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A REFERENCES AND BIBLIOGRAPHY

Governments Architects Office, December 2009. Landscape and Visual Impact Assessment for Proposed Bridge Options at Windsor, Stage 2 Draft Report.

Heritage Concepts, July 2008. **Baseline Aboriginal Assessment (Draft), proposed replacement of the Hawkesbury River Bridge** (RTA No. 415).

LesryK Environmental Consultants, July 2008. *Flora and Fauna Assessment*, Windsor Bridge.

RTA, March 2010. **Windsor Bridge Replacement** Short List of Option Selection-Draft.

RTA, November 2010. Community Update, Windsor Bridge over the Hawkesbury River.

RTA, November 2009. Windsor Bridge over the Hawkesbury River, Report on Community Consultation.

RTA, July 2009. Community Update, Windsor Bridge over the Hawkesbury River.

RMS (Formerly RTA) REFERENCES AND GUIDELINES

RTA, August 2009. Beyond the Pavement: RTA Urban Design Policy, Procedures & Design Principles.

RTA, November 2003 Bridge Aesthetics: Design guidelines to improve the appearance of bridges in NSW.

RTA, March 2004. RTA Heritage Guidelines, Version 2.

RTA, **Landscape Guideline:** Landscape design and maintenance guidelines to improve the quality, safety and cost effectiveness of road corridor planting and seeding.

HAWKESBURY CITY COUNCIL

Hawkesbury City Council, Hawkesbury Local Environmental Plan 2009.

Hawkesbury City Council, **Community Strategic Plan, Shaping Our** Future 2010-2030.

Hawkesbury City Council, **Windsor Foreshore Parks Incorporating the Great River Walk** Adopted Plan of Management 2009.

Hawkesbury City Council, Draft Residential Land Strategy.

Westbus, Windsor & Richmond Bus Guide October 2009.

Hawkesbury City Council, Hawkesbury District Bicycle Network 2005.

Hawkesbury City Council, Mobility Plan 2010, Bike Plan and Pedestrian Access and Mobility Plan.

OTHER SOURCES

Jack. M, Macquarie's Towns, The Heritage Council of New South Wales, Parramatta 2010.

Nichols, M, Hawkesbury Pictorial History, Kingsclear books 2004.

WMA Water, **Proposed Replacement of Windsor Bridge, Hydraulic** Assessment October 2010.

STRATEGIC POLICY CONTEXT AND DESIRED FUTURE CHARACTER B

Draft North West Sub-regional Strategy 2007

The draft North West Sub-regional Strategy was released by the NSW Government in December 2007. It covers the Baulkham Hills, Blacktown, Blue Mountains, Hawkesbury and Penrith local government areas. The strategy identifies a number of town centres, including Windsor and Richmond, which play an important role in serving the surrounding catchments.

The project supports the objectives of the strategy and the ongoing role of Windsor as a retail, commercial and community centre serving a regional catchment through the provision of improved access and connectivity for communities of the Hawkesbury River. The actions identified in the strategy relevant to the urban design project are listed in the table below

Theme	Action	Project relevance
Parks, public places and culture	 Improve access to waterways and links between bushland, parks and centres. 	The reconfiguration of the Thompson Square will improve pedestrian and vehicular access and connections to the Hawkesbury River from the Windsor town centre.

Source: Draft North West Subregional Strategy, 2007.

Hawkesbury Community Strategic Plan 2010-2030

The Hawkesbury Community Strategic Plan 2010-2030 was adopted by the Hawkesbury City Council in October 2009. The plan sets out the key community aspirations for the community under five vision statements. Themes and selected directions in the plan of relevance to this investigation are outlined in the table below

Vision Strategies		Project relevance	
Looking after people and place	 (Ensure) population growth is matched with the provision of infrastructure and is sympathetic to the rural, environmental, heritage values and character of the Hawkesbury local government area. 	• The project will have both positive and negative impacts on heritage listed Thompson Square; however the design of the bridge and rehabilitation of the square considers the heritage and aesthetic context.	
Caring for our environment	Be a place where we value, protect, and enhance the cultural and environmental character of Hawkesbury's towns, villages and rural landscapes.	Parts of the project area are located in State heritage-listed Thompson Square, an area highly valued for its contribution to the Windsor character and landscape. The bridge crosses the Hawkesbury River, an environmental asset highly valued by the local and regional community. Protection of these environmental and cultural assets is important.	
Linking the Hawkesbury	Have a comprehensive system of transport	The project would provide improvements to the	

Vision	Strategies	Project
	connections which link people and products across the Hawkesbury local government area and with surrounding regions.	pedestria including paths lin with the foreshor the river connecti Park.

