

**AUSTRAL ARCHAEOLOGY PTY LTD**

ABN: 55 629 860 975

Info@australarch.com.au

www.australarchaeology.com.au



**A U S T R A L**  
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# 11-13 PERCY STREET, AUBURN, NEW SOUTH WALES

## ABORIGINAL ARCHAEOLOGICAL REPORT

**FINAL REPORT**

Woolworths Limited

7 October 2020

## DOCUMENT INFORMATION

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# EXECUTIVE SUMMARY

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This Aboriginal Archaeological Report (AAR) has been prepared by Austral Archaeology Pty Ltd (Austral) according to the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (CoP) (Department of Environment, Climate Change and Water 2010a). As well as being an appendix to the main Aboriginal Cultural Heritage Assessment (ACHA) report, this document is additionally required to be 'a stand-alone technical report' (Department of Environment, Climate Change and Water 2010b). Therefore, this AAR by necessity includes a duplication of information contained in the main Aboriginal Cultural Heritage Assessment (ACHA) report.

This report details the investigation in advance of a proposed development at 11-13 Percy Street (lots 1 and 2, DP1183821), Auburn, New South Wales (NSW) (the Study Area).

The location of the study area is shown in Figure 1.1, Figure 1.2, Figure 1.3 and Figure 1.4, and is situated within the Cumberland City Council Local Government Area (LGA). The boundaries of the property also fall within the area overseen by the Metropolitan Local Aboriginal Land Council (MLALC). The study area is located approximately 17 kilometres west of Sydney CBD. The study area is bounded by Percy Street to the west, an industrial estate (SP 73204) to the north, Haslams Creek to the east and office buildings (SP 75541) to the south.

The proposed development within the study area will include the demolition of the two existing factory buildings and the construction of a warehouse and distribution centre. As such, the proposed impacts are likely to consist of large scale bulk earthworks throughout much of the study area due to the construction of new buildings, foundations, demolition works and subsurface excavations for delivery of services.

Austral previously prepared Aboriginal Cultural Heritage Due Diligence Advice for the study area for the proposed development, which did not identify any areas of potential for containing Aboriginal archaeological material (Austral Archaeology 2020a). Woolworths Limited (the proponent) was issued the Planning Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Assessment (EIS) for the proposed development. As outlined in Condition 5 of the SEARs, it is understood that the proponent requires an ACHA to be undertaken in accordance with the relevant Environment, Energy and Science (EES) guidelines to support the EIS that is being prepared as part of the State Significant Development (SSD) application process for the proposed development.

The results of the Aboriginal archaeological survey presented in this report examines the likely nature and extent of the archaeological resource and informs the potential impacts to Aboriginal cultural heritage within the proposed area of development.

## SUMMARY OF RESULTS

No Aboriginal objects or sites were identified during the archaeological survey undertaken as part of this assessment. This is due to the entirety of the site being developed with the construction of warehouse and factory buildings utilised for industrial purposes.

The study area has been built up slightly from the current road level for the construction of the existing warehouse buildings that make up the vast majority of the study area. It was assessed during the archaeological survey that the road level most likely represents the original ground level in the eastern half of the site, as the surrounding development within the study area has been raised slightly above the road level.

The western half of the study area demonstrated extreme levels of historical disturbance as a result of the construction of the warehouse buildings within this portion of the site. It was determined that the subsurface impact caused by the construction of these buildings coupled with impacts from the realignment of Haslams Creek would have removed any traces of the original soil profile, which is verified in the Geotechnical Investigation Report of the study area (Geo-Logix 2019).



The eastern half of the study area also demonstrated high levels of historical disturbance caused by the construction of warehouse buildings and carpark areas. Similarly, this would require deep level ground impacts for the construction of the building in this portion of the site. It was also assessed during the archaeological assessment and confirmed during the archaeological survey that much of the eastern and central portion of the study area has been significantly disturbed during the modification and realignment of Haslam's Creek between the 1930s and mid-1970s.

Overall, it was assessed that the study area contained very limited potential for containing subsurface Aboriginal cultural material as a result of the very high levels of historical disturbances present within the study area.

## RECOMMENDATIONS

The following recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, the findings of the archaeological survey and the predicted impact of the proposed development on archaeological resources. It is recommended that:

- 1) No further Aboriginal archaeological works are required to be undertaken.
- 2) All contractors undertaking earthworks on site should be briefed on the protection of Aboriginal heritage objects under the *National Parks and Wildlife Act 1974* and the penalties for damage to these items.
- 3) A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project and to the AHIMS Registrar

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# 1 INTRODUCTION

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## 1.1 INTRODUCTION

This Aboriginal Archaeological Report (AAR) has been prepared by Austral Archaeology Pty Ltd (Austral) according to the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (CoP) (Department of Environment, Climate Change and Water 2010a). As well as being an appendix to the main Aboriginal Cultural Heritage Assessment (ACHA) report, this document is additionally required to be 'a stand-alone technical report' (Department of Environment, Climate Change and Water 2010b). Therefore, this AAR by necessity includes a duplication of information contained in the main Aboriginal Cultural Heritage Assessment (ACHA) report.

Austral Archaeology Pty Ltd (Austral) has been commissioned by Woolworths Limited (the proponent) to prepare an Aboriginal Archaeological Report (AAR) in advance of the proposed development for the construction of a warehouse and distribution centre at 11-13 Percy Street (lots 1 and 2, DP1183821), Auburn, New South Wales (NSW) (the Study Area).

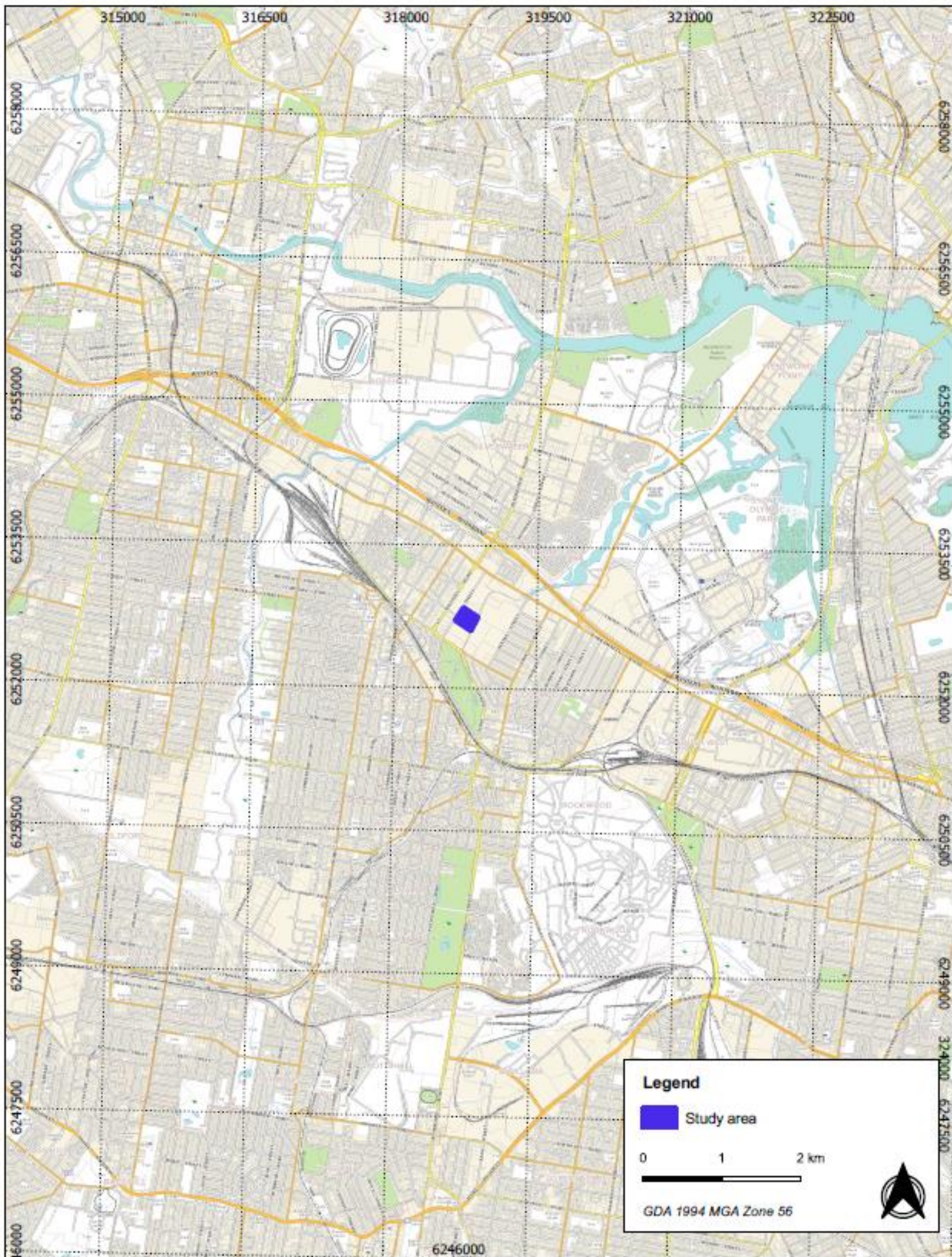
The location of the study area is shown in Figure 1.1, Figure 1.2, Figure 1.3 and Figure 1.4 and is situated within the Cumberland City Council Local Government Area (LGA). The boundaries of the property also fall within the area overseen by the Metropolitan Local Aboriginal Land Council (MLALC). The study area is located approximately 17 kilometres west of Sydney CBD. The study area is bounded by Percy Street to the west, an industrial estate (SP 73204) to the north, Haslams Creek to the east and office buildings (SP 75541) to the south.

