The FBC should outline the potential risk if demolition of the existing bridge is not approved.	The demolition of the existing bridge has been approved as a part of the Infrastructure Approval. No further action proposed.	N/A	N/A	Complete	Acceptable CLOSED

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
S2	The ERP were advised by DPE that condition A4 had already been satisfied because of the minor works that RMS has already undertaken on the site. Condition A4 relates to the 5 year consent lapse period as part of the planning approval conditions.	N/A					
S3	A major program of works has been established to further investigate heritage items such as aboriginal and non-aboriginal heritage. The only major change that came out of the EIS determination was to lower the road at the Southern end by 1m. The project has otherwise been accepted in regards to engineering design.	N/A					
S4	The following planning approval conditions have been approved by the Department of Planning in October 2016: • B3 – Archaeology	N/A					

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	<ul style="list-style-type: none"> B4 – Partially approved which includes salvage items. The Aboriginal heritage items have been approved by DPE. 						
S5	The proposed design actually enhances the Thompson Square precinct by physically connecting the east side with the west side which is separated by the Bridge Street cutting.	N/A					
S6	The ERP were advised that the new bridge will improve the visual and physical access between the square and the river foreshore by infilling the Bridge Street cutting and reshaping the landform to create a more regular grassed slope connecting George St to The Terrace.	N/A					
S7	An urban design and landscape plan is being prepared as part of the development approval conditions.	N/A					

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
S8	Flood management plan has been developed for the construction period. This will be a requirement of the Contractor tender documents. RMS will identify a suitable site and comply with DPE for a construction site which is less flood prone.	N/A					
Governance							
G1	The organisational chart in the Final Business Case does not depict how the project will be delivered. Refer to Fig 5.1 of the Final Business Case. It should show that Professional Service Contracts are reporting directly to the Project Manager (implementation). RMS is adopting a new structure based around a PMO approach which was introduced last year. This project is being managed within the new framework.	Update the organisational chart in the Final Business Case to depict how the project will be delivered.	Organisational chart updated in Section 5 of the Final Business Case.	Project Manager	May 2017	Complete	Acceptable CLOSED
Risk Management							
RM1	The risk register is yet to be complete and full probabilistic	Complete the risk register including a full	The risk analyser was updated in March 2017 and was further updated in August 2017. The current version	Project Manager	March 2017	Complete	Acceptable CLOSED

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2.Status
	risk evaluation needs to be completed. This is not satisfactory for a Final Business Case. PMO cannot undertake a full probabilistic P50 and P90 assessment without the risk register being completed.	probabilistic risk evaluation.	has been provided as a revised Appendix 10.				
RM2	WH&S and design Risk items have not been included in the risk assessment at the moment. This task will identify what risks are held with RMS and what is being transferred to the Contractor. This will be completed as part of developing the next cycle of risk assessment.	N/A					
RM3	Progress on key risk assessment activities has stalled due to the delay in acceptance of the heritage salvage management plans.	N/A					
RM4	Timing or completion of the condition items is a high risk. The target is June 2017 which is already at risk as the task is significant and the actions are	N/A					

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	extensive.						
RM5	1:5 year Flooding risks are evident and real. The risk strategy in regards to flooding during construction is not defined nor clear. The potential cost to RMS and Contractor in the event of flooding should be included in the probabilistic risk evaluation to establish that the contingency is sufficient to cover the most likely event.	Include in the probabilistic risk evaluation the cost to RMS and Contractor in the event of flooding.	Flood risks have been factored into risk analyser which was updated in March 2017. Refer to line items: 1.18.16 from Early Works sheet And from Detailed Design sheet:3.17.18 3.22.1 3.23.3 3.29.11.	Project Manager	March 2017	Complete	Acceptable CLOSED
RM6	Community issues, lack of support from Council and Heritage issues are key, and the costs associated with each are still being determined. RMS have some controls in place to address these issues. A probabilistic risk evaluation capturing the risk cost needs to be carried out.	Include in the probabilistic risk evaluation the risk and costs of community issues, lack of support from Council and Heritage issues.	Risk associated with stakeholders has been included in the Risk Analyser	Project Manager	March 2017	Complete	Acceptable CLOSED
RM7	Flooding during construction needs to be clearly assessed within the risk register and the approach within the GC21 Contract with the Contractor. These may be uninsurable and	Include flooding during construction in the probabilistic risk evaluation.	Risk associated with flooding was been included in Risk Analyser updated in March 2017 and estimates have been revised during detailed design. However, further discussions have been conducted with RMS Insurance	Project Manager	28 April 2017	Commenced	Acceptable OPEN 04/05/18: Contractual evidence signed. Closed.