Source: Hawkesbury Community Strategic Plan, 2010.

Hawkesbury Residential Lands Strategy

The Hawkesbury Residential Land Strategy was released in 2011. The objectives of the strategy were to:

- Accommodate between 5,000 and 6,000 additional dwellings by 2031, primarily within the existing urban areas identified in the Department of Planning's North West Subregional Strategy.
- Preserve the unique and high quality natural environment of the local government area.
- Accommodate changing population, which presents new demands in terms of housing, services and access.
- Identify ongoing development pressures to expand into natural and rural areas, as well as new development both in and around existing centres.
- Identify physical constraints of flood, native vegetation and bushfire risk.

The strategy identified a number of key issues. Those key issues relevant to the project are outlined in the table below.

Key issues	Project relevance
Development in close proximity to heritage items should be assessed for its impact on the heritage environment with the urban design of the heritage item treated sensitively.	The project is loca which is a significa Windsor. Approprimplemented to mi impacts. During op Thompson Square considers the herit importance, and p the waterfront.

Source: Hawkesbury Residential Lands Strategy, 2011.

Hawkesbury Local Environmental Plan 1989

Land use and development within Windsor is controlled through the zoning provisions of Hawkesbury Local Environmental Plan 1989. Land use zones within the study area are outlined in the table below.

Zone	Objectives	Project r
Business general	 Minimise conflicts between pedestrians and vehicular movement systems. Preserve the historic 	 The p minin betwee vehic provision

relevance

- an and cycle network, g new and upgraded king the town centre Hawkesbury River e. shared path across and new path ions to Macquarie

- ated in Thompson Square, ant heritage place in riate measures should be nitigate construction peration, rehabilitation of e and bridge design itage and aesthetic provides improved access to

elevance

project would assist in nising conflicts een pedestrians and cles through the ision of a signalised

Zone	Objectives	Project relevance
	character of the City of Hawkesbury by protecting heritage items and by encouraging compatible development within and adjoining historic buildings and precincts.	 crossing and a shared pedestrian/cycle path. The replacement bridge alignment would be through State heritage-listed Thompson Square, design and construction considers the heritage and aesthetic importance of this key area.
Open space (Existing recreation)	 Encourage the development of public open space in a manner which maximises the satisfaction of the community's diverse recreational needs. Encourage the development of open spaces as major urban landscape elements. 	 The project is located in close proximity to existing open space and recreation areas. The project supports the long term use of the existing public open space through the revitalisation of Thompson Square.

Source: Hawkesbury Local Environmental Plan, 1989.

The project generally aligns with the broader objectives of the local environmental plan.

Hawkesbury City Council Generic Plans of Management for Community Lands

The Community Land Generic Plans of Management outline the permitted uses and activities within the parks and reserves of the Hawkesbury and management actions that Council will endeavour to undertake. Of the four that have been developed, the Generic Plan of Management for Parks applies to Thomson Square, Macquarie Park and Wharf Reserve, while General Community Use applies only to Macquarie Park.

Relevant landscape character design issues from each plan relevant to the project are identified in the table below.

Objective (PoM)	Action (PoM)	Project relevance
Ensure that the landscape character of Parks/general community use is retained	 Plan appropriately, including materials selection and colour schemes Landscape designs to enhance landscape features 	 Appropriate materials and finishes have been identified for the project for further consideration. Landscape designs for Thompson Square seek to enhance landscape features through reunifying the square
Consider adjacent land use when designing Parks	 Retain trees for habitat value as well as shade and aesthetic values where possible 	While a number of trees would be removed, a detailed landscape plan will be developed identifying appropriate landscaping and plantings for the project
Design parks/general community use areas to improve safety of users	 Use Safer by Design principles when developing 	The potential for antisocial behaviours has been considered during the

Objective (PoM)	Action (PoM)	Project relevance
and reduce crime	parks and new areas	concept design and avoidance will be fu considered during o design.