Woolworths Limited proposes to demolish the existing buildings present within the study area and construct a warehouse and distribution centre for online sales. The proposed impacts, as a result of this development, are therefore likely to consist of large scale bulk earthworks throughout much of the study area due to the construction of new buildings, foundations, demolition works and subsurface excavations for delivery of services.

In June 2020, Austral prepared Aboriginal Cultural Heritage Due Diligence Advice for the study area which did not identify any areas of potential for containing Aboriginal archaeological material (Austral Archaeology 2020a). Woolworths Limited (the proponent) was issued the Planning Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Assessment (EIS) for the proposed development. As outlined in Condition 5 of the SEARs, it is understood that the proponent requires an ACHA to be undertaken in accordance with the relevant Environment, Energy and Science (EES) guidelines to support the EIS that is being prepared as part of the State Significant Development (SSD) application process for the proposed development.

The purpose of this assessment is to document the results of the Aboriginal archaeological survey across the study area, to re-examine the archaeological significance of the study area, and act as support for the EIS as part of the SSD application.



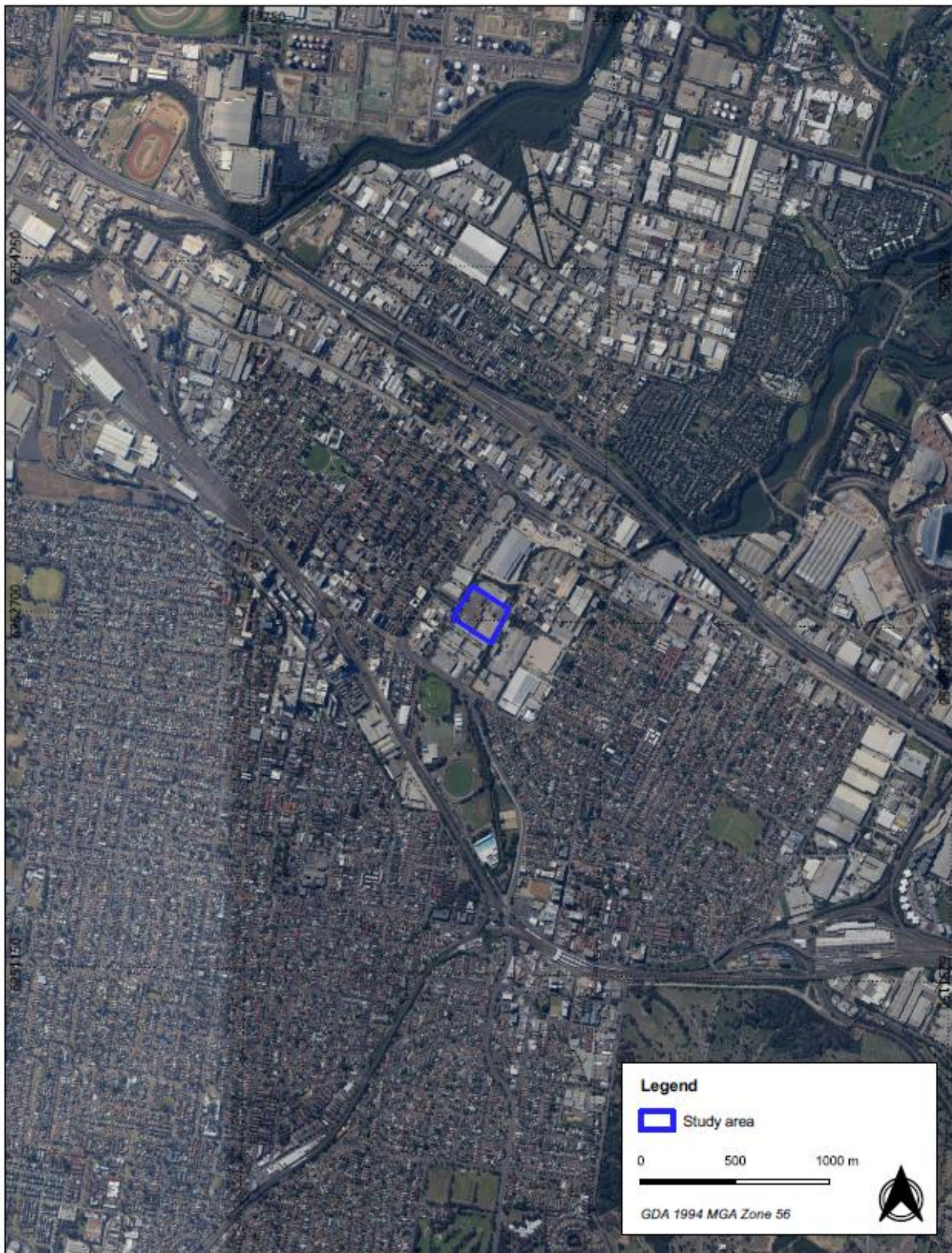


**Figure 1.1 Location of the Study Area**

11-13 Percy Street, Auburn ACHA







**Figure 1.2 Aerial Imagery of the Study Area**  
 11-13 Percy Street, Auburn ACHA

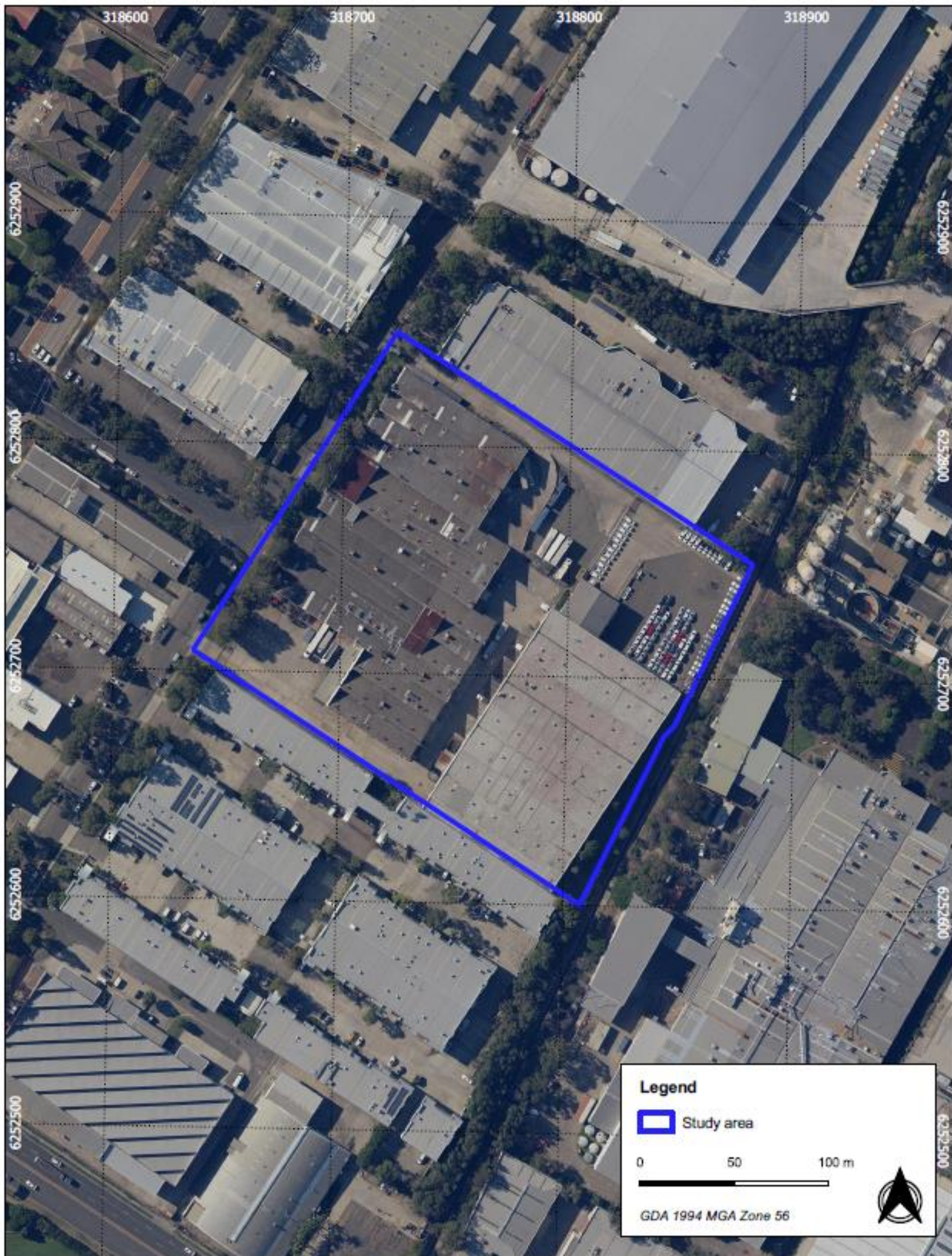
Source: Nearmap

Drawn by: MR Date: 10/06/2020



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**Figure 1.3 Detailed Aerial Imagery of the Study Area**

11-13 Percy Street, Auburn ACHA

Source: Nearmap

Drawn by: MR Date: 10/06/2020



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**Figure 1.4 Cadastral Boundaries Associated with the Study Area**

11-13 Percy Street, Auburn ACHA





## 1.2 PROJECT DESCRIPTION

The proposed development within the study area will include the demolition of the two existing factory buildings and the construction of a single-storey warehouse and distribution centre for online sales. The proposed warehouse will occupy the majority of the study area with an area allocated for receiving docks/ delivery truck docks located to the east of the proposed building and van/ staff parking to the south and west. As such, the proposed impacts are likely to consist of large scale bulk earthworks throughout much of the study area due to the construction of new buildings, foundations, demolition works and subsurface excavations for delivery of services.