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	will impact on time and cost delays to the project.		<p>Manager on insurance and coverage. Insurance Manager has stated insurance for this event can be obtained and that excess applies. This advice is included with the response but not in the business case. Further the relevant tender/ contract documents will be reviewed by the insurance manager. Currently \$2M has been allocated for this event the budget. This will now not be needed as only insurance excess will have to be paid. Money saved will be placed in the contingency for other future unforeseen risks.</p> <p><i>This risk has been removed for the risk register as it is a risk that can be insured. Documentation to obtain insurance has been included in the contract for the contractor to obtain. Costs related to delays are included in the Risk Analyser in the event if this risk occurred.</i></p>				
RM8	Contingency levels will have to be reviewed once there is clarity on salvage efforts and impact of the local community.	N/A					
RM9	Value for money from the Archaeologist Joint Venture is a real risk issue. Need to establish a plan to bring the investigation works to a timely	Establish a plan to bring the Archaeologist Joint Venture investigation works to a timely and cost effective end.	It has been decided to obtain the best value for money, it will be best to split the salvage contract into two separate contracts. One minor works contract for the civil works associated with salvage and one professional services contract for the archaeology services.	Senior Project Manager	July 2017	Complete.	Acceptable CLOSED

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	and cost effective end.		The civil works will be carried out by Seymour Whyte Constructions and the archaeology services will be provided by AAJV. These contracts have been awarded and some of the off-road salvage works has actually commenced on site in October 2017.				
RM10	The risk write up in the final business case is generic. The risks are well known but are not well documented in the business case and therefore the cost estimate does not fully incorporate the costs associated with risks on the project.	N/A					
RM11	Hawkesbury Council will be required to execute a Deed of Agreement with RMS to transfer assets and any associated compensation in relation to the transfers. In particular, Council will have a strong interest in the landscaping and urban design of Thompson Square Precinct. Council's concurrence with these plans will be required to satisfy B7 and C47 of the	Capture in the risk register the transfer of assets and associated compensation.	This has been included in Risk Analyser. Refer to item 3.29.24. No compensation for the transfer of assets is anticipated, however, this will be clarified with Hawkesbury City Council RMS has consulted Council on asset handover in December 2016. RMS has completed UD&L as well as Detail Design consultation with council. RMS is currently completing Asset handover Deed of Agreement for the transfer of Assets at the end of the project. Task	Project Manager	30 June 2017	Commenced.	<u>Acceptable</u> <u>OPEN</u> 07/05/18: Risk Analyser and consultation evidence sighted. Closed.

Cabinet in Confidence

Criteria and Ref	Observation	Recommendation	Project Team response – Actions and Evidence to address recommendations (include location, document name, version number where relevant)	Responsible person	Timeframe	Status (from Sponsor/Project Perspective)	Expert Review Panel/ IA Assessment: 1. Acceptability 2. Status
	planning approval conditions.		Commenced and is ongoing. <i>The asset handover agreement is an ongoing consultation process with the agreement reached at the end of the project during the finalisation phase. RMS has completed consultation with both RMS Assets team and Hawkesbury City Council.</i>				
Project Delivery							
PD1	In 2012 an Alliance delivery arrangement was established between Baulderstone (now Lend Lease) and RMS. This Alliance progressed with the development of a Target Outturn Cost (TOC). SKM (now Jacobs) were contracted directly by RMS to develop the preferred design option with design input and constructability advice from Baulderstone. When the court challenge was filed in April 2014 RMS terminated the Alliance arrangement with Baulderstone. The ERP have not been advised of any special termination arrangement with Baulderstone that may impact awarding future packages of works related to this project.	RMS carry out a due diligence in regards to the termination of the Alliance arrangement in regards to future procurement risks.	Lend Lease (Baulderstone) have been contacted and it has been clarified that the Alliance will not be resurrected and Lend Lease have no further claims. Evidence of termination letter and follow up emails to confirm enclosed with documents. Not referred to in business case due to sensitivity.	Principal Manager	March 2017	Completed	Acceptable CLOSED