Plan of Management for the Windsor Foreshore Parks - Incorporating the Great **River Walk**

'Plan of Management for the Windsor Foreshore Parks Incorporating the Great River Walk' (Environmental Partnerships, 2009) applies to a series of foreshore open spaces in Windsor, including, Macquarie Park, Thompson Square reserve and Windsor Wharf Reserve.

The lands covered by this plan form part of the route of the Great River Walk, an undertaking to expand the network of regional recreational trails serving the Sydney basin. The incorporation and enhancement of foreshore open spaces within Windsor to provide a linked river trail is the main focus of this plan.

The plan identifies key issues which impact the future development of the Great River Walk. A number of these key issues are directly relevant to the project including:

- Bridge Street/George Street intersection This is a difficult and potentially dangerous road crossing currently preventing safe and fluid pedestrian movements from the Windsor town centre along George Street to Governor Phillip Reserve.
- Access to Macquarie Park from Howe Park path requires two difficult and potentially dangerous road crossings (ie crossing the southern approach road and northern approach road of the existing bridge). The existing timber stair underpass (of existing bridge) is often not used as it is a longer alternative route adding more time to the trip as pedestrians must go down the stairs and then climb another set of stairs.
- Macquarie Park The foreshore path terminates abruptly here and there is a lack of ٠ pedestrian crossing to Windsor bridge.

The project would directly address all of these key issues including:

- Providing traffic signals at the Bridge Street/George Street intersection which would provide safe pedestrian movements from the Windsor town centre along George Street to Governor Phillip Reserve.
- New pedestrian paths and stairs would eliminate the two difficult and potentially dangerous road crossings (southern and northern bridge approach roads) between Macquarie Park and Howe Park.
- A provision would be made to connect the foreshore path from Macquarie Park to the new shared path on the replacement bridge.

The plan also contains management objectives and actions to facilitate the further development of the Great River Walk. There are a number of specific objectives and actions relating to the project and these are presented and assessed in the table below.

Management	Action from Plan of Management	Relevance to the
Objective The proposed PMS	Poinstatement of connection	The project would
(formerly RTA)	between the Hawkesbury water	reinstatement of th
Windsor Bridge	front and Thompson Square is	connection betwee
Replacement	pursued through Landscape design	Hawkesbury water
project allows for a	and sensitivity to the historical role	Thompson Square
reinstatement of	of Thompson Square is carried	Hawkesbury City C
historic connection	through any landscape	heritage agencies
between the	modifications to the area	specialists, the cor
Hawkesbury water		other stakeholder

d for urther detailed

project

allow for a he historic en the front and Council, and mmunity and groups would

Management Objective	Action from Plan of Management	Relevance to the project
front and Thompson Square		continue to be consulted on the landscape design for Thompson Square. Refer to Section 7.4 for details about visual amenity, urban design and landscaping.
Planning & management strategies promote both cohesion and diversity through the overall open space entity	 Prepare landscape / improvement plan for Windsor Wharf Reserve to consider: improved pedestrian access to The Terrace facilitated through RMS (formerly RTA) bridge replacement project activate use of foreshore spaces for fishing and other activities through reduction of spatial impacts of parking and access integration of RMS (formerly RTA) bridge replacement to Windsor Road Optimisation of slope as design feature - eg viewing areas 	HCC and the community would continue to be consulted on landscaping and urban design measures for The Terrace, foreshore areas and any areas of Windsor Wharf Reserve impacted by the project to ensure that HCC objectives/actions can be accommodated.
	 Prepare landscape / improvement plan for Macquarie Park to consider: improved pedestrian access to the town centre facilitated through RMS (formerly RTA) bridge replacement project improved linkage from park to bridge for pedestrians and cyclist extension of park area to east 	HCC and the community would continue to be consulted on landscaping and urban design measures for northern foreshore areas and the pedestrian/cyclist paths to ensure that HCC objectives/actions can be accommodated. With the removal and rehabilitation of the northern approach road to the existing bridge, Macquarie Park would be able to be extended east.
Safe connection of foreshore open spaces for pedestrians/cyclists	Liaise with RMS (formerly RTA) to establish a signalled crossing at the intersection of Bridge Road and George Street	A signalled crossing at the intersection of Bridge Road and George Street is part of the project.

