

PROJECT UPDATE / MAY 2012

Windsor Bridge replacement project

Honouring the past and building for the future

Windsor Bridge is the oldest existing crossing of the Hawkesbury River. Initially built for horse-drawn vehicles and foot traffic in 1874, it now serves the local, commuter, freight and leisure transport needs of up to 18,000 vehicles per day.

With parts of the bridge now more than 137 years old, maintenance costs are escalating and the structure no longer meets current design standards.

Roads and Maritime Services (RMS) has fully investigated repairing and restoring the bridge. However, this would add only a few years to the functional life of the bridge, before additional costly repairs or total replacement would be needed.

A bridge that meets 21st Century standards and caters to all road users is critical to the economic future of the town.

Our challenge: honouring the past and building for the future

A new bridge inevitably means a substantial change for Windsor. In planning for a new bridge, RMS has undertaken comprehensive research and consultation in order to balance the historic and cultural values of the town with needs relating to safety, transport and its economic future.

We are now working with the community and stakeholders to plan and design a bridge that takes into account the unique heritage setting and history of the town while equipping Windsor for the future.

Thompson Square and Windsor Bridge as they are today



1. Building for the future

To continue to thrive, Windsor must have a reliable and safe crossing of the Hawkesbury River that meets current and future business, tourism and local community needs. In planning for Windsor's future RMS is addressing the following challenges:

Safety: a new bridge would improve safety for motorists, pedestrians and cyclists.

Traffic and transport efficiency: the community would benefit from a more reliable access via a bridge that allows two-way truck traffic and shoulders for vehicle breakdowns.

Flooding: a new bridge would cope with higher levels of flooding and have the same 'flood immunity' as surrounding approach roads on the northern riverbank.

Pedestrians and cyclists: a new bridge would include a three metre wide shared pedestrian and cycle path and provide safe, well-designed connections to Thompson Square and surrounding locations.

Thompson Square: the new bridge approaches would be within the heritage precinct, but the road footprint would be reduced. The open space would be unified and provide direct access to the river as originally intended.

The river: Windsor recognises the value of its river frontage for tourism and recreation. A new bridge with fewer, higher piers and improved access to The Terrace would open up the waterway and allow the future expansion of river use, and any economic benefits that would flow.

Windsor as a living town and tourist destination: new pedestrian paths and changes to traffic management would encourage connectivity within and around Windsor. It would be easier to drive, walk or cycle between the town centre, Thompson Square, The Terrace, the river, Windsor Wharf and areas across the bridge such as Macquarie Park.



Access from Thompson Square along the foreshore to Howe Park

Improved access to beach and Macquarie Park

Improved flood immunity for the bridge

Safer and improved bridge crossing for pedestrians and cyclists

Bridge height allows service vehicles to pass under bridge

Direct pedestrian access to the foreshore through Thompson Square

More green space available in Thompson Square

New bridge that meets current road and bridge standards

Fewer piers enhance river usage

Safer access to wharf along the foreshore

Much improved visual and physical connection with Hawkesbury River

Improved pedestrian crossing point at the intersection of Bridge Street and George Street

