2.10 BRIDGE CROSSINGS IN WINDSOR OVER TIME

WINDSOR'S BRIDGES

Bridge Street in Windsor has always linked two of the town's water crossings.

The crossing over South Creek was the earliest, and historically the more important, as it marked the town entry and the route towards Sydney.

The crossing over the Hawkesbury River was predominantly a secondary crossing, serving to allow the conveyance of produce and livestock from the farmlands into the town markets.

The Hawkesbury River crossing has typically been utilitarian and robust in its character, in response to its use. Pragmatism and economy have underpinned its design and construction, as its much broader span and propensity to severe flooding events have been long-standing constraints.

In contemporary times, with the growth of the metropolitan area and the increasing use of the motor car, the Hawkesbury River crossing has grown to become the more important bridge crossing in the town, but the bridge has still retained its raw, structurally direct expression.

The evolution of the South Creek crossings and the Hawkesbury River Crossings are described in detail on the following pages.

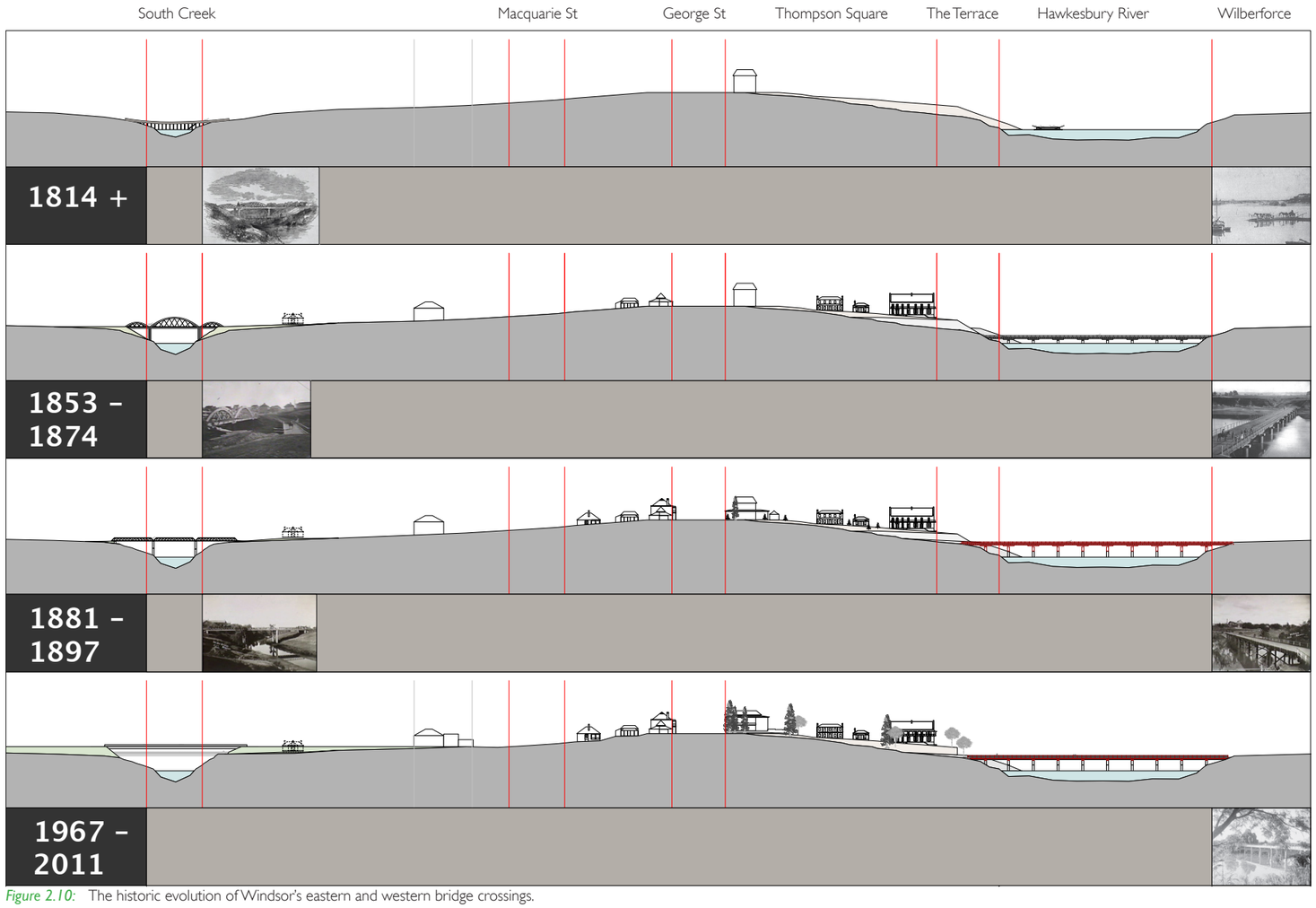

Figure 2.10: The historic evolution of Windsor's eastern and western bridge crossings.

