Appendix A Aboriginal Stakeholder Comments

Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton & Associates

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Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

5. 6. 12

Attention

Matthew Kelleher

re Windsor Bridge

DACHA have reviewed your proposed Methodology for this most important Darug area. We support your aims and objectives and we look forward to working with you on this project.

Yours Sincerely

Celestine Everingham

Cultural Heritage – Building respect for the past and Conservation for the future

From: Scott Franks [mailto:scott@tocomwall.com.au]
Sent: Tuesday, 21 August 2012 10:57 AM
To: GUNTHER Barry E
Subject: Draft CHAR v5 for the Windsor Bridge upgrade proposal.

Dear Barry,

Thank you for sending me the Draft CHAR v5 for the Windsor Bridge upgrade proposal. I have read and understood the Draft After speaking with Danny Franks and Steve Verey Tocomwall Pty Ltd except that the Report has provided enough information for us to agree with the recommendations. We would like to ensure that when the work starts on this project that our staff are on project to assist, it should be noted that KNC have done a great report and provided us with clear and ample information to assist us with making the decision to support the project.

Regards,

Scott Franks
Director & Aboriginal Heritage Manager

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Appendix B Minutes of Aboriginal Focus Group Meeting

Aboriginal Focus Group Meeting No:2
24th May 2012

Windsor Bridge replacement proposal

Attendees:

Barry Gunther – RMS
Nathan Chehoud – RMS
Matthew Kelleher – Kelleher Nightingale
Gordon Workman – Darug Land Observations
John Reilly – Darug Tribal Aboriginal Corporation
Gordon Morton – Darug Aboriginal Cultural Heritage Assessments
Steve Verey – Tocomwall / Yarrawalk
Danny Franks – Tocomwall / Yarrawalk

Apologies:

Participant	Meeting Minutes
	Meeting opened
Gordon M	Performs the welcome to country
All	Introductions by all.
Barry	Outline of agenda and meeting objectives
Matthew	General project description for the replacement proposal for Windsor Bridge. EIS proposal being done under Part 5.1 that requires no AHIP application Mathew gave an overview on project and discussion of each feature and the potential impact of the proposal. Including registered features and those identified during survey. Aboriginal heritage known to exist in the area. Windsor Museum previous Archaeological investigations found 15,000 artefacts. Discussion of geology including existing sand body, difference between sand profiles (course/fine) flood hazard and landform features Discussed methodology of investigations so far being Geotechnical boreholes and test pitting of identified Archaeological areas. **South Bank Investigations** – test Pit 30cm down found 115 artefacts including 1 backed blade dateable range 6,000 years to present.

1

Participant	Meeting Minutes
	Traffic Island Investigations – clay profile - testpit and borehole investigations nothing found. **Car Park Investigations** – Sandy profile – found 1 Flake near surface and nothing below **Burm Investigations** – Historic disturbance. 60 artefacts including shell (saltwater). 2 artefacts in shell piece. Hatchet fragment approximately 4,000 years to 8,000 years old (yet to be dated) **North Bank investigations** – This area is an old turf farm (farm terrace). 4 test pits same profile (completely homogenised) 6 artefacts in total found. No impacts to Aboriginal heritage on North bank. Open for questions.
Barry	Query whether anyone had any questions (no response).
Matthew	Outcomes – South bank – 2 PADs moderate to high with salvage mitigation warranted. North bank – No mitigation required for this area.
Barry	Asked if stakeholders would like to provide any cultural knowledge and additional inputs to the Stage 2 report, proposed methodologies and investigation process and findings. If not now then still have time to provide comment.
Barry	Asked registered stakeholders whether there are any objects and/or places of cultural value to Aboriginal people in the area of the proposed project.
Barry	Query whether any questions (no answer). Meeting officially closed.
	Meeting closed

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Appendix C Geoarchaeology profile and borehole descriptions

Square 1000E1000N North Section (South Facing)

Depth	Description
Unit I 0.00 - 0.37 m	A11 horizon; dark, 10YR 3/3 (moist); silty clay loam; weak strength; moderately moist; moderate structure, subangular blocky, 5-10 mm peds; few, very fine roots; gradual and smooth boundary to:-
Unit II 0.37 - 0.80 m	A12 horizon; dark, 10YR 3/3 (moist); silty clay loam; very weak strength; moderately moist; moderate structure, subangular blocky, 5-10 mm peds; very few, dispersed, subangular, medium-gravel sized, charcoal; few, very fine roots

Square 1000E 1015N North Section (South Facing)

Depth	Description
Unit I 0.00 - 0.35 m	A11 horizon; dark, 10YR 3/3 (moist); silty clay loam; weak strength; moderately moist; moderate structure, granular, <2 mm peds; very few, dispersed, angular, fine-gravel sized, charcoal; few, very fine roots; gradual and smooth boundary to:-
Unit II 0.35 - 0.80 m	A12 horizon; dark, 10YR 3/3 (moist); silty clay loam; very weak strength; moderately moist; strong structure, granular, <2 mm peds; very few, dispersed, angular, fine-gravel sized, charcoal; few, very fine roots

1000E 1030N East Section (West Facing)

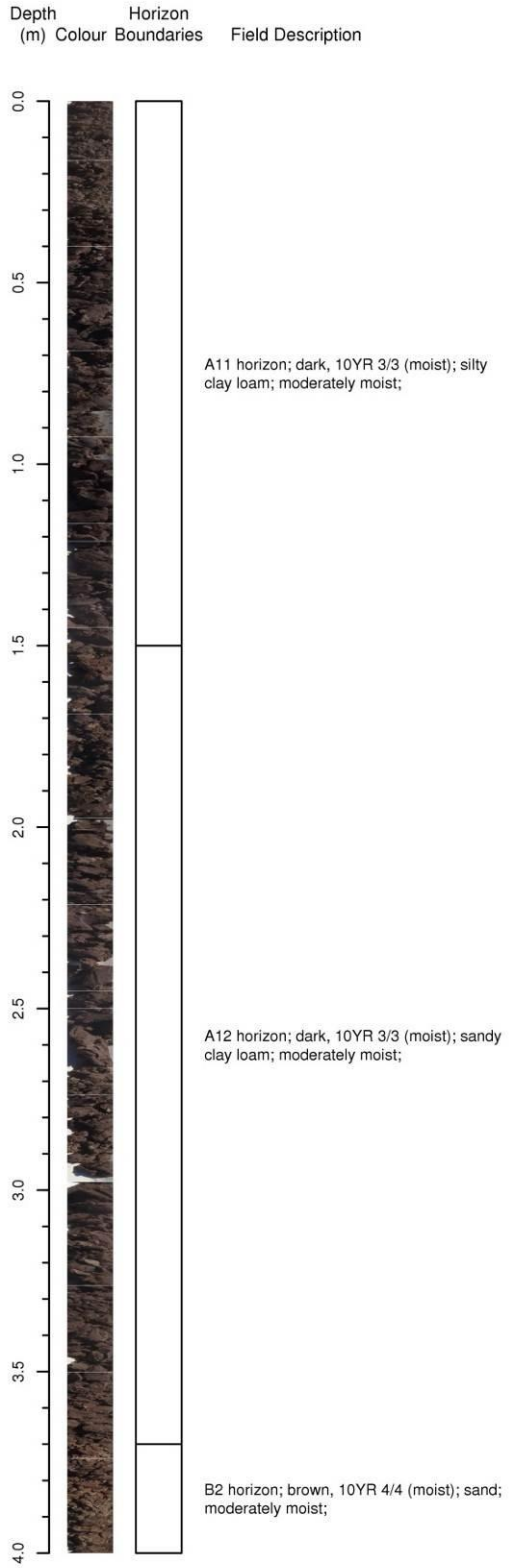
Depth	Description
Unit I 0.00 - 0.28 m	A11 horizon; dark, 10YR 3/3 (moist); sandy clay loam; firm strength; moderately moist; weak structure, granular, <2 mm peds; few, very fine roots; abrupt and smooth boundary to:-
Unit II 0.28 - 0.74 m	A12 horizon; brown, 10YR 4/4 (moist); sandy loam; weak strength; moderately moist; single-grained structure; very few, dispersed, angular, medium-gravel sized, charcoal; diffuse and smooth boundary to:-
Unit III 0.74 - 0.96 m	A13 horizon; yellow, 10YR 4/4 (moist); sand; very weak strength; moderately moist; single-grained structure

1015E 1035N North Section (South Facing)

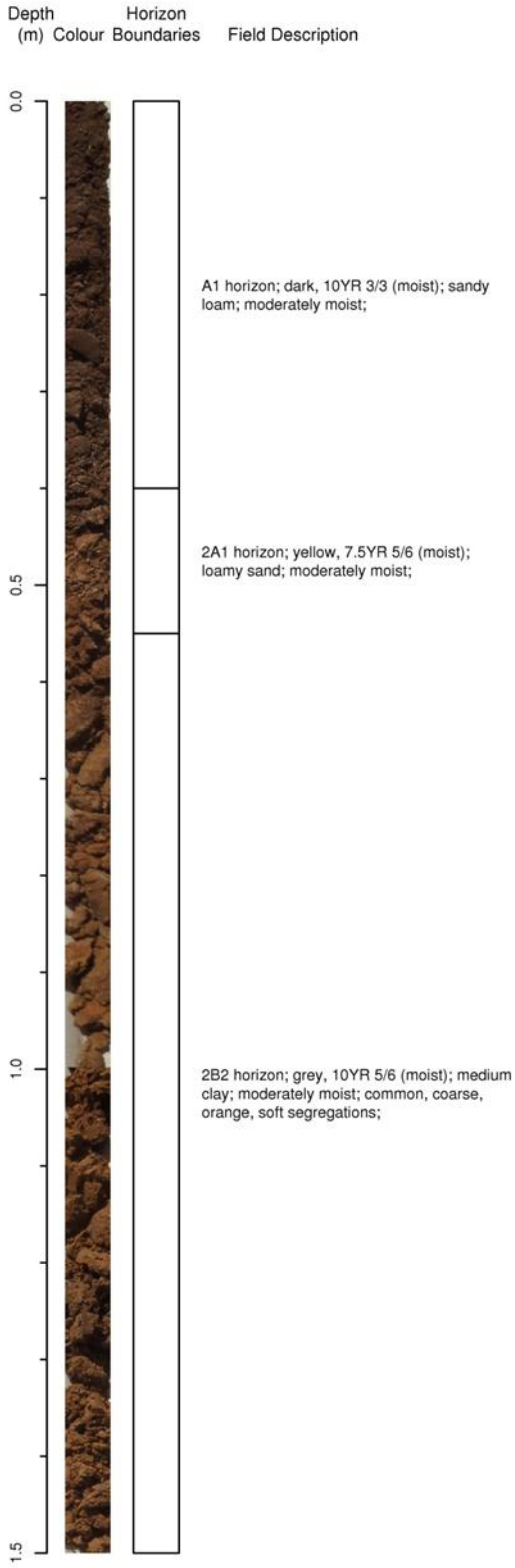
Depth	Description
Unit I 0.00 - 0.30 m	A11 horizon; dark, 10YR 3/3 (moist); silty clay loam; firm strength; moderately moist; weak structure, granular, <2 mm peds; few, very fine roots; abrupt and smooth boundary to:-
Unit II 0.30 - 0.80 m	A12 horizon; dark, 10YR 3/3 (moist); silty clay loam; very weak strength; moderately moist; moderate structure, subangular blocky, 5-10 mm peds; very few, dispersed, angular, coarse-gravel sized, charcoal; few, very fine roots