A bridge that works for Windsor

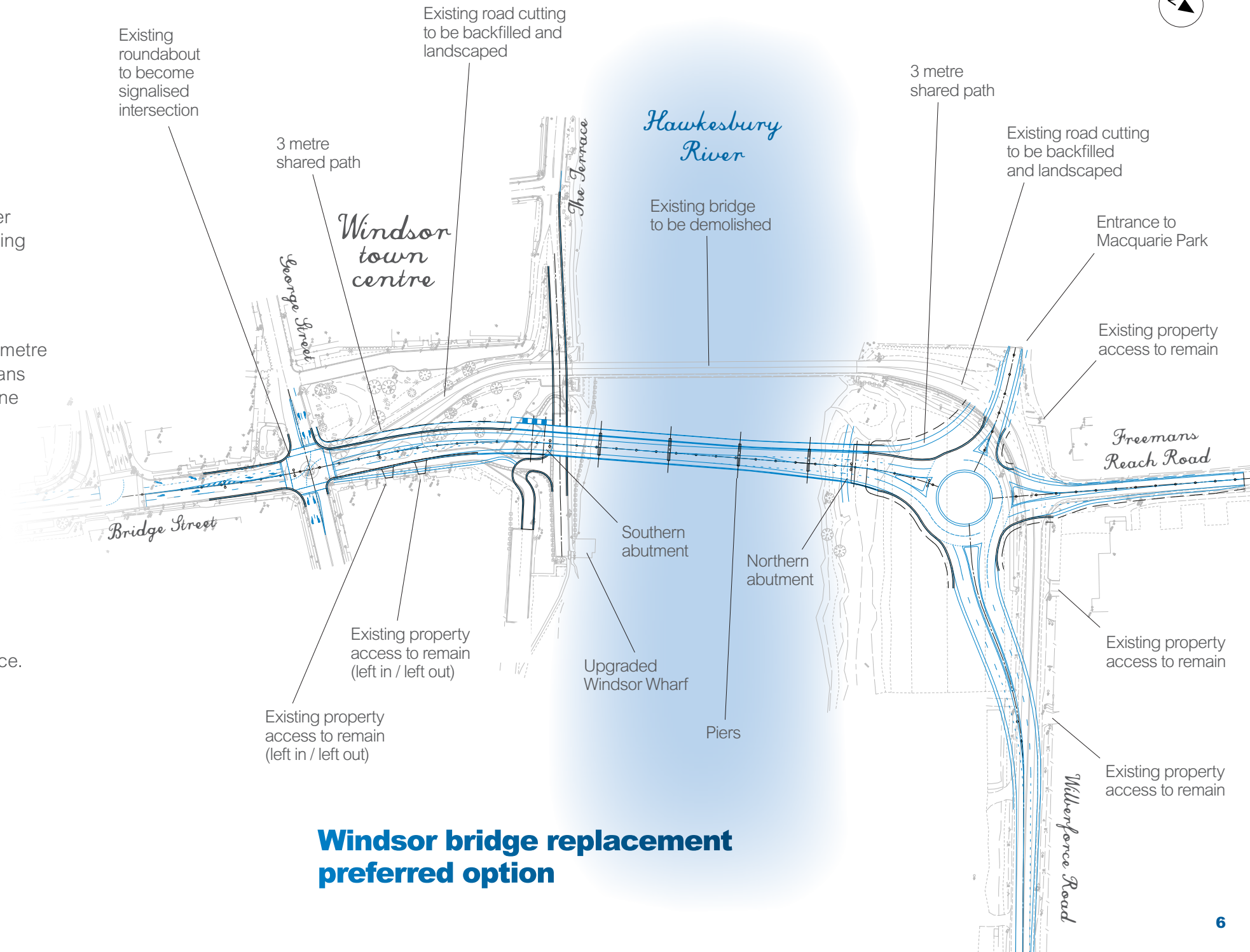
2. A bridge that works for Windsor

RMS, along with the community and stakeholders, undertook a process over several years to investigate nine different options for a new bridge. In deciding on a preferred option RMS took into account transport needs, social and heritage impacts, ecological, engineering and cost constraints.

The preferred option is for a replacement bridge, 35 metres downstream of the existing bridge, as an extension of Bridge Street. It would have two 3.5-metre lanes with two-metre shoulders and a three-metre shared path for pedestrians and cyclists. The two shoulders allow for a potential expansion to a three-lane configuration in the future.

The preferred option:

- Includes new intersections, which improve safety for motorists, pedestrians and cyclists.
- Uses an historic road alignment.
- Improves flood immunity.
- Allows safer access to the river for tourist buses.
- Allows Thompson Square park to be unified and increases the green space.
- Improves pedestrian and cycle access along The Terrace and riverfront.
- Improves access to Macquarie Park.
- Provides an efficient connection for local traffic.
- Continues to direct regional traffic through the Windsor town centre.



Windsor bridge replacement preferred option

Choice of bridge type

The preferred bridge type is an incrementally launched bridge. This type of bridge can be constructed mostly from the north bank of the river. This would require less construction work within Thompson Square than alternative types of bridges such as a plank bridge. More information on the different types of bridges is on the website www.nsw.gov.au/roadprojects. An incrementally launched bridge also has fewer piers and would provide better access for water activities than the current bridge.