THE SOUTH CREEK CROSSINGS

There is documentary evidence of at least six bridges over South Creek since 1802.

Punt and Floating Bridge

The original punt crossing was replaced by a floating bridge built by Andrew Thompson in 1802. This bridge was located downstream of the modern crossing point.

Howe's Bridge

The floating bridge deteriorated and was replaced by a fixed bridge constructed by Andrew Howe in 1813. This low slung timber structure was supported by a large number of timber piers and was known as Howe's bridge. This bridge was rebuilt in 1838, due to damage by flooding. In 1835 The Toll House was constructed, adjacent the bridge, to house the toll collector.

Fitzroy Bridge

A timber bow string truss bridge known as the Fitzroy bridge was constructed in 1853. This was a three span arched structure supported by two sets of double piles and timber (likely ironbark) cross beams.

Toll Bar Bridge

The wooden structure was replaced by the Toll Bar bridge in 1881. This was a wrought iron truss bridge, supported on cast iron piers.

Current Bridge

The current road traffic bridge was constructed in 1976. In response to flooding and to design safety speeds the approach to the bridge was raised on both sides, so that the roadway now sits just below the gutter height of the Toll House.

Consequently, it is difficult to perceive the moment that you are crossing South Creek, as the continuity of elevated road experience has become the dominant experience.

A cycle bridge was constructed upstream of the current bridge in 2009.

DESIGN CONSIDERATIONS

Learn from the experience of the transformation of the South Creek crossings over time by ensuring that the distinct, topographic experience of crossing that exists on the Hawkesbury River crossings is not similarly diluted.

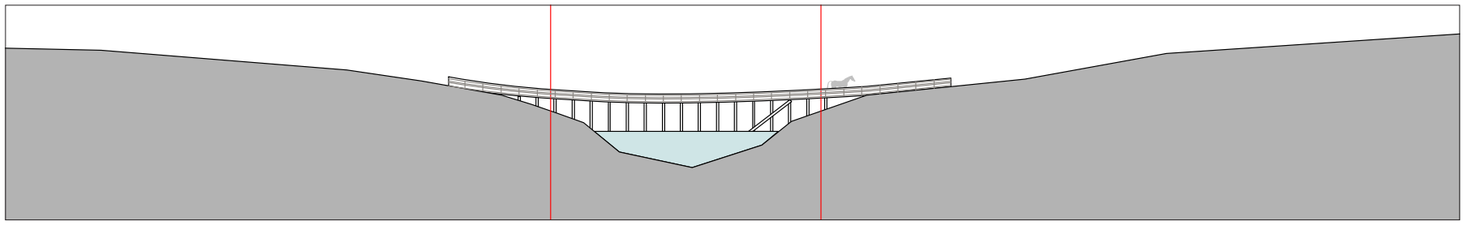

Figure 2.11: Howe's bridge.

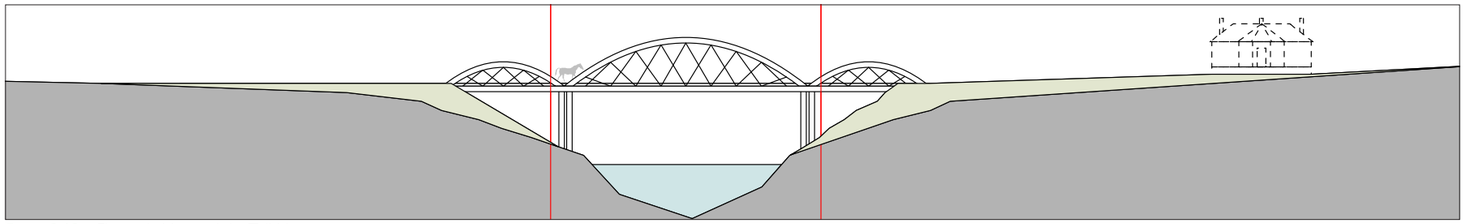

Figure 2.12: Fitzroy bridge and the Toll House.

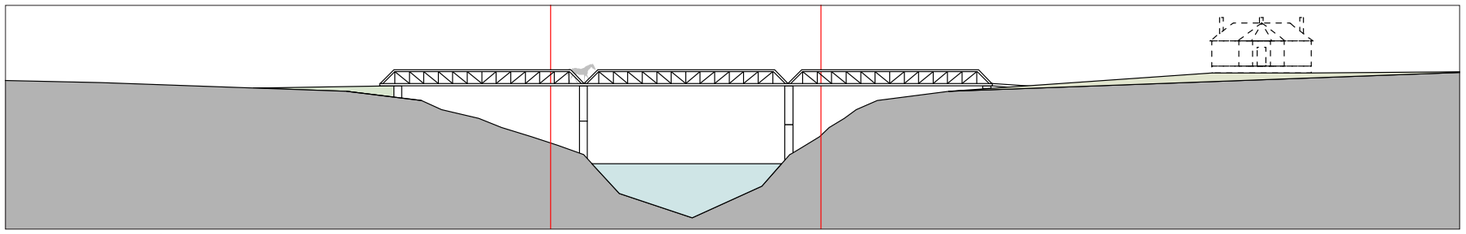

Figure 2.13: The Toll Bar bridge and the Toll House.