Geoarchaeological Borehole Logs

Sample: GA-BH-1000E1016N
Easting: 297943 m E
Northing: 6279885 m E
Depth: 4 m

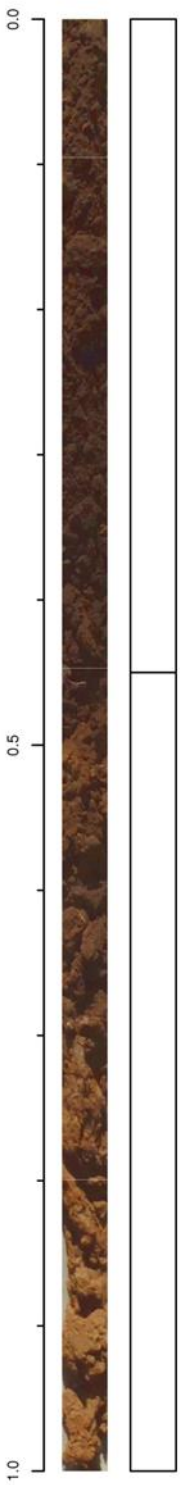


Sample: GA-BH-056E560N
Easting: 298056 m E
Northing: 6279560 m E
Depth: 1.5 m



Sample: GA-BH-053E564N
Easting: 298053 m E
Northing: 6279564 m E
Depth: 1 m

Depth (m) Colour Horizon Boundaries Field Description

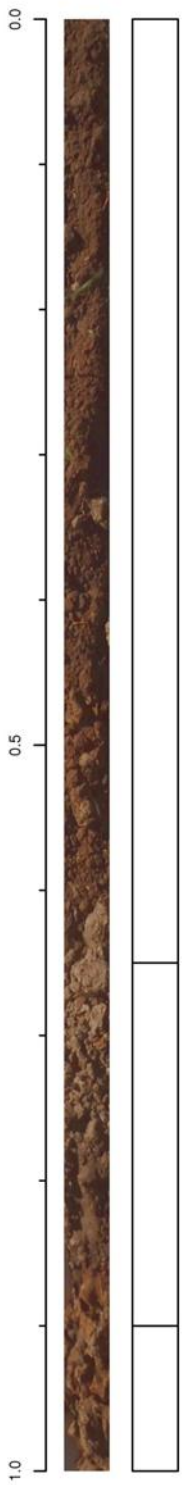


A1 horizon; dark, 10YR 3/3 (moist); sandy loam; moderately moist; very few, dispersed, subangular, medium-gravel sized, construction fragments;

2B2 horizon; yellow, 10YR 5/6 (moist); medium clay; moderately moist; common, coarse, orange, soft segregations;

Sample: GA-BH-043E568N
Easting: 298043 m E
Northing: 6279568 m E
Depth: 1 m

Depth (m) Colour Horizon Boundaries Field Description

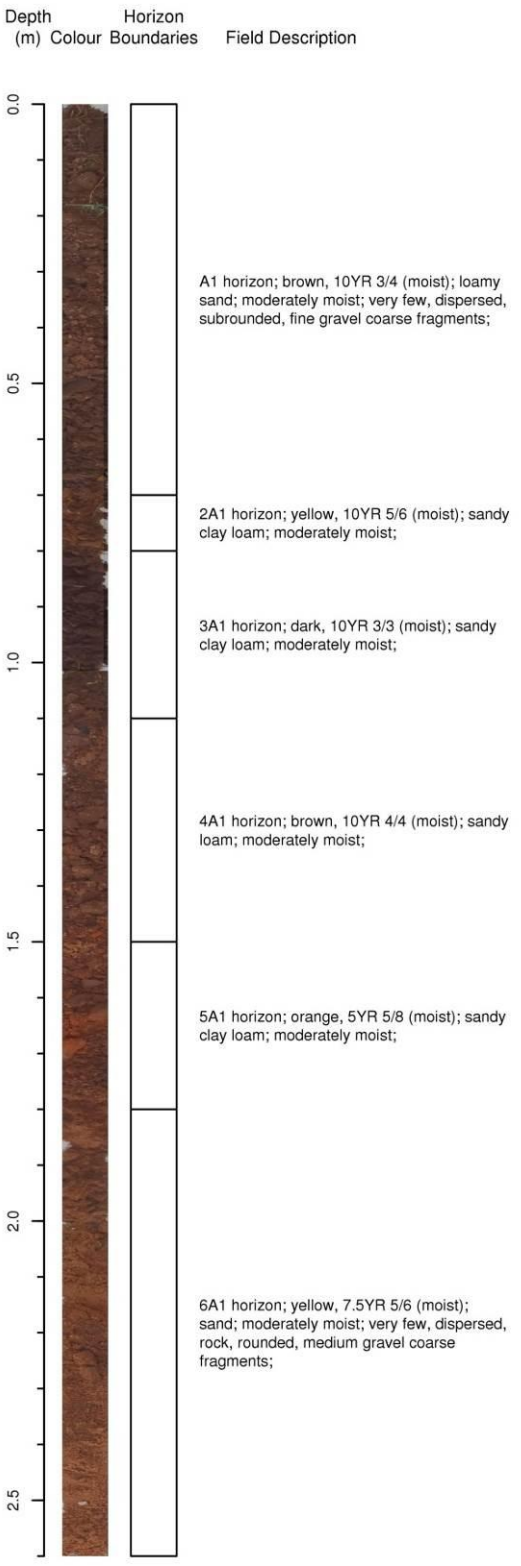


A1 horizon; dark, 10YR 3/3 (moist); sandy loam; moderately moist; few, dispersed, subangular, medium-gravel sized, construction fragments;

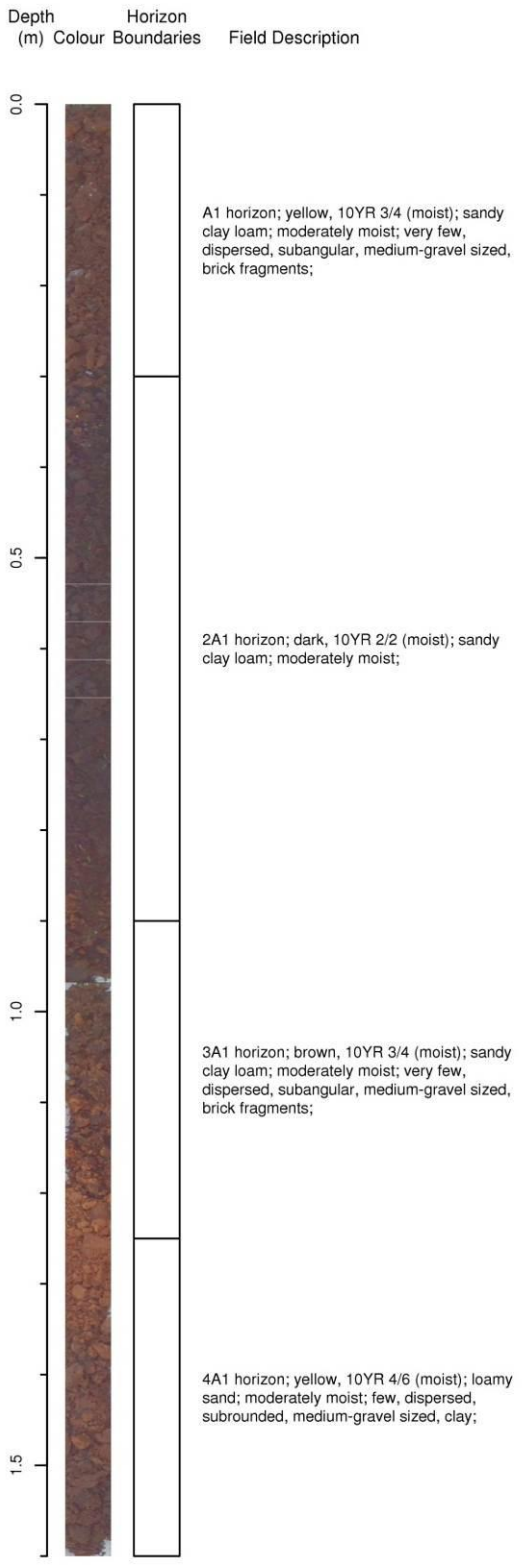
2A1 horizon; pale, 10YR 5/4 (moist); clayey sand; moderately moist; very few, dispersed, subrounded, fine-gravel sized coarse fragments;

2B2 horizon; yellow, 10YR 4/6 (moist); medium clay; moderately moist; common, coarse, orange, soft segregations;

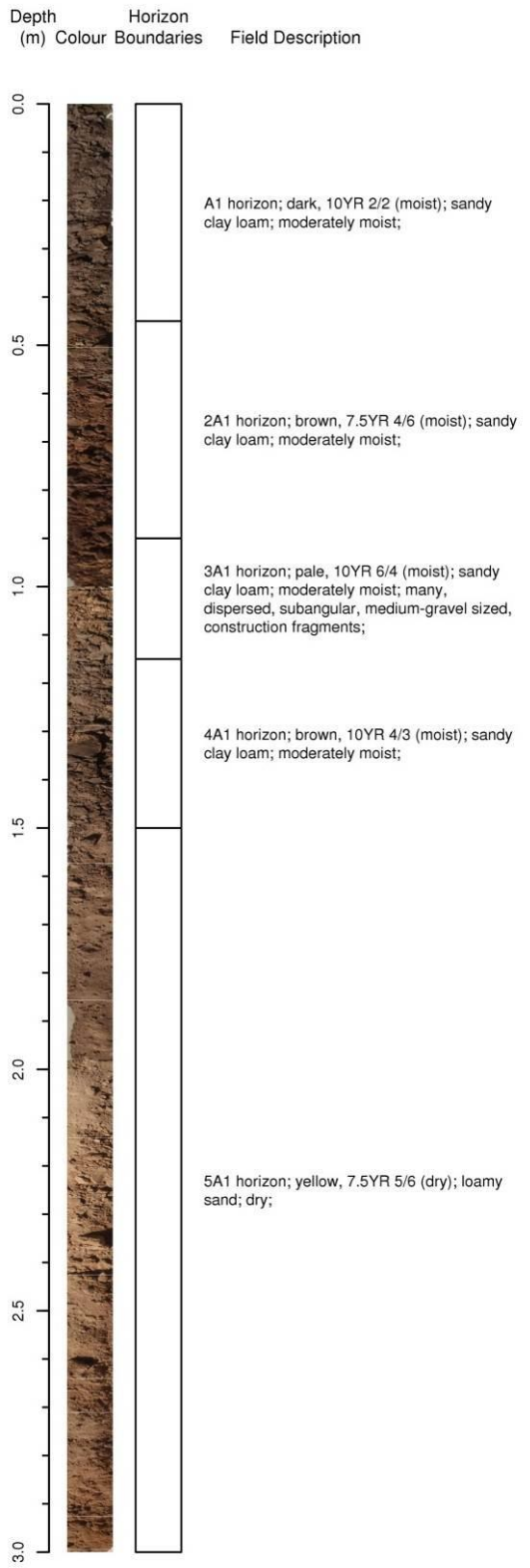
Sample: Auger 027E605N
Easting: 298027 m E
Northing: 6279605 m E
Depth: 2.6 m



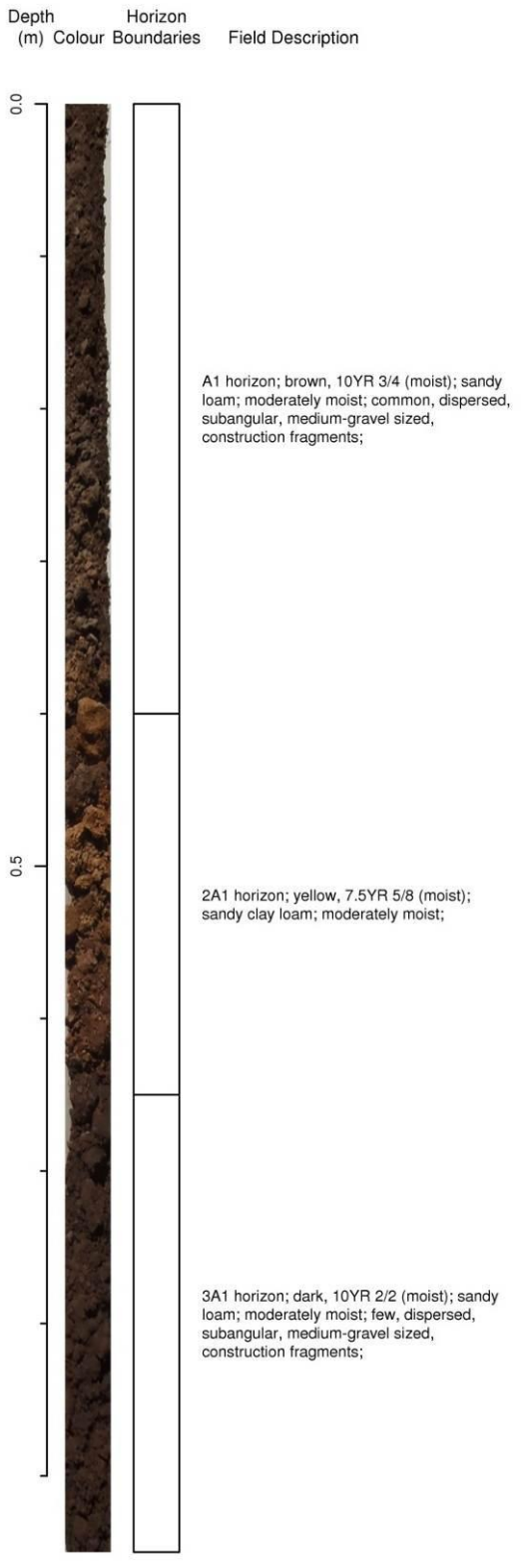
Sample: GA-BH-017E615N
Easting: 298017 m E
Northing: 6279615 m E
Depth: 1.6 m



