

AAJV



WINDSOR BRIDGE REPLACEMENT PROJECT

PROJECT NUMBER: 140604-2

Historical and Maritime Archaeological Research Design

AAJV

(an AUSTRAL & AHMS Joint Venture)

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4 October 2016

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CONTENTS

1	INTRODUCTION	2
1.1	Background and Context	2
1.2	Location	2
1.3	Statutory Context and Heritage Listings	2
1.4	Description of Development	3
1.5	Relevant Reports	3
1.6	Objectives	3
1.7	Limitations	3
1.8	Authors	4
2	SITE HISTORY	9
2.1	Introduction	9
2.2	Historical Overview	9
3	HISTORICAL ARCHAEOLOGICAL POTENTIAL AND SIGNIFICANCE	27
3.1	Introduction	27
3.2	Archaeological Potential	27
3.3	Statement of Archaeological Significance	31
4	RESEARCH FRAMEWORK AND METHODOLOGY	34
4.1	Introduction	34
4.2	Excavation Strategy	34
4.3	Excavation Methodology	40
4.4	Personnel	42
4.5	Reporting	42
4.6	Workplace Health and Safety Requirements	43
4.7	Public Information and Interpretation	43
4.8	Research Questions	43
4.9	Research Themes	47
4.10	Action Plan	48
5	REFERENCES	50
	APPENDIX A – HISTORIC MAP OVERLAYS.....	51

LIST OF FIGURES

Figure 1 - The regional context of the project area, including nearby locations.	5
Figure 2 - The town of Windsor with the approximate location of the project area indicated.	6
Figure 3 - Map of the WBRP project area.....	7
Figure 4 - Key elements of the WBRP project. (Source: SKM, WBRP EIS November 2012)	8
Figure 5 - Windsor in 1812: the government precinct, Thompson's lease and, in the upper section, the area round the later Bridge Street. The marked buildings include the schoolhouse/chapel (1), the 'Granary & Store' (2), the Government Cottage (3), the replacement military barracks (4), Assistant Surgeon's residence (5), Baker Jnr's lot (6) and Thompson's lots (7). North is at the bottom of the map (Source: James Meehan, surveyor, signed by Governor Macquarie, SRNSW Map SZ 529.)	12
Figure 9 - The Government Domain (right) and Thompson Square in 1831. Government buildings are coloured red. The privately owned buildings which define the south-west side of Thompson Square are in blue. The beds of the government garden are carefully surveyed just south of the letters 'IV' in 'River'. (Source: Surveyor Abbott, SRNSW, Map 1816, detail.)	15
Figure 10 - Survey of Thompson Square by Charles Scrivener, December 1894. Cf. the aerial photograph of 1929, Figure 12. (Source: Surveyor Charles Scrivener, LPI, Crown Plan, R.6026.1603.)	16
Figure 11 - Thompson Square, beaching facilities for small boats in 1812-1813. (Source: Slaeger, 'A View of Part of the Town of Windsor', published by West, 1813.)	17
Figure 12 - The punt-master's cottage adjacent to Thompson Square. It is the small rectangle between the Doctors' House (no.31) and the river. (Source: Map of Windsor by Thompson, 1827, SRNSW, SZ 526, detail.)	18
Figure 13 - The Windsor punt in 1835, shown in a detailed footprint map including the study area. (Source: Map of Windsor, SRNSW Map 5968.).....	19
Figure 14 - The first depiction of a road through Thompson Square, 1842. (Source: Laban White, auctioneer, '123 Building and 24 Cultivation Allotments ...')	20
Figure 15 - Thompson Square, the wharf and Windsor Bridge around 1900. All four buildings in the centre of the photograph still survive with reasonable integrity. (Source: State Library of NSW, Mitchell Library, Small Picture File.)	21
Figure 16 - Thompson Square in 1929, from the north, showing some plantings in the two reserves, 29900 (upper) and 29901 (lower). (Source: Aerial photograph, courtesy of Carol Roberts, from the collection of her mother, the late Iris Cammack. Photographer, Frederick Halpin Willson, RAAF, 1929.)	21
Figure 17 - Plan of Main Road 182, through Thompson Square, 12 December 1946. (Source: Surveyor Charles Seccombe, LPI, Crown Plan , R.23477.1603.)	22
Figure 18 - <i>In the foreground, the paling fence and part of a building on Whittons Farm, portion 69, Wilberforce parish, painted in c1810/1811. (Source: George William Evans, watercolour, Windsor Head of Navigation Hawkesbury, Mitchel Library, SV1B/Wind/6.)</i>	23

Figure 19 - The Squatters Arms on Whittons Farm, shown as 'house' in 1878, in the right angle between Wilberforce Road and Freemans Reach Road. The north end of Windsor Bridge is shown in the lower part of this detail of the plan. (Source: LPI, Crown Plan R1533.1603.)	25
Figure 20 - Bridge Street in 1835, between George and Court Streets. The upper cross street on the left is George, the lower Macquarie. The Macquarie Arms is shown on the corner of Thompson Square. (Source: Map of Windsor, SRNSW Map 5968.)	26
Figure 21 -The project area overlain with the 1812 Meehan Plan (green) and the 1831 Abbott Plan (orange). The map also shows the location of previous archaeological testings undertaken in the area.	30
Figure 22 - The Settlement on the Green Hills, Hawksburgh [i.e. Hawkesbury] River N.S.Wales, 1809. The structures shown in the painting are as follows: 1 Government House; 2 School/Chapel; 3 Brick Store; 4 Thompsons First House; 5 Log Granary; 6 Govt. Stables; 7 Wharf (behind the boat) 8 Two Government House Stores; 9 remains of Boat Slip; 10 Govt. Wharf (?); 11 Bakers Farm. Approximate boundary of the project area is outlined in green.	31
Figure 23 - The site aerial showing the proposed locations of both the Aboriginal and historical archaeological test trenches.	37

EXECUTIVE SUMMARY

The NSW Roads and Maritime Service (RMS) is proposing to replace Windsor Bridge, Windsor, NSW. The re-development includes replacement of the existing Windsor Bridge, with a new structure and various modifications to the approaches and surrounds of the crossing. The project was assessed under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (State Significant Infrastructure), and approved in December 2013 (SSI_4951). The Minister's Conditions of Approval (MCoA) for the Windsor Bridge Replacement Project (WBRP) require a range of geomorphological, Aboriginal, historical and maritime archaeological investigations for the southern (condition B3) and northern (condition B4) banks of the Hawkesbury River.

AAJV has been engaged by RMS to prepare this historical and maritime archaeological research design and action plan for the WBRP to provide a theoretical and practical framework for implementing the study in the event such deposits are found. The study includes:

- A program of historical and maritime archaeological testing designed to investigate the historic and maritime archaeological potential of key locations in and around Thompson Square and the Windsor Bridge Replacement Project zone of impact;
- A series of research questions underpinning the test excavations, to examine the intactness and significance of any surviving archaeological materials and their ability to provide further information regarding the history and development of Windsor and the Thompson Square area, guide further archaeological work and heritage management;
- Links to the Research Designs for the Aboriginal Archaeological Testing and Sand Bodies Study, to ensure a consistency of approach and output from the testing program, to guide the Strategic Conservation Management Plan;
- A methodology for the field testing program.

This document provides a structured process for undertaking the historical and maritime archaeological testing, and will be the basis for guiding decisions on any future salvage excavations and the future management of the archaeological heritage of the study area.

1 INTRODUCTION

1.1 Background and Context

The NSW Roads and Maritime Service (RMS) has engaged AAJV (a joint venture of Austral Archaeology and Extent Heritage (formerly AHMS)) to prepare an Archaeological Research Design (ARD) for the integrated Aboriginal and non-Aboriginal (European) archaeological test excavation associated with the redevelopment of Windsor Bridge, Windsor, NSW, also known as the Windsor Bridge Replacement Project (WBRP). The redevelopment includes replacement of the existing Windsor Bridge, with a new structure and various modifications to the approaches and surrounds of the crossing.

The project has been approved as State Significant Infrastructure (SSI_4951) under Part 5.1 of the *Environmental Planning and Assessment Act 1979*. The approval was issued on 20 December 2013 subject to the Minister's Conditions of Approval (MCoA). Part B - Pre-Construction Conditions of the MCoA includes a number of conditions (B1-B8) pertinent to the conservation of cultural heritage values of the project area. Conditions B3 and B4 require a range of geomorphological, Aboriginal, historical and maritime archaeological investigation works for both the southern and northern banks of the Hawkesbury River prior to commencement of pre-construction and construction works.

In 2013 AAJV prepared an Integrated Archaeological Research Design for the WBRP (AHMS 2013). The report was prepared in response to the requirement set out by the NSW Heritage Branch (now the Heritage Division) as follows:

Proposed research design and methodology for physical archaeological works needs to be reviewed by the Department of Planning and Infrastructure and the Heritage Council, prior to commencement, to check that strategies are appropriate and in accordance with standard archaeological practice for State listed sites and areas.

Following a further refinement of the WBRP design and the issue of the SSI MCoAs, a need to update the existing Integrated ARD has been identified. Given the complexity of a project area that includes several archaeological components, i.e. Aboriginal, historical (terrestrial) and maritime archaeologies it has been decided to prepare a separate ARD document for each archaeological component.

This report has been prepared to provide a theoretical and practical framework for the historical and maritime archaeological components of the integrated test excavation. A research framework to guide the Aboriginal archaeological component of the test excavation is provided in two separate ARDs.

1.2 Location

The project area is located at Windsor, within the Hawkesbury Local Government Area (LGA), approximately 57 kilometres north-west of Sydney. The town is situated on the southern bank of the Hawkesbury River, close to the foothills of the Blue Mountains (**Figure 1**).

The project area incorporates the area covered by the bridge works and associated road works, and it extends from the intersection of Freemans Reach Road and Wilberforce Road in the north to the intersection of Bridge Street and Macquarie Street in the south (**Figures 2 and 3**).

1.3 Statutory Context and Heritage Listings

The WBRP has been assessed as a SSI project and as such does not fall into the ambit of the NSW heritage legislation for the protection of historical and maritime archaeological relics. All work is being undertaken in accordance with the Minister's Conditions of Approval for the SSI.

1.4 Description of Development

The WBRP includes the construction of a replacement bridge approximately 35 metres east (downstream) of the existing bridge. This will require the construction of new southern and northern approach roads in order to access the proposed new bridge. The proposed re-alignment of Bridge Street will commence at the roundabout of George and Bridge streets, with the new carriageway then extending north across the replacement bridge. New underground services will also be constructed during the project and will be installed beneath Bridge Street, running from Macquarie Street to the proposed roundabout connecting Freemans Reach Road with Wilberforce Road on the northern side of the Hawkesbury River. Areas previously disturbed by utilities will be used for installation of new conduit.

The development is shown in Figure 4.

1.5 Relevant Reports

A number of heritage reports have been prepared for the project area. This report mainly draws on the following works:

Windsor Bridge Replacement Windsor, Integrated Archaeological Research Design, Austral and AHMS Joint Venture (AAJV), October 2013;

Windsor Bridge Replacement Project Independent Heritage Review, Dr Mary Casey (Casey & Lowe), Craig Burton (CAB Consulting) and Alex Been (Mott MacDonald), August 2013; and

Evaluation of Historical Images for Additional Archaeological Potential, Windsor Bridge Proposal, AHMS (Archaeological & Heritage Management Solutions), July 2013; and

Windsor Bridge Replacement Project - Historic Heritage Assessment & Statement of Heritage Impact, Biosis and Cultural Resources Management, 2012.

1.6 Objectives

The main objectives of the historical and maritime archaeological test excavation are:

- to identify the extent, nature and level of preservation of the potential archaeological resource that may be impacted by the WBRP and other developments within this corridor;
- to determine if any archaeological salvage of remains that would be impacted by construction is warranted;
- to inform the Strategic Conservation Management Plan (SCMP) currently in preparation for the project; and
- to direct future heritage activities including mitigation of development impacts for the WBRP, if required.

1.7 Limitations

This ARD has been prepared for the management of the historical and maritime archaeological resources of the WBRP.

The Aboriginal archaeological component of the project is addressed in the following reports:

Aboriginal Archaeological Research Design and Excavation Methodology Windsor Bridge – Windsor Bridge Replacement, AAJV, May 2016; and

Hawkesbury Region Sand Body Study – Research Design, AAJV, May 2016.

1.8 Authors

This report has been prepared by:

Historical archaeology: Matthew Kelly, Anita Yousif, Peter Douglas

Maritime archaeology: Cosmos Coroneos

Review: MacLaren North, Justin McCarthy



Figure 1 - The regional context of the project area, including nearby locations.

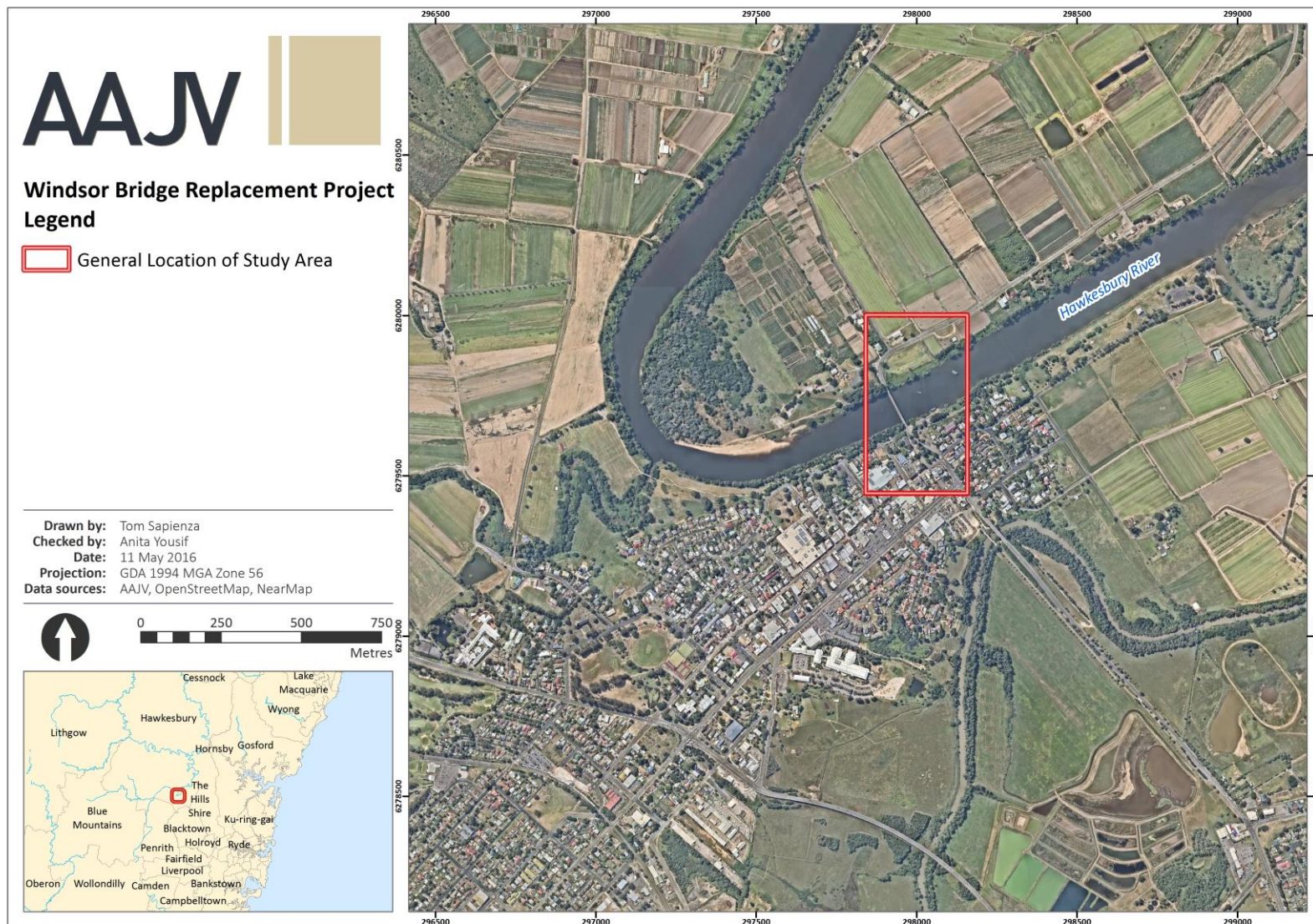


Figure 2 - The town of Windsor with the approximate location of the project area indicated.