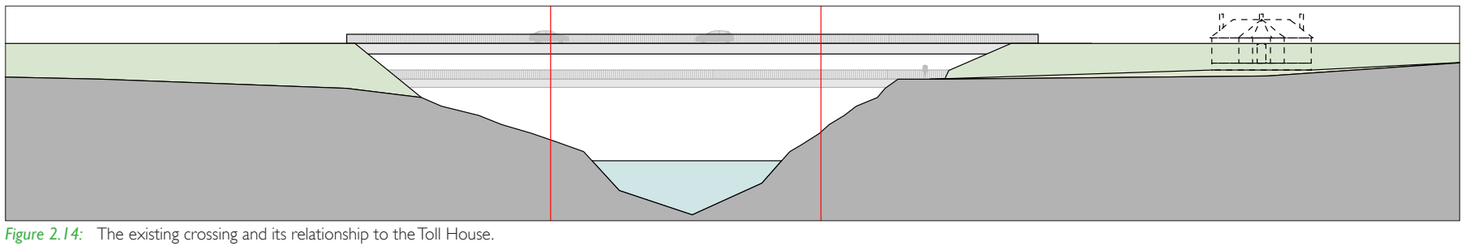

Figure 2.14: The existing crossing and its relationship to the Toll House.

THE HAWKESBURY RIVER CROSSING

Punt

The first western crossing was by a punt operated by John Howe in 1814. Due to lack of reliability in the service, it was taken over by the Government in 1832.

Construction of Windsor bridge - 1874

The first Windsor bridge was completed in 1874. Work had commenced on the bridge construction in January 1872, however problems with the proposed screw piles and several heavy floods delayed completion of the bridge piers until December 1873. The Australian Town and Country Journal 22nd August, 1874 described the bridge structure -

'The piers were of cast iron and reached to an average depth of 40 feet below the summer water level. All piers were lewised with a four inch bolt and filled up with cement and concrete supporting a ring of 9 inch radiating bricks enclosing a cone of concrete to the top of the pier. The deck comprised of planks of 5 inch thick ironbark fixed to 5 ironbark girders which were strongly bolted to the corbels and capsills secured to the iron piers...The hand rails were fabricated in wrought iron pipe and were fixed with sockets and collars that enabled them to be dropped before a flood to prevent damage.'

Raising of Windsor bridge - 1896-1897

Due to frequent inundation, the bridge was raised in 1896, by adding 8 foot tall cylinders onto the existing piers. New capsills, corbells and girders were fitted and damaged elements replaced. A new 4 inch tallow wood deck was layed with an ironbark kerb log. New iron handrails enabled the balustrade to be dismantled into four pieces, so that one man could raise and lower them at flood time.

Maintenance and additions

RMS documents suggest that the timber deck, corbels and beams were replaced by a concrete structure in the 1920's. In 1967 a water supply pipe to Wilberforce and steel pedestrian walkway were added to the structure.

DESIGN CONSIDERATIONS

New works should continue the tradition of raw, structurally expressive bridges that have typified crossings on this side of the town.

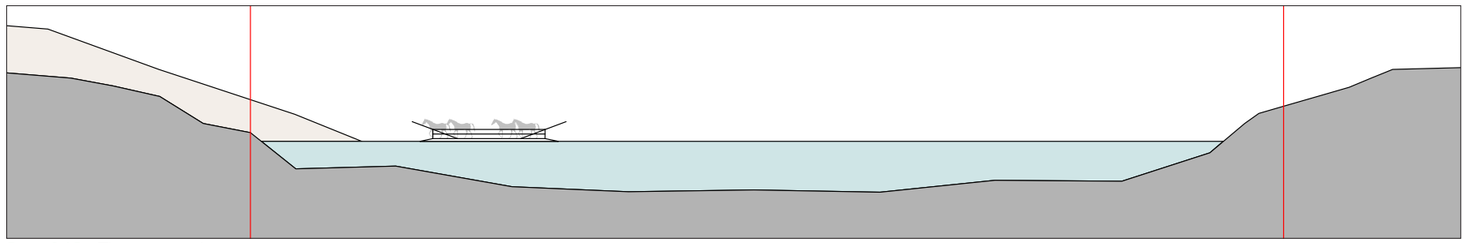

Figure 2.15: The punt crossing.