When selecting this bridge type RMS took into account:

- **Visual quality** – simple, clean, modern design is preferred by RMS, to not compete with the heritage characteristics of the town and riverside.
- **The scale of the bridge** – it should be consistent with the connecting roads.
- **Construction impact** – especially the need to minimise impact on Thompson Square.
- **Heritage** – the character of the bridge in relation to Windsor and its historic setting.
- **Flooding** – the performance of the bridge during river flooding.
- **River use** – the number and size of piers and the impact these would have on existing and future river use.
- **Wharf access** – the need to provide improved and safer access under the new bridge to the wharf and the water's edge.



Two examples of incrementally launched bridges: Iron Cove and Corowa

3. Honouring the past

As one of Sydney's first settlements, Windsor's heritage and cultural values are of great importance. While Windsor needs to modernise its infrastructure this must be done with sensitivity to its history and heritage.

Acknowledging the community's strong feelings about their town centre, RMS is working respectfully to integrate Windsor's heritage into the current designs. Urban and landscape designers, architects, heritage specialists and engineers are helping to deliver infrastructure that will not just support but enhance the living history of Windsor.

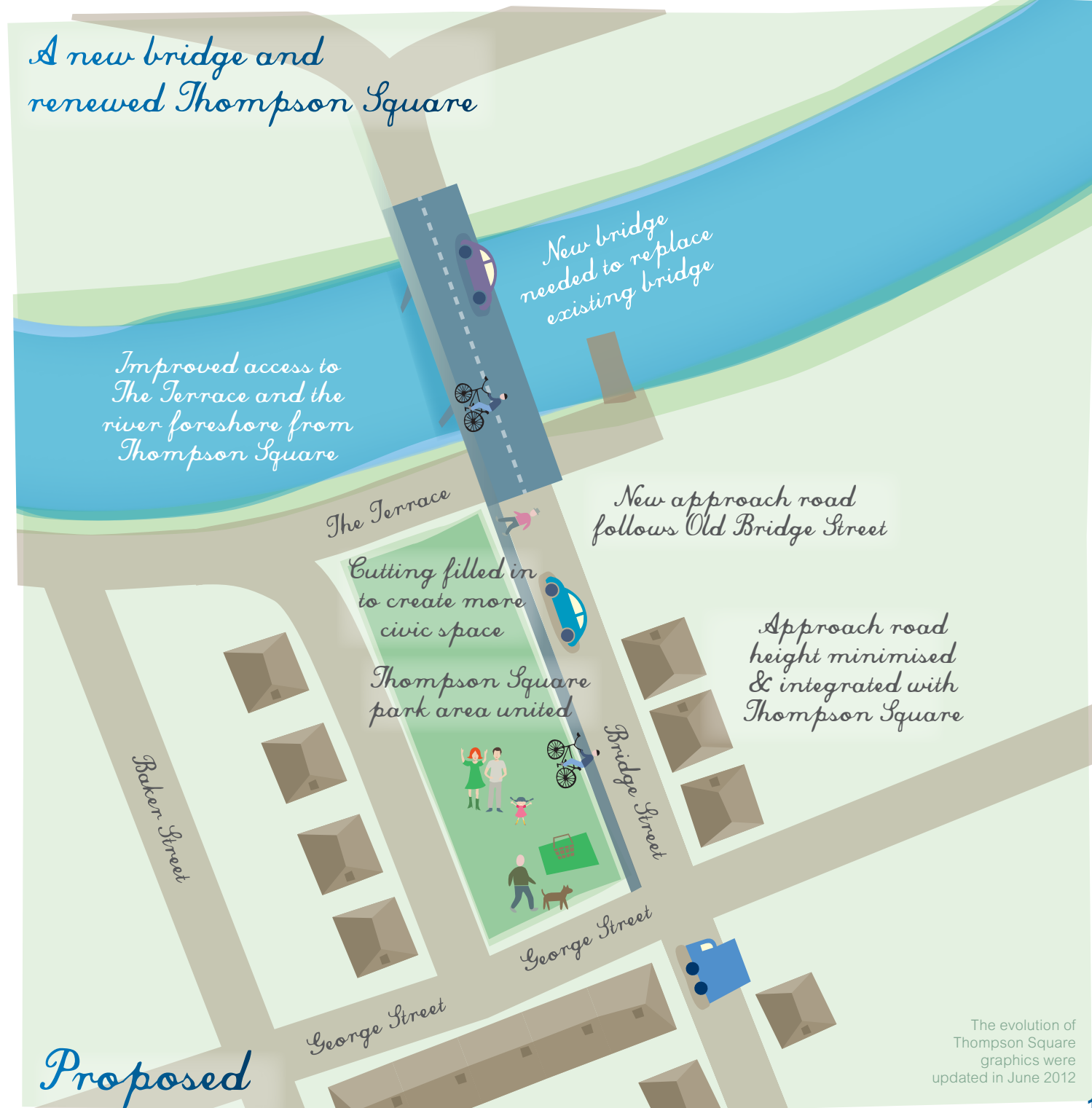
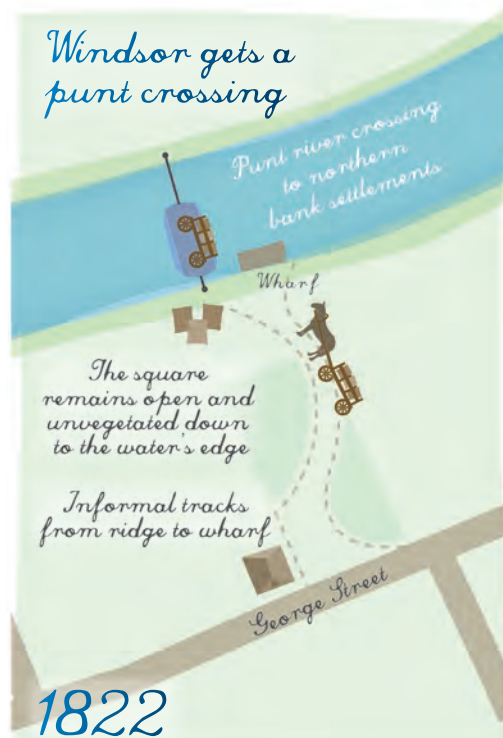
The principal concern is preserving Thompson Square, which is State heritage listed and the most intact surviving square of those designed by Governor Macquarie.