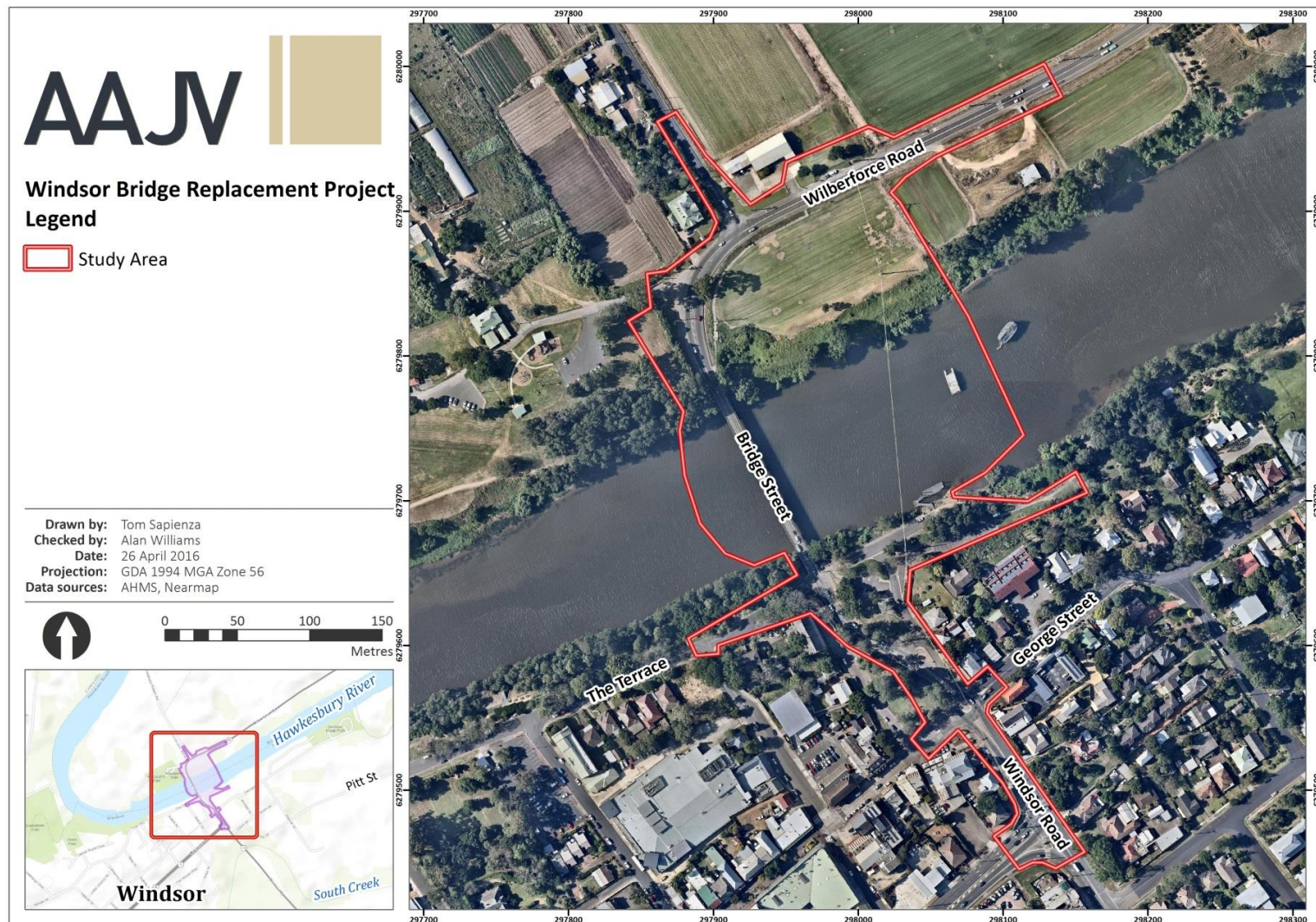


Figure 3 - Map of the WBRP project area

2 SITE HISTORY

2.1 Introduction

This section provides the history of the site that has been summarised from the 2012 Biosis report and the draft history prepared by Dr Ian Jack for the SCMP. This historical background for the site focuses on the historical sequence relevant for historical and maritime archaeology. Further historical research is being undertaken as part of the preparation of the SCMP. The draft history below concentrates on the earliest phases of the development of Windsor and the Thompson Square area. A more detailed history of Aboriginal occupation in the area is provided in the 2016 Aboriginal ARD.

2.2 Historical Overview

2.2.1 ENVIRONMENTAL AND ETHNOHISTORICAL CONTEXT

2.2.1.1 GEOLOGY AND SOILS

The Hawkesbury River, upon which the project area is situated, is one of the most significant fluvial systems on the eastern coast of Australia. Geomorphologically, the area has a complex history of fluvial and aeolian processes, resulting in the landscape evident today. Studies to the south at Cranebrook Terrace suggest that the banks and surrounds of the river are situated on Tertiary clays and gravels (>2.6million years old), and have formed over the last 100,000 years. Sand deposits associated with the river investigated at Pitt Town and the site of the Windsor Museum similarly suggest initial deposition by ~150,000 years (Austral Archaeology, 2011; Williams et al., 2012, 2014). These deposits are vast, with deposits at Cranebrook Terrace over 20m thick, and sand bodies at Pitt Town some 2.5m deep and deposited over 20m above the river surface.

With specific reference to the project area, the northern portion of the site is situated on Quaternary alluvium, which other parts of the river having shown to extend 4-8m below the land surface (Groundtruth Consulting, 2010). These deposits may also extend to the immediate banks on the south side of the river as well. Recent archaeological works discussed below, suggest that these deposits formed quickly, and may be less than 15,000 years in age. To the south of the project area, the land is characterised by a natural ridge of Tertiary clay. Excavations in 2012 indicate that this is overlain by a yellow brown loamy sand (KNC, 2012) up to 80cm deep, similar to the deposits at Pitt Town and the Windsor Museum, and likely formed through a combination of low-energy flooding and aeolian re-working. These sand deposits are disparate due to the undulating Tertiary clay, and extensive historical and more recent activities resulting in a range of shallower and more disturbed soil profiles across the area.

2.2.1.2 EVIDENCE OF ABORIGINAL OCCUPATION

Archaeologically, the Hawkesbury River corridor contains some of the earliest evidence of Aboriginal occupation in Australia. While disputed, the recovery of five flaked pebbles from the base of the Cranebrook Terrace, and dating to ~40,000 years BP, represent the earliest evidence of past activity (Nanson et al., 1987; Stockton and Holland 1974). More compelling evidence of Aboriginal use of the river is provided by excavations undertaken in advance of residential development at Pitt Town. These excavations, totalling ~250m² across a kilometre section of the ridgeline (PT-12) over-looking the river, recovered over 10,000 stone artefacts from depths up to 1.3m below surface, and dating to between 36,000 and 8,000 years ago (Williams et al., 2012, 2014). Similar findings were made in advance of the Windsor Museum, where a 1.8m deep sand body, recovered 12,000 stone artefacts dating to ~34,000 – 8,500 years ago (Austral Archaeology, 2011). Recent excavations on the banks of Peachtrees Creek (near Penrith CBD) recovered a handful of stone artefacts at a depth of 4m below

surface, and dating to ~15,000 years ago (AHMS, 2014). These assemblages were all dominated by indurated mudstone, tuff and/or volcanic raw materials, and suggest that Aboriginal populations were small, highly mobile, and exploiting the river corridor during periods of climatic aridity and generally poorer resources (Williams et al., 2015). More practically, they also demonstrate that cultural materials along the river corridor can be found at significant depths below the present day land surface.

While the early Holocene (~8-5,000 years BP) is poorly understood, with some evidence of abandonment of the region (Williams et al., 2014), a strong record of occupation and activity is present in the last 5,000 years. This is most evident through the extensive 'surface workshops' of stone artefacts and grinding groove patches documented by McCarthy (1978) between Castlereagh and Emu Plains. Excavations at Lapstone Creek rockshelter and KII rockshelter immediately west of the river also contain dense records of occupation over the last 4,000 years (McCarthy, 1978; Kohen et al., 1984), as does the upper 50cm of PT-12 (Williams et al., 2014). These assemblages are dominated by silcrete and quartz raw materials, and typically more complex, indicative of increasingly sedentary and technologically invested societies driven by regional demographic pressure hindering mobility across the landscape (Williams et al., 2015).

Excavations undertaken within the project area in 2012 contain several elements of the archaeological story presented above. To the north, excavations were too shallow to determine the past use of the area, but the deposits appear similar to those at Peachtrees Creek. To the south, the sand deposits investigated are very similar, albeit much shallower, to those observed at the Windsor Museum and PT-12, both of which contained extensive and significant cultural materials of great antiquity. The assemblage recovered in 2012 was small, and contained a mixture of tuff, indurated mudstone and silcrete raw materials. Interpretations by KNC (2012) suggest that the assemblage was likely only dated to the last few thousand years, but based on the evidence the potential for older cultural materials (possibly inter-mixed with later activity) cannot be entirely ruled out.

Both the river and the quaternary alluvium down by the south bank of the river and over all the study area on the north side of the Hawkesbury constituted a useful source of indigenous food supply.

2.2.2 EARLY EUROPEAN SETTLEMENT (1794 – 1800)

In the first years after European settlement of New South Wales began in 1788, there was a recurrent shortage of food in the colony and in 1794 grants were made along the upper Hawkesbury, where the soils of the flood-plain were superior to those already exploited around Sydney, Parramatta and Toongabbie. By the beginning of 1795 85 of the 118 initially promised land grantees had established farms, the overwhelming majority of them ex-convicts.

At the beginning the early settlement was known as Green Hills, but Lieutenant Governor Grose called it Mulgrave Place and the early grants were described as being in 'the District of Mulgrave Place' (Biosis 2012, p44).

A government presence was necessary and a site at the head of navigation, where stores could be brought in by boat and wheat and maize taken back to Sydney, had been retained in crown hands. This Government Precinct of some 40 acres was bounded on the north-east by Samuel Wilcox's grant, which ended at the present Arndell Street; on the south-east by South Creek; on the south-west by the present Baker Street, the approximate edge of a grant to Whitehouse, soon sold to William Baker, the government storekeeper; and on the north-west by the Hawkesbury River. Except for the strip of alluvial soil along the riverbank, the new government area occupied higher and less fertile land than the local farms.

Within the Government Precinct the area known as Thompson Square after 1811 sloped conveniently down to the river. The slope was cleared of vegetation and a wharf was erected early in 1795, along

with a store-house, housing a small guard. Other soldiers arrived in the winter and were accommodated close to the store in a barracks built late in 1795. A major flood in 1799 washed away the store and wharf, so both were replaced, with the store resited to higher ground. Better soldiers' accommodation was constructed in 1796 on the western side of the Square and moved to higher ground by 1800.

In addition to the store, the wharf and the barracks, the fourth basic facility was a granary for local cereal: the 1795 granary was replaced by Governor Hunter in 1796 by a more substantial wooden building in the middle of the eastern side of the present Square and a second similar granary was added by 1800.

In 1796 a cottage for the Commandant was erected near the north-eastern edge of the Government Precinct, adjacent to the study area. A small, thatched watch-house was built in the Square near the Commandant's house by 1798.

Adjacent to the 1796 granary, to its east, was a small cottage built for the local constable. This was Andrew Thompson (a model citizen who was to become the first ex-convict to become a magistrate in the colony), on the cusp of an extraordinary career. In 1799 Thompson was given the exceptional right to have a lease within the government precinct: he held the cottage and an acre of surrounding land down to the river bank for a period of fourteen years, which had not elapsed when he died in 1810. The map prepared by Meehan in 1812 (**Figure 5**), with the Hawkesbury at the bottom and South Creek at the top, shows only government buildings. Thompson's lease and his former small cottage are clearly shown.

2.2.3 TOWN EXPANSION (1800 – 1810)

In 1803, under Governor King, the earlier log and thatch granaries were soon replaced by a three-storey brick building on top of the ridge to the south-east of the Square.

"A very spacious Brick Granary with Three Floors, is now completed at the Hawkesbury for the Public Use – I have employed the people in that quarter to burn bricks for building a large school house (100 ft by 24) and Offices with Garden etc. For a House of Public Instruction for the Male Youth of this Colony – In the course of three Months I hope to see it finished".¹

"Built a Brick Granary at the Hawkesbury of the following dimensions length 101 feet, breadth 25 feet, Height to Wall Plate 23 Feet, with Three floors: Burning Bricks for a Public School for Boys".²

To the east of the new brick granary there was added in 1804-1805 a two-storey schoolhouse/chapel and schoolmaster's residence, which also served as a court-house, and under Bligh in 1808 the chapel was refurbished (Figure 6). Slightly to the west of the brick granary around this time, Thompson, at the height of his prosperity, built his own three-storey store facing the Square (**Figures 6 - 7**).

¹ HRA Series 1 Volume 4: 311.

² *Ibid.* 319.



Figure 5 - Windsor in 1812: the government precinct, Thompson's lease and, in the upper section, the area round the later Bridge Street. The marked buildings include the schoolhouse/chapel (1), the 'Granary & Store' (2), the Government Cottage (3), the replacement military barracks (4), Assistant Surgeon's residence (5), Baker Jnr's lot (6) and Thompson's lots (7). North is at the bottom of the map (Source: James Meehan, surveyor, signed by Governor Macquarie, SRNSW Map SZ 529.)

From 1795 the Square was the place where community activities, such as assembling for musters and picking up provisions took place. It is the oldest civic Square in Australia. In the paddock beside the barracks soldiers burnt an effigy of Governor Bligh when he was deposed in Sydney.

Meehan's 1812 map must be viewed in conjunction with the slightly earlier watercolours painted by George William Evans, the surveyor and explorer, while he was a farmer on the Hawkesbury, and also with the etching by Philip Slaeger published in mid-1813 (**Figures 6 and 8**).