The plan also presents concept designs for the Thompson Square parkland and other foreshore parks adjacent to the project. Where possible these concept designs would inform any urban and landscape design measures that would be developed as part of the project. Achieving all the objectives and outcomes of these concept designs is beyond the scope of the project, however RMS would continue to work with HCC, the community and heritage agencies to develop and implement urban design and landscaping outcomes that consider the heritage values and long term uses of Thompson Square.

Desired future character

The desired future character of the study area is drawn from an analysis of the existing character of the foreshore areas of Windsor that comprise the study area, and consideration of the strategic planning documents identified above. In particular the Plan of Management for the Windsor Foreshore Parks identifies the following vision statement:

"Creating and managing a foreshore open space corridor in Windsor that provides a valuable resource for recreation, cultural engagement and identity to the community both local and metropolitan, and that pursues sustainable best practice environmental management that contributes to the health of the broader river catchment system."

These desired improvements to the foreshore corridor, cultural engagement and river health, as well as improvements to vehicular, cyclist and pedestrian access within and through Windsor identified in other strategic planning documents, designed in a way that is sympathetic to existing valued heritage and cultural qualities and characteristics, form the desired character of the study area.

C SUMMARY OF OPTIONS CONSIDERED

BRIDGE DESIGN

BRIDGE FORMS CONSIDERED

Four bridge types were evaluated in urban design terms.

RIBBED SLAB + PRECAST PLANK

The ribbed slab option required 5 piers to complete the span and the precast plan required 6 piers. The modest and simple forms of these bridges would have a suitably calm urban presence, but it was considered that these construction systems lacked opportunities to finesse the expression of the underside of the deck, which is an important consideration in this context.

BALANCED CANTILEVERS

This bridge could complete the span with only 2 piers - giving it a very open expression. The form of the bridge was considered to be very elegant, but the required structural depth gave the bridge a dominating scale in comparison to the fine buildings in Thompson Square.

ARCHES

A number of arched options were considered. Typically these required a minimum of 3 piers to complete the span. Steel was ruled out due to its poor performance in flood. Therefore, and arched bridge would require a much deeper concrete structure to work in this instance, which again, tended to dominate the finer scale of Thompson Square.

LAUNCHED BRIDGE

The launched bridge (see following page) was pursued as it:

- Could complete the span with 4 piers, maximising its openness when viewed from Thompson Square.
- Would have a calm, dignified but robust urban form.
- Would allow opportunities to profile the underside of the deck, so that it also contributes to the urban expression of the bridge.
- Would allow a structural depth for the deck that does not dominate the scale of the adjacent public spaces a bridge type that can successfully withstand severe flooding events.



Ribbed plank bridge drawn in the context of the existing bridge and Thompson Square. Figure 9.1:



Figure 9.2: Precast plank bridge drawn in the context of the existing bridge and Thompson Square.





Figure 9.4: Arched bridge drawn in the context of the existing bridge and Thompson Square.

A number of design requirements affected the vertical alignment of the bridge, including:

- The desired design speed of the roadway.
- The need to maintain appropriate clearance for vehicles beneath the new bridge on The Terrace.
- The need to respect the setting of existing heritage buildings and views across Thompson Square.

The first vertical alignment option tested was a 60km/h design speed grade. The 60km/h alignment was placed into a drawing that allowed analysis of its height in relation to the existing buildings on Thompson Square and Bridge Street, and assessment of the resulting urban design outcome. The 60km/h gradients are shown in blue on the adjacent drawings.