Sample: GA-BH-999E629N
Easting: 297999 m E
Northing: 6279629 m E
Depth: 3 m



Sample: GA-BH-982E642N
Easting: 297982 m E
Northing: 6279642 m E
Depth: 0.95 m



Appendix D Aboriginal Heritage Assessment Windsor Bridge Replacement Project Methodology for Test Excavation

ABORIGINAL HERITAGE ASSESSMENT
WINDSOR BRIDGE REPLACEMENT PROJECT
Methodology for Test Excavation

Prepared for Roads and Maritime Services

Final
April 2012

Ref. 1111

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Document Information

Project Name	Aboriginal Heritage Assessment Windsor Bridge Replacement Project Methodology for Test Excavation
Project Number	1111
Status	Draft
Version	4
Client Name	Roads and Maritime Services
Recipient	Nathan Chehoud RMS Project Manager, Braith Gilchrist RMS Environment Manager
Issue Date	26 April 2012
Prepared by	Dr Matthew Kelleher; Sam Player
Approved by	Alison Nightingale

Contents

FIGURES

TABLES

1 Introduction

1.1 Project background

The Roads and Maritime Services (RMS) is seeking to replace the existing Hawkesbury River Bridge at Windsor (hereafter referred to as Windsor Bridge) with a new bridge located 35 metres downstream of the existing bridge (the project) (Figure 1). The proposed bridge replacement will include the following design elements

- construction of 180m long, 10 span bridge;
- bridge approach retaining walls on Old Bridge Road 100m long;
- intersection upgrades at George Street, The Terrace and Freemans Reach Road/Wiberforce Road; and
- demolition of the existing bridge.

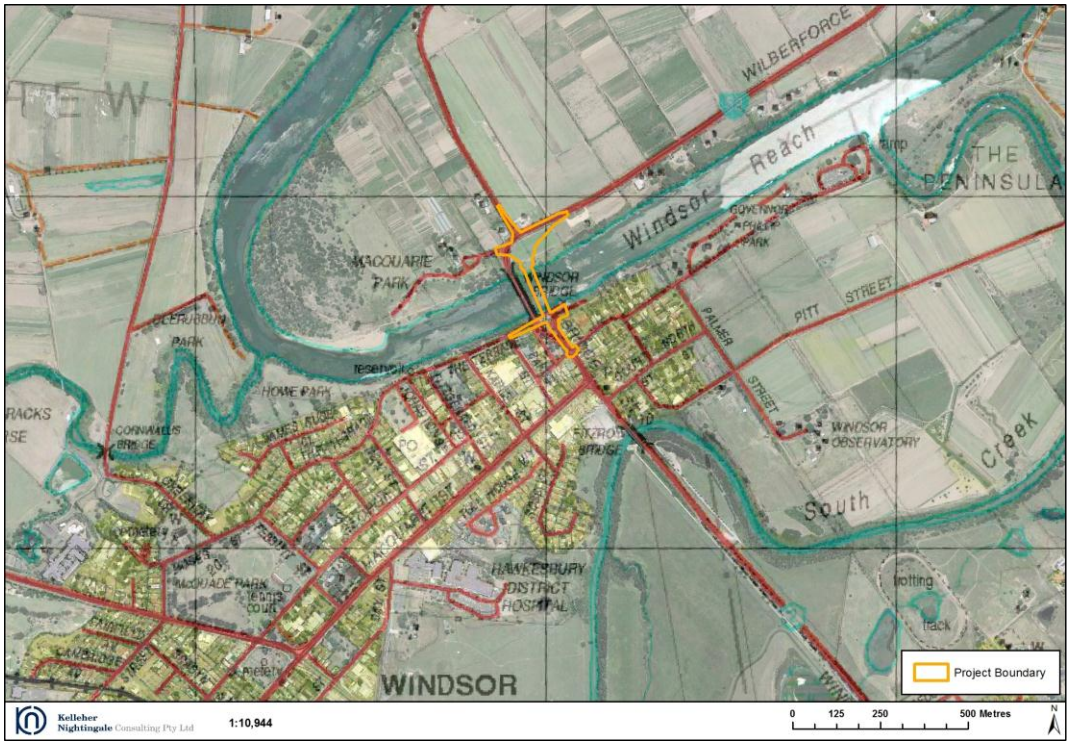

Figure 1: Location of Study Area

The Windsor Bridge replacement project is the subject of a State significant infrastructure approval application under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The environmental assessment to support the approval application is currently in progress.

An Aboriginal heritage assessment is required as part of the environmental assessment. The project boundary for the study area is shown in (Figure 2). The Aboriginal heritage assessment complies with the requirements of the RMS Stage 3 Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI 2011) and the Director-General's requirements for environmental assessment. As part of this assessment process for Aboriginal heritage a methodology for subsurface investigations is required. Kelleher Nightingale Consulting has been commissioned by RMS to fulfil the requirements of the PACHCI/Director General.

1.2 Document organisation

This document is a methodology for subsurface investigation of Aboriginal heritage for the Windsor Bridge replacement project. The methodology is organised as follows:

- Project Information (section 1)
- Aboriginal community consultation (2)
- Geomorphology (section 3)
- Archaeological Background (section 4)
- Historic Heritage (section 5)
- Predictive Model (section 6)
- Excavation Methodology (section 7)

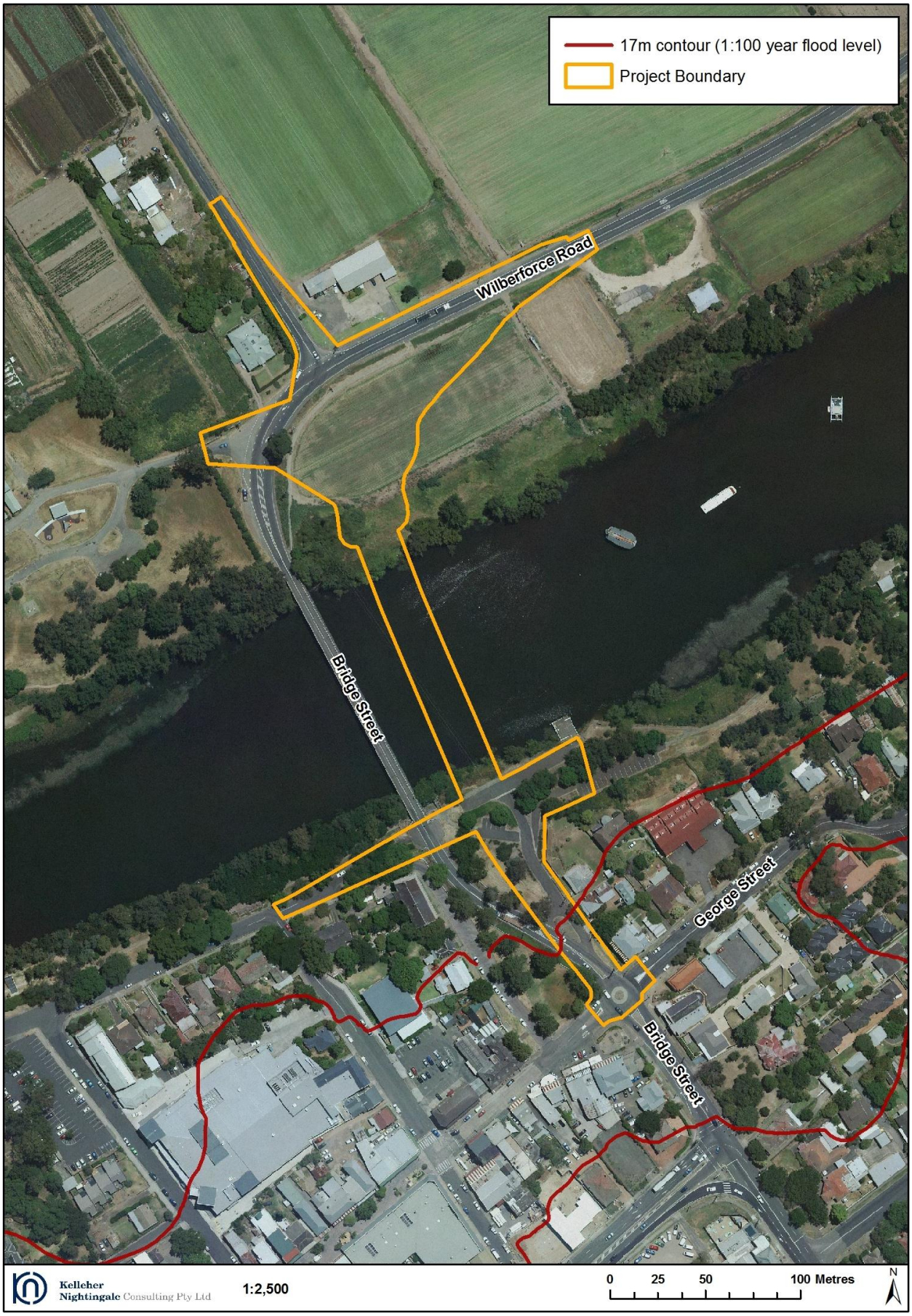

Figure 2. Windsor Bridge project boundary

2 Aboriginal Community Consultation

The RMS is committed to effective consultation with Aboriginal communities regarding RMS activities and their potential for impact on Aboriginal cultural heritage. The RMS Procedure for Aboriginal Cultural Heritage Consultation and Investigation PACHCI has been developed to provide a consistent means of effective consultation for RMS activities across NSW.

In accordance with the PACHCI the RMS initiated an Aboriginal stakeholder identification and consultation program. The consultation program is consistent with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (Department of Environment and Conservation, 2005).

The RMS compiled a list of potential Aboriginal stakeholders by writing to sources of information and placing advertisements. Identified Aboriginal people/organisations were then contacted to notify them of the proposed project and invited to participate in the consultation process. Closing date for registration was 10th February 2012 (14 day registration process).

Registered stakeholders for the Windsor Bridge Replacement Project are listed in the table below.

Group / Individual	Representative / Contact
Deerubbin Local Aboriginal Land Council	Kevin Cavanagh
Darug Land Observations	Gordon Workman
Yarrawalk	Scott Franks
Darug Aboriginal Cultural Heritage Assessments	Gordon Morton
Darug Tribal Aboriginal Corporation	Sandra Lee
Darug Custodian Aboriginal Corporation	Leanne Watson
Gunjee Wong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise
Darug Aboriginal Land Care	Des Dyer

Consultation is ongoing. The formal consultation process included:

1. Notification of project proposal and registration of interest;
2. Presentation of information about the proposed project;
3. Gathering information about the proposed project; and
4. Review of draft methodology.

Tasks included:

- letters sent to relevant government agencies and the local land council;
- advertising for registered stakeholders in local and Indigenous media;
- notification of closing date for registration;
- presentation of project information;
- ongoing compilation of registrants list, through continuing to register individuals and groups for consultation on the project;
- Aboriginal Focus Group (AFG) meeting held at the Windsor Museum on 29th February 2012, at which the results of the preliminary archaeological and Aboriginal cultural heritage assessments and methodologies for test excavation were presented and discussed; and
- ongoing consultation with the local Aboriginal community.

A copy of the draft methodology for test excavation has been provided to Aboriginal stakeholders for 28 day review and comment period (closing date 3rd April 2012). Comments received from stakeholders are attached in full in Appendix A.

Further Consultation Dates

Fieldwork is anticipated to be undertaken between the 16th and 23rd April and stakeholders will be invited to assist the archaeological program in accordance with the PACHCI.

Following fieldwork an AFG will be held to discuss the results sometime between 7th and 18th May and stakeholders will be given the opportunity to review the cultural heritage assessment report in accordance with the PACHCI prior to finalising the document.

3 Geomorphology

3.1 Preliminary geomorphological appraisal of the archaeological context of Windsor Bridge

Replacement of the Windsor Bridge will cause disturbance to materials that potentially contain archaeology. The geological origins of those materials constrain the depth at which archaeological materials occur. The following is an appraisal of the archaeological context at Windsor in relation to its geological genesis.