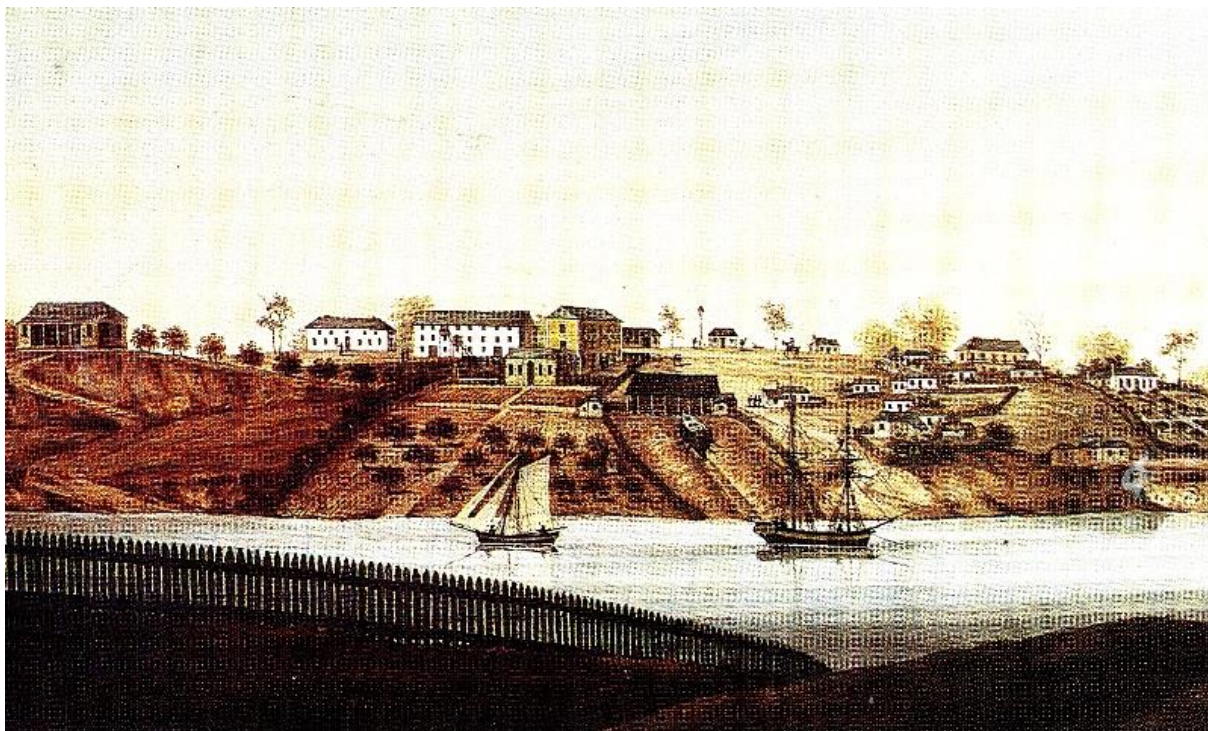


Figure 6 - The Government Precinct at Green Hills in 1807, with a boat, the 'Governor Bligh', under construction just below the central log granary. (Source: George William Evans, watercolour, Hordern House, Colonial Paintings catalogue, 1994, item 4)



Figure 7 - Thompson's store, at the top of Thompson Square, facing south-west across the Square, drawn in 1820. (Source: State Library of NSW, Mitchell Library, Bonwick Transcripts, box 10 p.4259.)



Figure 8 - The Government Precinct at Windsor in 1812 or 1813. (Source: Philip Slaeger, 'A View of Part of the Town of Windsor', etching published by Absalom West, Sydney 1813.)

The Evans paintings of 1807 (**Figure 6**), 1809 (Figure 22) and 1811 were all sketched from the same location on the north side of the river, approximately where Windsor Bridge was to span the river in 1874. Evans' vantage-point was Whittons Farm, which is within the present study area. Slaeger sketched the scene sitting slightly to the north-east of Evans' favoured place (**Figure 8**).

2.2.4 THE MACQUARIE PERIOD AND ITS AFTERMATH IN THOMPSON SQUARE (1810 – 1840S)

In December 1810 Governor Macquarie held a dinner in the Government Cottage where he announced the creation of five new towns on high land along the Hawkesbury-Nepean River. Windsor was to be the principal town. Unlike the other new towns, Pitt Town, Wilberforce, Richmond and Castlereagh, Windsor already had a rudimentary urban development. Macquarie recognised that there was already a civic Square in existence in Windsor. In 1811 he named this Square after his friend Andrew Thompson who had died in October 1810. Since Thompson Square was at one end of the elevated land on which the grid pattern of Windsor was laid out in 1811, a second Square was laid out closer to the centre of the new town, adjacent to the new cemetery, where Thompson was already buried, and where St Matthew's Anglican church was built between 1817 and 1822.

Thompson Square remained the commercial and administrative focus of Windsor for another half century. The lease held by Thompson within the Square reverted to the Crown on his death, the area was tidied up and Macquarie redefined the south-west boundary of the civic space by making four town grants in 1811. The Macquarie Arms inn (which is still extant) was built at once, and opened in 1815. No regular title-deeds seem to have been issued for these plots, where Howe's House (Thompson Square no.7), Thompson Square no. 5 and the Doctors' House (Thompson Square nos 1-3) were later built, but the private ownership of all the land abutting the square on the south-west was recognised from Macquarie's time onwards.

The Thompson lease, shown in Meehan's map (**Figure 5**) became the government garden in 1811. In the sketch-map of the area drawn by John Abbott in 1831, the government buildings then in use are shown in red, while the footprints of privately owned buildings are in blue (**Figure 9**). The clean-cut definition of the south-west side of Thompson Square is particularly evident in Abbott's map. The numerous private houses along George Street and Macquarie Street are not shown.

George Street did not extend north-east beyond Thompson Square. The old granary was by 1831 known as the Commissariat Stores, marked 'c' by Abbott. Beside the government garden there were police and convict barracks, with stables behind ('g', 'f' and 'e'). The schoolhouse/church of 1804-1805 was still standing just east of the Commissariat Stores, although St Matthew's had since 1822 taken over its religious functions. A new watch-house had been built on Bridge Street close to the Store and is shown as 'd'. Further south-east on Bridge Street the military barracks ('a') had been built in 1817-1818. Bridge Street itself had been created in 1814 to replace the road from the original South Creek crossing, further to the east, as shown on Meehan's map of 1812 (*Figure 5*). Bridge Street, however, ended at George Street: there was no defined road through early Thompson Square.



Figure 6 - The Government Domain (right) and Thompson Square in 1831. Government buildings are coloured red. The privately owned buildings which define the south-west side of Thompson Square are in blue. The beds of the government garden are carefully surveyed just south of the letters 'IV' in 'River'. (Source: Surveyor Abbott, SRNSW, Map 1816, detail.)

2.2.5 A FRINGE AREA: 1850S ONWARD

The government presence on the eastern side of the Square diminished in the early Victorian period. The fully developed, privately owned western side of today's Thompson Square, begun in 1811, was in place by the 1850s. Across the Square, the earlier buildings, shown in *Figure 5*, had disappeared and Government stables had been built at the northern corner of Bridge Street and George Street. These stables were demolished after Lilburn Hall (10 Bridge Street) was built in the 1850s.

Below Lilburn Hall, the former government garden had been abandoned in 1852 so that the Presbyterian Church could build a manse. Although the church never built upon this flood-prone land, the realignment of the property boundaries straightened what is currently known (misleadingly) as Old Bridge Street, until the resumption of a triangle of land to enhance the vehicular turn into the wharf area in 1896 (*Figure 10*). The sandstock brick wall which survives below the house at 4 Bridge Street (built in 1955) does not seem to have been accurately surveyed, but is likely to have been part of the garden delimitation of the government garden.

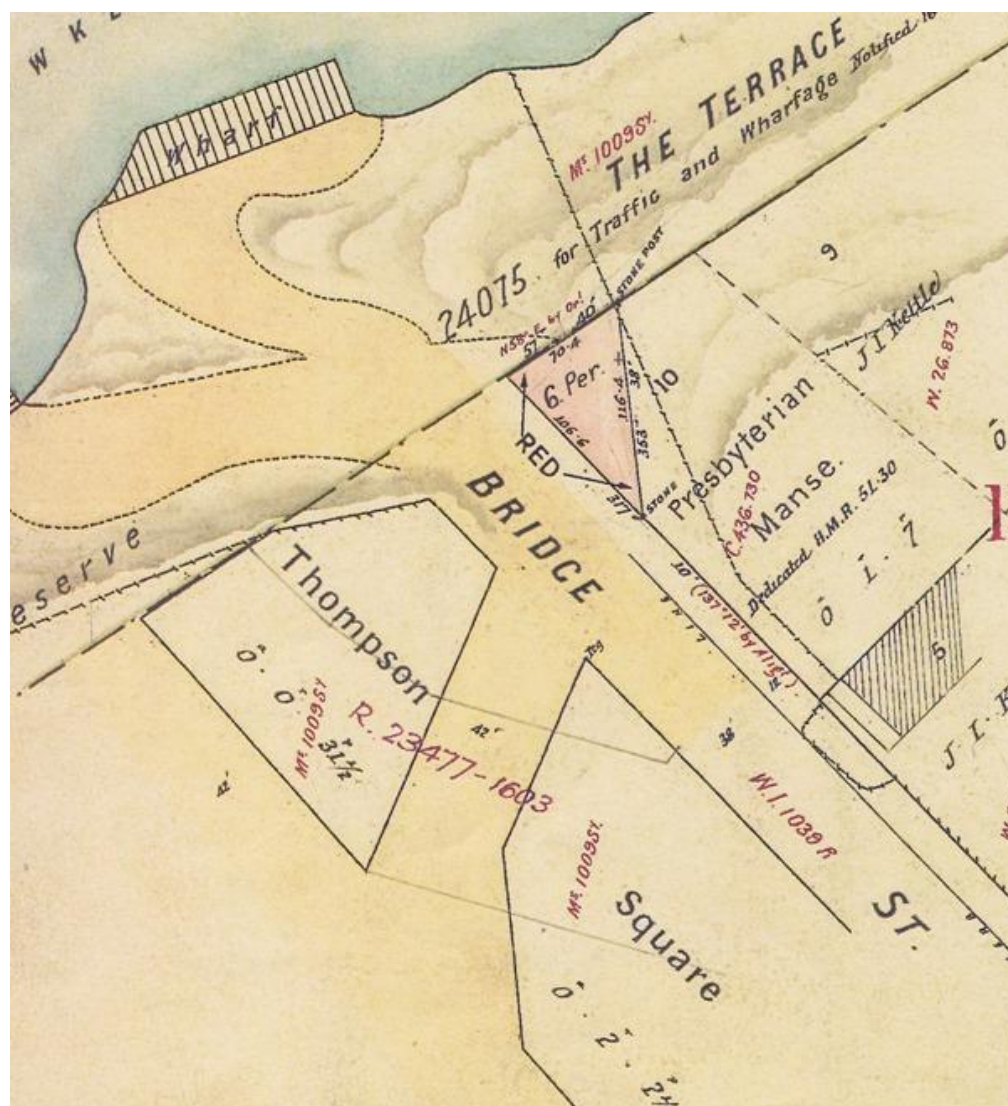


Figure 7 - Survey of Thompson Square by Charles Scrivener, December 1894. Cf. the aerial photograph of 1929, Figure 12. (Source: Surveyor Charles Scrivener, LPI, Crown Plan, R.6026.1603.)

Further east along George Street, the old Government House (which had survived intact with additions since 1796) survived in increasing disrepair until 1921, when, despite widespread protests, it was

finally pulled down. Although a house (41 George Street) was built over part of the eighteenth-century foundations, there remains high archaeological potential on the site.

2.2.6 WHARVES AND ROADWAYS

Wharfage was a cardinal consideration at Thompson Square from the beginning in 1795. The earliest wharves seem to have been destroyed in a series of severe floods after 1799 and the only landing facility was the edge of the river where small boats could be pulled up just beyond the water-line, as vividly shown in Slaeger's 1812-1813 etching (*Figure 7*). This was also the area of the Square where the schooner named 'Governor Bligh' was built and launched in 1807 (*Figure 2*): this was one of the earliest ships built in Australia for the significant sealing trade.

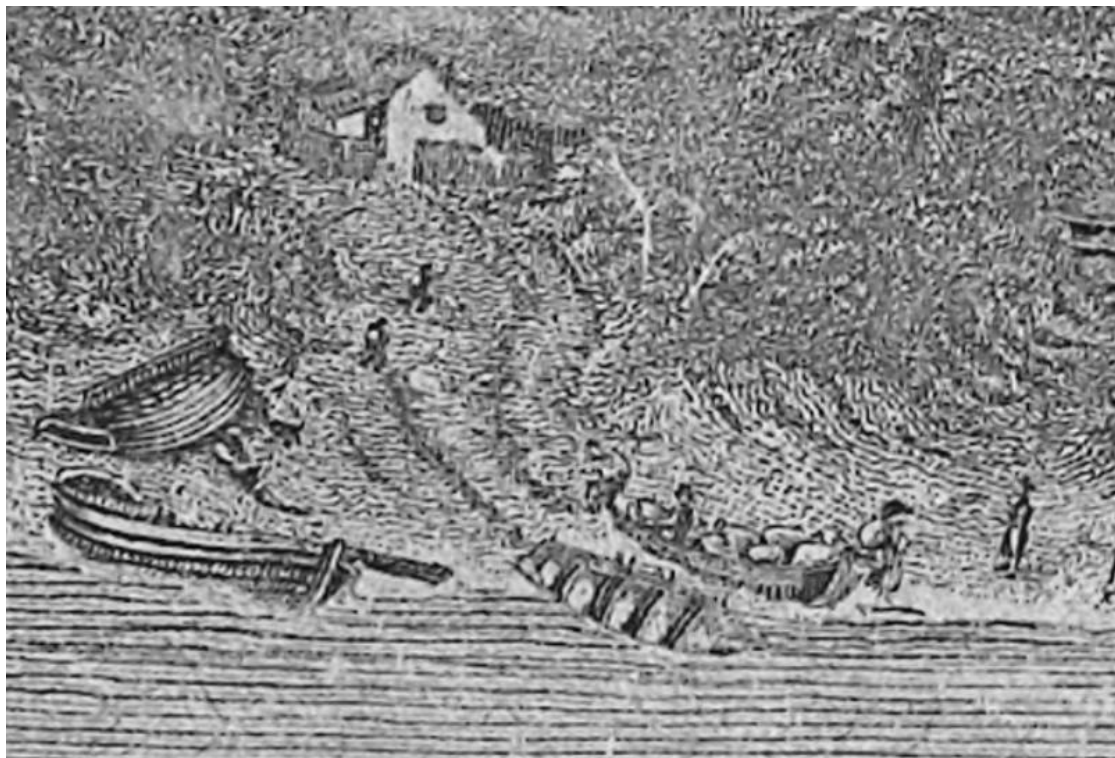


Figure 8 - Thompson Square, beaching facilities for small boats in 1812-1813. (Source: Slaeger, 'A View of Part of the Town of Windsor', published by West, 1813.)

Macquarie in August 1814 commissioned the local entrepreneurs John Howe and James McGrath to construct a new wharf 50 feet long, projecting 18 feet into the river and supported by piles '16 to 18 inches thick'. Almost as soon as this wharf had been constructed, a further contract was issued in April 1815 commissioning a larger wharf three feet higher than the existing one and apparently over it. Severe criticism of the materials and workmanship of the new wharf led to Francis Greenway, the Acting Colonial Architect, being commissioned in November 1816 to design a new wharf and to direct Howe and McGrath during its erection. The high floods of June 1816 and February 1817 finally removed the wharves of 1815-1816, but payment for the Greenway wharf was not finalised until 1820, probably because of another 46-foot flood in 1819. The location and dimensions of the Greenway wharf are shown on the north-east side of Thompson Square in an anonymous map of 1835 (*Figure 9*).

Howe and McGrath had also contracted in 1814 to do significant works within Thompson Square. The steepness of the slope shown in the Evans and Slaeger views was to be diminished by putting

piles in the lower sector of the square near the river and then using fill to reduce it 'into a gradual slope' down from the major store on top of the ridge.

The contractors also made between 120,000 to 150,000 bricks to construct drainage works in 1814-1815. They were to build either one 'sewer' in the middle of the square or two 'sewers one on each side of the Square'. Remnants of a substantial brick drain have been uncovered on various occasions in the nineteenth and twentieth centuries and were the subject of archaeological interest more recently. These observations seem to confirm that the contractors chose to build a single central drain in 1814-1815.

A regular punt service across the Hawkesbury was also begun by John Howe in 1814, a short distance upstream from the landing place. The punt-master occupied a small cottage between the garden of the Doctors' House and the river, as shown in Thompson's 1827 map, where the Doctors' House is no.31 (*Figure 12*).