When Governor Macquarie founded Windsor, the existing open space of the government precinct was dedicated as Thompson Square. The Square played an important transport and civic role in the township. In its current form Thompson Square is surrounded with significant heritage buildings and contains important archaeological remains. These show the changing character of Windsor from before European settlement to the present.

The evolution of Thompson Square

Thompson Square was originally conceived as a marshalling area where grain, vegetables and livestock could await transport by boat to Sydney. From the earliest days there were tracks winding through the Square, allowing carts to manage the steep gradient down to the water's edge. The current road alignment through the square was created in 1934.

Only current SHR-listed buildings are shown, but many others have been built and removed around Thompson Square.



The evolution of Thompson Square graphics were updated in June 2012

Renewing Thompson Square: five possible options

The preferred option for a new bridge would have a visual and physical impact on Thompson Square. However, in backfilling the existing road cutting and realigning it along one side of the Square, the new bridge presents an opportunity to renew Thompson Square as a unified green space.

RMS has developed options for Thompson Square which would:

- Reduce the number of roads in Thompson Square from three to two.
- Increase the usable area of the Square by more than 500 square metres. This would provide opportunities to enhance several distinct areas of the Square, including the existing well-used area near the town centre and lower areas closer to the river.
- Make improved use of areas of the Square which are away from traffic with river views.