The 60km/h speed required vertical changes in grade to be minimised and resulted in the level of the approach road being raised significantly above existing ground levels. It made vehicular access to the properties on Bridge Street very difficult, and resulted in the roadway sitting at a level that was above the masonry plinth of the Doctor's house. It was determined that this option had an inappropriate impact on the buildings surrounding Thompson Square.

A 50km/h design speed road was subsequently tested. This alignment is shown on the adjacent drawings in yellow.

The 50km/h design speed allowed the approach roadway to be lowered significantly. This allowed the levels to be transitioned so that the existing verge levels along the Bridge Street properties could be maintained. The bridge and the approach also sat below the masonry plinth of the Doctor's house. This was a much improved urban outcome.



Figure 9.5: Analysis drawing showing 50km/h and 60km/h design speed roads in relation to heritage buildings in Thompson Square.



Figure 9.6: Analysis drawing showing 50km/h and 60km/h design speed roads in relation to the buildings in Bridge Street.

Wilberforce40m
30m
20m
15m
10m
5m 0

ipson Square				George Street	
	RL 24.29		RL 30.66		RL 29.25
		-			
DT 6		LOT			
ESS LC		CES			
Y ACC		RTY AC			
PROPERT		PROPE			

THOMPSON SQUARE WORKING PAPER

Thompson Square Alternatives Working Paper

1. Issue

An integral part of the concept design for the Windsor Bridge replacement project is selecting an appropriate treatment of Thompson Square that responds to the values, opportunities and challenges presented by this unique location.

This working paper documents the process used by Roads and Maritime Services (RMS) to shortlist possible treatments for the Square and access connections to and from the bridge.

2. Background

In response to the significant heritage and social values of Thompson Square, the project team has developed urban design principles to guide the design process for the Square and the bridge replacement project. These are to:

- Protect and interpret the heritage values of Thompson Square and Windsor in general.
- Maximise the available open space in Thompson Square by reducing the road corridor footprint.
- Define a preferred form and character for Thompson Square based on a range of appropriate uses.
- Enhance access around and through Thompson Square.
- Improve the amenity of Thompson Square and the surrounding areas.

The project team has developed a series of possible options based on these principles which are presented in this working paper.

The project team met with Hawkesbury City Council officers on 21 March to present and discuss the possible options for Thompson Square. Feedback from Council on 3 April was incorporated into the options assessment.

In order to achieve the objectives stated above, the focus in considering the best outcome for Thompson Square is on access both into and around the Square.

The options we generated focussed on the location and alignment of the shared path associated with the proposed bridge and access to the river foreshore via The Terrace. Secondary footpaths through the Square and other parts of the park have not been fully explored in the options as the detailed design of the final form of Thompson Square will need to be by Hawkesbury City Council.

Other measures to increase the area of green open space in Thompson Square include backfilling the existing cutting on Bridge Street, narrowing the pavement and removing the bus bay on the road on the western edge of Thompson Square. These are all common to the options presented below.

Access for people who are mobility impaired between George Street and The Terrace and the River foreshore is proposed by using Thompson Square road, past the Doctor's House to The Terrace. This arrangement is proposed to be a shared zone where slow moving vehicles, cyclists and pedestrians share the same pavement area. The posted speed limit on a Shared Zone roadway is 10km per hour. Some of the options show an alternative ramp access within Thompson Square

which connects an internal path to The Terrace. This alternative requires a large footprint that would reduce the area of green open space.

RMS will now present these options to the community for review and comment.

3. Comment

Five possible options for access through Thompson Square and the constraints for each were examined. A summary of the advantages and disadvantages of each option follows.



Page 1



Advantages:

- 1. The shared path provides a logical and direct connection to the bridge from the George Street and Bridge Street intersection.
- 2. Contiguous green open space in the Square is provided. This is helped by aligning the path with the edge of the Square.
- 3. The shared path alignment is easily constructed adjacent to the roadway reducing the construction footprint in the Square.
- 4. Access to and from the properties on the eastern side of the Square across Bridge Street is helped by this alignment of the shared path.