Figure 9 - The punt-master's cottage adjacent to Thompson Square. It is the small rectangle between the Doctors' House (no.31) and the river. (Source: Map of Windsor by Thompson, 1827, SRNSW, SZ 526, detail.)

The punt, which ran for sixty years after 1814, reached the northern bank of the Hawkesbury just upstream of the later bridge (*Figure 13*).



Figure 10 - The Windsor punt in 1835, shown in a detailed footprint map including the study area. (Source: Map of Windsor, SRNSW Map 5968.)

Initially there was no formal roadway constructed within Thompson Square, although there were well-used tracks. When Howe and McGrath completed their 1815 contract, they cut away the river-bank in the vicinity of the new wharf so that there was a turning place for carts. The first map which shows a cart-road leading down to the wharf down George Street is, however, in a private sub-division plan of 1842, which shows a road turning off George Street in front of the Macquarie Arms (then a military mess-house) and curving north across the square before descending to the west onto the river-bank where the punt docked (*Figure 14*). The wharf is not shown.

This road, with a tighter curve, continued to serve the Windsor Bridge when it was opened in 1874, while also serving the wharf downstream from the bridge. As traffic increased, the road effectively divided the open space of Thompson Square into two separate parts. This is clearly shown in Scrivener's plan of the square in 1894, which shows the road diverging to the bridge on the west and to the wharf on the north (*Figure 10*). The road immediately adjoining the bridge was adjusted in 1896, when the bridge was raised more than 2 metres, but the curve of the roadway bisecting the Square remained largely unchanged until the present realignment and cutting were implemented in 1935.

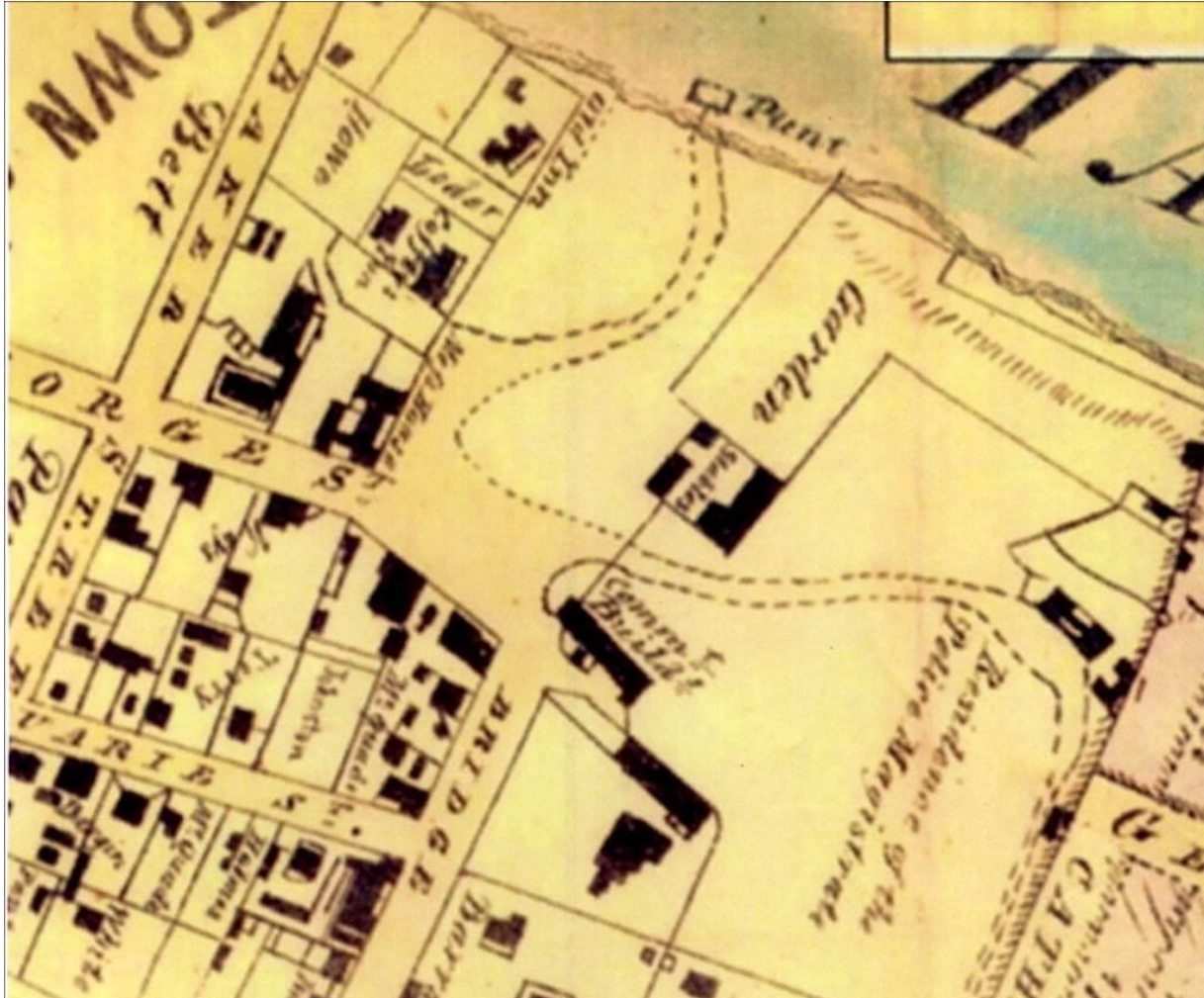


Figure 11 - The first depiction of a road through Thompson Square, 1842. (Source: Laban White, auctioneer, '123 Building and 24 Cultivation Allotments ...')



Figure 12 - Thompson Square, the wharf and Windsor Bridge around 1900. All four buildings in the centre of the photograph still survive with reasonable integrity. (Source: State Library of NSW, Mitchell Library, Small Picture File.)

The 1890s saw the formal creation of three reserves between George Street and the river. In conjunction with the heightening of the bridge, Reserve 24075 was proclaimed in May 1896, a long narrow strip along the river bank on both sides of the bridge (*Figure 10*). This reserve was primarily for ‘traffic and wharfage’ but also developed a recreational aspect as the ‘River Reserve’. In 1899 the two areas of Thompson Square divided by the roadway were declared public recreation reserves: Reserve 29900 was the southern area up to George Street and Reserve 29901 the smaller northern section opposite the Doctors’ House (*Figure 16*).



Figure 13 - Thompson Square in 1929, from the north, showing some plantings in the two reserves, 29900 (upper) and 29901 (lower). (Source: Aerial photograph, courtesy of Carol Roberts, from the collection of her mother, the late Iris Cammack. Photographer, Frederick Halpin Willson, RAAF, 1929.)

This configuration of the Square continued until 1935, when, after lengthy debate, a new approach road to the bridge from George Street, which created the present deep cutting going north-west from the extension of Bridge Street, was finally approved. These alterations to the roadway through and along Thompson Square will have had impact on the archaeological remains in these areas.

The new road cutting intersected the Victorian roadway, which lay on the opposing diagonal. The parts of the earlier diagonal roadway which were now closed and added to the reserves 29900 and 29901 are coloured blue in the plan surveyed in 1946 (*Figure 17*). The northern area was redefined as Reserve 74215 in 1951.

When the new road was completed in 1935, the Country Women's Association moved to build a baby health centre in the upper reserve and the Ladies Section of the Upper Hawkesbury Motor Boat Club sought premises in the lower reserve. Neither was approved.

Siltation of the river after 1880, exacerbated by the building of Penrith weir in 1902, had limited access to Windsor wharf to shallow-draught vessels. Windsor ceased to be a meaningful river-port in the twentieth century. But Thompson Square remained a significant civic, commercial and educational focus. The buildings around the Square housed at various times inns, private schools, the School of Arts, medical rooms and a hospital, as well as private homes, while George Street developed shops and businesses of various sorts.

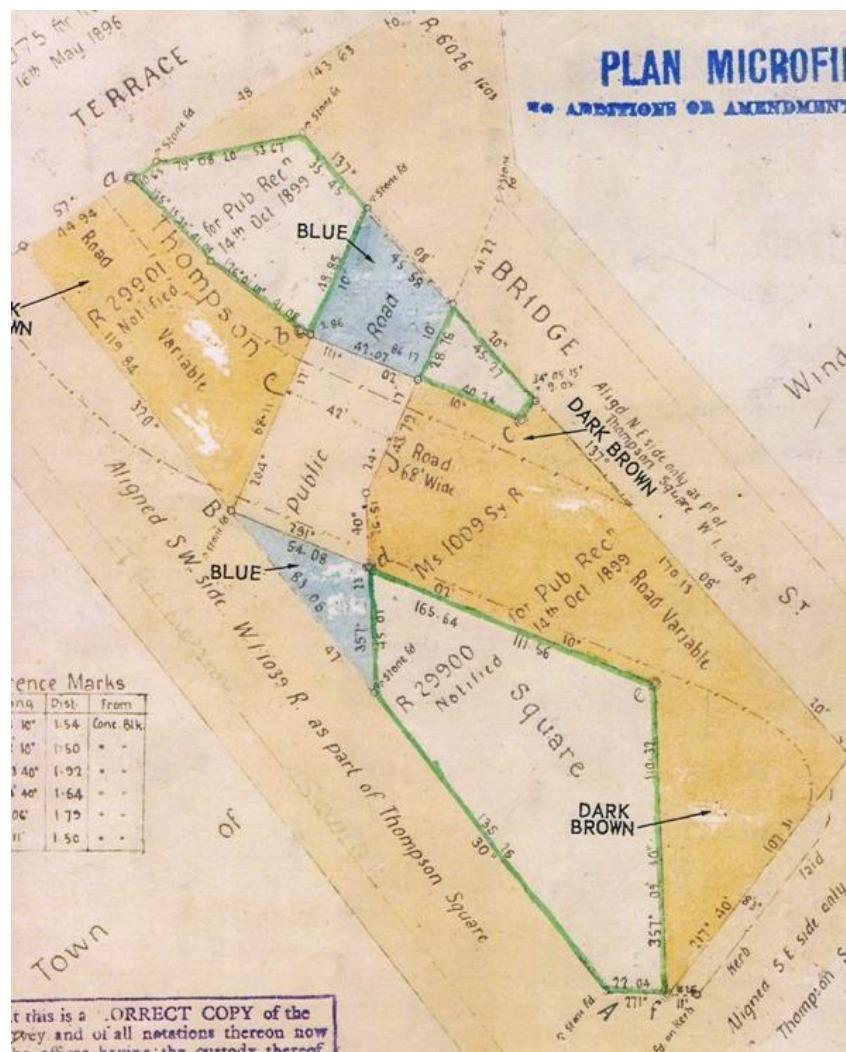


Figure 14 - Plan of Main Road 182, through Thompson Square, 12 December 1946. (Source: Surveyor Charles Seccombe, LPI, Crown Plan , R.23477.1603.)

2.2.7 THE STUDY AREA NORTH OF THE HAWKESBURY RIVER

On the northern side of the river, the study area includes the bridge, the road curving round from the bridge to run north-east towards Wilberforce (Main Road 182) and the part of portion 69 in Wilberforce parish which lies between the river and the present house called Bridgeview (27 Wilberforce Road). This is where George William Evans had sat to prepare his watercolours of the Square and Green Hills across the river (*Figure 18*).



Figure 15 - In the foreground, the paling fence and part of a building on Whittons Farm, portion 69, Wilberforce parish, painted in c1810/1811. (Source: George William Evans, watercolour, Windsor Head of Navigation Hawkesbury, Mitchel Library, SV1B/Wind/6.)

Portion 69 is the 30-acre grant to Edward Whitton, made in December 1794, known through much of the nineteenth century as Whittons Farm or the farm by the Windsor punt. In the 1830s the property was developed as a public house, the Squatters Arms, by Robert Smith, who ran two other inns in Windsor town, but he was obliged to sell the entire portion to Thomas Chapman in 1839.

Chapman divided the 30 acres into two long narrow strips, divided by Freemans Reach Road, and in 1841 sold the western one to Michael McQuade, who was the licensee of the pub on the corner of Tebbutt Street and George Street in Windsor. The eastern strip was acquired by another absentee publican, John Eccleston. Although the two strips were in different ownership, both were leased from the 1860s until 1913 to one conscientious farmer, John Ryan, who also ran the Squatters Arms for a time. The pub lay on the section bought by McQuade, right on the west corner of the junction of Freemans Reach Road and Wilberforce Road, perhaps partly within the study area (*Figure 19*). By 1914 the old pub building had become ruinous and was demolished. It was replaced by the present Federation cottage called Bridgeview after the McQuade family sold the land to Robert Judd, yet another Windsor publican. Bridgeview lies a short distance to the north-west of the pub site and is outside the study area.

Anecdotal evidence indicates that the land on the north bank of the river was used as a Chinese market garden around the end of the nineteenth and beginning of the twentieth century.³ Market gardening was common in the area and, according to oral histories, two Chinese men were known to grow the market garden located within the boundaries of the current project area.⁴

In addition to the crop cultivation (especially wheat), for which the Hawkesbury was renowned from the early days of the colony, the area also produced fruit and and vegetables. Towards the end of the nineteenth and beginning of the twentieth century, the Hawkesbury became the major supplier of vegetables (potatoes, cauliflower, cabbage, corn and broccoli) to the Sydney market.

Toward the end of the twentieth century, the northern bank experienced a shift from vegetable market gardens and orchards to turf farms, particularly along the flood prone lower land. Turf was more resistant to being covered with floods with minimal impacts to the product. The northern portion of the project area present has been used as a turf farm since 1991.⁵

³ Biosis 2012, p107.

⁴ Ibid, p108.

⁵ Ibid, p108.

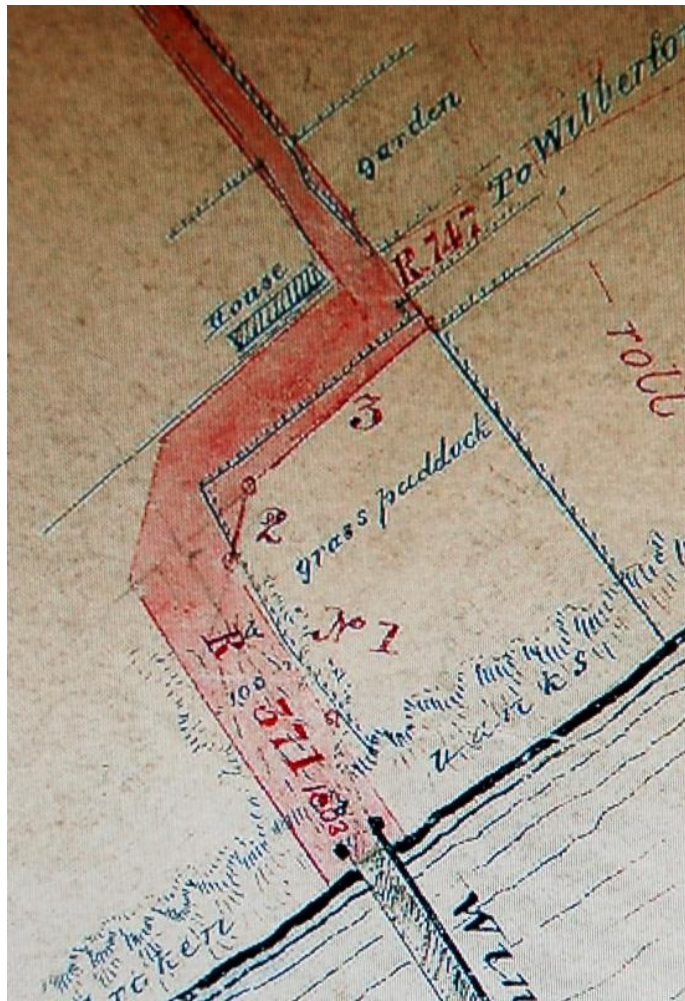


Figure 16 - The Squatters Arms on Whittons Farm, shown as 'house' in 1878, in the right angle between Wilberforce Road and Freemans Reach Road. The north end of Windsor Bridge is shown in the lower part of this detail of the plan. (Source: LPI, Crown Plan R1533.1603.)