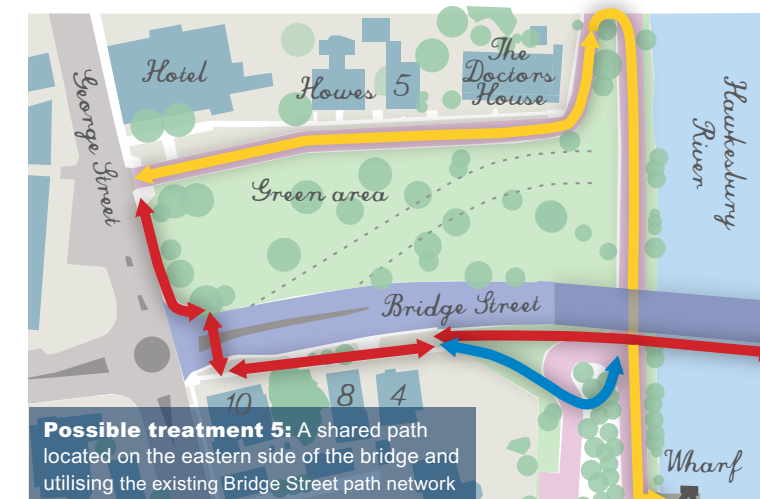
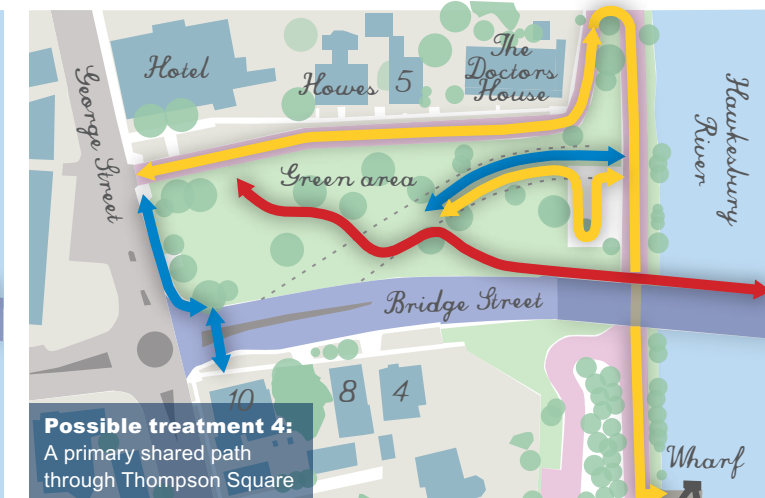
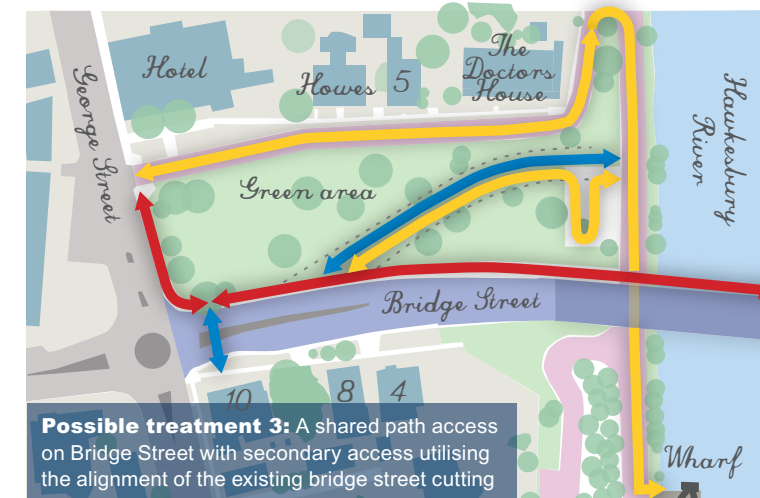
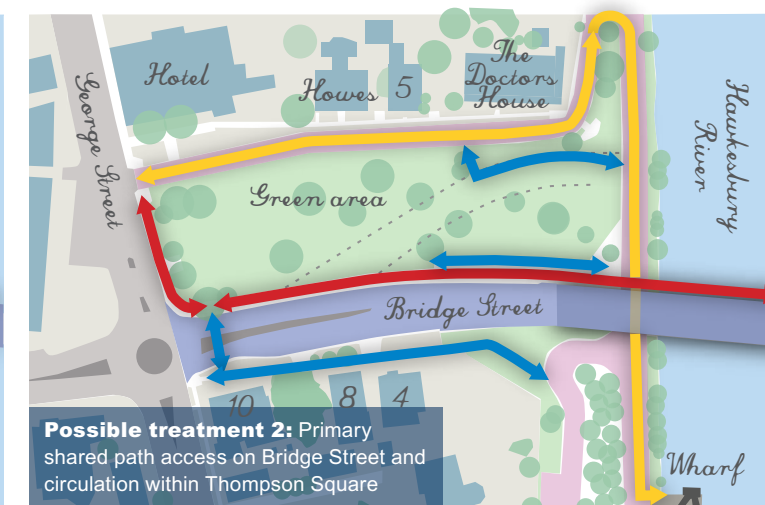
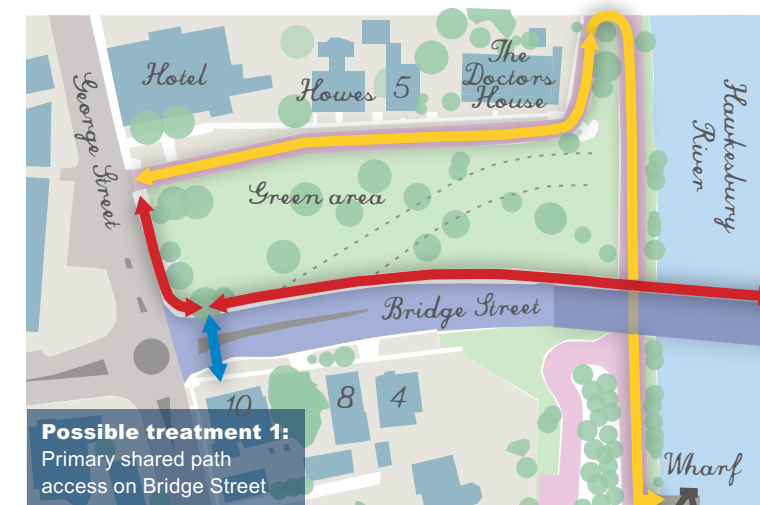
RMS is seeking community review and comment on the **five possible options** for access through and around the Square. The design should:

- Protect and enhance the heritage values of Thompson Square and Windsor in general.
- Maximise the open space in Thompson Square by reducing the road footprint.
- Improve access around and through Thompson Square.
- Improve the amenity of Thompson Square and the surrounding areas.

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 has now started and RMS is committed to working closely with them as the project progresses to ensure the best possible outcome.

If the bridge replacement project is approved, the conditions of approval are likely to include the development of a plan for Thompson Square. To this end, an indicative design for the 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.

For a more detailed look at these options, please view Thompson Square Alternatives Working Paper on the website at www.rms.nsw.gov.au/roadprojects



Legend

- Green open space
- Shared zone
- New bridge alignment approach
- Shared path
- Pedestrian access
- Ramp access to The Terrace and the wharf



Aboriginal and non-Aboriginal heritage

The Windsor Bridge replacement project would affect land that has both Aboriginal and non-Aboriginal heritage significance. RMS has engaged heritage specialists to thoroughly investigate the significance of heritage items within the project area and to assess the impacts of the project on these items.

As an integral part of urban Windsor, the Thompson Square precinct has undergone over two centuries of road-cutting, construction and landscaping to provide road access for stock, humans and vehicles. Transport across and on the river has involved the construction of the bridge, the wharf and the punt, and the river has been dredged.

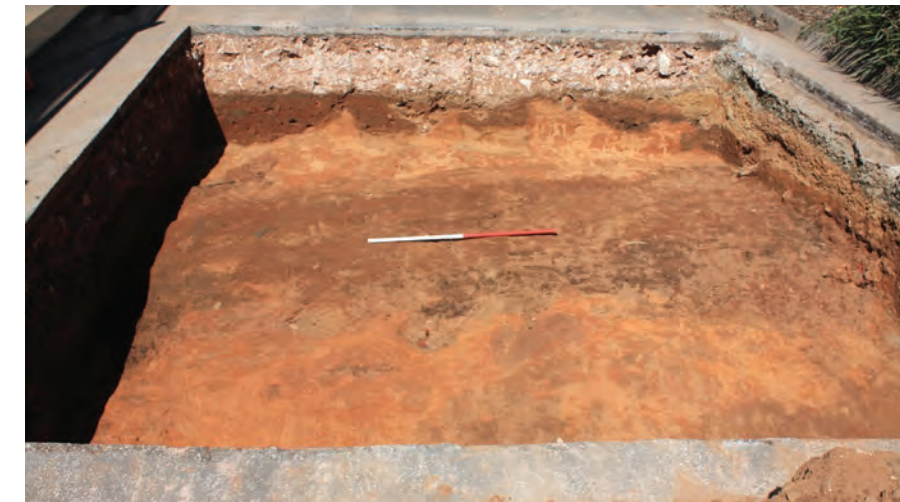
Despite these high levels of activity, heritage consultants, with the input of heritage regulators and Aboriginal stakeholders, have made the following discoveries:

- The project area has been volatile for millennia, with flood-borne sand deposits on both banks of the river, and only the higher part of the George Street ridge has remained undisturbed.
- Deposits containing high densities of Aboriginal artefacts.
- Remains of the Macquarie period wharf.
- A yard or garden surface dating back to the 1820s-30s.
- Remains from the road construction of the 1890s.

The archaeological and heritage consultants are working with the design team to minimise the impacts of the bridge on the heritage of Thompson Square. RMS is working to minimise construction impacts, visual impacts (including on significant historical views of Windsor and the Hawkesbury), noise and vibration effects on the adjoining heritage properties, and the impact of the new ground-level roadway on users of Thompson Square.



Main pit – Aboriginal artefacts recovered from a single layer in a trench near George Street, 2012.



Road trench – Archeological trench through Old Bridge Street. The dark stain in the centre of the trench is a yard surface of early-mid 19th century date.

4. Meeting community concerns about the project

Lowering the height of the southern approach road: The bridge approach road through Thompson Square was originally designed by RMS to be high enough to allow large coaches to pass underneath along The Terrace. Following community concerns about the height of the new bridge and approach road and its impact on Thompson Square, RMS renegotiated the height clearance required by Hawkesbury City Council.

By reducing the speed limit on the access road from 60 km/h to 50 km/h the RMS team was able to lower the approach road by some 5 metres and bring it down to ground level, until it reaches The Terrace. The lowered approach would reduce the visual impact of the new approach road on sight lines across Thompson Square and would improve the integration of the road with Thompson Square.

Improving traffic flow in Windsor: RMS believes the replacement bridge would improve the flow of through traffic due to new wider lanes and breakdown shoulders. Wider lanes on the bridge allow two large trucks travelling in opposite directions to simultaneously cross the bridge. The truck speed limit would increase from 40 km/h to 50 km/h, consistent with the speed limit throughout the town.

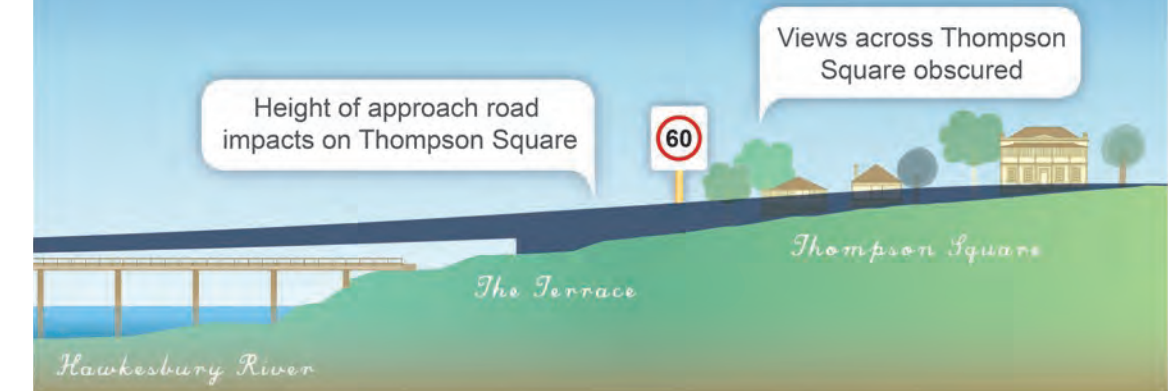
RMS is currently undertaking traffic and noise modelling. This modelling will guide the refinement of intersection types and the choice of any appropriate noise mitigation measures.