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PD2	The ERP were advised that the incrementally launched bridge construction methodology proposed was actually proposed and designed by Baulderstone as part of the Alliance arrangements that Baulderstone had with RMS prior to it being terminated.	Confirm that Baulderstone do not have Intellectual or Moral Rights over the bridge design and construction methodology.	Refer PD1	Principal Manager	March 2017	Completed	Acceptable CLOSED
PD4	Construction interface is a significant risk – The ERP are unsure how the content related to closing out the EIS approval conditions will be incorporated into the Contractor tender documents. Including the large list of EIS information documents puts the risk on RMS in regards to compliance.	N/A					
PD5	RMS has taken on the role as the independent certifier/verifier. Ian Allen is the Principal manager and he will review the documents to make sure it addresses all the protocols and all the correct RMS reps have been consulted and reviewed to progress.	N/A					

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PD6	<p>SKM (now Jacobs) were contracted to produce the EIS on behalf of RMS. Following public submissions to the EIS SKM were contracted under a PSC (Construction Industry) form of Contract by RMS to prepare detailed design of option 1.</p> <p>The Land and Environment Court challenge submitted by Community Against Windsor Bridge (CAWB) in April 2014 resulted in SKM being put on hold and the termination of the Alliance Arrangement with Baulderstone.</p> <p>Following the favourable Land & Environment Court Decision in October 2015 RMS asked SKM to submit a proposal for a variation to their original PSC Contract. In December 2015 RMS approved the variation to carry out the scope of works. Part of the scope was to complete the Final Business Case. In October 2016 SKM submitted the Final Business</p>	<p>Establish Jacobs roles and responsibilities going forward.</p>	<p>There is an allowance in the contract for design support during the delivery phase. The scope of this support is to be defined and detailed as an amendment to the contract. Note that the value of this support will primarily be based on hourly rates.</p> <p>Construction Support documentation from Jacobs highlights the cost, scope and role of Jacobs in the Construction Phase.</p>	Project Manager	August 2017	Pending For Gate 3	<p><u>Acceptable</u> <u>OPEN</u></p> <p>04/05/18 Evidence sighted. Closed</p>

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	Case report to RMS. The ERP were advised there are currently over 30 variations approved between December 2015 and March 2017.						
PD7	The ERP have been advised that the form of Contract will be a Construct Only-GC21 Contract which is currently being drafted and was not provided to the ERP to review or comment on. The ERP were advised that there is no change to the risk allocation in the GC21 terms and conditions. The major project specific items will be covered in the technical specifications and appendices with the GC21 Contract.	N/A					
Stakeholder Management							
SM1	There is a stakeholder management plan. RMS have been proactive in managing issues related to stakeholder responses. Given the controversial nature of the project enhanced communication arrangements	N/A					

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	<p>have been established within RMS.</p> <p>The RMS community and stakeholder officers have been directly involved on the project for a long period of time. They have been actively involved with discussions with residents and community groups.</p> <p>There are strong linkages between the RMS Media team and the Project Comms team that ensures very quick response to issues that may arise in the media.</p>						
SM2	<p>The ERP were advised that no trucking organisations have been consulted to date. There are significant numbers of heavy vehicles that use the bridge each day. The trucking companies will be a major beneficiary of the bridge upgrade and their support should be sought.</p>	<p>Consult with trucking groups and minute discussions.</p>	<p>Consultation was undertaken with some local trucking companies and no major concerns or issues were raised.</p>	<p>Communications Office</p>	<p>July 2017</p>		<p><u>Acceptable</u> <u>CLOSED</u></p>
SM3	<p>The ERP were advised that following recent Council</p>	<p>N/A</p>	<p>N/A</p>				