2.2.8 BRIDGE STREET

The other part of the study area outside Thompson Square is Bridge Street from George Street down to below Macquarie Street. This part of the street was lined with buildings, including inns, by the 1830s (*Figure 20*) and remains the gateway to Windsor from Sydney and Parramatta. As a result the allotments adjoining the study area along Bridge Street and the short portions of George Street and Macquarie Street have substantial heritage significance and archaeological potential.

Surveyor Abbott's 1831 plan (*Figure 9*) shows that George Street did not extend north-east beyond Thompson Square. The northeast extension therefore may still contain evidence of the former old granary (also known as the Commissariat Stores) within the current road reserve boundaries. Further south, at the intersection with Macquarie Street, the road reserve may include evidence of the three pre-1831 buildings that were shaded in blue on Abbott's plan as non-government properties.

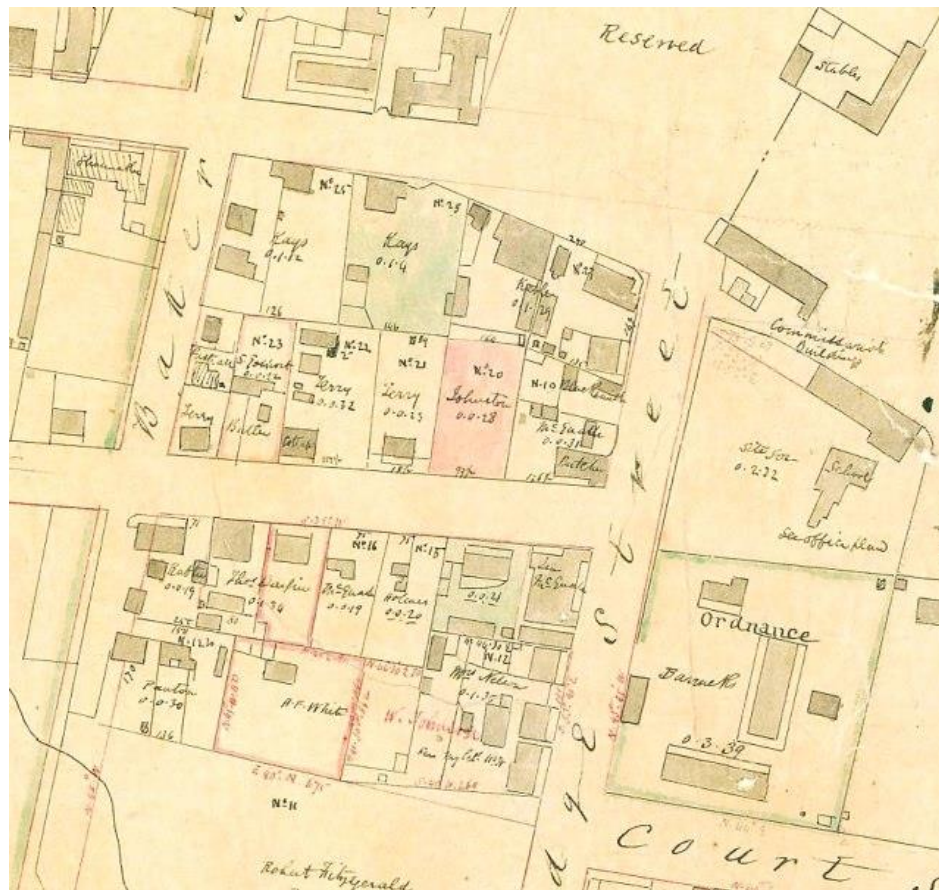


Figure 17 - Bridge Street in 1835, between George and Court Streets. The upper cross street on the left is George, the lower Macquarie. The Macquarie Arms is shown on the corner of Thompson Square. (Source: Map of Windsor, SRNSW Map 5968.)

3 HISTORICAL ARCHAEOLOGICAL POTENTIAL AND SIGNIFICANCE

3.1 Introduction

This section of the report presents the summary of archaeological potential and summary statement of significance, as identified in the 2013 Evaluation of Historical Images for the Additional Bridge proposal and the 2012 Biosis report.

3.2 Archaeological Potential

The table below provides the identified site features and types of potential archaeological remains that may still be preserved within the project area. The site features and their archaeological potential is presented in accordance with the phasis of historical development. Figures 21 and 22 show the potential site features and their approximate location.

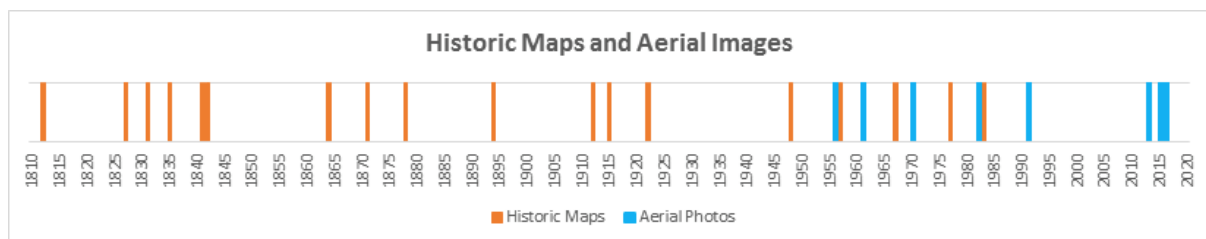
Phasing and Date	Site Features	Types of Archaeological Evidence
Phase1 - Early European Settlement: 1794-1800	<p>Early Environment/Clearance and farming</p> <p>Tracks</p> <p>First guard house (1795)</p> <p>First wharf (1795)</p> <p>First boat slip</p> <p>Log granaries (1795-1800)</p> <p>Two government houses</p> <p>Storehouses, granaries, officers' dwellings, public brick buildings and a lock-up</p> <p>A triangular sliver of the western portion and the river frontage of the Thompson allotment including orchards</p> <p>Whitton's Farm (north of river)</p>	<p>Tree bowls, stumps and evidence of burning; plough marks; palynological evidence.</p> <p>Compacted dirt surfaces, wheel ruts, side drains.</p> <p>Structural remains – postholes, brick, stone, timber foundations; underfloor deposits.</p> <p>Evidence of timber piers, trusses, fences, hinges, cleats, surfaces and other structural elements associated with the wharf and boat slip</p> <p>Evidence of fence posts, yard/work surfaces, garden beds and edges, tree bowls and seeds.</p> <p>Deeper subsurface features such as wells, privies and drains.</p> <p>Artefact scatters/rubbish pits.</p>
Phase 2 – Town Expansion: 1800-1810	<p>1803 store house (west end only within development footprint)</p> <p>Brick burning areas</p> <p>Track to Government Reserve</p> <p>Cottages, paths, drains fences etc. associated with allotments outside project area</p>	<p>Structural remains – postholes, brick, stone, timber foundations; underfloor deposits.</p> <p>Scorched clays, clay pits, evidence of burning, etc.</p> <p>Evidence of fence posts, yard/work surfaces, garden beds and edges,</p>

	<p>1815 Wharf</p> <p>Piling of foreshore</p> <p>Ferry landing place</p> <p>North-south brick barrel drain</p> <p>Paths, drains, Ha-Ha, plantings etc. associated with allotments outside project area</p> <p>The bell post</p> <p>Loudar's Farm (north of river)</p>	<p>Compacted dirt/gravel/stone/brick surfaces, wheel ruts, kerbs and side drains.</p> <p>Evidence of timber piers, trusses, fences, hinges, cleats, surfaces and other structural elements associated with the wharf and boat slip.</p> <p>Wall remains and contents.</p> <p>Structural remains – postholes, brick, stone, timber foundations; underfloor deposits.</p> <p>Remnant post and posthole</p> <p>Deeper subsurface features such as wells, privies and drains.</p> <p>Artefact scatters/rubbish pits.</p>
<p>Phase 3= Macquarie Town and Regional Centre: 1810 – 1840s</p>	<p>1832 Punt</p> <p>Paths, plantings, drains fences etc. associated with allotment s outside project area</p> <p>Government garden</p> <p>Approach road to river</p> <p>Guard house/punt operators house</p> <p>Inn at Whitton's Farm (north of river)</p> <p>the Squatters Arms Hotel (north of river)</p>	<p>Structural remains – postholes, brick, stone, timber foundations; underfloor deposits.</p> <p>Evidence of garden beds, paths and palynological evidence.</p> <p>Evidence of fence posts, yard/work surfaces, garden beds and edges.</p> <p>Compacted dirt/gravel/stone/brick surfaces, wheel ruts, kerbs and side drains.</p>
<p>Phase 4 – A Fringe Area: 1850s-1900</p>	<p>School of Arts site</p> <p>Bridge St extension</p> <p>Services (sewer, stormwater etc.) (1882-1894) Pavilion and/or summerhouse in reserves</p> <p>Fills and former surfaces</p> <p>Extant bridge and changing infrastructure</p> <p>Formalizing Thompson Square and parklands</p>	<p>Structural remains – postholes, brick, stone, timber foundations; underfloor deposits.</p> <p>Macadam surface and associated roadbase; cuts in landform.</p> <p>Evidence of fence posts, yard/work surfaces, garden beds and edges.</p> <p>Compacted dirt/gravel/stone/brick surfaces, wheel ruts, kerbs and side drains.</p> <p>Park furniture and monuments</p>

Phase 5- Settled Place : 1900 - Present	Roads, surfaces Cut and fill of a new approach to the bridge in 1934 Boatshed Market gardens and turf farms Further development of Thompson Square as a recreational space	Changes to alignments, levels and paving surfaces. Structural remains – postholes, brick, stone, timber foundations; underfloor deposits. Garden beds and botanical remains
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The historical ARD relies on a range of overlays of maps and plans for the study area to guide the placement of the historic test trenches. This series of overlays has allowed the positioning of trenches based on potential impact of the WBRP as well as historical archaeological potential and previous disturbance. Not all documents provide useful information for the testing program, based on position, coverage and quality. A selection of key images which have informed the research design are included in Appendix A.

The age range for the maps, plans and aerial photos used to date include:



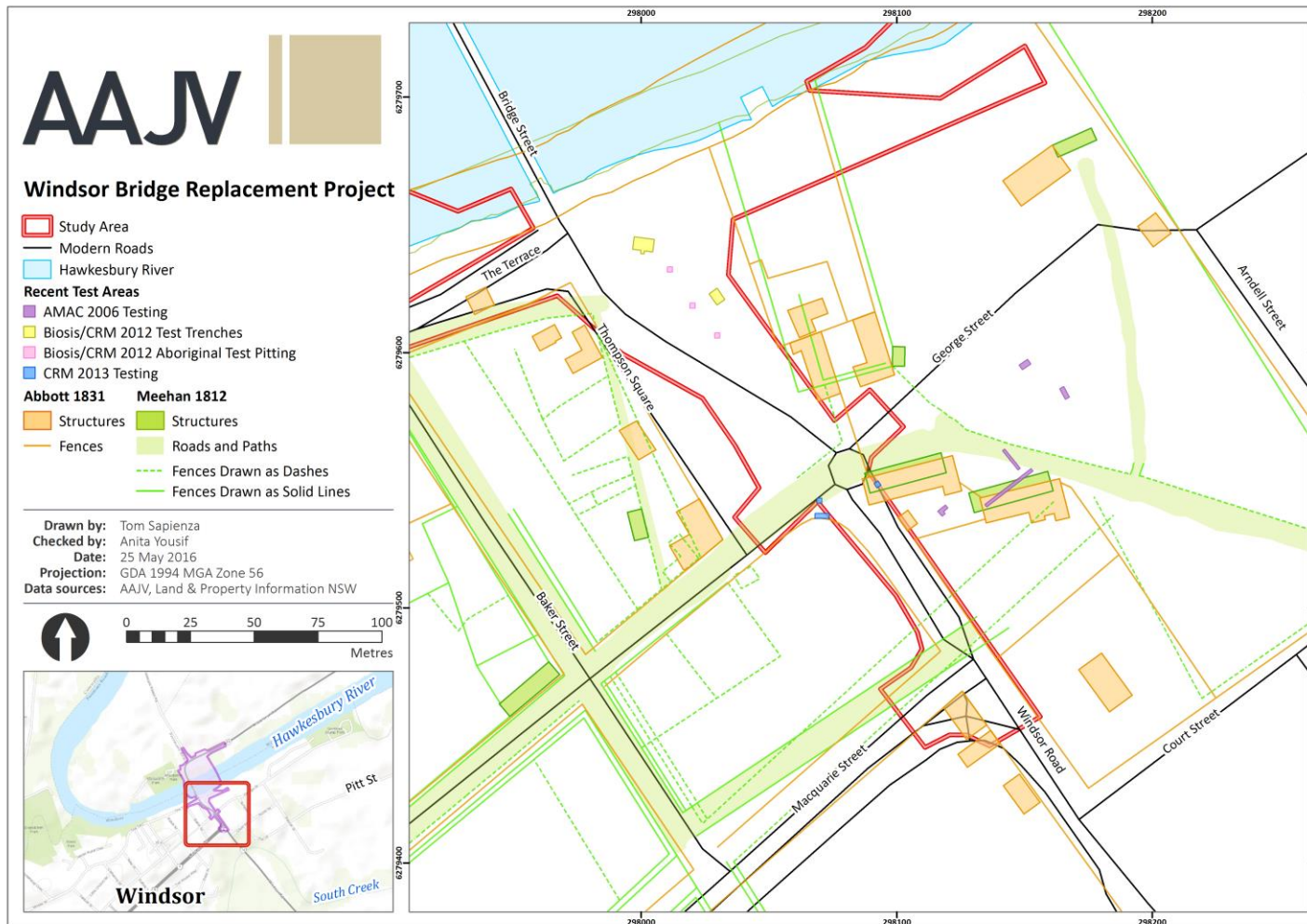


Figure 18 -The project area overlain with the 1812 Meehan Plan (green) and the 1831 Abbott Plan (orange). The map also shows the location of previous archaeological testings undertaken in the area.