5. The shared path provides a suitable alignment for both pedestrians and cyclists.

Disadvantages:

- 1. This creates a relatively steep grade (up to 8%) down to the bridge and this is not desirable for mobility impaired access.
- 2. The access from the area around the intersection on George Street, near the Macquarie Arms Hotel, to the bridge, is not direct.
- 3. Access for mobility impaired people down to The Terrace and River foreshore is restricted to the road on the western edge of The Square (passing the Doctor's House).
- 4. The footpath on the eastern side of the Square between Bridge Street and the adjoining properties will not be suitable for mobility impaired access.
- 5. The George and Bridge Streets roundabout is a difficult crossing point for pedestrians and cyclists.

Windsor Bridge replacement project - Thompson Square Alternatives Working Paper



- Advantages: 1. The stairs adjacent to the bridge abutment provide direct access to The Terrace and the river foreshore and assist in integrating the bridge abutment into the Square.
 - 2. Stairs adjacent to the retaining wall next to the Doctor's House would provide access for pedestrians from the road in the Square down to The Terrace and River foreshore.
 - 3. Option 1 advantages 1 to 5 also apply to this option.

Disadvantages:

- 1. This option does not improve access for mobility impaired people to The Terrace and the river, over that described in Option 1.
 - 2. Option 1 disadvantages 1 to 5 apply to this option.

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Advantages:

1. The secondary path provides direct access through the Square to The Terrace and to the river foreshore.

- 2. The secondary path provides opportunity to interpret the heritage alignment of the existing Bridge Street approach to the bridge through Thompson Square.
- 3. Option 1 advantages 1, 3, 4 and 5 also apply to this option

Disadvantages:

- 1. A secondary path cuts across the Square disrupting the contiguous green open space between George Street and The Terrace.
- 2. A secondary path would require complex grading in order to meet mobility impaired access guidelines.
- 3. The ramp access on the secondary path adjacent to The Terrace both physically and visually separates The Terrace from the Square.
- 4. Option 1 disadvantages 1, 2, 4 and 5 also apply to this option.

Windsor Bridge replacement project - Thompson Square Alternatives Working Paper





- 2. Pedestrian and cyclist amenity is improved as it is partially located within the Square and away from traffic on Bridge Street.
- 3. Both paths provide some opportunity to interpret the earlier/historic alignments of roads through the Square.
- 4. The secondary path provides more direct access through the Square to The Terrace and the river foreshore.
- 1. Direct shared path access is not provided to the George Street / Bridge Street intersection to avoid duplicating the shared path in **Disadvantages:** Thompson Square.
 - 2. The shared path alignment is not in a typical location being away from the roadside.
 - 3. The shared and secondary paths cut across the Square disrupting the contiguous green open space between George Street and The Terrace.
 - 4. The shared path alignment is less easily constructed away from the roadway and increases construction in the Square.
 - 5. Both paths would require complex grading to meet mobility impaired access guidelines.
 - 6. Ramp access in Thompson Square physically and visually separates The Terrace from the Square.

Windsor Bridge replacement project - Thompson Square Alternatives Working Paper

Page 6



Advantages:

- 1. The shared path maximises the use of the area between the approach road and buildings on eastern side of the Square and maximises.
- The shared path provides a logical and direct connection to the bridge from the George Street / Bridge Street intersection. 2.
- 3. The contiguous green open space in the Square is maximised by aligning the path with the eastern edge of the Square.
- The shared path alignment is easily constructed adjacent to the roadway. 4.
- 5. Access to and from the properties on the eastern side of the Square across Bridge Street is helped by this alignment of the shared path.
- 6. The shared path provides a suitable alignment for both pedestrians and cyclists.

Disadvantages:

- 1. The relatively steep grade (up to 8%) down to the bridge is not desirable for providing mobility impaired access.
 - 2. Access from the area around the Macquarie Arms Hotel to the bridge is not direct and requires people to cross the George Street / Bridge Street intersection.
 - 3. Access to Macquarie Park on the northern foreshore requires crossing to the opposite side of the intersection.
 - 4. The George and Bridge streets roundabout is a difficult crossing point for pedestrians and cyclists.

Windsor Bridge replacement project - Thompson Square Alternatives Working Paper

Page 7

The way forward

The next step is to seek input from the community, heritage groups and agencies on options for Thompson Square, including the possible options presented in this working paper. The input received from this process will start the discussion on the final layout for Thompson Square.