Geology

Three geological units are mapped at 1:25,000 scale (Figure 3). Quaternary age alluvium (Qa) consisting of gravel, sand, silt and clay are the predominant materials surrounding Windsor. These materials compose the entire north bank of the Hawkesbury River at Windsor and also the floodplain beyond. The same materials also occupy a narrow berm on the south bank at Windsor. Tertiary age gravels (Tg), Rickabys Creek Gravel, are mapped occupying Windsor itself and the area to its southwest. Sand and loam, consolidated clay, claystone and sandstone, conglomerate, laterite and lateritised gravel all occur in the same geological formation and potentially around Windsor Bridge. Wianamatta Group shale of the Liverpool Subgroup (Rwl) fringes the area to the east of Windsor and consists predominantly of black shale with some sandstone beds.

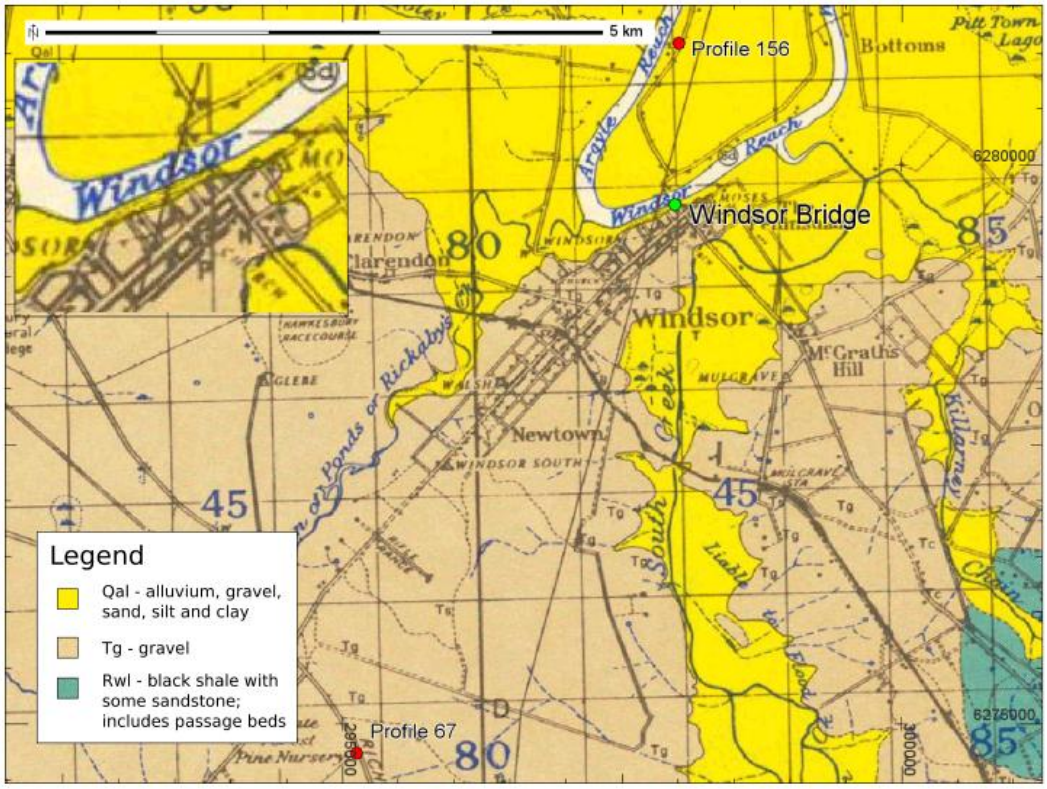

Figure 3. Geology surrounding the Windsor Bridge. A closeup of Windsor town in the top-left corner shows a short berm of Quaternary alluvium on the south bank of the Hawkesbury River

The Quaternary alluvium forming the floodplain on the north side of the Hawkesbury River and a short berm on the south side at Windsor (Plate 1) comprise part of the Lowlands Formation. It is sedimentologically comparable to the archaeologically significant Cranebrook Formation consisting of a basal gravel that grades upwards into sand, silt and clay. An equivalent date range is possible and given pollen derived from clays in the basal units of the Cranebrook Formation returned Pleistocene dates, the entire thickness of the Lowlands Formation can be dated to within the known period of human occupation of Australia. Descriptions of the unit are derived from commercial well logging and a maximum thickness is reported at 12 m although it thins towards Windsor (Jones and Clark 1991).

Plate 1. A berm of Quaternary alluvium can be identified visually as the flat area of ground immediately adjacent to the Hawkesbury River. Its boundary is marked here by a sharp break of slope.

The archaeological potential of particular stratigraphic units within the Lowlands Formation varies with its texture. Coarse-grained strata such as gravels have very low archaeological significance because they represent high energy, high disturbance deposits. Where archaeological materials are contained within gravels, they are likely to have been transported and not in situ. Textures of sand or finer have much higher archaeological potential as they may occur as overbank deposits, in which case artefacts can be buried in situ. Course grained gravels can be expected within sediments where the water flow is likely to have disturbed in situ artefacts. Given that the Lowlands Formation is reported to fine-upwards, the upper archaeological potential can be regarded to increase higher in the profile.

Gravel is a fluvial deposit that composes the lower part of the Londonderry Formation and is interpreted to have formed during a pluvial phase (an extended period of high rainfall) in the Tertiary. The upper part of the Londonderry Formation is occupied by the Londonderry Clay and was likely formed as an overbank or lacustrine deposit associated with the same fluvial system that formed the gavel layer. The Londonderry Formation is at least 8 million years old. As a result, archaeological materials occurring where Londonderry Formation exists as the substrate would only be expected to exist in the very upper biomantle. Materials would only occur deeper in the profile due to secondary depositional processes not associated with the primary deposition of the Londonderry Formation. The Londonderry Formation can be regarded as a residual landscape for the purposes of archaeological investigation.

Aeolian sands have been identified resting on the Londonderry Clay up to 4m thick on the more elevated portion of Windsor. Investigations near Baker Street have found bioturbated sands offering some archaeological potential. The soil material associated with this sand body exhibits at least some stratigraphic properties and there is no evidence that it represents a buried land surface (Mitchell 2007:8). Aeolian sands are enticing archaeologically because they have the potential to show chronologically stratified soils and are not limited by the deflationary cycle (temporal collapse) affecting most of the Sydney Basin. The caveat is that bioturbation often homogenises archaic sand bodies resulting in a smeared chronology (as opposed to a collapsed chronology) rather than the desired chronologic sequencing.

Flood energy has had a major impact on the geomorphology of Windsor. Numerous high energy events have resulted in the terraces surrounding Windsor and alluvium associated with the lowlands. Archaeologically, high energy floods have the ability to transport artefacts while low energy inundations may result in burial of artefacts. As a guide to flood impacts the 1:100 flood level is useful as it offers a measure of potential fluvial disturbance. The 1:100 flood level for Windsor Bridge is 17.3 AHD. Soils below the 1:100 year level should exhibit evidence of noticeable soils movement and potential homogenisation (caused by successive fluvial events). Soils above the 1:100 flood level should exhibit increased pedogenesis and as a result have greater archaeological potential.

Implications for test program

Archaeological investigation methods would necessarily need to vary between the two geological substrates. In the Quaternary alluvium occurring on the north side of the Hawkesbury River and on a short berm on the south bank, archaeological materials may exist throughout the deposit. Should Pleistocene deposits exist, then these would occur in the basal units. Given the potential depth of archaeological materials, augering or drill coring may be advisable to establish the presence or absence of fine over bank deposits. If gravels are predominant then the archaeological significance can be regarded as low due to reworking of emplaced archaeological materials.

On the Tertiary substrate (south bank) archaeological materials should be constrained to the upper biomantle which can vary between 0.2m to 4m thick. Investigation should seek to establish the depth of the Londonderry Clay. Methods of investigation on Tertiary substrate will necessitate a combination of small test pits and coring. Where sufficiently undisturbed biomantle is found on top of the clay it is possible to conclude a moderate to high archaeological potential.

Flooding will have impacted on the soils within the study area. Subsurface testing above and below the 1:100 flood level will identify how flood events have modified the soils around Windsor Bridge. Archaeological significance will be lower where significant flood impacts are identified in the deposit.

4 Archaeological Context

4.1 Database search (AHIMS) and known information sources

The Aboriginal Heritage Information Management System (AHIMS) is a database operated by Office of Environment and Heritage, regulated under section 90Q of the *National Parks and Wildlife Act 1974*. AHIMS contains information and records related to registered Aboriginal archaeological sites (Aboriginal objects, as defined under the Act) and declared Aboriginal places (as defined under the Act) in NSW.

A search of AHIMS was conducted on 29 November 2011 to identify registered (known) Aboriginal sites within or adjacent to the study area.

The AHIMS Web Service database search was conducted within the following coordinates (GDA, Zone 56):

Eastings: 0297000 to 0299000
Northings: 6278500 to 6280500
Buffer: 0 metres

The AHIMS search results identified 14 Aboriginal sites.

Two potential archaeological deposits (PADs) were identified within the project boundary: North Bank PAD-W-NP (45-5-3580) and South Bank PAD-W-SP (45-5-3581). These PADs were identified during the Stage 2 PACHCI survey of Windsor Bridge.

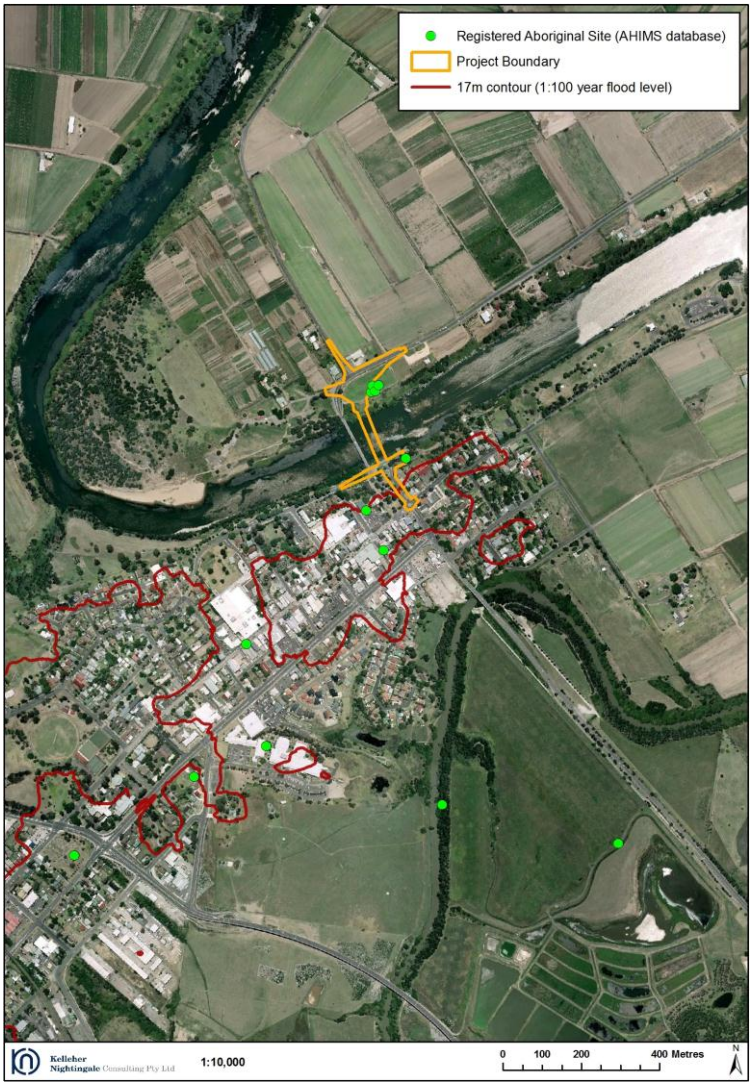

Figure 4. Known Aboriginal heritage near the study area (AHIMS search results)

4.2 Previous Archaeological Assessments

Aboriginal archaeology exists on the terraces and elevated landforms within and near Windsor. Archaeological investigations have identified Pleistocene alluvial and Aeolian sand bodies containing potentially culturally stratified deposit. Significant Aboriginal archaeology occurs above the primary flood level, which appears to coincide with the 1:100 year level. Geoarchaeological investigations have shown that soil disturbance, bioturbation and flooding have impacted on the remnant cultural deposit, but intact archaeological deposit remains within a relatively homogenised biomantle.

A summary of pertinent archaeological investigations and relevant implications for the test program is presented in this section. Site locations near the study area are shown on Figure 5.