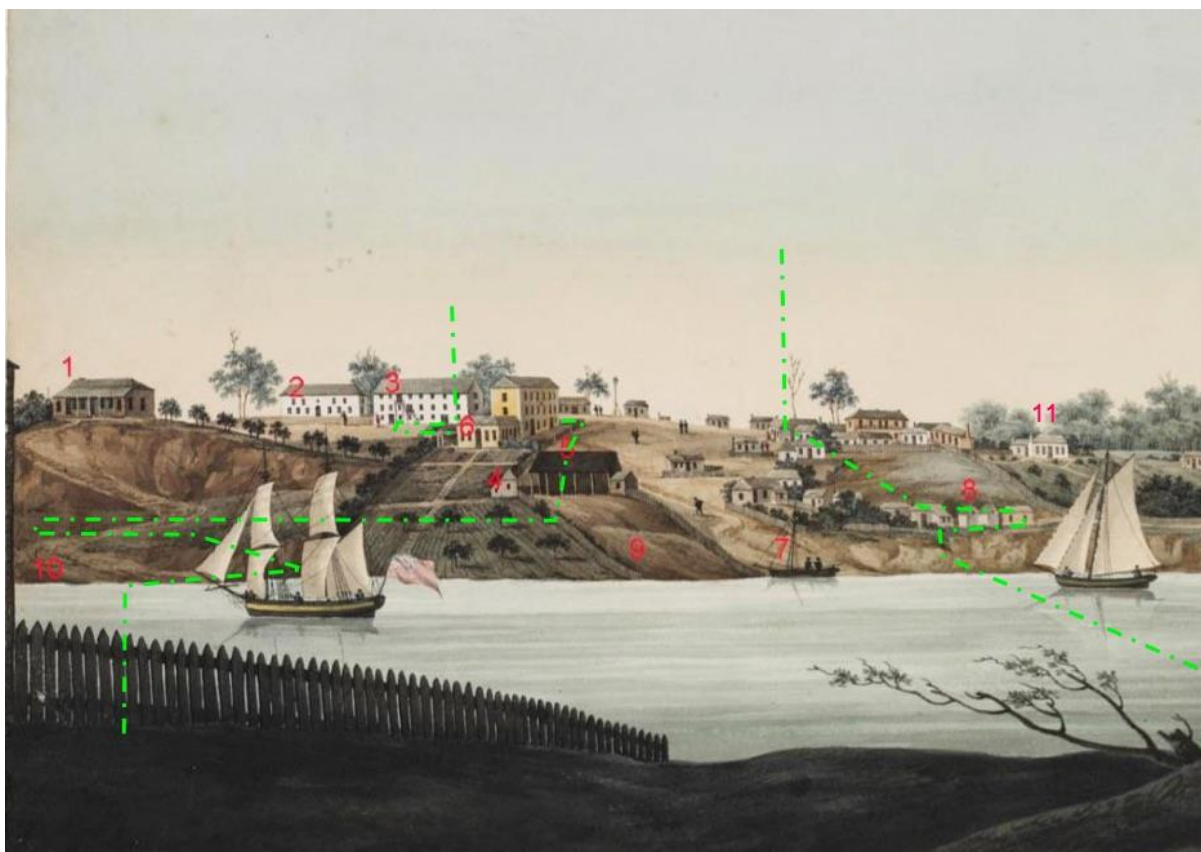


Figure 19 - The Settlement on the Green Hills, Hawksburgh [i.e. Hawkesbury] River N.S.Wales, 1809. The structures shown in the painting are as follows: 1 Government House; 2 School/Chapel; 3 Brick Store; 4 Thompsons First House; 5 Log Granary; 6 Govt. Stables; 7 Wharf (behind the boat) 8 Two Government House Stores; 9 remains of Boat Slip; 10 Govt. Wharf (?); 11 Bakers Farm. Approximate boundary of the project area is outlined in green.

3.3 Statement of Archaeological Significance

The following statement of significance has been reproduced from the 2012 Biosis report:

The historical analysis, archaeological assessment and evidence from preliminary testing and past works demonstrate that there is likely to be a complex and chronologically deep archaeological profile within Thompson Square and to a lesser degree on the northern river bank. It is impossible to isolate the resource that could exist within the project area and assess its significance. It must be assumed that the evidence contained within the project area will have the same values and significance as the rest of Thompson Square even if specific elements within both may vary from each other. The significance of the archaeological resource within the project area is the same as that for the resource across all of Thompson Square and this cultural significance must be assessed on several levels.

Windsor is the third settlement in Australia after Sydney and Parramatta. These are the places that made long-term European settlement possible and their histories inform us of the circumstances, the pressures and visions that would shape our history and the way we live. Apart from its importance as one of our first permanent settlements, Windsor also has added status as a Macquarie town, one of only five places in the Hawkesbury that were specifically selected and influenced by arguably our most important Governor, Lachlan Macquarie. A number of the improvements and designs for Thompson Square are a direct result of Macquarie's involvement. Thompson Square has direct associations with outstanding people in the development of the town and region particularly Andrew

Thompson, who lived and worked here. The archaeological resource could provide tangible links or associations with significant historical figures by revealing works or improvements that have been created for, on behalf of, or by these figures.

Thompson Square is the single place that links the earliest settlement on the Hawkesbury with the Macquarie-era town. This site was used as a civic precinct to service the first farms established on the river from 1794. It evolved into a small village in its own right that also provided the services and administration for the region. It is the seminal place of the town's evolution. It was this village that was incorporated into the Macquarie planned town of Windsor; it was the only town to incorporate this earlier layer of settlement. It is unique. If Windsor and Thompson Square are important then archaeological evidence that can better document or reveal the history of use and development that is unique to this place and provide evidence of its associations is also significant. The below ground resources are likely to provide evidence of the earliest years of settlement, pre-dating the fabric that survives above ground. Archaeological evidence is also likely to provide evidence of events and processes that were specific to Thompson Square but are representative of the development of this town.

The principal value of the potential archaeological profile in Thompson Square is its cumulative value. It has the potential to document events, processes, improvements and places that span the full history of European development in this place from 1794 to the present day. It is likely to be the only place in Windsor or its environs that can do so. The archaeological profile of the project area on the south bank is completely unique to it. Because of the potential chronological depth of the profile it may include sites that are rare beyond the specific history of this place.

Apart from the potential to document and demonstrate the changing town and the place of Thompson Square in it over a long period of time the archaeological profile of Thompson Square can be evaluated for different levels of significance that are largely relevant to their rarity either through age or singular uses. In particular, evidence that relates to the founding settlement of 1794 up to and inclusive of Macquarie-era works is assessed to be of exceptional significance for its importance within the town, its rarity and its contribution to documenting the growth of the colony in its formative years. For the earliest years of settlement this resource would be the only fabric that survives in the town; there is no evidence above ground that predates 1811. It is comparable to only a very small number of other places in New South Wales that have the same depth of development such as Sydney or Parramatta.

As well as works from the first decades of the town's growth the project area is also likely to encompass important improvements from the middle and later years of the nineteenth century that reflect the changing status and role of the town and Thompson Square. These include the development of the bridge across the river to link the two communities. Many of these processes are not evident in above ground resources. These are resources that can make a substantial addition to the evidence that survives above ground; they have value for the town.

Evidence that derives from the early to middle years of the twentieth century is less significant. These processes are still evident in other forms and they have impacted on earlier and very rare resources. Evidence from the later years of the twentieth century onwards which is still largely intact above ground and has acted to remove or disturb older or very rare elements is considered to have little individual significance but is recognised as an integral component in the complex profile.

The northern area of the project area across the river also has a history of settlement that dates back to 1794 with a farm established here by the ex-convict, Edward Whitton, in that year. Apart from his pioneer status Whitton's contribution is representative of the thousands of people who worked to develop the region.

Archaeology in the northern part of the project area is unlikely to have the same complexity of resources as Thompson Square because of the nature of settlement here; largely pastoralism and

agriculture. It has value as a comparison to the complex history of Thompson Square but its individual components are likely to be less significant; the exception would be the site of a long-standing landmark inn although its precise location cannot be determined. The resource in the northern part of the project area, with few exceptions, is likely to be more representative of the agricultural/pastoral development that characterised this side of the river.

The archaeological resource is likely to provide a depth of historical layering and sense of place to the acknowledged visual qualities of Thompson Square. These are qualities and resources that can be valued by the community. It has the ability to provide unique, rare and representative components for this place and for New South Wales. The cumulative profile recording evidence of works and change over two centuries is unique. Within that overall profile evidence of the Green Hills period of development and Macquarie-era works would be of State significance; evidence contained within it, above and below ground that can be determined to have a direct association with the Green Hills Settlement or the period of expansion under the direction of Governor Lachlan Macquarie would potentially be of National significance. The remainder of the archaeological profile has local significance.

4 RESEARCH FRAMEWORK AND METHODOLOGY

4.1 Introduction

Archaeological research designs provide an outline of both the research framework which guides the archaeological work on site and the methodologies which are to be employed to realise the research potential of the subject site. While they set out a series of general and specific research questions, research designs are not designed to be prescriptive. The work undertaken at an archaeological site must remain flexible enough and confident in its own reasoning to enable the reworking or the discarding of research objectives should it become apparent that the archaeological resource cannot sustain them.

Previous archaeological investigations in the Windsor area have revealed a highly complex archaeological landscape containing evidence of over 30,000 years of Aboriginal occupation and over 200 years of historical occupation. At least 21 buildings and associated town infrastructure were constructed from the early days of the settlement, the remains of which may still survive in or near the site. In order to obtain meaningful information from the archaeological testing, a program of integrated Aboriginal, historical and maritime archaeological investigation has been designed. The aim of the testing program is to create an understanding of the human history of Thompson Square from multiple sources of evidence. This will inform the future management of the significant archaeological resource, should it be identified, in both the project area and the greater context of Thompson Square and Windsor. The results of the testing will be used to guide potential further excavation, project impact mitigation and long-term management measures. It will also be informed by engagement with stakeholders and the broader community identifying the overlay of social significance.

The strategy to the testing program involves a focused research framework structured around a holistic methodology that gives equal weight to the disciplines involved. It is designed to adhere to the planning and conservation principles of best practice archaeological heritage management.

4.2 Excavation Strategy

4.2.1 GENERAL PRINCIPLES

Historical archaeological test excavation will precede Aboriginal archaeological excavation work. Following the mechanical removal of turf, topsoil and fills, the historical archaeologists will then manually excavate the designated test trenches until they expose either significant historical archaeological relics or other identifiable deposits, including sand body, which may contain Aboriginal cultural material. If neither the significant historical archaeological / Aboriginal relics nor sand body are identified during the historical archaeological program the excavation will proceed until culturally sterile natural deposits are exposed at which point investigation at such locations would be discontinued and the trenches backfilled to specifications. Structural remains will be left in situ.

Proposed maritime archaeological investigation within the project area will be undertaken concurrently with the historical archaeological program. If significant deposits or structures associated with past riverine activity are exposed during the historical archaeological excavations, the nominated excavation director will consult with the project's maritime archaeologist to appropriately plan the identified items and determine the relationship between the maritime and terrestrial archaeological investigations.

The Aboriginal excavation will be undertaken concurrent with the historical archaeological work. The initial excavation of each Aboriginal test pit will be undertaken under the historical archaeological supervision. This will ensure that potential historical archaeological remains are appropriately identified and recorded and that all of the national and/or state significant relics remain undisturbed.

Depending on the level of significance and integrity of the exposed historical archaeological relics, Aboriginal test pits may require relocation. Excavation restructured by utilities may also require relocation of both historical and Aboriginal test trenches/pits.

As the historical, Aboriginal and maritime excavations will be occurring simultaneously, the specialist teams will be able to consult with each other in relation to the most appropriate locations and findings in general.

4.2.2 HISTORICAL ARCHAEOLOGY

Based on the nature of the project area the archaeological testing will be generally divided into two main areas of works: the southern and northern sides of the Hawkesbury River. While the focus of the historical archaeological testing will be on archaeological potential located on the southern side (SH 1-10), a limited number of historical test trenches (NH 1-5) have been positioned on the northern side of the river. These trenches, as the associated research design, are a contingency only, and are not presently planned to be excavated.

The rationale behind this is that, although the northern riverbank has been assessed of having limited potential to contain significant relics, verifying such potential early in the project would significantly reduce risks associated with delays of established timing and interruption during the construction phase of works, especially if they deemed to be well preserved and capable of providing additional information relevant for the history of Windsor. The test excavation on the northern side of the project area will be provisional upon finding historical archaeological evidence in the Aboriginal test pits.

Figure 23 sets out proposed locations for historical archaeological investigation across the southern and northern parts of the project area. While some trenches have been set out to allow investigation of identified historic features or areas considered to have archaeological potential, the cumulative information gathered from such excavations is designed to answer the questions related to the location, extent and nature of the potential archaeological resource. The need to answer the question of general intactness and depth identified by Casey in the 2013 Independent Heritage Review may, by necessity, require test excavations to occur beyond the limit and depth of predicted impacts from the WBP, but will be required to satisfy the NSW Heritage Council that the testing program will provide confirmed results.

4.2.2.1 SOUTHERN AREA

The test trenches have been strategically positioned to test for the following:

- **SH1** Two Government houses shown in the 1809 image and the small structure shown in the 1831 Abbott Plan at the river front, on the west side of the project area. The trench will also investigate archaeological deposits associated with the river frontage and road construction. The trench is expected to measure 10 x 2 metres;
- **SH2** Potential for archaeological deposits associated with pre-1810 features at the western edge of the project area. The trench is expected to measure 3 x 2 metres.
- **SH3** As with trench 2, this trench will also investigate the potential for archaeological deposits associated with pre-1810 features at the western edge of the project area. The trench is expected to measure 3 x 2 metres;
- **SH4** As with trench 2 and trench 3, this trench will also investigate the potential for archaeological deposits associated with pre-1810 features at the western edge of the project area. The trench is expected to measure 3 x 2 metres.

- **SH5** Designed to test for archaeological potential associated with the Commissariat building at the top of the ridge, the presence of the road and the extent or otherwise of truncation in this area. The trench is expected to measure 15 x 1.5 metres.
- **SH6** The extent of archaeological potential or otherwise of truncation in this area. The trench is expected to measure 15 x 1.5 metres.
- **SH7** Potential for archaeological deposits along the riverfront adjacent to the current bridge and the presence of the brick vaulted drain. The trench is expected to measure 10 x 2 metres.
- **SH8** Potential for archaeological deposits along the riverfront, filling and road surfaces. The trench is expected to measure 10 x 2 metres;
- **SH9** Presence of archaeological deposits along the riverfront across the alignment of Thompson's garden. The trench is expected to measure 10 x 2 metres.
- **SH10 and 10A** Two trenches will be opened to test for the presence of structures indicated on the overlay at the corner of Bridge and Macquarie Streets. The need for the excavation of two trenches was dictated by the limitations of the busy intersection and presence of numerous services in the southwest corner footpath. The two trenches, sited in the pedestrian island and southwest corner footpath are expected to measure 5 x 1.5 metres (SH10) and 4.5 x 2 metres (SH10A).

4.2.2.2 NORTHERN AREA

A contingency has been allowed within the project for the optional testing of five historical archaeological test trenches in the northern project area. These trenches are all located in grassed areas beside the roadway or within the current turf farm area, which will partially contain the site compound. The excavation of these trenches will commence, when and if historical archaeological evidence has been identified in the northern Aboriginal test pits.

As further work is currently required to confirm both the presence and the nature of the archaeological resource within the northern project area, the historical archaeological investigation (if undertaken under the contingency provisions) will use a systematic layout of trenches to provide data from across the entirety of the project area. As such, trenches are located to test for the historical archaeological potential of features and deposits associated with the early settlement of the northern riverbank.