The final layout that is selected will contain elements that will be refined and optimised as the design progresses. These include:

- Landform
 - Appropriate reshaping of the landform of the Square
- Road Treatments
 - Appropriate alignment, width and surface treatments
- Thompson Square Elements
 - o Appropriate key element locations e.g. amphitheatre and viewing deck
- Paths
 - Appropriate alignment and finishes
- Stairs
 - Appropriate alignment and finishes
- Barriers and Balustrades
 - Appropriate arrangements and materials
- Lighting (If required)
 - Appropriate locations, sizes and design form

Further input from the community and government agencies will be sought as the design of these elements is developed.

The project team will continue to develop the concept design for the bridge and undertake a range of environmental investigations to input into the Environmental Impact Statement (EIS). The EIS will be placed on public exhibition later in 2012 and comments received will be considered in a submissions report. The Minister for Planning and Infrastructure will consider these comments before making a decision on whether to approve the project.

Discussions with the community, heritage groups and agencies are a vital part of the renewal of Thompson Square. Consultation with these groups regarding the renewal of the Square have now started and RMS is committed to working closely with them as the project progresses to ensure the best possible outcome.

If approved, the conditions of approval are likely to include the development of a plan for Thompson Square. To this end, an indicative design for Thompson Square will be included in the environmental impact statement. It is important that the community and heritage groups know that the design in the EIS will not necessarily be the design finally chosen for Thompson Square. The ongoing consultation process for the final treatment of Thompson Square will continue beyond the display of the EIS.

RMS 12.143

D ITEMS FOR FURTHER REVIEW

Table 9.1: ITEMS FOR REVIEW IN DETAIL DESIGN.

PROJECT ELEMENT	SUMMARY OF MITIGATION MEASURES TO BE UNDERTAKEN DURING THE DETAILED DESIGN PHASE OF THE PROJECT			
The bridge	Investigations could be made to determine if it is possible to give the bridge an entirely straight profile from abutment to abutment, and move the widening that currently exists so that it is situated on land, rather than over the water.			
	¬ Further investigations should explore whether the double girders can be moved closer together (i.e. further away from the edge of the bridge). This would allow for a finer profile to the edge of the bridge when viewed from below.			
	Services are currently proposed to be mounted on the soffit (underside) of the bridge at a level that means that they are visible below the capping parapet. Further investigations should explore whether these services can be moved further away from the edge of the bridge or otherwise raised or concealed.			
	□ Further investigations could explore whether the pile capping can be profiled in plan to more closely follow the plan geometry of the piers.			
	□ Investigations should also explore whether it is possible to move the piers closer together and away from the edge (in conjunction with the girders of the deck) to give more shadow and relief to the bridge elevation.			
	¬ Structural constraints should be constantly reviewed to ensure that the piers have a form that is as slender as the constraints permit. The community should be involved in the formal design process for the abutment piers.			
	¬ The option of using more traditional brick or sandstone finishes on the abutments should be kept open.			
	The design of the abutment walls should continue to explore and refine opportunities for interpretation of flooding events.			
	¬ The potential to minimise the use of pole lighting should be considered along with the possibility to provide statutory lighting levels by provision of pole lighting on the banks, and more subtle integrated lighting on the bridge itself to reinforce the horizontal plane of the bridge.			
	□ If pole lights are required on the bridge, investigate whether the placement of the lighting poles can correlate more strategically with the structural spacings/rhythms of the bridge.			
	 Further investigations should explore the provision of integrated, linear, low level strip lighting on the pedestrian/cycle path on the bridge. 			
	¬ The design of barriers, and in particular the barrier terminals, should be considered in the detailed design phase.			
	□ The design of the pedestrian fence adjacent to the shared path should create a distinctive and harmonious composition on the bridge.			
	¬ An appropriate lighting design of the abutment areas would encourage use further reinforce the safety of area.			

URBAN DESIGN AND LANDSCAPE CONCEPT REPORT

WINDSOR BRIDGE REPLACEMENT