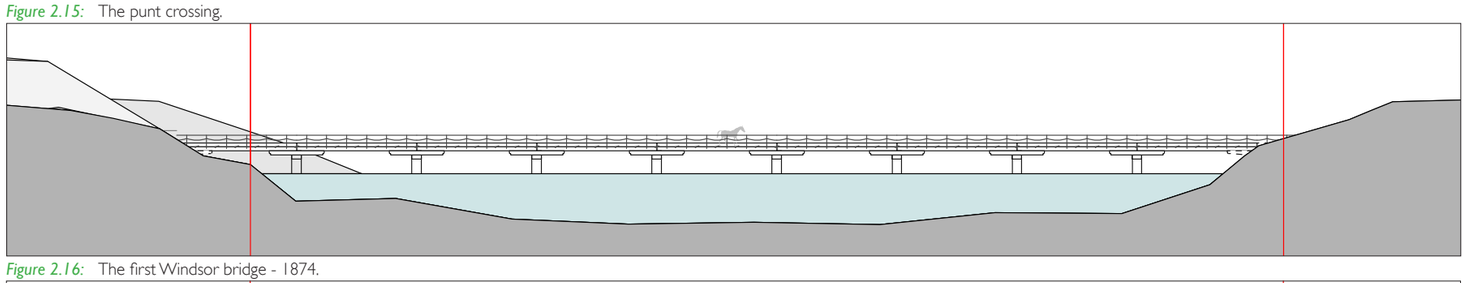

Figure 2.16: The first Windsor bridge - 1874.

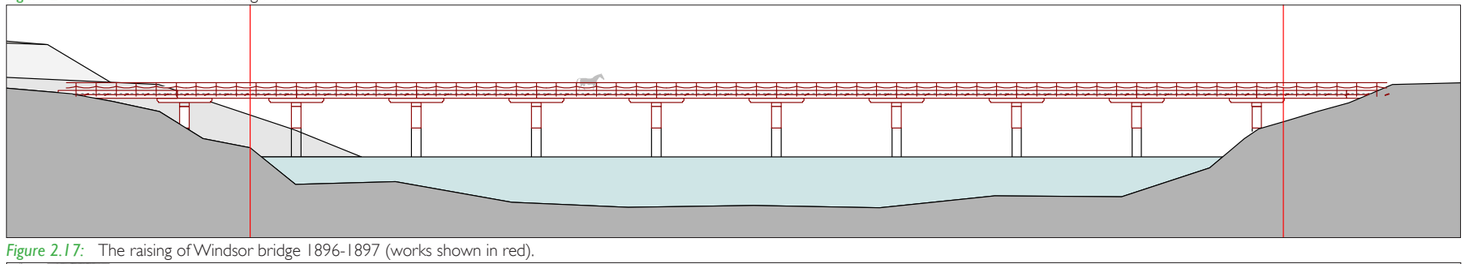

Figure 2.17: The raising of Windsor bridge 1896-1897 (works shown in red).

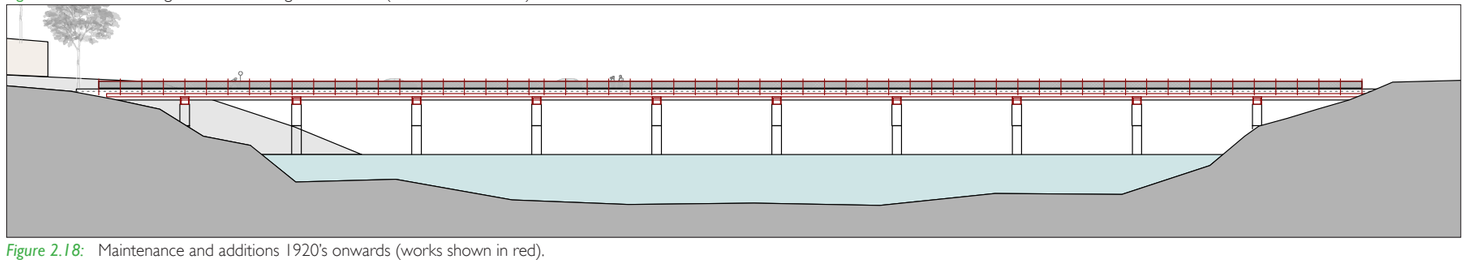

Figure 2.18: Maintenance and additions 1920's onwards (works shown in red).

2.11 LAND USE ZONING

The land surrounding the township of Windsor is made up of pastureland and is dominated by various agricultural activities and uses. There are considerable areas of open space and recreational land located around the built up areas and along the river foreshore. The township itself is made up of a commercial / retail core with low density residential developments adjoining these.

DESIGN CONSIDERATIONS

Current land use zoning indicates a focus for development within, and adjoining existing urban areas to the south of the Hawkesbury River. Provision for open space access along the foreshore between Thompson Square and Governor Phillip Park to the east (Council proposed open space zoning) would provide an important connection that needs to be considered as part of this project.