Windsor Bridge
An Aboriginal archaeological survey report, Stage 2 PACHCI report, was completed by the (then) Roads and Traffic Authority to assess the potential impact of the replacement bridge at Windsor (Heritage Concept 2009). The survey report identified two potential archaeological deposits:

- North Bank PAD W-NP (45-5-3580) located on the northern bank of the river east of the existing bridge. The PAD was disturbed from past agricultural use of the area and is subject to flooding (9-11m AHD).

- South Bank PAD W-SP (45-5-3581) located in an area of the southern bank between the existing bridge approach and Old Bridge Street. This area had been heavily disturbed by earth cutting and road construction. The majority of the PAD comprised an area ranging from 7-18m AHD with the land rising toward the south. A small area to the west of the current bridge approach was between 16-19m AHD.

The portions of both PADs immediately adjacent to the riverbanks were assessed as having low archaeological potential due to erosion, flooding and repeated earth cutting for bridge stabilisation, however areas further from the river were assessed as being of high potential.

Four isolated finds of flaked silcrete were also recorded during the survey – W1 (45-5-3582), W2 (45-5-3583), W3 (45-5-3584) and W4 (45-5-3585). All of the identified objects are outside the current study area. All were identified on the surface of the terrace along the northern bank and assigned low archaeological significance due to their presence in secondary alluvial deposits.

Review of the 2009 report suggests the area identified as North Bank PAD W-NP is too low to contain intact Aboriginal archaeology. Assessment of this area should focus on core samples and should expect an interspersed gravel profile. The area above 15m AHD associated with the South Bank PAD W-SP exhibits some archaeological potential based on the presence of a sand body associated with the Windsor Museum (approximately 100m west of the study area, discussed below).

Windsor Museum – 45-5-3011
This site was located on a naturally high point above the south bank of Hawkesbury River, approximately 19-20m AHD on a moderately steep river terrace. Investigations were undertaken for construction of a new museum building on Lot 1 DP 60716 and Lot 3 DP 864088 on Baker Street. Historic archaeological excavation of the site identified Aboriginal archaeological material. Subsequent Aboriginal archaeological investigations of 26 contiguous square metres was excavated at depths of up to 180cm, yielding over 12,000 lithic items from a sandy deposit believed to represent an intact Pleistocene sand dune (Aeolian). A sample of 803 lithic items was subjected to further analysis. Of the artefacts, the most common material type was mudstone (68.7%), followed by silcrete (13.8%), and quartz (7.6%). The majority of the artefacts were unmodified flakes, with one grindstone also recovered. The assemblage contained no backed artefacts. Thermoluminescence dating was carried out on four sediment samples from various depths. Sediment from the artefact bearing layers was dated to between 8,500 +/- 800 years to 33,900 +/- 1,700 . In terms of disturbance, bioturbation was evident with some vertical movement demonstrated, however vertical stratigraphy showed moderate integrity in general with no evidence of size sorting or vertical movement of artefacts en masse (Austral 2011:147-148). A number of historical cuttings and refuse pits were present but had limited impact on the artefact rich, lower layers. One pit however was abandoned due to extensive disturbance. Fill associated with historical use of the properties overlayed the sand body in several areas. The majority of archaeological deposit within the development area has been retained undisturbed beneath the new constriction and the authors note the likelihood that the deposit extends beyond the boundaries of the study area.

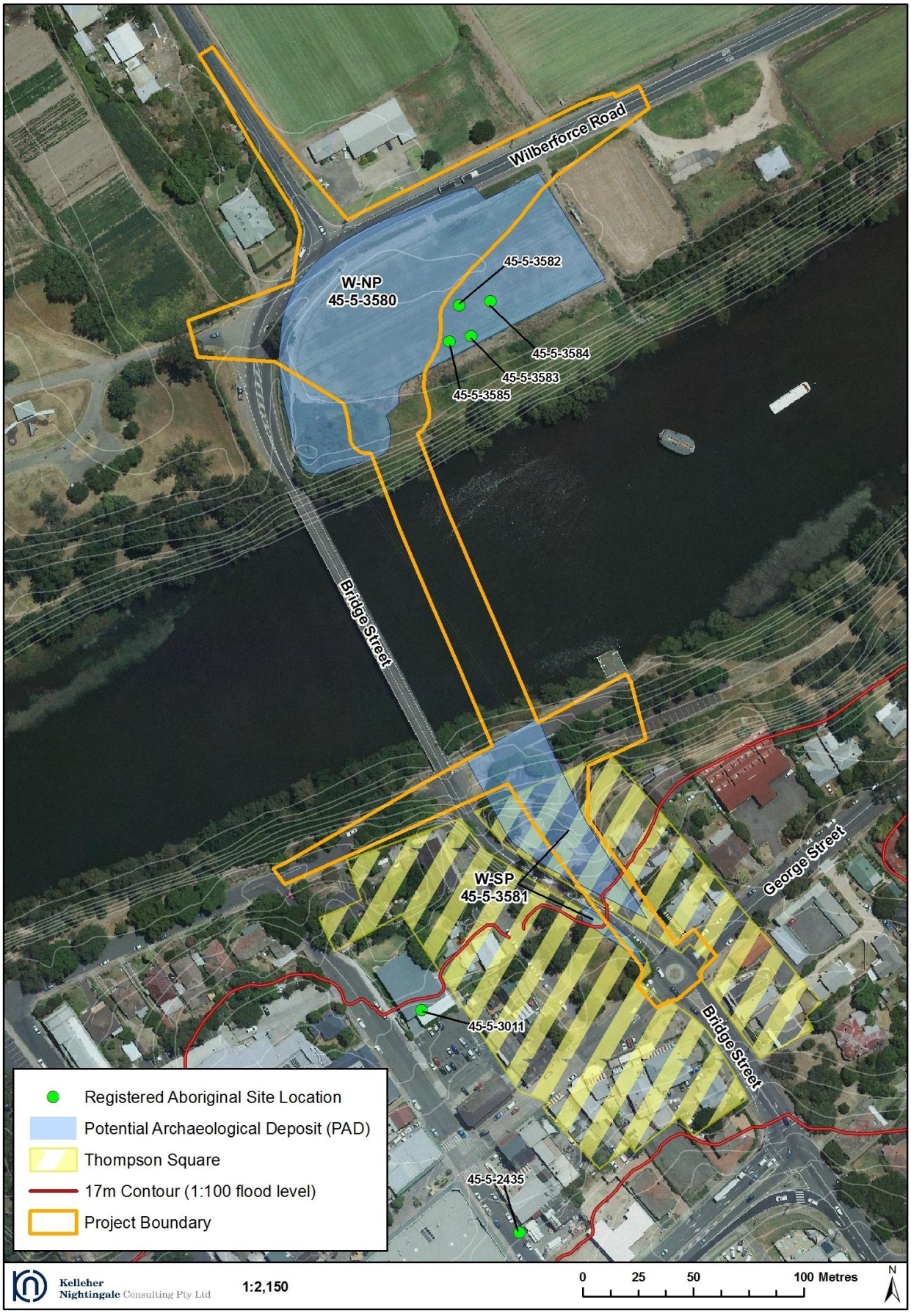

Figure 5. Aboriginal and historic heritage with and near the study area

In sum, Aboriginal archaeological occurs in the sand body beneath the Windsor Museum within 100m of the southern end of Windsor Bridge. The archaeology appears to exist above the 1:100 year flood level to a depth of around 17m AHD. Bioturbation has affected the quality of the deposit, however movement of artefacts appears uniform and deflationary.

Windsor Flood Evacuation Route (WFER) Assessment

Test excavation of four PADs was undertaken as part of the WFER (Ozark 2004). The PADs were located over a variety of landforms, ranging from upper elevated terrace (PAD 4 – 45-5-2936), remnant elevated alluvial knoll (PAD 6 – 45-5-2938), to remnant low terrace sloping to floodplain (PAD 5 – 45-5-2937 and PAD 7 – 45-5-2939). All PADs were heavily disturbed by a variety of processes, including urbanisation, vegetation clearance, topsoil removal, intensive cropping and grazing. All excavated areas of the PADs were at elevations subject to regular flooding. Artefacts recovered were predominantly of silcrete and quartz. Artefact density varied both between and within PADs, with average densities ranging from 19.4/m^2 to 29/m^2. The southern section of PAD7 was assessed as being of moderate archaeological value due to its potential for intact archaeological deposit existing at depths below 15-20cm. All other PADs were assessed as having low significance, due to low artefact densities and excessive disturbance. In sum, review of the WFER assessment indicates that significant Aboriginal archaeology near Windsor is most likely to exist above the 1:100 year flood level where disturbance is relatively low.

Hawkesbury Hospital – 45-5-2865

The Hawkesbury Hospital site was located on an elevated Tertiary river terrace, one of the high points in the local landscape at approximately 16-18m AHD. A test excavation program was carried out recovering 64 flaked stone artefacts from a series of test trenches, predominantly silcrete and tuff. Two formal tool types were identified, being a geometric backed artefact and a scraper, with the remainder of the assemblage including flaked pieces, flakes and broken flakes indicative of secondary reduction. Disturbance across the site was excessive, with all artefacts being recovered from shallow, highly disturbed remnant topsoil that also contained a number of historical European artefacts. The archaeological significance of the site was assessed as being low due to low artefact numbers combined with high levels of disturbance.

BGW97 –- 45-5-2435

The BGW site was located across an upper hill slope and ridge top on the corner of George and Baker Streets (within 100m of the study area).The site sat on a terrace approximately 19-21m AHD and approximately 220m south of the Hawkesbury River. Historical archaeological excavations were carried out ahead of development of the site and identified 25 Aboriginal artefacts and A horizon soils. The following test excavation confirmed the presence of a remnant A2 horizon topsoil of variable depth across the study area (JMCHM 1998). 654 artefacts were recovered from an ensuing salvage excavation of 28m^2, chiefly indurated mudstone and silcrete. The assemblage comprised backed artefacts, as well as flakes and debitage. The site was classed as moderately disturbed, with shallow deposit precluding investigation of any stratification.

Windsor Cemetery – 45-5-3118

This site was located on a low ridge (12-14m AHD) next to the former Roman Catholic cemetery east of George Street. Test excavation program was carried out to determine the archaeological significance of the site prior to road work as part of the Windsor Flood Evacuation Route project (AHMS 2006). 152 lithic pieces were recovered from 22 test pits and test trenches. The majority of the assemblage was fine grain siliceous material (44.1%), followed by tuff (23.7%) and silcrete (22.4%). No finished implements or formal tool types were found. One tuff bipolar core was recovered. The minimum artefact count suggested a density of 0.8 artefacts per square metre. The site was described as moderately disturbed, with bioturbation from tree roots and insect burrows evident. Additional disturbance from European activities such as vegetation clearance and grave digging meant the site had limited integrity (AHMS 2006:54). Review of the Windsor Cemetery report indicates the low artefact count and perceived disturbance was also likely to have been affected by low energy flooding, which would have degraded the deposit.

Windsor Police Station– 45-5-3548

This site comprised a large PAD corresponding to part of PAD4 (45-5-2936) identified during the WFER assessment. Test excavation was carried out in 2008 in advance of proposed development (AHMS 2008). The site was situated atop a low ridge bisected by the 1:100 year flood line, with the northern and eastern sections above this elevation and the eastern edge retaining the highest ground. A total of 24m^2 was investigated, yielding 24 artefacts, with silcrete and chert representing 75% of the assemblage. No formal tool types were identified, with the assemblage consisting primarily of broken flakes, angular fragments and a single bidirectional core. All artefacts were recovered from a remnant Berkshire Park soil landscape underlying various fill and levelling layers imposed in the early to mid-20th century. Both horizontal and vertical stratigraphic integrity was considered compromised by intensive historical use of the site as evidenced by various historical materials recovered from the test pits. Disturbance from ploughing and tillage as well as bioturbation and the levelling activities described above was high and the site was assessed as being of low archaeological significance.

Fernadell and Bona Vista – Pitt Town

The Fernadell and Bona Vista properties located approximately three kilometres north east of the study area were significant because the geology was similar to the study area (Agnes Banks sands). The two properties sit on elevated and relatively flat land between 14 – 25m AHD in the western portion, sloping to a minor creek line in the southwest. Much of the hill slope and creek bank areas fell below the 1:100 flood level. Subsurface test excavations were undertaken in the northern section (Bona Vista) on a high alluvial terrace (20-24m AHD) and in the southern section (Fernadell) on a levee deposit paralleling Bathurst Street. A total of 96 artefacts were recovered. Bioturbation was substantial in all soils encountered and historical agricultural use of the site resulted in little vertical stratigraphic integrity. Salvage excavation (AHMS 2010) was also undertaken over a portion of the property and confirmed low artefact densities and disturbed deposit.