It is understood that the construction works will involve:

- Demolition of existing buildings within the study area
- Large scale groundworks including extensive earthworks and levelling for the construction of the new warehouse and distribution centre
- Installation of associated services, including sewer drainage, water supply and electrical cables

Proposed site plans showing the areas of impact as part of the development is shown in Figure 7.1 and Figure 7.2.

## 1.3 PREDICTED IMPACT ON THE POTENTIAL ARCHAEOLOGICAL RESOURCE

In accordance with the key aims of the Code of Practice, the Aboriginal archaeological potential of the study area has been determined. The survey has confirmed that the entirety of the study area has been subject to high levels of disturbance caused by the industrial use of the study area and the construction of factories and warehouses from the 1960s onwards. In addition, it was assessed that high levels of disturbance was caused by the modification and realignment of Haslams Creek during the mid-20<sup>th</sup> century.

No Aboriginal objects or sites were identified during the archaeological survey, and it was determined that the study area contains low potential for the presence of subsurface Aboriginal cultural material due to the high levels of ground disturbance caused by previous developments.

It is therefore considered that further investigation would not yield material traces that would provide new information on the Aboriginal occupation of the study area. Therefore, further archaeological investigation of the study area is not warranted.

## 1.4 ASSESSMENT OBJECTIVES

The scope of this AAR is based on the legal requirements, guidelines and policies of Heritage NSW of the Department of Premier and Cabinet. The guiding documents for this assessment are the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011) [the Guide to Reporting] and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a) [the Code of Practice].

The scope of works includes the following:

- Undertake a literary review of available data, including previous studies/investigations from around the study area,
- Undertake necessary consultation with relevant Government agencies and key local Aboriginal stakeholders;
- Provide adequate documentation to support the EIS.



## 1.5 FEDERAL AND STATE LEGISLATION

Aboriginal archaeological and cultural heritage assessments in New South Wales (NSW) are carried out under the auspices of a range of State and Federal acts, regulations and guidelines. The acts and regulations allow for the management and protection of Aboriginal places and objects, and the guidelines set out best practice for community consultation in accordance with the requirements of the acts.

Table 1.1 to Table 1.4 detail the Australian acts and guidelines which have been identified as being applicable or with the potential to be triggered with regards to the proposed development.

**Table 1.1 Federal Acts**

Federal Acts:	Applicability and implications
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	<p>This Act has not been triggered, and so does not apply.</p> <ul style="list-style-type: none"> <li>No sites listed on the National Heritage List (NHL) are present or in close proximity to the study area.</li> <li>No sites listed on the Commonwealth Heritage List (CHL) are present or in close proximity to the study area.</li> </ul>
<i>Aboriginal and Torres Strait Islander Heritage Protection Amendment Act 1987</i>	<p>Applies.</p> <ul style="list-style-type: none"> <li>This Act provides blanket protection for Aboriginal heritage in circumstances where such protection is not available at the state level. This Act may also override state and territory provisions.</li> </ul>

**Table 1.2 State Acts**

State Acts:	Applicability and implications
<i>Environmental Planning and Assessment Act 1979 (EP&amp;A Act)</i>	<p>Applies.</p> <ul style="list-style-type: none"> <li>This project is being assessed under Part 5 of the EP&amp;A Act.</li> </ul>
<i>National Parks and Wildlife Act 1974 (NP&amp;W Act 1974)</i>	<ul style="list-style-type: none"> <li>Provisions under Section 90 of the NP&amp;W Act do not apply for this project.</li> </ul>

**Table 1.3 State and Local Planning Instruments**

Planning Instruments	Applicability and implications
Local Environmental Plans (LEP)	<p>The following LEP is applicable:</p> <ul style="list-style-type: none"> <li><i>Auburn Local Environmental Plan 2010</i></li> </ul>
Development Control Plans (DCP)	<p>The following DCP is applicable:</p> <ul style="list-style-type: none"> <li><i>Auburn Development Control Plan 2010</i></li> </ul>

**Table 1.4**      **Aboriginal Community Consultation Guidelines**

Guidelines	Applicability and implications
<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010</i> (Consultation Requirements)	The project's SEARs requires consultation to be undertaken in accordance with the consultation requirements.

## 1.6 SECTION SUMMARY

Aboriginal Places and Objects, both known and unknown, are protected in NSW by State and Federal legislation. As stated above, the present assessment is being conducted under the Heritage NSW's *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (Department of Environment, Climate Change and Water 2010b) [the Consultation Requirements] and the Guide to Reporting, in respect to the identification of Aboriginal stakeholders. As the proposed work is a State significant project, the procedures under Part 5 of the EP&A Act apply.

Searches of the Australian Heritage Places Inventory (AHPI), the Register of the National Estate (RNE), the National Heritage List and Heritage NSW's State Heritage Inventory (SHI) websites identified no recorded sites within the study area.

At the State level, the works are to be assessed under the EP&A Act. The *Auburn Local Environmental Plan 2010*, produced in accordance with the EP&A Act, makes provision for the protection of Aboriginal heritage, archaeological sites and potential archaeological sites. Still, no places or objects within the study area are recorded in the LEP.

## 1.7 PROJECT TEAM AND QUALIFICATIONS

This AAR and all associated GIS mapping was prepared by Miles Robson (Senior Archaeologist, Austral) with project management provided by Alexander Beben (Director, Austral). The Aboriginal archaeological survey was undertaken by David Marcus (Director, Austral). This report was reviewed by David Marcus for quality assurance purposes.

### ALEXANDER BEBEN (B.A. (HONS.) ARCHAEOLOGY)

Alexander is a Director of Austral and brings a wealth of experience to our projects. Alex has over 15 years' experience and has been the technical lead for over 500 heritage projects across Australia. Through this experience Alexander has developed a collaborative approach to projects which enables him to work closely with Austral's clients to ensure that they understand their heritage requirements and formulate innovative solutions to their specific needs.

Alexander is an eminent archaeologist in the Greater Sydney region with an unrivalled level of experience having completed over 200 projects locally. Alexander maintains excellent relationships with local Aboriginal stakeholders and is recognised as an eminent archaeologist in the area. Alexander is familiar with the heritage values of the area through acting as technical lead or primary author for multiple projects in the Shoalhaven district.

Alexander has been the nominated excavation director on projects of local and State significance.

### DAVID MARCUS (B.A. (HONS.) ARCHAEOLOGY, MA. ARCHAEOLOGY)

David has significant experience in both Aboriginal and historical cultural heritage projects. David started his career in archaeology in 2000 and has worked in all roles from field assistant through to project manager. He commenced work for Austral Archaeology in 2010 and has been responsible for all aspects of the day-to-day running of Austral Archaeology. David also has high-level skills in both physical and digital mapping and integration of digital data into GIS. David has completed various Aboriginal archaeological projects and is familiar with the archaeology of the Cumberland Lowlands.

## MILES ROBSON (B.A (HONS) ARCHAEOLOGY)

Miles is a Senior Archaeologist who has worked with Austral on various projects since 2013, before being taken on as a full time employee. He specialises in undertaking fieldwork and has a wide range of experience and skills in both Aboriginal and historical archaeology, working on projects in New South Wales, Tasmania and South Australia. Miles is also skilled in GIS mapping, report preparation and undertaking historical research.

## 1.8 ACKNOWLEDGEMENTS

Austral Archaeology would like to acknowledge the participation of the following people who contributed to the preparation of the report:

- Michael Rumble                      Woolworths Limited

## 1.9 ABBREVIATIONS

The following are common abbreviations that are used within this report:

AAR	Aboriginal Archaeological Report
ACHA	Aboriginal Cultural Heritage Assessment
ACHDDA	Aboriginal Cultural Heritage Due Diligence Advice
AHIMS	Aboriginal Heritage Information Management System
AHPI	Australian Heritage Places Inventory
Auburn DCP	Auburn Development Control Plan 2010
Auburn LEP	Auburn Local Environmental Plan 2010
BOM	Bureau of Meteorology
Burra Charter	Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance 2013
CBD	Central Business District
CHL	Commonwealth Heritage List
The Code of Practice	Code of Practice
DA	Development Application
DCP	Development Control Plan
DEC	Department of Environment and Conservation
DPC	Department of Premier and Cabinet
EPA Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environmental Protection and Biodiversity Act 1999
EPI	Environmental Planning Instrument
GSV	Ground Surface Visibility
Heritage Act	<i>Heritage Act 1977</i>
ICOMOS	International Council on Monuments and Sites
IHO	Interim Heritage Order
MLALC	Metropolitan Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NHL	National Heritage List
NPW Act	National Parks and Wildlife Act 1974
NPSW	National Parks and Wildlife Service

NSW	New South Wales
PAD	Potential Archaeological Deposit
The Proponent	Woolworths Limited
RNE	Register of the National Estate
SHI	New South Wales Heritage Office State Heritage Inventory
SHR	New South Wales Heritage Office State Heritage Register
Study Area	11-13 Percy Street, Auburn, NSW

Refer also to the document Heritage Terms and Abbreviations, published by the Heritage Office and available on the website: <http://www.environment.nsw.gov.au/heritage/index.htm>.

**Aboriginal Stakeholder Abbreviations:**

BAC	Butucarbin Aboriginal Corporation
DNC	Didge Ngunawal Clan
GLALC	Gandangara Local Aboriginal Land Council
KYWG	Kamilaroi Yankuntjatjara Working Group
MLALC	Metropolitan Local Aboriginal Land Council

## 2 ARCHAEOLOGICAL CONTEXT

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### 2.1 REGIONAL ABORIGINAL ARCHAEOLOGICAL CONTEXT

Archaeological investigations of the Cumberland Lowlands and in particular the area surrounding Parramatta, including Auburn, have been conducted in direct response to the spread of urban development. The limited ethnographic accounts of early settlers and explorers were once considered the primary source for archaeological enquiry. However, with the recent spread of urban development within the Western Sydney environs, archaeological investigations have undergone a corresponding increase.