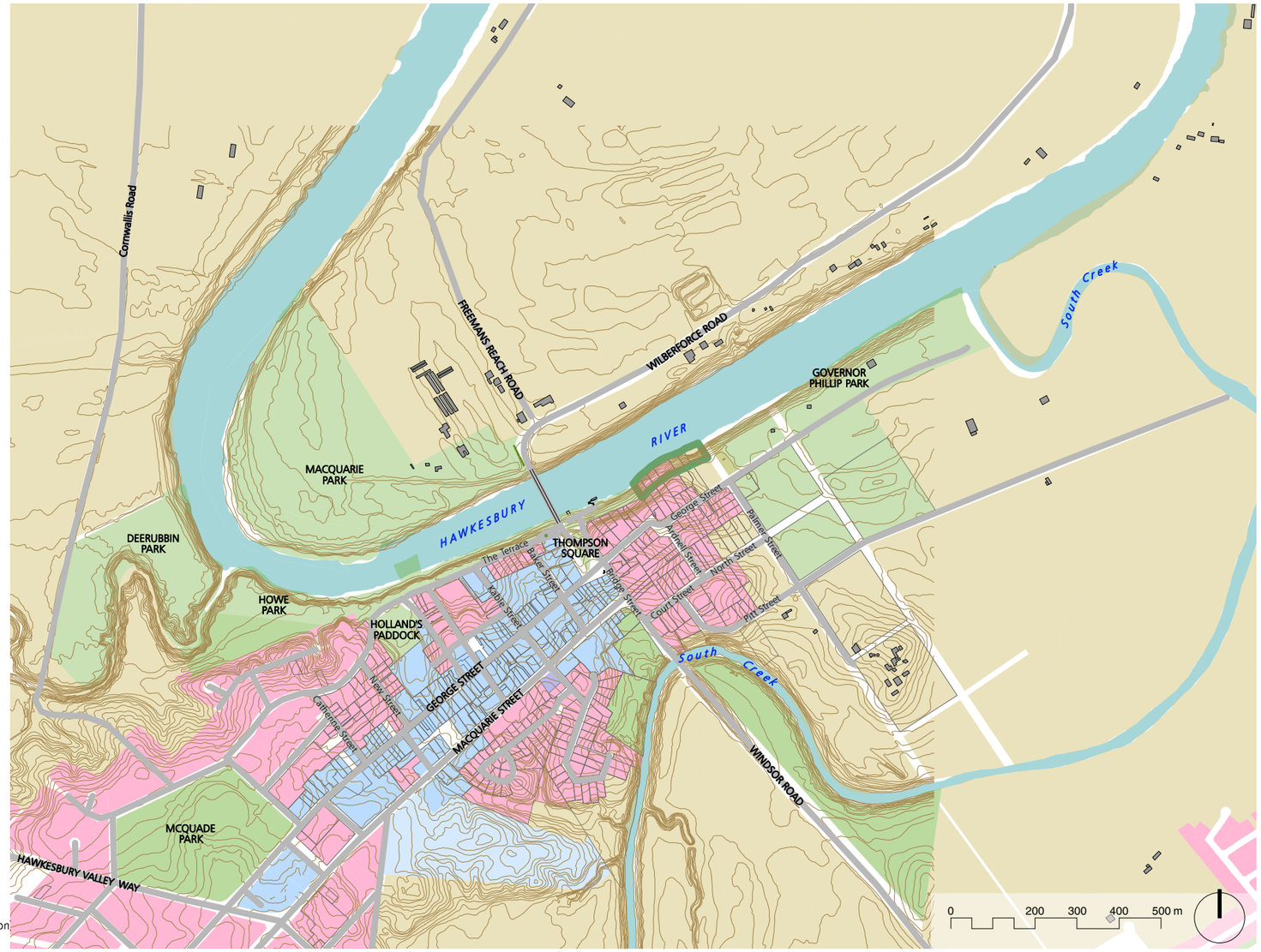

Figure 2.19: Land Use Zoning of Windsor (Source: Information from *Hawkesbury Local Environmental Plan 2009*, Hawkesbury City Council).