Lots 11-18 Hall Street – Pitt Town

Archaeological assessment and excavation of Lots 11-18 Hall Street, located approximately 200m to the north of Bona Vista in Pitt Town were pertinent because the geology is similar to the study area (Agnes Banks sands –alluvial). The Hall Street landforms ranged from elevated alluvial terraces (20-24m AHD) in the southern portion of the property to hill slopes descending to the northeast and west to low lying swamp and river bank. The majority of the northern and central part of the study area fell below the 1:100 flood level. During survey of the property 11 artefact scatters designated PT1 - PT11 (45-5-3038 and 45-5-3040 – 45-5-3049) and seven isolated finds IF1 – IF7 (45-5-3050 – 45-5-3056) were identified across the high alluvial terrace and hill slopes.

Test excavation (AHMS 2006) across the Hall Street property identified 1054 flaked stone pieces, recovered from twelve 2m x 2m test trenches. The assemblage was predominately tuff and silcrete. Ploughing and bioturbation had affected the site. Artefact density varied by landform. The alluvial terrace and terrace slope (max 24m AHD) showed the highest density with 26.67 items/m^3, dropping to a low-moderate density of 3.75/m^3 on hill slopes (12-16m AHD) and a low density of 0.47/m^3 on the river bank, flood channel and flood plain.

Artefacts recovered from the highest density areas of the elevated terrace and slopes indicated the presence of a deep, stratified assemblage within the sand body. Two occupation phases were identified, with a silcrete-based typical Bondaian assemblage overlying an tuff-based assemblage which is presumably pre-Bondaian. However, geomorphological assessment indicated the site had suffered from extensive bioturbation. Review of the assessment concluded that bioturbation had facilitated a uniform, deflationary, downward movement of artefacts within the sand body. While precise chronological dating of the site is difficult, the alluvial sands do exhibit a possible (if somewhat disturbed) Pleistocene deposit.

Salvage excavation was subsequently undertaken over a portion of the Hall Street property (AHMS 2011). As part of the salvage program, a series of boreholes were undertaken in order to identify the area containing the most archaeologically rich or undisturbed deposit for a subsequent open area excavation. The selected area was the crest of the landform at 24m AHD, at the widest point of the sand body. The excavated area of 25m^2 yielded 1151 stone artefacts/manuports, giving a density of 46/m^2. Based on composition and spatial location, these were divided into three discrete assemblages, with an upper assemblage composed of typically Bondaian silcrete artefacts. Two lower assemblages were identified, comprised of amorphous tuff artefacts and simple flakes. Bioturbation was evident within the deposit and as a result OSL dating of the sand body was inconclusive.

Implications for test program
Archaeological assessments of the terraces and elevated landforms within and near Windsor have identified indicators which can be used to guide investigations related to the bridge replacement:

- Sand bodies containing relatively in situ Aboriginal objects exist on elevated terrace near the south side of Windsor Bridge. Less disturbed sand bodies represent high archaeological significance.
- Bioturbation and soil disturbance will affect the quality of the archaeological deposit regardless of the soil matrix.
- Some cultural stratigraphy may be present in the deposition of artefacts (e.g. silcrete upper layer, chert/mudstone lower layers).
- Archaeological deposit appears more intact above the 1:100 flood level.
- Deflationary soils (e.g. Berkshire Park) exhibiting a jumbled chronologic cultural deposit (homogenised biomantle) will also exist on the Windsor terraces, but generally represent lower archaeological significance.

5 Historic Heritage

Historic heritage within the study area has been assessed by Biosis Research (2012) 'Windsor High Level Bridge Research Design'. The Biosis research design should be read in conjunction with this document. Historic heritage is of high value within the study area. Thompson Square is listed on the NSW State Heritage Register and encompasses large portions of the south bank within the study area (Figure 5).

Aboriginal and historic archaeologists will work together to minimise cumulative heritage impacts. The Aboriginal archaeological program will necessarily be flexible and respond to new information as it arises to ensure a minimal impact on historic heritage. The overall aim is to gather sufficient information to allow a detailed assessment of the study area, but at the same time limit the physical impact. With this aim the Aboriginal subsurface excavation:

- Will be undertaken in consultation with the approved historic heritage specialist and relevant government agencies as required.
- Will undertake historic heritage induction training for all Aboriginal archaeological excavators.
- Will target areas exhibiting no surface historic heritage or specifically identified subsurface potential.
- Will excavate below historic heritage test excavations areas where appropriate.
- Will be hand excavated to a depth below potential historic heritage.
- Will utilise techniques such as micro coring to further minimise impact by limiting the total excavation area.
- Will be monitored by historic heritage specialists as required.
- Will desist if significant or potentially significant historic heritage is encountered.

6 Predictive Model

The Aboriginal archaeology question for the study area is:

Does the study area exhibit intact sand deposits on Tertiary substrate or non-gravel alluvial sand?

The geomorphology (section 2) and archaeological information (section 3) describe what to expect from a subsurface investigation and clearly show what the indicators of significant archaeology are:

- Intact biomantles, especially sand bodies, on Tertiary substrate have the potential to contain archaeological objects.
- Biomantles containing sand (Aeolian or alluvial) and low level bioturbation may also allow chronologic, stratified cultural deposition.
- Archaeological excavation of Aeolian sands within 100m of the study area has identified stratigraphic cultural deposit representing possible Pleistocene occupation.
- Significant artefact densities exist above 1:100 flood level along the Windsor—Pitt Town river terraces.
- Special care is required to ensure against harming objects of significant historic heritage.

7 Methodology

The main aim of the proposed test excavation program is to determine if:

The study area contains intact sand deposits on Tertiary substrate or non-gravel alluvial sand.

The further aim of the test program is to determine the subsurface integrity, extent and spatial extent of the deposit in order to enhance the main aim

- Determining the integrity of the deposit involves assessing the degree of disturbance which is present.
- Determining the extent of the sites involves identifying the boundaries associated with the identified archaeological deposit.
- Assessing the spatial distribution involves identifying the presence/absence of archaeological material across identified land forms (e.g. crest and slope).

Caveat: mitigative research is archaeologically limited in physical scope. Only locations impacted by the proposed bridge replacement are open to investigation. Previous archaeological assessment (section 3.2) offers some clues regarding the presence of sand bodies on the Windsor terraces as well as the integrity, extent and spatial distribution of Aboriginal archaeological deposit.

7.1 Investigation Questions

Pleistocene archaeology is scientifically significant. Such archaeology within Windsor is associated with sand bodies. The overriding question therefore is to determine:

the presence or absence of sand bodies within the study area.

Pleistocene archaeology is significant because it offers information about something less well known to science, the very distant past. The more insight we can gather about early human activity in Australia the better we can model that behavior in the material record today. For example, by understanding how peoples' activities changed (or not) through long periods of time in varying environmental conditions we are able to highlight trends in the relationship between environment and culture. The more time depth we can access the more robust and useful the insight.

The second question is to determine:

the presence or absence of Aboriginal archaeology within the study area in general, regardless of the presence of sand bodies.

Tertiary clays exhibit deflated top soils, which have the potential to contain Aboriginal objects (albeit without identifiable time depth). The investigation will assess the likely impact of the project on Aboriginal cultural heritage.

7.2 Field Methods

The goals of the investigation program are to 1) identify archaeologically significant sand bodies within the study area; 2) identify Aboriginal archaeology within the study area and 3) limit the impact to the study area, with special concern for historic heritage. A progressive series of assessment methods will be used to achieve these goals.

1. Geotechnical boreholes measuring 100mm in diameter
2. Geoarchaeological boreholes measuring 30-50mm in diameter
3. Hand excavated test squares measuring $1m^2$
4. Hand excavated test squares and geoarchaeological boreholes within the base of historic test areas.

Step 1: Geotechnical Boreholes

The Aboriginal archaeological assessment will utilise the forthcoming geotechnical borehole logs. The geotechnical boreholes will be undertaken as part of the geotechnical program and information made available to KNC. Importantly the geotechnical bore holes will show what the overall structure of the ground consists of and identify the large scale stratigraphic sequence. The geotechnical bore holes will also show why the soil/geology is structured in a specific way (i.e. as it appears today). This information will then assist us in moving forward in the assessment process to very specific, small scale, geoarchaeological bore holes.

Approximately six boreholes will be taken during the geotechnical program (figure 6), which are of relevance to the archaeological assessment (Figure 6). The planned geotechnical boreholes measure 100mm in diameter. Experience

indicates these logs will be useful in identifying the gravel matrix of the alluvial deposit (north side of bridge) and potentially deep tertiary biomantles (south side of bridge).

Step 2: Geoarchaeological Borehole Testing
Geoarchaeological bore holes will be used to add detail following the results of the large scale geotechnical program. Hand sampled geoarchaeological bore holes will colour in the gaps by showing the specific micro trends within the soil profile. Specifically, where Step 1 geotechnical bore holes have identified an increased level of archaeological potential, such as the presence of sand, the small scale geoarchaeological bore holes will seek to expand on this result by mapping the extent of the deposit. Geoarchaeological testing will assist in showing why some places within the alignment have (or do not have) archaeological potential by showing more precisely the type and extent of soil deposits. It is anticipated that the geological testing program (both step 1 and 2) will identify if sand bodies are present within the study area. Once the geoarchaeological program is complete these result will flow on to the next step in the assessment.

The borehole program will involve the use of a push tube corer with an expected diameter of between 30-50mm (micro borehole). The geoarchaeological program will be undertaken by KNC. This technique will be used to supplement the geotechnical boreholes and target select locations where archaeological deposit may occur. The selected locations will aim to gather maximum information with minimal cumulative impact on the study area. It is anticipated that approximately 10 boreholes will be taken during the archaeological investigation (Figure 6). Additional geoarchaeological boreholes, up to a maximum of 25, will be undertaken across the study area to ensure an adequate assessment of the soil profile across all landforms within the study area. The location of any additional borehole will be designed to achieve a consistent assessment of the study area. It is anticipated that a soil/stratigraphic sequence will be established by recording a series of soil profiles intercepted by the two borehole programs. This sequence will allow an interpolation of the soils across the study area. The borehole assessment should indicate the potential for sand bodies to exist in the study area.

Step 3: Test Squares
Hand excavation of select locations will be undertaken to assess detailed soil profiles and test for the presence of Aboriginal archaeological objects. Hand excavated test squares will be excavated as appropriate to assess the potential impact of the project on Aboriginal objects. If sand bodies are identified during the first two steps of the assessment, these locations will be carefully assessed. The numbers of test squares will depend on the retrieved information. The excavation program will cease once enough information is retrieved to adequately assess the study area. Each step in the assessment will build on the information derived from the earlier steps (i.e. disturbed deposit or sand present in the profile, are Aboriginal object present?). Decisions regarding the need for the continued excavation of test squares will depend on the ability to answer the research questions: are sand bodies containing Aboriginal objects found within the project area?

The preferred location of test squares is shown in Figure 6. Excavation will be undertaken stratigraphically where possible to enable the correlation between soil layers and any retrieved Aboriginal objects. It is anticipated that most squares will be single $1m^2$ however flexibility in the location of test squares and the combination of squares (1x3, 2x2, max surface area $4m^2$) will facilitate potential deep excavation, maximise information and minimise impact to the study area. All excavated deposit will be wet sieved on 2.5mm and 5.0mm nested sieves. All artefacts would be collected and bagged.

Hand excavation of test squares ensures any potential impact to historic heritage will be minimal. Excavation of test squares will be undertaken in consultation with the historic heritage specialist and monitored if required. A test square encountering significant historic heritage will be abandoned.

Step 4: Test Squares within Historic Test Areas
Hand excavated test squares may also be excavated into the base of historic heritage test areas in the event the two test programs overlap at specific locations. This will be done to limit the cumulative impact on the historically sensitive area. Historic excavation areas will be used to: further assess soil profiles following steps 1 and 2, further assess potentially deep cultural deposits, similar to the Aboriginal cultural deposit found beneath a historic layer at the Windsor Museum.

Some overlap may occur between historic heritage test areas 2 and 3 (see Appendix C showing non-Aboriginal test pit locations as described in Biosis 2012:43-44). In the event a test square within historic test areas identifies further historic objects the historic heritage specialist will be required to assess the object prior to continuing the Aboriginal archaeological test excavation. All soil profiles within the historic test excavations areas will be assessed as part of the Aboriginal archaeological assessment.