The major studies which have contributed to our understanding of the Greater Sydney region, and those with direct relevance to the study area through their proximity, are outlined below. Reference is made to the main trends garnered from these investigations which serve to provide a broad framework in which to base the current study.

Aboriginal occupation of the Sydney region extends back well into the Pleistocene, or 10,000 years ago. Currently, the oldest date for an archaeological site in the Sydney region is a date of approximately 40,000 years from the Cranebrook Terrace on the Nepean River (V Attenbrow 2010). However most samples dated by geochronology are much more recent being less than 15,000 years old and concentrated in the last 2,500 years (DECCW 2011, p.1). The vast majority of archaeological sites within the Cumberland Lowlands, including Parramatta and the surrounding districts, comprise of dates between 1,000 and 5,000 years (Kelleher Nightingale Consulting Pty Ltd 2017, p.67). The nature of this human occupation has changed through time according to the environmental conditions and the type of society that existed.

#### POPULATION AND CONTACT HISTORY

The Wangal clan, also known as Wann-gal, were the original inhabitants of the Auburn area. The boundaries of the Wangal Country originally extended from the suburbs of Birchgrove and Balmain in the east to Silverwater and Auburn in the west, with a northern boundary at the Parramatta River. The Cadigal were the Wangal clan's neighbours to the east, while the Wategora were located to the west, the Wallumedegal to the north and the Bidiagal to the south. All of these clans are of the Darug tribe and spoke the coastal or Eora dialect of the Darug language (Urbis 2016a, p.13).

The origins of occupation in the Auburn area are unknown; however there is archaeological evidence present which indicates that the Aboriginal population lived in the Sydney area for at least 10,000 years. Following the end of the last Ice Age, rising seas submerged large areas of on the coastal regions of Sydney, creating the harbour and river environment first seen by Europeans in 1788 (Urbis 2016a, p.13).

It is difficult to determine the pre-contact population, language groups and territory of the Wangal Clan due to disease, dislocation and violence which led to the demise of traditional lifestyles and the scarcity and unreliability of the early historical observations. The impact of diseases and massive social dislocation caused the Aboriginal population to decline rapidly after contact (Urbis 2016a, p.13).

The Wangal clan were highly dependent on the Parramatta River, particularly in the summer months where they would catch and eat the fish and shellfish that inhabited the area. In the winter months the local population would move further inland to stay warm while gathering and hunting the local flora and fauna to survive (Souter 2012, p.11).

Early estimates of the number of Aboriginal people in the Sydney region suggest that around 3,000 individuals inhabited the areas surrounding Parramatta, including Auburn. However, the pre-contact population numbers for the study area are not known and, due to numerous diseases, including smallpox and influenza, that significantly diminished the population following the arrival of the Europeans, it is unlikely that the early European explorers were able to successfully grasp the traditional population size (Urbis 2016a, p.14).



Lieutenant William Bradley of the *Sirius*, was the first European to provide a written account of Auburn area and its environs. He describes large expanses of mudflats with dense scrub and open forest further away from the water. Between 1788 and 1831, land grants ranging from 100 to 10,000 acres were issued to ex-convicts, soldiers and settlers. Initially contact with the local Aboriginal population was limited to lost convicts and marines, and boats passing the site while travelling up Parramatta River. Smallpox claimed the lives of many Aboriginal people in the Sydney area and is likely to have severely changed cultural practices of the Wangal at Auburn (Urbis 2016a, p.14).

Early accounts of the evidence of such occupation may be found in the writings of Governor Phillip, who recorded that fireplaces, bark huts, and evidence of food gathering and preparation including shells, fern roots, animal bones and the fur of possums were all seen at a campsite during a visit to Parramatta, approximately 5 kilometres north of the study area (Kelleher Nightingale Consulting Pty Ltd 2017). Phillip also recorded that:

*"...these parts are frequented by the natives... undeniably proved by the temporary huts which were seen in several places. Near one of these huts, the bones of kangaroo were found..."* (Phillip 1789).

Aboriginal people still inhabited the Auburn area following the occupation of the Europeans in the area. Several encounters and conflicts between Europeans and Aboriginal people are documented within the Auburn area throughout the 1790s as well as in the early 19<sup>th</sup> century. Despite many small and large land grants in the area, the area remained largely uncleared until the 1850s and is likely to have had continued use by Aboriginal people. Within the areas surrounding Auburn, including Parramatta and the Newington Estate, Aboriginal people were working for and trading fish with the Blaxland family. By the 1830s, Aboriginal people along the Parramatta River were living in small groups at several locations including across the river at Kissing Point in Ryde. This group, known to Europeans as the 'Kissing Point Tribe' may have included some Wann-gal people from Auburn (Urbis 2016a, p.14).

Aboriginal firing of the landscape is also considered at least partially responsible for the open, 'park-like' appearance of the Cumberland Lowlands, particularly in areas surrounding Parramatta and Auburn as described by early European accounts. For example, Admiral John Hunter provides a description of the landscape in the Parramatta region:

*"the trees stand very wide of one another, and have no underwood; in short the woods ... resemble a deer park, as much as if they had been intended for such a purpose"* (Hunter 1798).

Hunter believed that the fires were set in order to clear underbrush from frequently travelled routes and to make more accessible the roots and tubers found below ground. An additional benefit, as recorded by Philip, were the possums, sugar gliders and other animals which succumbed to the fires and provided a ready source of food (Val Attenbrow 2010, p.86). Firing of the landscape may also have ensured the fruiting of certain plant species and allowed for new vegetation growth, which encouraged kangaroos to graze (Val Attenbrow 2010, p.42).

As the area surrounding Parramatta grew, conflict between Aboriginal people and the colonists increased. Aboriginal warrior Pemulwuy, who belonged to the neighbouring Bidjigal Clan, began leading raids, attacks and resistance efforts around the district throughout the 1790s. Following Pemulwuy's death in 1802, active conflict around Parramatta lessened, becoming more frequent in the Hawkesbury and Nepean districts instead with the rapid and widespread establishment of farms. By the early years of the 19<sup>th</sup> century, major efforts were being made to 'civilise' and assimilate Aboriginal people into a European lifestyle (Kelleher Nightingale Consulting Pty Ltd 2017, p.17).

This ethnohistory regarding the social and cultural practices of the local Aboriginal population should be employed with caution and Hiscock has recently argued that even very early historical accounts may not be a suitable basis for analogy (Hiscock 2008). As Aboriginal groups had to change their economic, cultural and political practices in order to cope with the social impacts of disease in the historic period, he argues that it is likely that similar drastic changes happened in the past in response to "altered cultural and environmental circumstances" following the arrival of Europeans. Social disruption in the Greater Sydney region caused by European settlement pushing Aboriginal people to the fringes of their traditional lands would have caused such drastic changes.

## MATERIAL CULTURE

The material culture of the Aboriginal people of the Sydney region at the time of European contact was diverse, and utilised materials derived from a variety of plants, birds and animals, as well as stone. Below is only a short summary of the types of material known to have been used by the Aboriginal people of the Sydney region.

Spears in the Sydney region were usually made of a grasstree spike (for the shaft) with a hardwood point. Stone, bone, shell or wood were sometimes used as barbs. Thin and straight spear-throwers were made from wattle, while fishing spears were usually tipped with four hardwood prongs with bone points. Fish were also caught by means of shell or bird talon fish hooks (Attenbrow 2010, p.177).

Bark of various types were used for making such diverse items as wrappings for new-born babies, shelters, canoes, paddles, shields and torches. Resin from the grasstree was used as an adhesive for tool and weapon making, particularly spears. Similarly, 'Boomerang' is believed to be a Darug word. Various kinds of boomerangs and clubs were made from hardwoods as were such items as digging sticks (Attenbrow 2010, p.179)

Stone artefacts are often the only physical indication of Aboriginal use of an area. The knapping of stone artefacts can indicate one of two things, the knapping of stone to create tools and the discard of these tools once they have been used, or sometimes both. The knapping of stone creates a large amount of stone debris in very little time. Large knapping events tend to occur in proximity to sources of permanent water (Jo McDonald Cultural Heritage Management. 2005). This is probably because the availability and resources made these good places to camp for short periods of time. Small scale knapping events can occur anywhere in the landscape and are associated with the manufacture or maintenance of stone tools as a direct result of a specific need. This implies that locations of sites away from water courses will be more diffuse.

Stone was commonly used for tools and, apart from discarded shell in coastal middens, is the most common material found in archaeological sites of the Sydney region. Stone or stone tools were used for axe heads, spear barbs and as woodworking tools, amongst other things.

Small items such as shellfish and plant foods, such as berries, yams and nectar-bearing blossoms, were collected and carried in net bags or baskets. The principal pieces of equipment required for gathering plant food was a wooden digging stick used by women to dig out root vegetables such as fern roots, bulbs from numerous orchid species, and tubers from a variety of vines (Australian Museum Business Services 2005, p.36).

Bird feathers, animal teeth, nuts, ochre, animal skins and plant fibres were used to create tools and decorative items including clothing, cloaks and personal ornamentation. Leaves, bark and fibrous stems were used to make nets, bags, traps, baskets, string and rope. In addition, eel traps around the Parramatta region were made from hollow logs and eels were also speared from the shore (Kelleher Nightingale Consulting Pty Ltd 2017, p.26).