2.12 THE PUBLIC DOMAIN

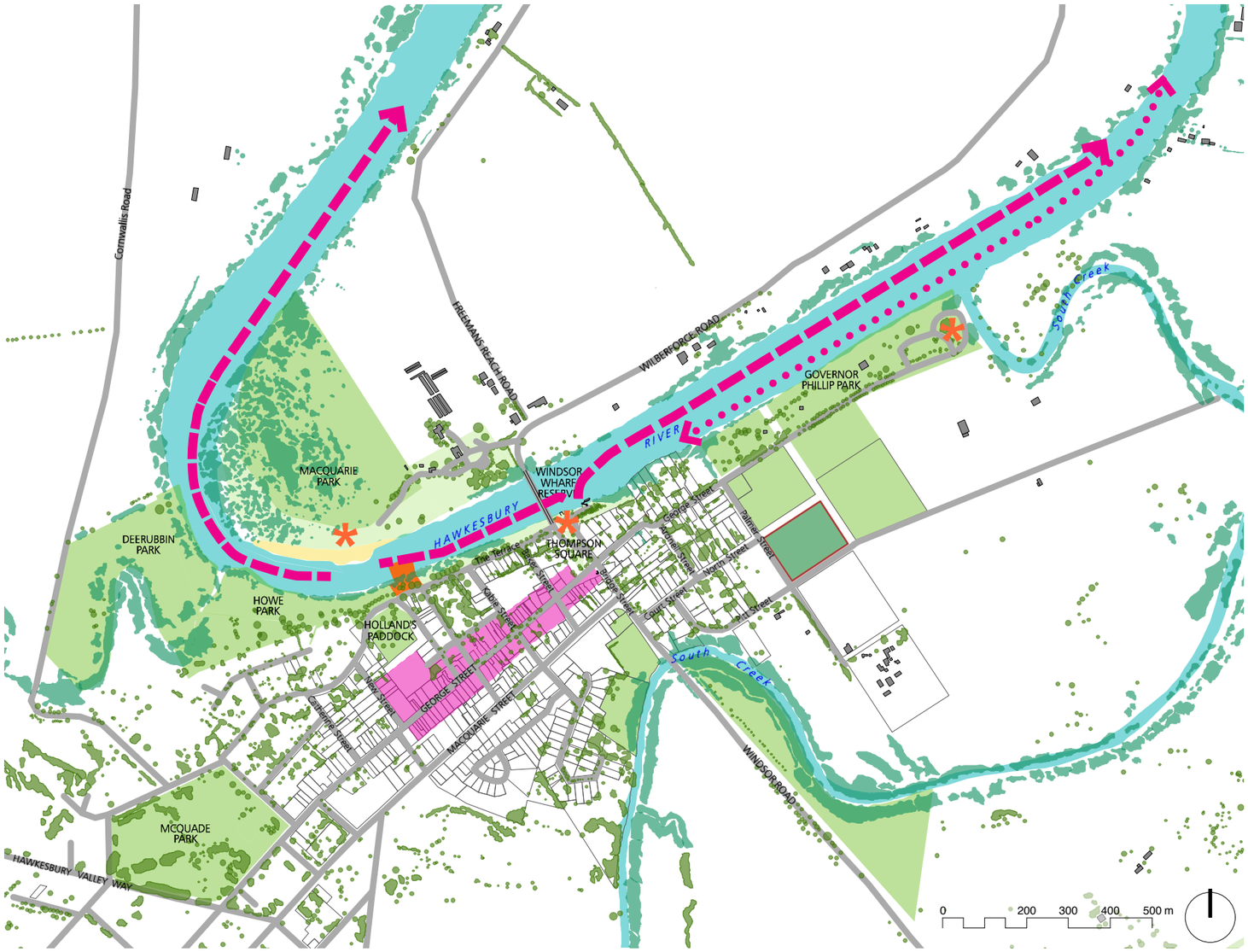

Figure 2.20: The public domain of Windsor.

PARKS AND OPEN SPACES

Parks and open spaces are very important features of Windsor. These include Deerubbin Park, Howe Park, Windsor Wharf Reserve and Governor Phillip Park which are located along the southern bank of the river and Macquarie Park on the northern bank. Thompson Square and Hollands Paddock are both separated from the river by The Terrace (refer to Figure 2.20). Each of these open spaces provide for a range of recreational activities and are of great importance to the local community.

HAWKESBURY RIVER ACTIVITIES

Water based activities are a key feature of the open space network at Windsor and include;

- Power Boat Race - Brooklyn to Governor Phillip Park (May).
- Bridge to Bridge Water Ski Classic - Danger Island, Broken Bay to Windsor Stadium, Governor Phillip Park. (November).
- Hawkesbury Canoe Classic - Macquarie Park to Brooklyn (October).

Other river based activities include wakeboarding, river cruises, house boats, fishing, kayaking and canoeing.

DESIGN CONSIDERATIONS

The parks and open spaces of Windsor provide a valuable asset for a variety of recreation and community based activities to take place. Water based activities are a key feature of the area. Safe and easy access to these areas needs to be a key consideration for this project.

2.13 PEDESTRIAN AND CYCLE NETWORK

A number of key pedestrian and cycle routes currently exist within Windsor, as illustrated in Figure 2.21. The primary routes to and from the town centre extend out to the various parks and open spaces to the south and north of the river. The secondary route connects the spaces along the foreshore. Thompson Square forms a natural convergence point for the network at the crossing point of the river and near to the town centre.