Excavation Scope
Decision regarding the assessment will stem from the progression through these series of investigative steps. The goal is to retrieve a high level of information to allow a comprehensive impact assessment of the proposed Windsor Bridge.

Up to 15 1m^2 excavation squares may be required to assess the study area. The number of test squares will depend on the retrieved information but will not exceed 15 for the overall program. All excavation will operate under the premise of diminished returns. The aim is to establish if archaeologically significant sand bodies and associated Aboriginal archaeological deposit exist within the study area. The field work will conclude once the program obtains sufficient information related to this aim.

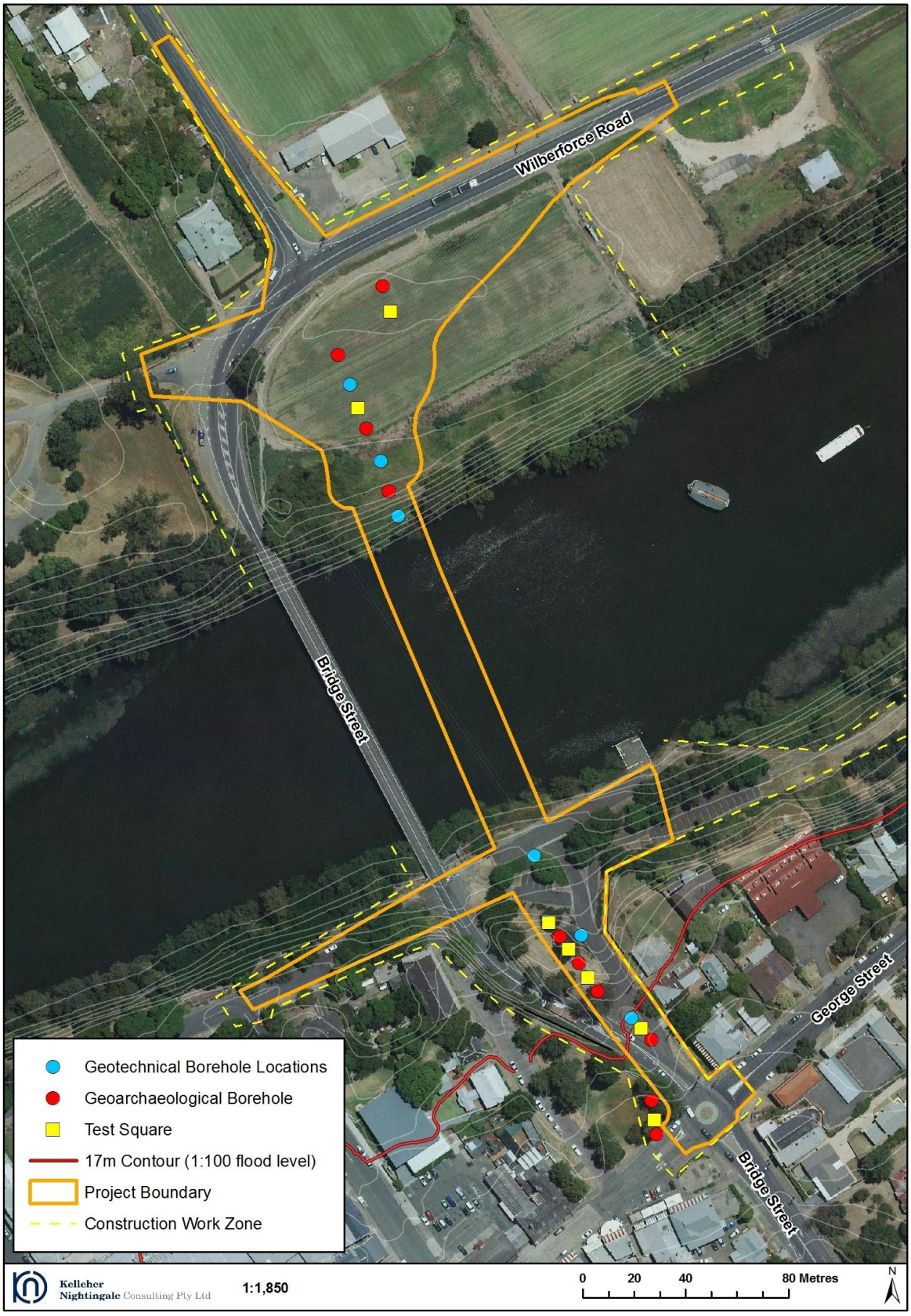

Figure 6. Location of geomorphic and archaeological boreholes and test squares

7.3 Analysis

Collected information will be assessed in accordance with archaeological best practice. Geomorphological information will be assessed by Dr Matthew Kelleher and Sam Player (geomorphologist).

A range of stone artefacts may be present within the study area and the analysis would expand accordingly to account for artefact variability. All information would be recorded in database form (MS Excel). A short description of the proposed analysis in outlined below.

- Field analysis would record basic data, such as material type, number, and any significant technological characteristics, such as backing or bipolar techniques; added to this would be any provenance data such as square ID and spit number. The purpose of the field recording is twofold: 1) establish a basic recording of artefacts retrieved and 2) to allow on-going assessment of the excavation regime (e.g. whether higher stratigraphic resolution is required while excavating).
- Detailed (laboratory) analysis would entail recording a larger number of characteristics for each individual artefact. These details would be recorded in matrices suitable for comparative analysis (e.g. multivariate and univariate) of the assemblage on a local and regional basis.
- Lithic characteristics to be recorded cover a range of basic information but are not limited to these categories (see Table 1).

Table 1. Lithic Recording Characteristics

Sample Categories		
Record Number	% Cortex	Flake Type
Pit ID	Length	Termination Type
Spit Number	Width	Core Type
Count	Thickness	Number of Scars (Core)
Raw Material	Weight	Scar Type (Core)
Colour	Modification	Shape of Flake
Quality	Reduction Type	Platform Type

- Minimum Number of Flake (MNF) calculations formulated by Hiscock (2000, 2002) will be undertaken where applicable.

The analysis of artefacts recovered during the excavation program would be undertaken in a transparent and replicable fashion so as to permit the comparison of the Windsor Bridge material with previous and subsequent investigations.

The analysis of archaeological objects will be included in the Cultural Heritage Assessment Report and can be incorporated into the environmental assessment prepared for the project.

7.4 Procedures for Handling Human Remains

This section outlines the procedure for handling human remains in accordance with the Skeletal Remains – Guidelines for the Management of Human Skeletal Remains under the *Heritage Act 1977* (NSW Heritage Office 1998) and the Office of Environment and Heritage (OEH) (former Department of Environment and Climate Change and Water) Manual for the Identification of Aboriginal Remains. In the event that investigations reveal possible human skeletal material (remains), the following procedure is to be followed:

1. as soon as remains are exposed, all work is to halt at that location immediately and the Project environmental manager is to be immediately notified to allow assessment and management;
    i. stop all activities; and
    ii. secure the site.
2. contact police, the discovery of human remains triggers a process which assumes that they are associated with a crime. The NSW Police retain carriage of the process until such time as the remains are confirmed to be Aboriginal or historic;
3. Department of Planning and Infrastructure (DP&I), as the approval authority, will be notified when human remains are found;
4. once the police process is complete and if remains are not associated with a contemporary crime contact DP&I. The DP&I will determine the process, in consultation with OEH and/or the Heritage Branch as appropriate;
    i. if the remains are identified as Aboriginal, the site is to be secured and the Aboriginal stakeholders are to be notified in writing. The DP&I will act in consultation with OEH as appropriate. OEH will be notified in writing according to DP&I instructions; or

ii. if the remains are identified as non-Aboriginal (historical) remains, the site is to be secured and the DP&I is to be contacted. The DP&I will act in consultation with the Heritage Branch as appropriate. The Heritage Branch will be notified in writing according to DP&I instructions;

5. once the police process is complete and if the remains are identified as not being human work can recommence once the appropriate clearances have been given.

8 Field Team

KNC directors, Dr Matthew Kelleher and Alison Nightingale, would be responsible for the test excavation program. Dr Matthew Kelleher would direct the excavation component of the Aboriginal archaeological assessment. Matthew has extensive experience in managing large scale archaeological excavations and research projects. Alison will primarily undertake Aboriginal community consultation and integration of results.

The proposed field team personnel, roles and tasks are listed in the table below.

Table 2. Project Personnel

Personnel	Role	Tasks
Dr Matthew Kelleher	Director / Archaeologist	Project and Excavation director, liaison with RMS, coordinate team, lithic analysis, assessment and reporting
Alison Nightingale	Director / Archaeologist	Project manager, coordinate team, liaison with community, assessment and reporting
Sam Player	Geomorphologist	Excavation specialist
Mark Rawson	Senior Archaeologist	Excavation supervisor, lithic analysis and reporting
Josh Symons	Archaeologist/GIS	Mapping
Archaeologists (2)	Field Archaeologists	Excavation program

9 Collected Aboriginal Objects

The long term management of collected Aboriginal objects is as follows:

1. Department of Planning and Infrastructure (DP&I), as the approval authority, will be consulted;
2. Aboriginal objects will be transferred to the Australian Museum in accordance with legislative requirements, *Australian Museum Archaeological Collection Deposition Policy v1.0 January 2012. The Australian Museum should accept Aboriginal objects from the Windsor Bridge program because:*
    a. the area is archaeologically important based on the finding of the Windsor Museum excavations (Austral 2011) which identified possible Pleistocene archaeology;
    b. a comprehensive geomorphologic assessment of the terraces along the Hawkesbury River is valuable to our understanding of Sydney's geologic and cultural past;
    c. intact (potential) sand deposits with associated Aboriginal archaeology are rare in the inland regions of the Cumberland Plain;
    d. archaeological impacts of major infrastructure are important to document.
3. In the event the Australian Museum is unable to accept the objects, the objects will be transferred in accordance with a Care Agreement or similar agreement to an Aboriginal community;
4. In the event that neither the Australian Museum nor the Aboriginal community are able to accept the archaeological objects, KNC will seek a Care Agreement or similar agreement to curate the objects;
5. The objects will be reburied in accordance with OEH policy.

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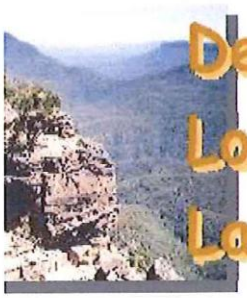
Appendix A Aboriginal Stakeholder Comments



Deerubbin Local Aboriginal Land Council

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PENRITH NSW 2750

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Penrith BC
NSW 2751 AUSTRALIA

T: (02) 4724 5600
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Matthew Kelleher
Kelleher Nightingale Consulting Pty Ltd
Suite 911-912, 155 King Street
SYDNEY NSW. 2000

7 March 2012

SUBJECT: PROTECTION OF ABORIGINAL CULTURAL HERITAGE
Windsor Bridge Replacement Project
Windsor NSW

Dear Mr Kelleher,

I refer to your methodology for excavation of the Windsor Bridge Replacement Project

On the basis of the information provide, in your methodology, Deerubbin Local Aboriginal Land Council (Deerubbin LALC) has no objection for the scope of works to be undertaken

Deerubbin LALC requires that the custodianship of any Aboriginal cultural heritage material unearthed from this site, is to be held by the Australian Museum

Should you wish to discuss this matter, please do not hesitate to contact the Steve Randall on (02) 4724 5600 or 0417219174

Yours Sincerely

(Kevin Cavanagh
Chief Executive Officer)

c.c. Barry Gunther – Roads & Marine Services

DARUG CUSTODIAN ABORIGINAL

CORPORATION

PO BOX 81 WINDSOR 2756

PH: 45775181 FAX: 45775098 MOB: 0415770163

ABN: 81935722930

mulgokiwi@bigpond.com

16th February 2012.

Attention: Matthew Kelleher.

SUBJECT: Aboriginal Heritage Assessment: Windsor Bridge Replacement Project – Methodology for Test Excavation.

Dear Matthew,

The Darug Custodian Aboriginal Corporation have received and reviewed the methodology for the test excavations at Windsor for the Windsor Bridge replacement project.

Windsor is an area that has a very strong Darug history, oral histories are also known for this area, we would like to include some of the oral histories that are known in this project.

On Church Street in very close vicinity if not within the Bridge works, there is a known ceremonial meeting place, this is documented. There is also our dark history of the two young boys that were murdered in this area by colonists. At this early stage of the project our group would ask that the stories of this area be included in this, and also that within the construction and naming of the Bridge Darug history be a preference due to the high significance of this area. Our history in this area is not too hard to research as we had the native news in the local paper from colonisation that gives an insite into our people and there hardships in this area.