Observations made by Francis Barrallier (1773-1853) during exploration in 1802 revealed that the local Aboriginal population in Parramatta and the surrounding districts have customs relating to food and hunting were similar to those of those practiced between Nattai and the lower Wollondilly. It was also noted by Barrallier that the local environment was also the source of raw materials for tool and weapon-making, clothing and shelter (Comber 2014, p.21).

From about 1,600 year ago, Bondi points and geometric microliths began to drop out of use in the coastal parts of the Sydney region, although the Elouera continued to be used. This is known as the *Late Bondaian* phase. In coastal areas, and possibly through the Sydney Basin, both the use of quartz and the use of the bipolar flaking technique increased through time (V Attenbrow 2010).

Recorded items of material culture in the archaeological record within Parramatta and the surrounding districts include hunting and fishing spear, spear-throwers (at least two types), fishing lines and hooks, stone axes and hatchets, digging sticks, clubs, shields, string and net bags, baskets, bark containers and canoes, scrapers, adzes and awls, animal skin cloaks and a variety of stone tools (Val Attenbrow 2010, p.85).

## FOOD

A range of land mammals were hunted for food, including kangaroos, possums, wombats, sugar gliders and echidnas as well as native rats and mice. Birds, such as the mutton bird and brush turkey were eaten and it is recorded that eggs were a favourite food of the Aboriginal people in the region surrounding the study area (Attenbrow 2010, p.210). The location of Auburn, being close to the head of Parramatta River meant that freshwater, estuarine and terrestrial resources were all available and all of these were exploited (Kelleher Nightingale Consulting Pty Ltd 2017, p.16).

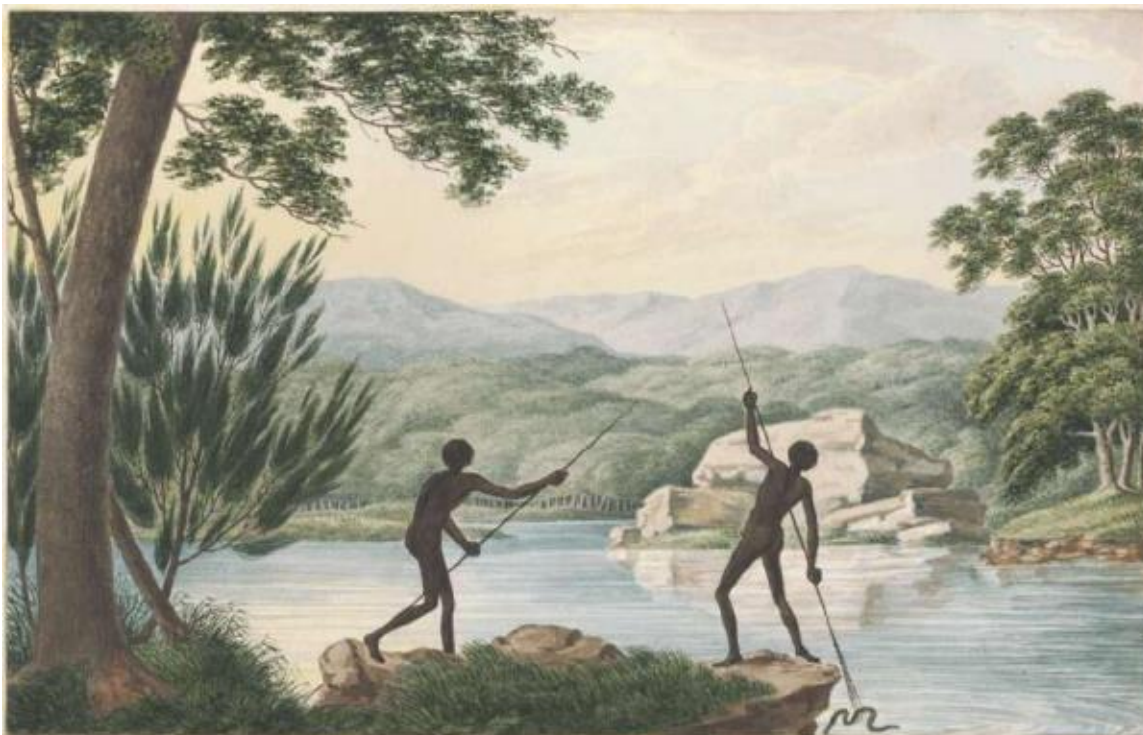
In 1810, the diet of the Wann-gal tribe was described as consisting of a variety of foods including “possums, eels, snakes, blue-tongued lizards, freshwater mussels and a variety of birds” (Kohen 1993).

Prior to European settlement, the study area is likely to have been a rich ecological zone which provided both an abundant and a diverse variety of food resources. A range of different resource habitats were likely to have been readily accessible to Aboriginal groups living within the region. These variable habitats include the riverine areas of Parramatta and Duck River and their tributaries, significant creek-lines including Haslams and Powells Creek, wetland areas of mangrove and saltmarsh and a variety of open and woodland terrestrial zones situated within the more elevated areas (Urbis 2016b, p.24).

Kohen records that inland Aboriginal people living in the Parramatta region, in close vicinity to the study area, were not as dependant on fish and shellfish as groups closer to the coast, but relied on small animals and plant foods in addition to seasonally available freshwater mullet and eels (Kohen 1993). However, while the Wangal clan would not have relied on fish as much as those who lived on the coast, it still provided an important part of their diet given the close vicinity of Parramatta River. The swamps, wetlands and anabranch channels related to the river were a rich source of various birds, shellfish, eels, water rats and fish. In the fresh water they caught mullet, crayfish, shellfish and turtles and in the salt water eels, fish, shellfish and molluscs. Tidal mudflats and mangroves provided a ready supply of shellfish which could be collected by hand from the mud (Kohen 1993, p.96).

Attenbrow has noted that “Sydney vegetation communities include over 200 species that have edible parts, such as seeds, fruits, tubers/roots/rhizomes, leaves, flowers and nectar from the river banks (Attenbrow 2010, p.76). Plant seeds and fruits were also an important source of vegetable matter. Observations from the earliest European settlers describe Aboriginal people in the Sydney region roasting fern-roots, eating small fruits the size of a cherry as well as a type of nut and the root of “a species of the orchid” amongst other types of plant food. As Attenbrow points out, however, the settlers’ lack of knowledge of the local plant species make identification of the various plants used difficult (V Attenbrow 2010).

Other food sources surround the Auburn area included ants, grubs and the eggs and larvae of various beetle species. Small animals provided the protein component of the Aboriginal diet on the wider Cumberland Lowlands. As described by Colonial Explorer, Tench, in 1793, the Aboriginal population along Parramatta River set traps and snares for bandicoots and wallabies, while decoys for snaring birds were also a commonly employed technique. Tench notes that *“these are formed of underwood and reeds, long and narrow, shaped like a mound raised over a grave, with a small aperture at one end for the admission of the prey”* (Tench 1793).



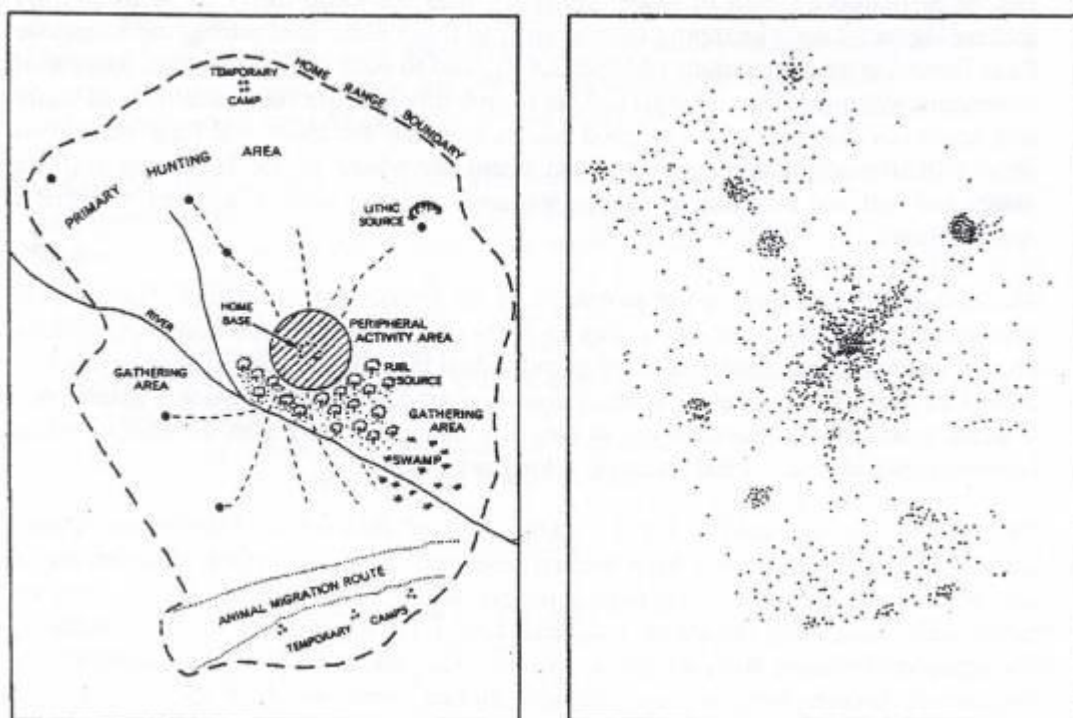
**Figure 2.1** Two Aboriginal men fishing for eels in the Parramatta River, painted by Joseph Lycett (source: National Library of Australia).

## EARLY ARCHAEOLOGICAL MODELS

Early settlement models focused on seasonal mobility, with the exploitation of inland resources being sought once local ones become less abundant. These principles were adopted by Foley (Foley 1981) who developed a site distribution model for forager settlement patterns. This model identifies two distinctive types of hunter and gather settlements; 'residential base camps' and 'activities areas'. Residential base camps are predominately found located in close proximity to a reliable source of permanent water and shelter. From this point the surrounding landscape is explored and local resources gathered. This is reflected in the archaeological record, with high density artefact scatters being associated with camp bases, while low density and isolated artefacts are related to the travelling routes and activity areas (Foley 1981).