Reducing construction impact on Thompson Square: The selection of the bridge type is important. The preferred type is an incrementally launched bridge. This will have a reduced construction impact on Thompson Square.

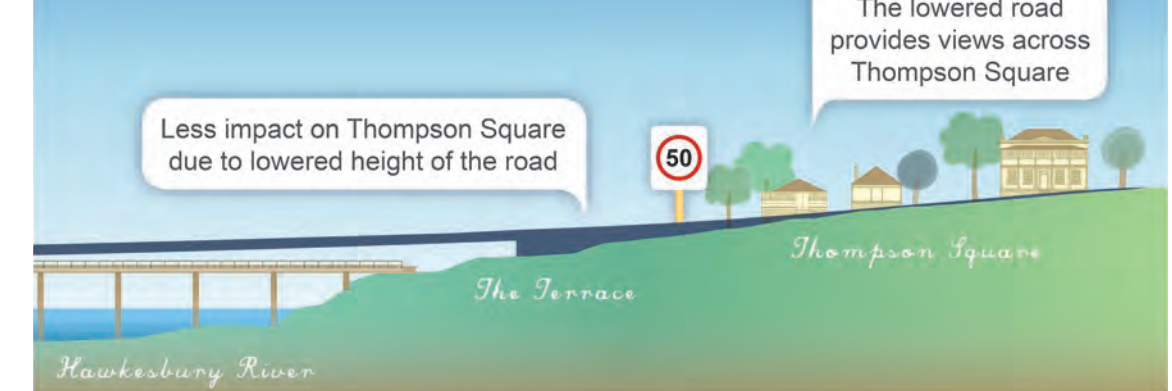
The treatment of Thompson Square: Must be a consultative process to produce the right design.

Lowering the northern approach road to the town

Original design – April 2011



Proposed revisions to design – May 2012



What has happened so far?

The Windsor Bridge replacement project has been under consideration since 2006. RMS initially looked at repairing the bridge. RMS then considered rebuilding the bridge at the same location, however this would require a 30 kilometre detour during construction (a period of about 18 months). RMS then identified eight bridge replacement options and an additional option to rehabilitate the existing bridge. These were discussed with the community.

In August 2011 the Minister for Roads and Ports announced Option 1 as the RMS preferred option.

The replacement of Windsor Bridge is designated as a State Significant Infrastructure project, which means it must be approved by the Minister for Planning and Infrastructure under Part 5.1 of the *Environmental Planning and Assessment Act*. The Director-General of the Department of Planning and Infrastructure requested that extensive consultation with all relevant stakeholders be included in the environmental impact statement.

RMS and its consultants are developing a concept design and conducting environmental studies for the project.



This paper is carbon neutral, Australian-made, recycled fibre, elemental chlorine free, pulp derived from sustainably managed sources.

Where are we headed?

The project team is extensively researching all aspects of replacing the bridge and is preparing a concept design and an environmental impact statement. A range of vertical and horizontal alignment options, as well as bridge types and possible treatments of Thompson Square, are being discussed.

The project team are creating options to refine and improve the quality and character of the bridge and surrounding areas. Their designs take into consideration Windsor's built, historic, natural and community character in order to create a sympathetic and elegant structure. They have developed five possible options for pedestrian access and landscape treatment of the enlarged public space, currently out for public review and comment. Hawkesbury City Council is working on a longer term masterplan for this space.

In creating the concept design for the bridge a wide range of factors are considered including heritage, access, safety, traffic, noise and flooding.

The environmental impact statement will be exhibited for all to comment on later in 2012. These comments will be documented in a submissions report. The Minister for Planning and Infrastructure will consider both the statement and all submissions made by the community during exhibition before making a decision.

Have your say

RMS welcomes your ongoing ideas and contributions.

- **Review the updated website:** www.rms.nsw.gov.au/roadprojects.
- **Provide your thoughts to an online discussion:** www.rms.nsw.gov.au/roadprojects, go to the Windsor Bridge Replacement page, and click on the online discussion forum. This forum will run from **Monday 28 May to Friday 15 June**.
- **Email** your thoughts to Windsor_Bridge@rms.nsw.gov.au