This is an area that the Darug people have used and revisited for thousands of years, we look forward to working with you on this project.

Please contact us with all further enquiries on the above contacts.

Regards

Leanne Watson

1111 Windsor Bridge

Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton

Mob: 0422 865 831
Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

7. 3. 12

Attention
Alison Wightingale
&
Matthew Kelleher
re Windsor Bridge Replacement Project
DACHA have reviewed your methodology for the Windsor Bridge Project and we support your aims and objectives. We look forward to working with you on this interesting area.

Yours Sincerely
C. Everingham

Cultural Heritage – Building respect for the past and Conservation for the future

Appendix B AHIMS Search Results

Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Windsor Museum

Client Service ID :57252

Note: This Excel report shows the sites found in AHIMS on the 29/11/2011. If this date is not the same as the original date of the Search Results letter obtained during the Basic Search, then the search results might be different. The PDF version of this report will always coincide with the Basic Search Results letter.

SiteID	SiteName	Contact	Datum	Zone	Easting	Northing	Context	SiteStatus	SiteFeatures	SiteTypes	Permits	Reports	Recorders
45-5-2435	BEW 97		AGD	56	297900	6279250	Open	Valid	Artefact : -	Open	919		Stephanie
45-5-2865	Former Hawkesbury Hospital		AGD	56	297550	6279010	Open	Valid	Artefact : -		1713,176	98746,9	Dominic
45-5-2936	Pad 4 (Hawkesbury District Hospital		AGD	56	297600	6278750	Open	Valid	Potential		1931,205		Doctor.Jod
45-5-2938	Pad 6		AGD	56	298050	6278600	Open	Valid	Potential		1931,205		Doctor.Jod
45-5-3011	Windsor Museum		AGD	56	297960	6279540	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : -		2119		Mr.Peter Mitchell
45-5-3118	Windsor Cemetery Artefact Scatter		AGD	56	297110	6278470	Open	Valid	Potential		2367,251	99714	Susan
45-5-3303	PAD MHCS		AGD	56	298500	6278500	Open	Valid	Potential		2656		Therin
45-5-3548	WPS PAD		AGD	56	297417	6278671	Open	Valid	Potential		3010,305		Archaeolo
45-5-3580	North Bank PAD-W-NP (Windsor)		GDA	56	297957	6279840	Open	Valid	Potential				Heritage
45-5-3581	South Bank PAD-W-SP (Windsor)		GDA	56	297957	6279485	Open	Valid	Potential				Heritage
45-5-3582	Windsor 1-Isolated Find		GDA	56	297970	6279858	Open	Valid	Artefact : -				Heritage
45-5-3583	Windsor 2-Isolated Find		GDA	56	297976	6279843	Open	Valid	Artefact : -				Heritage
45-5-3584	Windsor 3-Isolated Find		GDA	56	297991	6279861	Open	Valid	Artefact : -				Heritage
45-5-3585	Windsor 4-Isolated Find		GDA	56	297957	6279840	Open	Valid	Artefact : -				Heritage

Report generated by AHIMS Web Service on 29/11/2011 for Kylie Mcdonald for the following area at Datum :GDA, Zone : 56, Eastings : 297000 - 299000, Northings : 6278500 - 6280500 with a Buffer of 0 meters.Additional Info : Due Diligence. Number of Aboriginal sites and Aboriginal objects found is 14

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

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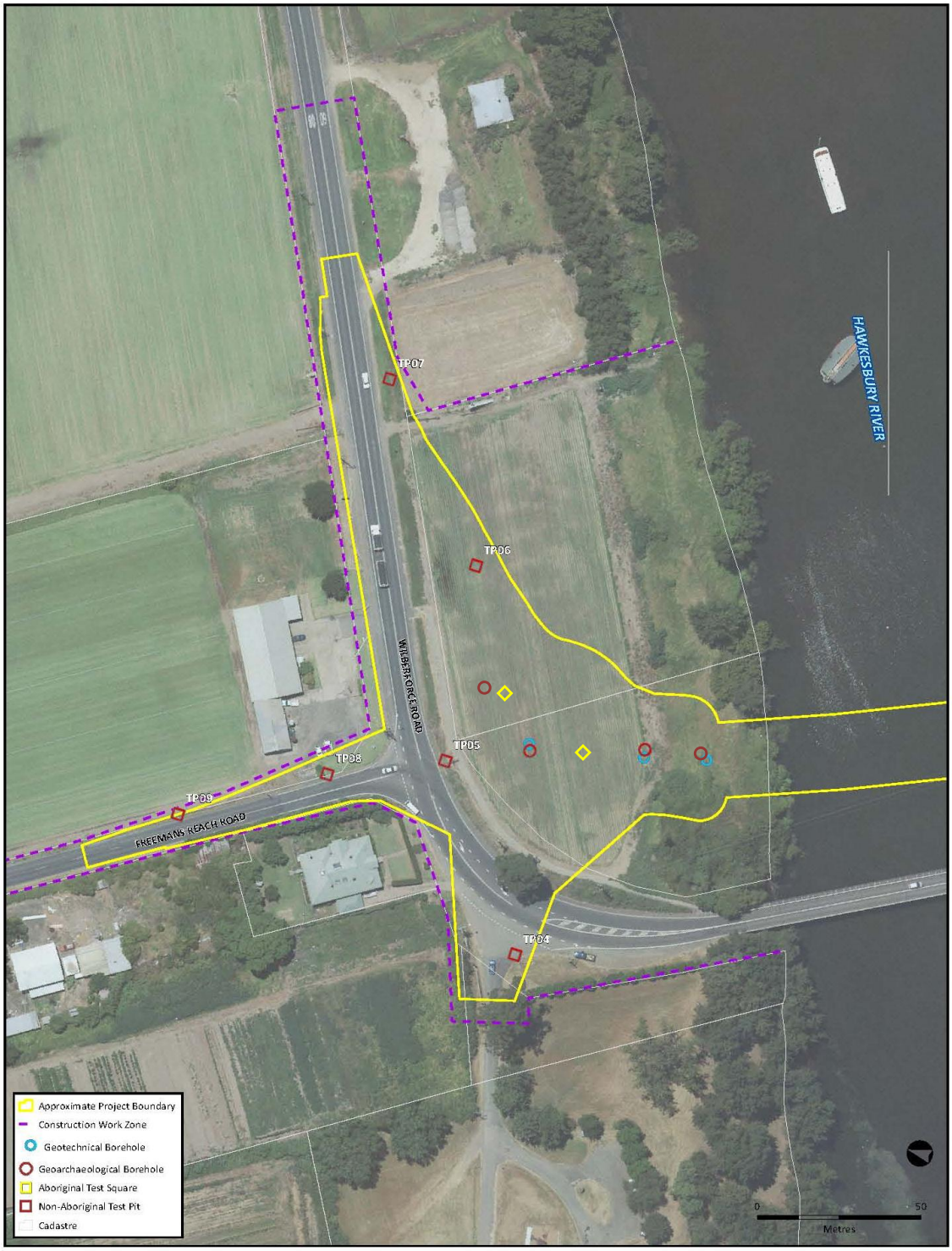
Appendix C Combined Mapping of Aboriginal and Historic Test Excavations

Figure 6 | Locality map and proposed geotechnical and heritage sites



Windsor Bridge Replacement - Geotechnical and Heritage Investigation Sites

INDICATIVE FIGURE ONLY

5/03/2012 | I:\NBIF\Projects\NB11459\Technical\GIS\GIS_Directory\ArcMap\Geotech_REP\NB11459_002_RMS_Geotech_Locations.mxd
Sydney Spatial Team - Prepared by : DO
Checked by : JC

Figure 7 | Locality map and proposed geotechnical and heritage sites

Windsor Bridge Replacement - Geotechnical and Heritage Investigation Sites

INDICATIVE FIGURE ONLY

5/03/2012 | I:\NBIF\Projects\NB11459\Technical\GIS\SIS_Directory\ArcMap\Geotech_REF\NB11459_002_RMS_Geotech_Locations.mxd
Sydney Spatial Team - Prepared by : DD
Checked by : JC

Appendix D Minutes of Aboriginal Focus Group Meeting

Aboriginal Focus Group Meeting
29th February 2012

Windsor Bridge replacement proposal

Attendees:

Barry Gunther – RMS
Matthew Kelleher – Kelleher Nightingale Consultancy
Gordon Workman – Darug Land Observations
Paul Goddard - Darug Land Observations
Gordon Morton – Darug Aboriginal Cultural Heritage Assessments
Celestine Everingham - Darug Aboriginal Cultural Heritage Assessments
Justine Coplin – Darug Custodian Aboriginal Corporation
John Reilly – Darug Tribal Aboriginal Corporation
Des Dyer – Darug Aboriginal Land Care
Braith Gilchrist – RMS
Roy Surace – RMS
Nathan Chehoud - RMS

Apologies:

Participant	Meeting Minutes
	Meeting opened
Gordon M	Performs the welcome to country
All	Introductions by all.
Barry	Outline of agenda and meeting objectives
Nathan	Nathan gave an overview of the project proposal and past history of the Options for the bridge replacement. Gave rational of selected bridge option and the need to identify any Heritage constraints. Removal of current road through Thompson Square and Thompson Square to be re vegetated and landscaped. Old bridge to be removed. Cycle path / shared pathway are part of bridge construction design. Open for questions.
Celestine	Query as to how many trees are to be removed?
Nathan	Response to Celestine's question- Not sure how many but will try to retain what can be retained.
Nathan	Nathan explained that the new proposal will be safer than current road alignment. Requested opinions on all issues from AFG stakeholders regarding proposal, not just Aboriginal archaeology. Any other questions? None raised.
Matthew	Outlined the process so far. Spoke about the expected Sand Body under the Regional Museum and its presumed size / extent. Explained

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Participant	Meeting Minutes
	design of road and bridge. Outlined 100 year flood and its impacts on archaeology of area. Explained existing Archaeology of area – a bit around Windsor area. Mathew explained the previous Stage 2 survey report and its findings in relation to Aboriginal heritage PAD and artefact finds. Thompson Square is historically listed and consultation with Heritage Branch is required. Relayed the need to identify where the extent of the Sand Body is in relation to the proposal to minimise impact. Explained and showed diagrams of proposed Archaeological geotechnical investigations scope and locations and reason why. Kelleher Nightingale Consultancy will do own micro Archaeological Geotechnical investigations and RMS will do some. Archaeology will be at some depth. Any questions?
Nathan	Nathan inquired about what type of archaeology is expected to be found?
Matthew	Mathew replied that it would most likely be stone tools such as artefacts – silcrete, mudstone, quartz etc or possible axe heads. Likelihood of skeletal remains is considered low.
Barry	Queries whether anyone has any questions.
Celestine	Asks is there to be wet sieving?
Matthew	Could be – depending on what is there.
Barry	Asks Mathew to explain PADs and can we impact with Geotechnical investigations as they have not been investigated under the Code of Practise.
Matthew	Explained to AFG that the project is under 5.1 (old Part 3A) and do not need to apply for an AHIP but in his experience there is often more rigour applied to the assessments under this part. These investigations are needed to identify where the sand Body is in relation to the proposal and is somewhat different to other PAD methodology and investigation methods. Noted that some additional locations may also be added within Thompson square but the methodology distributed for comment will remain unchanged, only possible scope change.
Barry	Advises AFG stakeholders that the RMS is seeking comments on the Stage 2 report, Archaeological Geotechnical investigations/methodology, cultural heritage issues but not an AHIP application
Gordon Morton	GM spoke about the previous Archaeological site at the Regional Museum that was found – 12,000 artefacts recovered from site.
Barry	Asks AFG if there are any further questions. No further questions put forward.
Barry	Does the Bridge have a name?
Roy Surace	The existing Bridge is historically known as Windsor bridge. Not aware if the bridge has a name. Bridge just known as Windsor Bridge
Barry	Explained that in the RMS Aboriginal Action plan that there is a possibility to have new Bridge named with an Aboriginal flavour.

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Participant	Meeting Minutes
	Stakeholders informed to consider an Aboriginal name for the new bridge and put forward suggestions for consideration by RMS.
Mathew	Gave Stakeholders a copy of Stage 2 Survey Report and proposed investigation methodologies.
Barry	Informed stakeholders that the 28/3/2012 is the closing date for comments on the Stage 2 report, methodologies for archaeological investigations and other issues regarding the new bridge proposal, cultural knowledge and Aboriginal heritage matters.
Barry	Asked stakeholders if they would like a site visit. All are very familiar with the area.
	Meeting officially closed

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