The model suggests that people would reside in one general location or locations, probably in proximity to a good source of permanent water and with shelter from the elements, and travel throughout the local landscape to gather resources at known locations. The right hand side of Figure 2.2 shows how this settlement pattern would look in terms of artefact discard. The majority of artefacts are deposited in proximity to the residential base camp, fewer at the various resource locations and a generally low amount throughout the rest of the landscape, mainly while travelling between activity areas and the base camp. The model however, does not take into account the use of more than one base camp in an area or changing preferences of camping areas over time; nor does it account for the movement of resources over time.





**Figure 2.2 Foraging Model (Foley 1981)**

However, more recently, investigation into understanding the impacts of various episodes of occupation on the archaeological record has been explored, of which single or repeated events are being identified. This is often a complex process to establish, specifically within predictive models as land use and disturbance can often result in post depositional processes and the superimposition of archaeological materials by repeated episodes of occupation.

The principles behind this model have been incorporated into other predictive models such as that of McBryde (McBryde 1978). McBryde's model is centred on the utilisation of food resources as a contributor to settlement patterns, specifically with reference to the predictability and reliability of food resources for Aboriginal people within the immediate coastal fringe and/or hinterland zone, with migratory behaviour being a possibility. Resources such as certain species of animals, particularly; small marsupials and reptiles, plant resources and nesting seabirds may have been exploited or only available on a seasonal or intermittent basis. As such, archaeological sites which represent these activities whilst not being representative of permanent occupation may be representative of brief, possibly repeated occupation.

## LATER WORK

More recently McDonald has argued that environmental factors, such as stream order, were integral to developing a predictive model for the Sydney Basin (McDonald 1997a). Stream order modelling as a predictive tool can be utilised to anticipate the potential for Aboriginal camp site locations in the landscape based on the order of water permanence. McDonald (McDonald 1997a, McDonald 1997b, McDonald 1999) in particular, has drawn on stream order modelling in order to forecast the potential nature and complexity of sites in the Sydney Basin. These models can also be used to predict the possible range of activities carried out at a particular site and the frequency and/or duration of occupation.

Analysing stream order can allow researchers to locate areas of water permanence, which would have been vital for Aboriginal people. Abundant food and other resources are more likely to occur in areas of water permanence which would in turn attract Aboriginal occupation. McDonald's excavations of open artefact scatter sites at the ADI site in St Marys provided evidence of such a correlation (McDonald 1997b, p.133).



According to McDonald, the range of lithic activities and the complexity of the resulting stone assemblage observed at a location of permanent water also differ depending on stream order. Large knapping events tend to occur in proximity to sources of permanent water (McDonald 2000). This is probably because the availability and resources made these good places to camp for short periods of time. Small scale knapping events can occur anywhere in the landscape and are usually associated with the manufacture or maintenance of stone tools as a direct result of a specific need. This implies that locations of sites away from water courses will often be more diffuse.

Overall, artefact scatters in the vicinity of a higher order ranking streams reflect a greater range of activities (e.g. tool use, manufacture and maintenance, food processing and quarrying) than those located on lower order streams. Temporary or casual occupation of a site, reflected by an isolated knapping floor or tool discard, are more likely to occur on smaller, more temporary water courses (McDonald 1997a, p.127).

It is therefore possible, McDonald concluded, that stream order modelling could be utilised to make general predictions about the location and nature of Aboriginal sites in the Sydney Basin. Water permanence (i.e. stream order), landscape unit (i.e. hill top, creek flat) as well as the proximity to artefact raw materials can result in variations in the density and complexity of an Aboriginal archaeological feature (McDonald 1997a, McDonald 2000). Site location and duration of occupation predictions therefore relate to stream order in the following ways:

- In the headwaters of upper tributaries (i.e. first order creeks) archaeological evidence will be sparse and represent little more than a background scatter;
- In the middle reaches of minor tributaries (second order creeks) archaeological evidence will be sparse but indicate focussed activity (e.g. one-off camp locations, single episode knapping floors);
- In the lower reaches of tributary creeks (third order creeks) will be archaeological evidence for more frequent occupation. This will include repeated occupation by small groups, knapping floors (perhaps used and re-used), and evidence of more concentrated activities;
- On major creek lines and rivers (fourth order) archaeological evidence will indicate more permanent or repeated occupation. Sites will be complex, with a range of lithic activities represented, and may even be stratified;
- Creek junctions may provide foci for site activity; the size of the confluence (in terms of stream ranking nodes) could be expected to influence the size of the site;
- Ridge top locations between drainage lines will usually contain limited archaeological evidence although isolated knapping floors or other forms of one-off occupation may be in evidence in such a location (McDonald 2000,p.19).

This predictive model has been refined with focus on the dominant environment and landscape zones of the Cumberland Lowlands, such as the Wianamatta Group Shales, Hawksbury Sandstone, Quaternary alluvium, Quaternary Aeolian and Tertiary alluvium. Attenbrow (V Attenbrow 2010) discovered that the Quaternary alluvial deposits had a greater concentration of archaeological sites, which is likely the result of these deposits being located towards major creek lines and rivers, such as Eastern Creek, Second Ponds Creek etc. Areas of alluvial deposits were found by Kohen (Kohen 1993) to contain artefact scatters of a large and complex nature the closer they were to permanent creeks.

In 2007, Austral undertook an Aboriginal archaeological assessment at 95-101 George Street, Parramatta and subsequent salvage excavations in 2007 (Austral Archaeology 2007). The results of the salvage excavations provided the ability to develop models for the nature of occupation and trading patterns of Parramatta and the surrounding region, including Auburn. A total of 601 whole and broken flakes were recovered during the salvage excavations, and it was proposed that the raw materials for the artefacts had been sourced both locally and from other regions with the prime local source being the gravel load of the Parramatta River. Other sources included the Olympic Village site, about 5 kilometres to the east, and sandstone bodies to the north and west and the Nepean River, about 25 kilometres away (Austral Archaeology 2007, p.ii). A major finding from this study was the conclusion that sites closer to the Parramatta River represented

occupational sites that were regularly used. Sites further from the river appeared to be more 'opportunistic or casual use knapping events' (Austral Archaeology 2007, p.iv).

Paul Irish, as part of an Aboriginal archaeological assessment of the Sydney Olympic Park, further notes that in areas of the Blacktown soil landscape, as found in the study area, archaeological evidence is generally limited to the upper topsoil, or A-Horizon (Irish 2006). The subsoil in such cases is usually a brown clayey loam with gravel, overlying a clay subsoil which is archaeologically sterile. Therefore, while Potential Archaeological Deposits (PADs) are frequent in the Cumberland Lowlands, they are limited to areas which retain the original topsoil.

In 2010, Comber Consultants excavated a series of 32 test trenches at 140 Macquarie Street, Parramatta (Comber Consultants 2010). A total of 55 artefacts were identified from a total of 32 test pits at a depth of 2 metres, most of which were flaked debitage. The Parramatta Sand Body was also identified throughout the western portion of the site, and geomorphology suggested that the area had been a wetlands environment in the past. The test excavations were interpreted to show that the area was used by the local Aboriginal people and was utilised for its natural resources, however it was not an appropriate area for camping. It was suggested that more appropriate campsites would be slightly north, closer to the Parramatta River where the Parramatta Sand Body was elevated (Comber Consultants 2010, p.54). It was determined that the study area was would have naturally been wetlands, and as such was not suitable for occupation and therefore few artefactual deposits were encountered, despite minimal disturbance and the intact nature of the Parramatta Sand Body.

It was therefore concluded by Comber Consultants that despite moderate disturbance and development, the archaeologically sensitive Parramatta Sand Body can be preserved and intact. However, while the sands are generally archaeologically sensitive, they do not always contain artefacts and it was heavily emphasised by Comber that the original landforms associated with a study area is vital in determining the archaeological sensitivity of the regions surrounding Parramatta despite being close in close vicinity to Parramatta River (Comber Consultants 2010, p.58).

The results and conclusions of the excavation conducted by Comber Consultants has been adopted by numerous consultants undertaking assessments surrounding Parramatta and along the Parramatta River. This is particularly the case for archaeological assessments being conducted in low-lying estuaries, such as wetlands, associated with Parramatta River that have been modified, of which have determined that there is limited potential for Aboriginal archaeological material within these areas (AECOM 2018, Urbis 2016b, Kelleher Nightingale Consulting Pty Ltd 2017).

## 2.2 HERITAGE DATABASE SEARCH RESULTS

### ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM SEARCH RESULTS

A search of Heritage NSW's AHIMS database was undertaken on 24 August 2020 (Client Service ID 529708). The results from the AHIMS search identified 46 previously recorded sites within a 5 kilometre radius of the study area (Figure 2.3, Figure 2.4 & Table 2.1). None of these registered sites were located within the boundaries of the study area.