The Great River Walk Windsor foreshore walking path is a part of the overall proposed route/ future connections to Governor Philip Park and possibly the northern bank from Macquarie Park

A number of both off road and on road cycleways provide for connections throughout Windsor and the surrounding areas. Hawkesbury Council has also planned a number of additions and extensions to this network (as set out in the Hawkesbury District Bicycle Network on Councils website).

DESIGN CONSIDERATIONS

Opportunities for enhancement of the existing pedestrian and cycleway network should be carefully considered in the context of maintaining and improving safety and connectivity for all users. Provision for further extensions of the network should be integrated wherever possible.

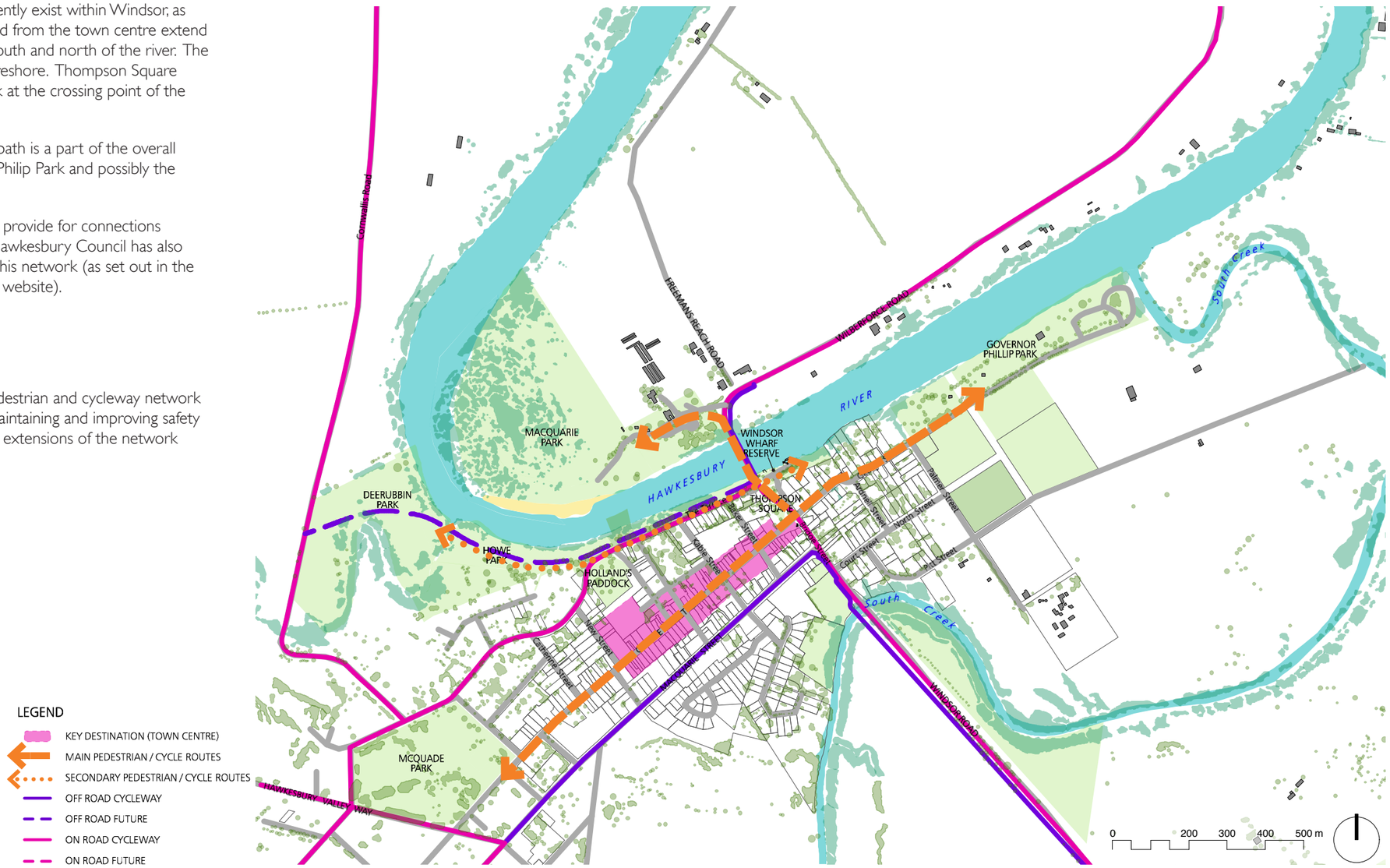

Figure 2.21: Key pedestrian and cycle circulation and access (adopted from Hawkesbury City Council, 2011).