The trenches are expected to measure as follows:

- **NH1** 6 x 2 metres;
- **NH2** 6 x 2 metres;
- **NH3** 10 x 2 metres;
- **NH4** 2 x 2 metres; and
- **NH5** 6 x 2 metres;

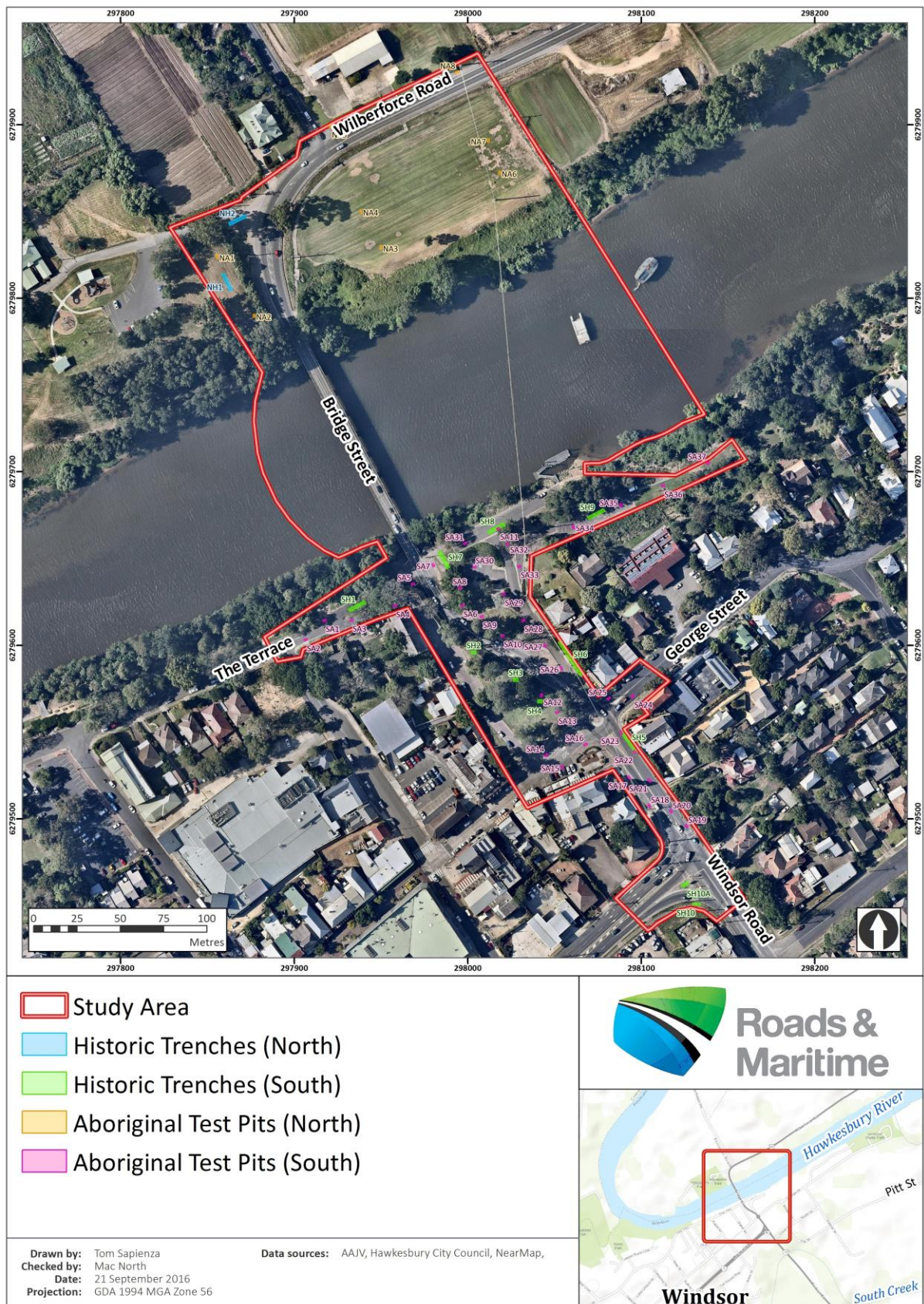


Figure 20 - The site aerial showing the proposed locations of both the Aboriginal and historical archaeological test trenches.

4.2.3 MARITIME ARCHAEOLOGY

Cosmos Archaeology examined maritime archaeological potential for the site in detail in two reports in 2012. The Final Report for that phase of maritime archaeological assessment concluded there were two principal areas of maritime archaeological sensitivity, the location of the original wharf on the southern river embankment (at the site of the present wharf) and the potential landing spot for the punt, located just west of the northern abutment of the existing bridge. These are the areas in which maritime testing will be concentrated.

The proposed test excavation methodology will attempt to obtain data that will better inform the management, during and after, the implementation of the detailed design of the new bridge on the cultural heritage significance of the maritime infrastructure – above and below water - and other submerged archaeological remains of colonial period Windsor.

Management of the submerged cultural remains during the implementation of the detailed design refers to the effects of piling, bank stabilisation (if occurring) as well as anchoring and propeller jet turbulence.

Management of the submerged cultural remains after the implementation of the detailed design refers to the effects of potential scouring arising from changed conditions on the river bed.

The most significant of the identified underwater archaeological remains are those associated with the late 18th/early 19th jetty. Our knowledge of this site is confined to a compact expanse (ca. 55 m x 12 m) of rounded cobbles close to the southern river bank which has been interpreted as being ballast which weighed down the timber piles and bed logs which formed part of the jetty.

To better understand the type and scale of the potential impacts to the significance of this site the following information is required:

What is the exact extent of the site? This would be done with more detailed mapping than has previously been done involving divers working with land based total station, augmented by remote sensing. This would determine the extent and provide the basis for recommendations about avoiding and minimising disturbance.

How compact is the ballast mound? The degree of compactness of this feature will assist in assessing whether the site is sufficiently robust so as to withstand long term impacts of any predicted scouring.

What archaeological remains are within and under the ballast mound? Understanding the cultural heritage significance of artefacts and structure currently protected by the ballast mound will provide critical information which will be used to avoid and minimise loss to the site's cultural heritage significance.

The detailed survey work to be undertaken as part of the DAR will answer question 1. This survey will be undertaken immediately prior to the test excavation.

The test excavation will attempt to answer questions 2 and 3 by providing details regarding:

- The depth and compact nature of the rubble ballast that is present on the site;
- The nature of the strata present immediately below the ballast deposit, and subsequent strata on site;
- The compactness of the site and potential to be impacted from long term indirect impacts, such as from increased water velocity, and the potential for scouring or deflation to occur;
- Further understand the archaeological potential within the ballast deposit; and,

- Further understand the archaeological potential within the strata below the ballast layer.

The archaeological potential considered in the context of this test excavation relates to the potential quantum and date range of the artefacts present within the matrices. This is maritime archaeology equivalent of a terrestrial underfloor deposit where in this case artefacts have fallen through gaps in the deck planks or off boats. It is possible that this ballast layer provides a terminus ante quem, by having sealed off earlier archaeological deposits. The ballast layer could have been laid in the 1790s, 1810s or later.

It follows that should the interpretation that the rounded cobble formation is ballast be found to be correct, then it would be apparent that the foundations of the wharves – piles and/or bed logs – would be present. This is akin to a mound created by the collapsing walls of a building where it would be obvious that the footings of the building would be buried. Such structural features would not be used as a primary guide for archaeological potential. Archaeological potential in this case would be assessed on the greater or lesser likelihood of underfloor deposits between the footings and the predicted depth of deposits. This is the approach being undertaken for this test excavation.

To clarify, the maritime test excavation is not designed as a salvage excavation aimed at recovering large volumes of artefactual material for detailed study or display/interpretation, nor is a large volume of artefactual material anticipated, given the relatively small area being tested (3 locations of approximately 50x50cm in area). Nor is it the aim to locate the footings of the substructure of the wharf.

In the process of undertaking the test excavation, if archaeological remains of former wharf structures were identified, these would be documented and included in the site plan being created as part of the DAR component of the field programme. It is likely that piling, associated with the latter phases of the wharf, will be encountered – and recorded – during the DAR survey.

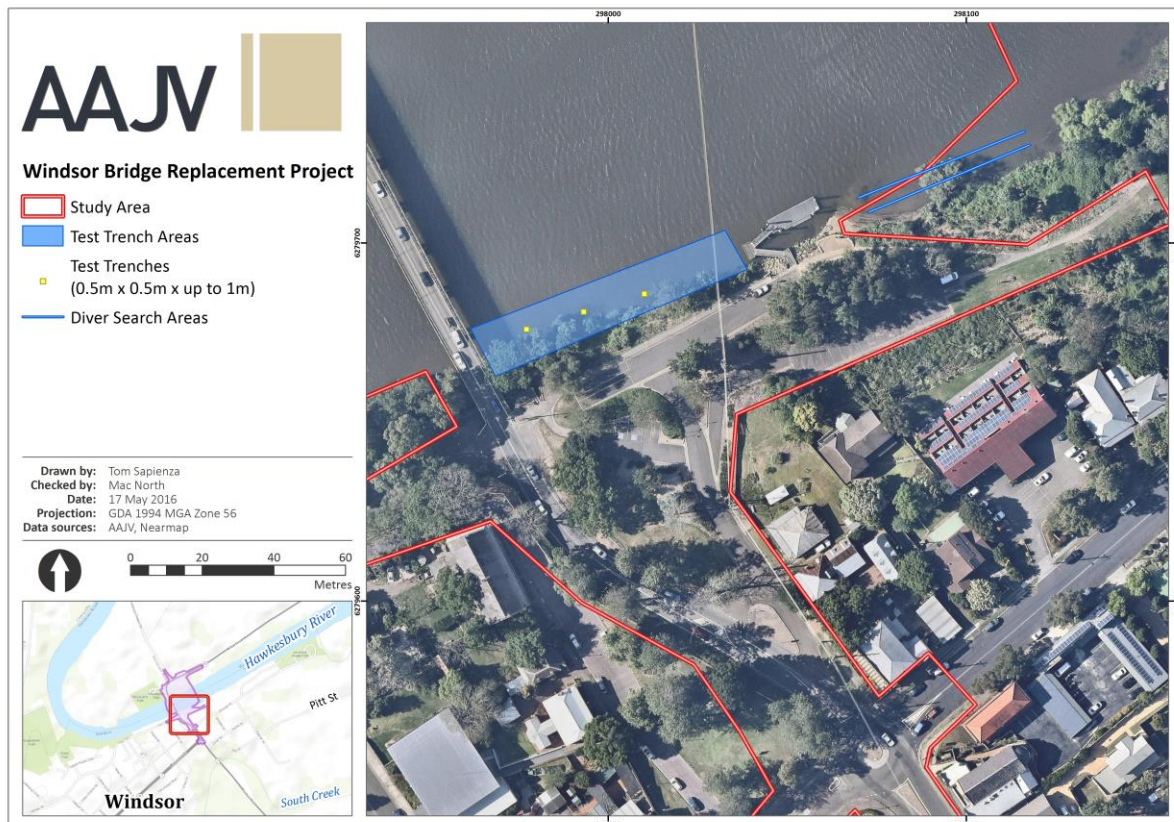


Figure 24 - Areas of maritime archaeological potential (Cosmos 2012)

4.3 Excavation Methodology

4.3.1 HISTORICAL ARCHAEOLOGY

Prior to archaeological testing being undertaken, services will be located using both current service plans and service detecting remote sensing. Where services have been identified within trench areas, potholing to locate services shall be undertaken. Where sufficient clearance cannot be achieved between services and the test trenches, minor relocations of the test trenches may occur

- Excavation of the test trenches will proceed via a series of shallow scrapes with a mechanical excavator so that the exposed surface in the pit or trench is progressively reduced in a controlled manner. This process will continue until the extent of archaeological remains in the trench has been identified.
- Concurrent with this, targeted manual excavation will occur where required by qualified archaeologists. Small hand tools such as picks, shovels, pointing trowels, brushes and pans will be used in manual excavation, either for cleaning up excavated areas or revealing exposed features or deposits. Where an *in situ* historic feature that is the target of the excavation is located, mechanical excavation will cease. The feature will then be cleaned up by hand and recorded. The archaeologist will endeavour to expose and identify all significant historic features and deposits. In the event that structural fabric is not located, excavation will stop when natural (including sand body) and/or culturally sterile deposits have been reached. Spoil will be stockpiled adjacent to the trench during the archaeological testing.
- Provenance data and fabric descriptions will be recorded on numbered context recording sheets and the vertical and horizontal positions of all significant deposits and features will be recorded with reference to a permanent site datum. This survey information will be transferred to scaled site plans showing the spatial relationships between features revealed during the course of the investigation. Documentary records of the excavation will be supplemented by the preparation of Context Schedules and a Harris Matrix for the excavation area (where significant stratigraphic relationships are identified).
- All significant elements will be photographed with a scale bar. Digital media will be used for general photographic recording.
- Any artefacts found within the test excavation areas will be collected, cleaned and catalogued in accordance with the proposed test excavation methodology and best archaeological practice. Artefact bearing deposits may be wet sieved to optimise recovery. All artefacts will be stored in a secure storage facility, location subject to confirmation. During the day, artefacts will be relocated from the test trenches to the proposed site compound north of the river, for cleaning and cataloguing. Artefacts will be relocated to the nominated secure storage area each evening following the completion of archaeological works.
- Artefacts will be bagged in suitable polyethylene or paper bags, double tagged with Tyvek (or similar) labels and put in an agreed temporary secure storage location. At the conclusion of the project they will be handed over to the client for retention in accordance with an artefact management plan that will be developed to identify artefacts with the various levels of attributes as follows:
 - a) display potential;
 - b) research potential; and
 - c) those that have reasonably exhausted archaeological research potential.

- The labels will be annotated with the trench or pit number as well as the context or layer number using permanent ink pens. All artefacts will be subjected to a detailed, post excavation statistical analysis in order to fully answer the research questions, which guide the archaeological investigation.
- Standard conditions for historical archaeological investigations identify the permit applicant (usually the developer) as responsible for organising the long-term curation of the artefact collection. The artefacts remain the property of the site owner. AAJV may assist the client with the investigation of potential repositories for the collection.
- The position of all Aboriginal artefacts (if any) which are present in historic contexts will be recorded and keyed into the overall archaeology site grid and the nature of their identified context will be noted (i.e., re-deposited sand or a cesspit).
- In the event that Aboriginal cultural material is identified on the surface of the natural ground surface following the completion of the historical archaeological investigation, then the nominated archaeologist will record the location and nature of the cultural material and collect it. Depending on artefact frequency, the location of any high density artefact concentrations may be subjected to the excavation of an Aboriginal archaeological test pit, which will be undertaken in addition to the test pit locations, as deemed necessary..
- Any Aboriginal artefacts recovered outside of Aboriginal test excavations, such as glass displaying potential use wear or surpassed knapping, will be separated from the historic and/or maritime artefact analysis and, while their presence in a historic context will be noted and cross-referenced for provenance data, they will be subject to examination by a lithics specialist along with artefacts recovered from the Aboriginal test excavations.

4.3.2 MARITIME ARCHAEOLOGY

The proposed test excavation methodology is as follows:

- Establish a notional grid across the site outlining the upper (close to the bank) middle and lower (outer toe of the site) zones;
- Position three trenches to be excavated, one within each zone, as outlined above, in multiple areas across the site, being the upstream, middle and downstream side of the archaeological site (see figure below);
- The test trenches are to measure 0.5 m x 0.5 m by up to 1 m in depth;
- Remove and record ballast rubble by hand within each test trench;
- Record the strata present immediately below the ballast remains;
- Excavate strata with the use of a diver operated water induction dredge to determine the composition, and depth of the deposit; and,
- Determine the likely depth of the archaeological deposits within each zone on the site.
- Artefacts will be recovered either from within concretions which have formed on the ballast or deposited onto an on-board sieve as a result of the dredging.
- Artefacts will be assigned a context on the basis of which trench they were recovered and from whether they were recovered from the ballast stratum or the strata below.
- As it is anticipated that relatively few artefacts will be recovered, each artefact will be registered, briefly described and photographed for post excavation analysis.
- At the completion of the excavation recovered artefacts will be placed in plastic bags with their context identification written on tags placed in the bags. The bagged

artefacts will be returned to their respective trenches and covered with the ballast that had been removed from the trenches.

4.3.3 ARTEFACT MANAGEMENT AND CONSERVATION

The historical terrestrial and maritime archaeological works will require the involvement of an artefact specialist/conservator on-site. The artefact specialist/conservator will:

- Liaise with the historical archaeological and maritime excavation directors regarding excavated material during the course of the excavation, providing services and advice related to artefact treatment and handling, washing and storage;
- Samples of timber and other materials may be cut for species identification and dating;
- Prepare the space for temporary holding of artefacts (especially those raised from the river);
- Conduct ongoing conservation during project to ensure the artefacts from the river do not deteriorate while in temporary storage; and
- Undertake measures for short-term storage of any artefacts required in the course of the post-excavation analysis.