**Table 2.1 Summary of Sites Recorded within a 5 kilometre Radius of the Study Area**

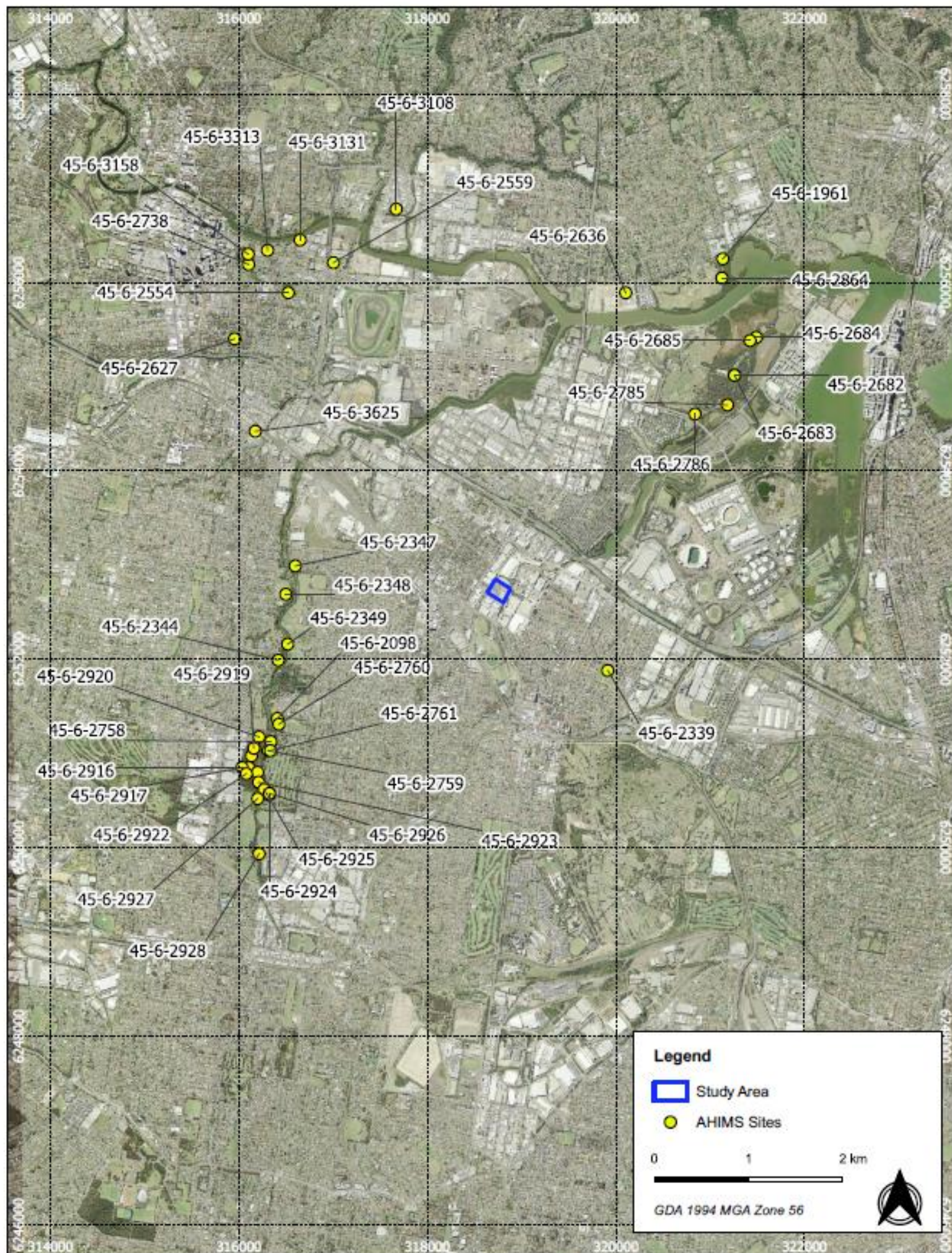
Site feature(s)	Occurrence	Frequency (%)
Artefact	36	81.8
Potential Archaeological Deposit (PAD)	6	13.6
Artefact; Aboriginal Resource and Gathering; Potential Archaeological Deposit (PAD)	1	2.3
Modified Tree (Carved or Scarred)	1	2.3
<b>Total</b>	<b>44</b>	<b>100</b>

As shown in the above table, the majority of sites identified in the vicinity of the study area relate to artefacts (isolated finds and artefact scatters) (81.8%, n=36), which are predominantly identified along Duck River to the west and Parramatta River to the north. The second most frequent site type relate to PADs (13.6%, n=6), which are also identified along the banks of Duck River as well as in close vicinity to Parramatta River. An Aboriginal and Resource and Gathering site is also located approximately 4 kilometres north-west of the study area and 100 metres south of Parramatta River. A modified tree is located approximately 3 kilometres north-east of the study area, within the Millennium Parklands.

## OTHER HERITAGE REGISTER SEARCH RESULTS

Searches of the AHPI, the RNE and the SHI were undertaken and did not identify any recorded Aboriginal Objects or Places in or around the development area. No Aboriginal objects or places are listed as significant in the *Auburn Local Environmental Plan 2010*.





**Figure 2.3 AHIMS Sites within 5 Kilometres of the Study Area**

11-13 Percy Street, Auburn ACHA

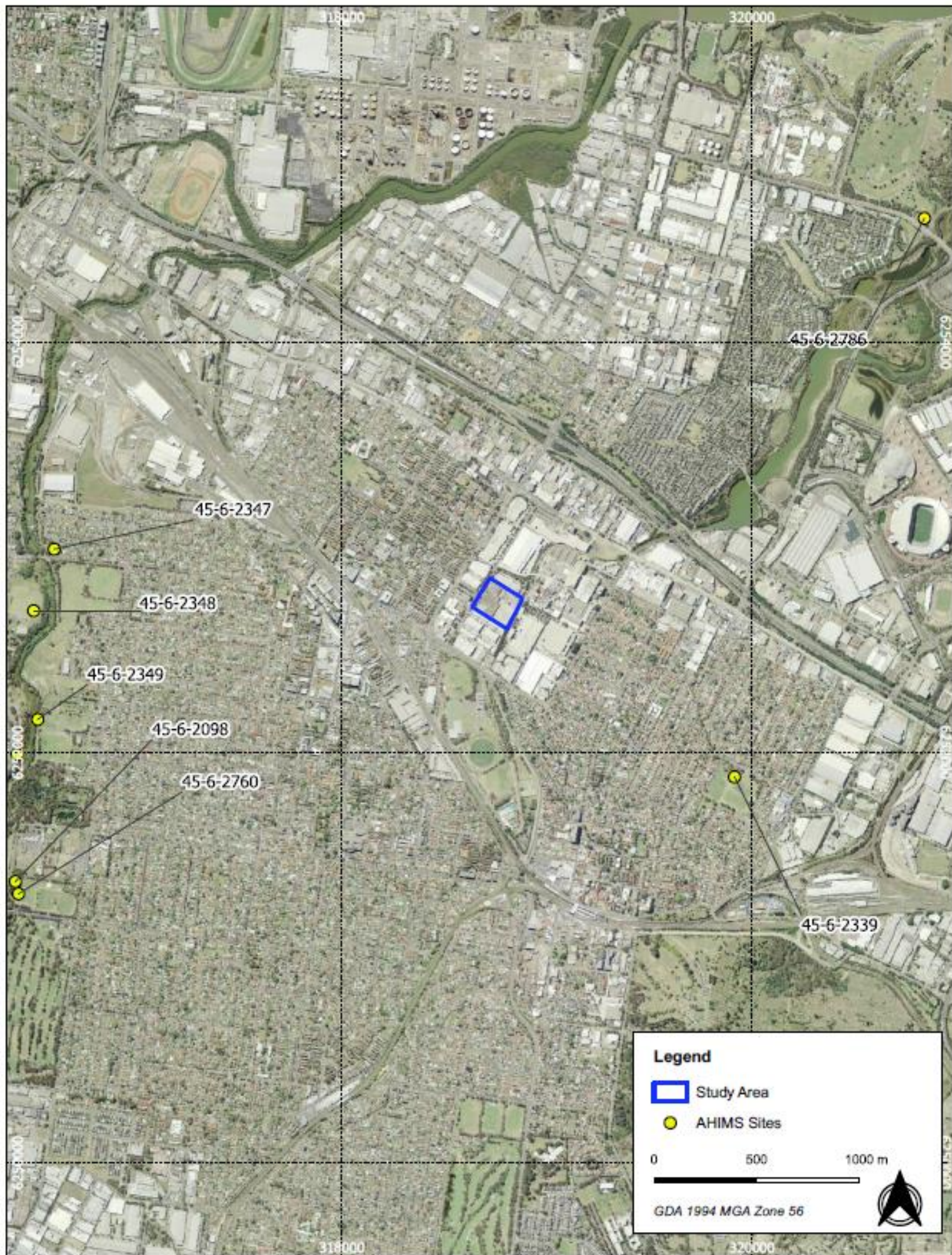
Source: Nearmap

Drawn by: MR Date: 21/08/2020



**AUSTRAL**  
ARCHAEOLOGY





**Figure 2.4 AHIMS Sites within the Vicinity of the Study Area**

11-13 Percy Street, Auburn ACHA

Source: AHIMS, Nearmap

Drawn by: MR Date: 21/08/2020



**AUSTRAL**  
 ARCHAEOLOGY



## 2.3 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Although European observers recorded various aspects of the lifestyles of Aboriginal people throughout the Greater Sydney region from the beginning of European settlement of the area in the late 18<sup>th</sup> century, it was not until the 20<sup>th</sup> century that archaeological investigations of Aboriginal archaeological sites were undertaken.

Since then, archaeological sites have been frequently recorded across the region, and hundreds have been excavated. Most commonly, these contain open scatters of archaeological material such as stone artefacts, PADs and modified trees.

### PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS IN THE LOCAL REGION

Table 2.2 below outlines the details and results of relevant archaeological consultant's reports from the region.