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	<p>elections the local Council does not now support the preferred option. RMS advised that they have a good working relationship with Council Officers.</p> <p>Given the alignment and nature of the project RMS will handover certain assets at the completion of the project to the Council. Consequently there will be a need to execute a Deed of Agreement to transfer assets and any compensation in relation to the transfers. In particular Council will have a strong interest in the landscaping and urban design of Thompson Square Precinct. Council's concurrence with these plans will be required to satisfy B7 and C47 of the planning approval conditions.</p>						
SM4	<p>The ERP noted that DPE control the approval to proceed to construction via the planning conditions approval.</p> <p>Monthly meetings are being held with DPE. The ERP were</p>	N/A	N/A				

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	advised that DPE are supportive of the project and have a good working relationship with RMS. The ERP were advised that approval protocols between DPE and RMS are part of a Memorandum of Understanding between the agencies.						
SM5	The ERP noted that there is a very well organised and focussed community action group opposed to the project. They have a permanent encampment on Thompson Square. They were responsible for the court case appealing the EIS approval conditions. The group's policy agenda appears to be one of keep the existing bridge for community use and build a bypass of Windsor Town Centre incorporating a new bridge. RMS are of the view that the action group do not represent the views of the broader community.	N/A					
Change Management							

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CH1	The ERP note that this project has a long history and there have been a significant number of changes to RMS team, consultant and stakeholder individuals. Therefore the historical knowledge of the project may be lost in part. Therefore it is important that the evolution of the project is closely documented including changes in scope of works and cost estimates.	N/A					
CH2	The Change Management Plan is generic and needs to incorporate project specific change management items such as the handover of assets to Council at the completion of the project and how the demolition of the existing bridge will be managed.	Incorporate project specific change management items such as the handover of assets to Council at the completion of the project and how the demolition of the existing bridge will be managed	Change Management Plan (Appendix 13) has been updated to reflect more project specific items such as demolition of the old bridge and asset handover to council.	Project Manager	July 2017	Complete	Acceptable CLOSED
Cost Management							
CO1	In June 2008 the NSW Government announced the replacement of the Windsor Bridge at a Cost of \$25m. In August 2011 RTA reported on	The RMS project team prepare a reconciliation establishing how the cost changes have been built	A new detailed design estimate has been obtained and business case has been updated to suit.	Project Manager	June 2017	Complete	Acceptable CLOSED

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	<p>the preferred option to proceed at \$45.4m. In November 2012 RMS reported through the EIS that the cost of Option 1 would be \$50.4m. The Final Business Case presented to the ERP is estimated at [REDACTED]</p> <p>There have been continual cost increases that do not appear to be associated with scope change going from option 1 in 2011 to option 1 in 2016. This is the same scoped option throughout.</p>	up.					
CO2	The ERP noted that there is no 100% design cost estimate completed to date.	Provide 100% design cost estimate	100% Detailed design probabilistic estimate report included in Appendix 1B of business case.	Project Manager	July 2017	Complete	Acceptable CLOSED
CO3	Contingency amounts have not been crossed checked against probabilistic risk assessment contained within the risk register. This analysis is a standard requirement for a Final Business Case.	Undertake a full and complete probabilistic risk assessment of the 100% design costed project.	Refer to CO2 response.	Project Manager	July 2017	Complete	Acceptable CLOSED
CO4	The ERP noted that RMS property section included a large contingency for property	N/A	N/A				

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	acquisition. The ERP queried why such a large contingency was required when the majority of properties were already purchased.						
CO5	The Cost estimate as reviewed by PMO RMS was of the concept design and not the 100% design. Consequently PMO have established a contingency of 33% which they consider appropriate concept design.	PMO review 100% design cost and contingency allowance.	Detailed design estimate has been reviewed by PMO. Breakdown summary included in economic appraisal Appendix 2. The estimate is attached in Appendix 1B as noted above. Record of review can be found in document A17270588.	Project Manager	May 2017	Complete	Acceptable CLOSED