4.4 Personnel

Maritime Archaeological Investigations: Cosmos Coroneos, Chris Lewczak and Danielle Wilkinson of Cosmos Archaeology. The team would include the wet worker leader who would ensure all dive records are maintained and kept and would also undertake survey work and mapping requirements;

- Boat leader - Dry Work (TBC); The Boat Leader would organise the artefact registrar and run the sieve;
- Maritime Archaeologists - 2 ADAS qualified divers who would be working off of the punt; and
- Commercial Dive Team - 3 divers (TBC) who would maintain gear run the dives and be technical dive supervisors.

4.5 Reporting

Following the completion of the archaeological investigations, the AAJV excavation team will prepare a preliminary report, for the purpose of informing the management recommendations of the SCMP. The AAJV will subsequently undertake a post-excavation analysis of the data in order to produce final archaeological test excavation reports, which will fully document the archaeological works undertaken, their results and the potential effects of any archaeological findings on future works. These reports will serve to meet MCoA Condition C5. Production of the reports will require:

- analysis of any Aboriginal and historical cultural material identified during the excavation;
- examination of the results from soil and chronological sampling strategies in order to identify the age and formation history of the deposits;
- digitisation of all records to provide a permanent record of the works undertaken;
- consideration of the works undertaken, information on the location, extent and significance of any archaeological deposits, and guidance on the future management of them; and
- development of a detailed salvage strategy for subsequent stages of the project.

The final test excavation reports will meet the MCoA and will include but not be limited to:

- An introduction and executive summary.
- Planning framework.
- Site history.
- Archaeological background & collated research.
- Archaeological investigation methodology, results and site recordings.
- Analysis and catalogue detailing all Aboriginal and historical cultural material recovered.
- Maps and site plans etc. that identify areas and levels of cultural sensitivity.
- Re-assessments of significance.
- Comparison of the dataset against comparable sites.
- Conclusions and recommendations.

4.6 Workplace Health and Safety Requirements

The responsibilities of the full time HSEQ compliance officer will be to ensure compliance with the *Work Health and Safety Act 2011*, to develop and to manage the WH&S requirements for the archaeological team in conjunction with the WBA WH&S plan and managers. The AAJV has adopted the Extent Heritage Work, Health Safety and Environment Plan.

4.7 Public Information and Interpretation

Public information on the archaeological program will be managed in accordance with the RMS Community and Stakeholder Engagement Plan for the WBRP. At this stage, no formal public engagement is proposed during the testing program, however RMS is investigating options for keeping the community informed during test excavations. This may include information posted on the project website, community notifications, etc.

Results from the testing program will be used to inform the Interpretation Strategy for the WBRP and study area.

4.8 Research Questions

4.8.1 BROAD RESEARCH QUESTIONS

An archaeological Research Design can be formulated to answer general questions about any deposits or features exposed during excavation work at any given site. These general questions are applicable to the investigation of most archaeological sites and they are typically focused upon smaller scale questions related to specific site development. However the ability to answer even these questions is critical to developing information related to broader research objectives. These general questions that are typically asked about a site are:

- What features or deposits are present on the site?
- What is the nature and extent of these features and deposits?
- How intact are they?
- What is their significance?
- What are their depths below the current surface?

- What date or occupation phase can be assigned to them? and,
- How does this information compare to available historical information relating to the site?

4.8.2 SITE SPECIFIC QUESTIONS

The following site-specific questions can be asked of the archaeological remains of the Windsor site. They have been set out below based on the chronology identified in the archaeological assessment for the site. As the current archaeological program involves targeted, small scale testing only, evidence for all research questions may not be found during works, and the testing may result in different or expanded research questions for future archaeological works as a part of the WBRP or beyond.

The results of the testing will be used to inform and refine the policies and recommendations for the future management of the archaeology of Thompson Square and surrounds in the SCMP.

4.8.2.1 LANDSCAPE

- Is there evidence for flooding or other erosional effects from the site's proximity to the river?
- Can historically attested floods be discerned?
- What palynological evidence is there for the changes to the local flora from pre- to post-colonisation?
- Is the first clearance of the site evident and what effects did it have on the site?
- Was the area of the square stabilised, cut, filled or otherwise altered to serve its purpose as a landing place and then public space?

4.8.2.2 CONTACT ARCHAEOLOGY (1791-1820S)

- Is there evidence for the initial period of contact between the local Aboriginal people and Europeans?

4.8.2.3 EUROPEAN OCCUPATION

- What is the earliest evidence for the European presence on the site?
- Is it related to the river or other activities?
- Is there any evidence of for the first settlers of Green Hills/Mulgrave Place?
- What evidence is there for Baker's and Thompson's occupations on the south side of the river?
- Is there any remaining evidence of the government buildings, which occupied the western portion of the site?
- What materials were they constructed from?
- is there any evidence for early paths and tracks to access areas on both the north and south sides of the river?
- Is there evidence for an early alignment (pre-1810) of George Street?
- Is there evidence for Howe's brick barrel drain(s) in the square?
- Is there evidence for the heavy military presence at Windsor on the south side of the river?

- Are any other structures or occupation evidence remaining at the intersection of the Wilberforce and Freemans Reach Roads?
- What is the evidence of the late nineteenth/early century modifications across the site? How have these later modifications affected the survivability of the historical archaeological resource?
- What did vacant space mean in the context of Windsor over 200 years and how is this manifested at Thompson Square? Was it a place to dump refuse or was it treated as a civic space?

4.8.2.4 RIVERINE ELEMENTS

- How was the first jetty constructed?
- Is there any evidence of early ship construction?
- What can it tell us about the engineering skills available to the colony within the first five years of settlement?
- Was ballast used to stabilise the jetty, and which jetty phase was the ballast used for?
- How was the risk of flooding managed?
- What was the quality of the materials used in the jetty? (i.e. was copper sheathing used? Spacing of piles, size and standard of fastenings). Does this say something about the availability of materials or the level of importance placed on the jetty by the authorities, through comparison with other contemporary jetty sites?
- Was the jetty constructed on bed logs or piled directly into the riverbed?
- How was the 1814/15 (second) jetty constructed and how was it modified and altered throughout the 19th century?
- What do the river artefacts tell us about the use of the wharf and the commercial contacts over time?
- Is there any evidence for the operations of the ferry on either side of the river?
- Are there new facilities for the punt (cable tie etc.) where the new road meets the water?

4.8.2.5 SITE-SPECIFIC THEMATIC RESEARCH QUESTIONS

The following are thematically based research questions, which may help direct the longer-term archaeological investigation of Thompson Square and the Windsor area. Given the scale of the current testing program, it is unlikely sufficient evidence will be found to meaningfully address the majority of these questions, but they provide a guiding framework for future archaeological work.

ENVIRONMENTAL CHARACTERISTICS

The environmental characteristics of the site are an important feature of understanding the place. They should not be seen, however, as a passive background to human activity here, neither should they be seen as the main external determinant governing those actions. An understanding of the river, soils and climate largely determined the prospects for a successful life here and guided both Aboriginal and European attempts to inhabit this place.

- Have the environmental conditions at the site contributed to or influenced the development of

human occupation here?

- What changes has the river made to the site over time?
- How does the Aboriginal occupation at Windsor compare to similar sites - such as Parramatta and/or Rouse Hill?
- How does the European occupation at Windsor compare to similar sites - such as Parramatta River, Port Essington, Risdon Cove, Coal (Hunter) River and Swan River etc.?
- When did this site become a focus for the local agricultural community?

Traditional Life and Structures

In April 1791, Governor Phillip along with 21 others, including Colbee and Boladeree, searched for the junction of the Hawkesbury and Nepean rivers. This track took them along the south bank of the Hawkesbury through the future area of Windsor. Based on Tench's account, some have suggested that for a part of this trip along the riverbank, the party were able make use of an Aboriginal pathway.⁶

The question of the tribal localities and boundaries in the Sydney basin at the beginning of European settlement has been problematic based on the reported information. In 1821, the Reverend Walker referred to nine tribes of the area - one of which was the Windsor Tribe.⁷ The identification of such groups in this manner reflects much about how Europeans observed and recorded people based on preconceptions rather than on accurate information. Ross places the Darug astride the Hawkesbury River, known as Deerubin to the Aboriginal inhabitants, in the vicinity of Windsor but this is by no means certain.⁸

- Can the archaeological information related to the site assist us in developing a picture of the local Aboriginal people?
- The river may reflect a boundary between the Darug and Darkinung. Can archaeological work provide any evidence to support or refute that theory?
- How connected was this region with other places and is there any evidence of trade with the coast, the Hunter region or the mountains?
- Does the evidence support the model that people of the hinterland only utilised freshwater resources?
- What is the suite of materials and technologies evident in the lithic assemblage and how does this site compare with excavations conducted at Pitt Town and Parramatta?

Meeting of occupants and newcomers

18th and 19th century European colonial expansion brought settlers and colonisers to new shores as widely dispersed as the Americas, Africa, New Zealand and the Pacific Islands. The profound effects of the new arrivals upon the locals have been recognised by many since first contact and have been often asked in studies of cross-cultural contact.

- We may also ask what effect did the locals have upon the newcomers?
- How does the contact period at Windsor conform or differ from similar places of contact across the globe?
- What were the efforts at integration and did they change over time related to local circumstances or through larger scale changes in attitudes to indigenous peoples?
- Can the contact between locals and the European newcomers be compared with other such first places of contact elsewhere in contemporary colonial encounters such as those at Sydney Cove, Port Essington (Northern Territory), Hunter River, Risdon Cove (Tasmania), Hutt River (New Zealand) and Cape Colony (South Africa) etc?

⁶ Tench, W, 1961, *Sydney's First Four Years: Comprising A narrative of the exhibition to Botany Bay and A complete account of the settlement at Port Jackson*, L Fitzhardinge, [ed.], p.223ff.

⁷ Attenbrow, V, 2002, *Sydney's Aboriginal Past*, UNSW Press, p.21.

⁸ Ross, A, 1988, "Tribal and Linguistic Boundaries: A Reassessment of the Evidence" in, G Aplin, *Sydney Before Macquarie: A Difficult Infant*, UNSW Press, fig 2.3.

Windsor - English Town?

Windsor commenced as an unplanned river crossing and port in the late 18th century. Its later history was shaped by the execution of a township model by Governor Macquarie based on his understanding of contemporary urban structures.

- Can Windsor's development be placed in a wider context, not only of Macquarie's five towns, but also his experiences in North America, Jamaica and India?
- How much can Windsor be considered an English town imposed on the antipodean landscape?

The River, the Bridge, the Wharf, the Town

Windsor owed its position to the river being accessible for crossing and offloading of produce at this point. In its early life, this access was reflected in informal inlets and beach access that were soon formalised through the construction of wharves. The wharves became the pivot upon which early agricultural produce turned with the transport of the agricultural surplus to the market in the south, the critical element in the early success of the town. The early crossing of the river using the punt, by comparison, reflected the relatively low importance of the connection to the north. The wharves remained as the primary transport hub for the first half of the 19th century. Other activities also take advantage of the presence of a wharf in the local area, including recreational uses (e.g. fishing) that occur on a more local level. Active uses of a wharf change as its primary role changes or ceases.

- Are the wide range of activities associated with the river, bridges and wharves represented in the archaeology?
- Can we discern changes in these uses over time?
- Did the construction of the Bridge change the way Thompson Square was used?
- The wharves were the nexus between the river transport route and the settlement at Windsor, and the construction of the wharves and their changing fortunes reflected the success and priorities of the town.
- How do the maritime infrastructure sites demonstrate aspects of the local and greater regional trade network?
- Can the changes over time in Windsor also be read in the interplay between the bridge, wharves and people of the town?
- How does the current development fit into the history of the development of access to the river here? Is the development of Windsor and its relationship with the river reflected in the histories of similar sites in Australia such as:
- Are the histories of Windsor comparable with those of similar sites in Australia, such as Swan River (Western Australia), Coal (Hunter) River, Parramatta and Risdon Cove (Tasmania)?

4.9 Research Themes

In addition to the above general and specific questions, more detailed research questions can be framed through an understanding of the specific activities associated with the site. To assist in providing general contexts for historical and archaeological research, a series of National and State level themes have been developed by both Commonwealth and State heritage agencies to provide guidance and to assist in structuring research. The WBRP area has the potential to contribute to the following National and State Research Themes:

- Tracing the natural evolution of Australia.
- Peopling Australia. Aboriginal cultures and interactions with other cultures; Convict; Promoting settlement; and, Fighting for land.
- Developing local, regional and national economies. Developing primary production; Commerce; Establishing communication; Environment - cultural landscape; Making economic use of inland waterways; Building and maintaining roads; Altering the

environment - Regulating waterways; and Developing an Australian engineering and construction industry - Building to suit Australian conditions.

- Building settlements, towns and cities. Planning urban settlements - Selecting township sites; Land Tenure; Supplying urban services; and Making settlements to serve rural Australia.
- Governing. Governing Australia as a province of the British Empire; and Administering Australia - Policing Australia.
- Developing Australia's Cultural Life. Organising recreation - Developing public parks and gardens; Organising recreation - Enjoying the natural environment; Living in and around Australian homes; and Living in the country and rural settlements.

4.10 Action Plan

The following action plan has been developed for implementation should significant historical and maritime relics be identified within the WBRP.

The action plan is divided into two sub-sections:

- i) tasks required at the conclusion of the testing program, to inform any salvage excavation within the WBRP;
- ii) tasks requires to inform the future long-term management of archaeological resource of Thompson Square and central Windsor.

Results of the testing phase

The testing program proposed here involves 8 to 12 weeks of historic testing (depending on whether the northern archaeological testing is undertaken) and 6 days of maritime archaeological testing.

The conclusions from these testing programs will be used to inform impact mitigation measures for the construction phase of the WBRP, as well as the long-term management of the archaeological resources under the SCMP.

While many specific impacts of the construction program are known, additional or unforeseen impacts may be identified during detailed design, which may or may not have ramifications for the archaeological resources. Throughout the testing program, the project team will be in contact with the bridge design team and RMS, to provide progressive information regarding the findings in the field, and the potential implications for the project.

On completion of the testing program, two weeks have been allowed to prepare a Preliminary Archaeological Testing Report, which covers all archaeological disciplines, and provides an assessment of the findings of the testing, the potential impacts of the WBRP on identified archaeological resources and recommendations for mitigation.

Significant archaeological deposits may be identified outside of the direct construction impact zone of the project, and one of the considerations for RMS and the consent authority will be whether any archaeological works are undertaken outside of the impact zone.

A two-week period has been allowed for the RMS and the consent authority to review the results of the Preliminary Testing Report and resolve what additional archaeological works will be required before construction commences.

Subject to agreement, it is anticipated that any amendments required to the ARDs will be prepared concurrently and salvage excavation would proceed immediately following agreement between RMS and the consent authority.

Further details regarding the salvage excavation scope, research design and methodology are pending the outcomes of the testing program and agency review.

It is also anticipated that there will be further archaeological protocols built into the Construction Environmental Management Plan (CEMP) for the project, to set out a process for managing unexpected finds during construction works.

Inputs to the Strategic Conservation Management Plan

The Strategic Conservation Management Plan for Thompson Square and the adjacent areas is concerned not other with the mitigation of project impacts, but the long-term management of all heritage resources, including Aboriginal, historic and maritime archaeology, within the study area.

The results of the testing program will inform the SCMP in several areas:

- Refining the history of the place, based on physical evidence;
- Assessment of historical archaeological significance;
- Identifying opportunities for the interpretation and presentation of archaeological remains and results;
- Establishing areas of archaeological sensitivity across the study area;
- Providing management policies, recommendations and procedures for managing archaeological resources;
- Identifying further research questions and a regional research framework which can be used to guide future archaeological investigations in the immediate study area and the wider vicinity;
- A process to guide future decision makers regarding the acceptability of archaeological impacts within the study area.

These elements will be designed based on the results of the testing and qualified with appropriate limitations, so as to not be overly prescriptive but able to provide a robust framework for the future protection and management of archaeological heritage.

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