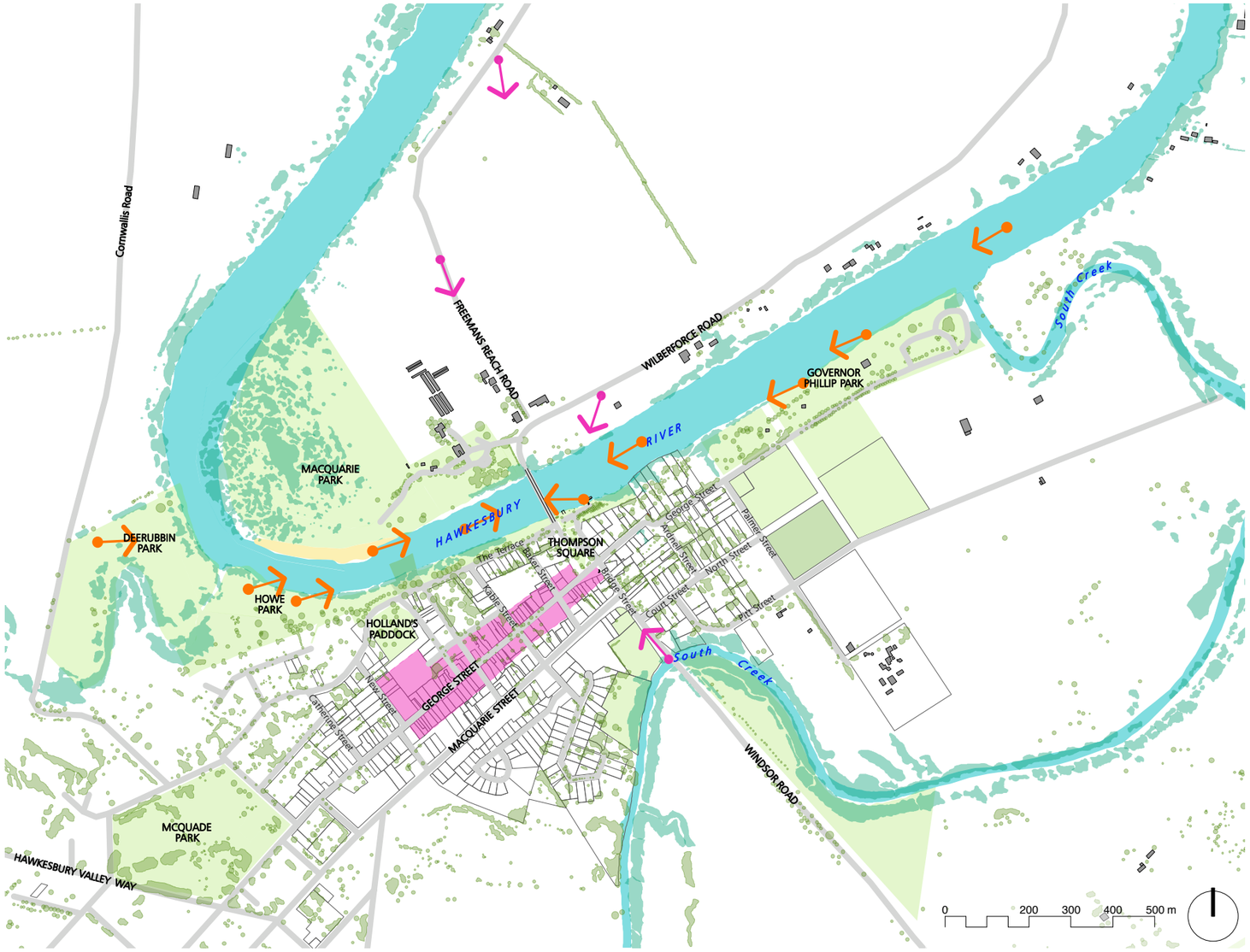

Figure 2.22: The key viewpoints of Windsor and Windsor bridge.

2.14 VISUAL CHARACTER

Plate 2.8: View of Windsor bridge on the Hawkesbury River (Source: www.discovergreatersydney.com.au)

The township of Windsor is located on a ridge line just to the south of the Hawkesbury River. Approach roads both from the south and north provide glimpses of the idyllic historic town sitting on this ridge above the river. The river is a significant landmark in this landscape. Windsor is located adjacent to a long wide reach of the river with sharp meandering curves at each end. The river reach affords views upstream and downstream and south towards the township, Windsor bridge and the townships foreshore parklands.

The combination of attractive, low scale and historic buildings set in a well vegetated landscape compliments the otherwise rural setting of the surrounding floodplain.

DESIGN CONSIDERATIONS

The unique setting of historic Windsor on the banks of the Hawkesbury River is unrivalled in NSW. The township has a rich history, series of open spaces and important heritage buildings.

LEGEND

- TOWN CENTRE
- KEY VIEWPOINTS TO WINDSOR BRIDGE
- VIEWS TO WINDSOR