**Table 2.2 A Summary of Archaeological Consultant Reports from the Region**

Reference	Study area location/ description	Results	Site distribution/ Conclusions
(Rich 1985)	Archaeological survey and assessment at Charity Point, Homebush Bay, approximately 3.5 kilometres north of the study area	Rich undertook an archaeological survey at Homebush Bay as part of the development of conservation measures. A shell midden with an associated artefact scatter was identified, along with other isolated objects.	The site was concluded to contain high Aboriginal archaeological significance
(Morris 1986)(Carney & Steele 1997)	Aboriginal archaeological assessment of the proposed Olympic Park Site, Homebush, approximately 1 kilometre east of the study area	Carney & Steele undertook an Aboriginal heritage survey that identified two areas of minimal disturbance that may contain subsurface deposits.	It was recommended that any impact to these subsurface areas be monitored for the presence of Aboriginal artefacts.
(Brayshaw 1997)	Aboriginal archaeological survey at Olympic Village, Newington, approximately 800 metres north of the study area	Brayshaw undertook an Aboriginal heritage survey that did not identify any Aboriginal objects or areas of PAD.	It was concluded that, due to past disturbance in this area, there was no potential for Aboriginal archaeological sites, relics or deposits.
(Irish 2004)	Aboriginal archaeological assessment at Newington Armory Precinct, approximately 1 kilometre north of the study area	Irish identified three isolated artefacts that consisted of silcrete and chert, and also identified two PADs .	Irish states that the lack of archaeological material is likely to be a reflection of the early urban development of the Parramatta River, which would have precluded the preservation of sites and the necessity for archaeological assessment; rather than an indication of less intense Aboriginal occupation of the area.
(Navin Officer Heritage Consultants 2005)	Aboriginal archaeological assessment at Homebush Railway Station, approximately 3 kilometres east of the study area	Navin Officer Heritage Consultants conducted an Aboriginal archaeological survey that did not identify any Aboriginal sites or areas of PAD.	No further archaeological investigations were recommended.



Reference	Study area location/ description	Results	Site distribution/ Conclusions
(AECOM Australia 2010)	Aboriginal Due Diligence Assessment at Christina Road, Villawood, approximately 4 kilometres south-west of the study area	No Aboriginal sites or objects were identified during the archaeological survey and the site was determined to be generally disturbed.	No further archaeological investigations were required.
(Comber Consultants 2010)	Test excavations at 140 Macquarie Street, Parramatta, approximately 5 kilometres north-west of the study area	A total of 55 artefacts were excavated, found in 17 of the 32 test pits excavated. Most of the artefacts were flaked debitage and within the Parramatta Sand Body.	The test excavations were interpreted to show that the area was used by the local Aboriginal people and was utilised for its natural resources, however it was not an appropriate area for camping. More appropriate campsites would be slightly north, closer to the Parramatta River where the Parramatta Sand Body was elevated.
(AMBS 2012)	Aboriginal archaeological survey undertaken at Newington Armament Depot & Nature Reserve, Sydney Olympic Park, approximately 4 kilometres north of the study area	The purpose of the survey was to verify the location of previously recorded sites within the study area, if possible, to inspect the area for any new archaeological sites and to identify the potential for archaeologically sensitive areas to be present within the Newington area. There are five registered AHIMS sites within the Newington Armament Depot & Nature Reserve study area, which have been assessed as being of low significance, and no new Aboriginal sites or areas of Aboriginal heritage sensitivity were identified during the survey.	No further archaeological investigations were required.

Reference	Study area location/ description	Results	Site distribution/ Conclusions
(Kelleher Nightingale Consulting Pty Ltd 2014)	Aboriginal archaeological survey for WestConnex M4 Widening Pitt Street, Parramatta to Homebush Bay Drive, Homebush, approximately 3 kilometres east of the study area	The project consisted of a pedestrian survey of a 7 kilometre road easement, including crossings at Duck River and Haslams Creek that are associated with the study area. No Aboriginal archaeological objects, sites or potential archaeological deposits were identified in the construction footprint or associated compound locations.	The subject area was considered to be of low Aboriginal archaeological sensitivity and no further works were recommended.
(AECOM Australia 2015)	Aboriginal archaeological assessment for the existing M4 corridor in the inner west of Sydney within the Auburn, Strathfield, Canada Bay, Burwood and Ashfield Local Government Areas	The assessment identified areas of disturbed terrain that were unlikely to retain Aboriginal archaeological materials in surface or subsurface contexts. No Aboriginal objects were identified; however, two areas of potential were identified in association with parks that had been subject to lower levels of disturbance.	Neither of the potential areas of sensitivity would be impacted either directly or indirectly by the construction or operation of the project. As such, no further works were required.
(Urbis 2016b)	Heritage Impact Statement and Archaeological Assessment at Dooley's Catholic Club, Lidcome, 2 kilometres southeast of the study area	The study did not identify any Aboriginal objects or areas of PAD due to the highly disturbed nature of the site.	No further works were required.
(Urbis 2016a)	Historic and Aboriginal Archaeological Assessment at 2 Figtree Drive, Sydney Olympic Park, approximately 1.5 kilometres east of the study area	The archaeological survey did not identify any Aboriginal sites or objects. This was concluded to be the case due to the heavy modification of the site as a result of the construction of buildings and roads.	No further works were required.

Reference	Study area location/ description	Results	Site distribution/ Conclusions
(AECOM 2018)	Aboriginal heritage assessment at Rosehill/Camellia Peninsula on the Duck River, approximately 1.5 kilometres west of the study area	The study area would have naturally been a low-lying estuary however it has been heavily modified throughout colonial history and is partially reclaimed land. It was assessed that the natural landscape suggests that raw materials suitable for stone tool manufacture would not have been present in this area and it would not have been a suitable habitation area, as it was low-lying wetland naturally.	The report assessed the study area as having little to no archaeological potential, no potential Aboriginal places or archaeological deposits were located, and no further investigation was recommended.

## PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS IN THE STUDY AREA

The study area has been subject to only one previous Aboriginal archaeological investigation, which was undertaken by Austral Archaeology in June 2020 (Austral Archaeology 2020a). Austral prepared ACHDDA for the study area as part of the current proposed development. This assessment determined that the historical development and land use of the site was likely to have resulted in extreme levels of disturbance. As a result of the historical disturbances associated with the study area, which included clearance of vegetation, the realignment of Haslams Creek, several phases of construction and the installation of underground tanks and services, Austral concluded that these activities would have resulted in the removal of the original topsoils and subsoils and transformed the historical landscape into an industrial zone (Austral Archaeology 2020a, p.5).

Furthermore, Austral utilised the results of the Geotechnical Site Investigation Report of the study area to further conclude that the historical land use of the study area has removed all topsoil across the study area (Geo-Logix 2019). This Investigation Report assessed that fill was encountered across the entire study area up to a depth of 1.8 metres, and that this overlaid sandy clays or clayey sands with no evidence for buried topsoil identified (Geo-Logix 2019).

Based on the high level impacts of the historical land use, it was concluded by Austral that there lies a very low likelihood that any original soil profiles containing Aboriginal archaeological cultural material would have survived within the study area (Austral Archaeology 2020a, p.5).



## 3 LANDSCAPE CONTEXT

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The natural environment of an area influences not only the availability of local resources, such as food and raw materials for artefacts, but also determines the likely presence and/or absence of various archaeological site types which may be encountered during a field investigation.

Resource distribution and availability is strongly influenced by the environment. The location of different site-types (such as rock-shelters, middens, open camp sites, axe grinding grooves, engravings etc.) are strongly influenced by the nature of soils, the composition of vegetation cover and the climatic characteristics of any given region. Equally important is the range of other associated characteristics which are specific to different land systems and their geology. In turn this affects resource availability of, for example, fresh drinking water, plant and animal foods, raw materials for stone tools, wood and vegetable fibre used for tool production and maintenance.

Therefore, examining the environmental context of an area is essential in accurately assessing potential past Aboriginal land-use practices and/or predicting site types and distribution patterns within any given landscape, cultural or not. The information that is outlined below is applicable for the assessment of site potential of the current study area.

### 3.1 GEOLOGICAL CONTEXT AND SOIL LANDSCAPE

The study area is located in an area rich in Triassic quartz sandstone, Lithic sandstone and with minor shale and laminite lenses (Mitchell 2002, p.118, Hazelton & Tille 1990, p.76).

The geology of the area makes the presence of rock types suitable for knapping unlikely. As such, if artefacts are found, the materials are likely to have been brought into the area from nearby quarry sites.

The study area is located predominantly within the Birrong (**bg**) soil landscape, which consists of a level to gently undulating alluvial floodplain draining on to Wianamatta Group shales (Figure 3.2). The topography associated with this soil landscape is level to gently alluvial floodplains with a local relief of <5 metres and slope gradients of <3%. Landfill has occurred in many areas within this soil landscape, as the area has been developed heavily for industrial purposes (Bannerman & Hazelton 2011, pp.84–85). A geotechnical investigation of the study area identified that fill material was present across the study area to a maximum depth of 1.8 metres. The fill material generally overlay sandy clays or clayey sands, which appear to be consistent with the B horizons associated with the Birrong (**bg**) landscape. Alluvial sediments comprising interbedded layers of mixed sand, silts and clays with occasional peat layers were identified in the eastern and central portion of the study area. These sediments were up to 7 metres in depth and were associated with the infill of the former alignment of Haslams Creek. This may indicate that soils from within the study area were pushed into the channel, with additional fill material being brought as part of the construction program (Geo-Logix 2019, p.29).

The stratigraphy of the Birrong soil landscape consists of:

- **bg1** – Dark brown pedal silty clay loam
- **bg2** – Bleached hardsetting clay loam
- **bg3** – Orange mottled silty clay
- **bg4** – Brown mottled clay
- **bg5** – Light grey mottled saline clay

The top stratigraphic unit of the Birrong soil landscape (**bg1**) is a dark brown silt loam or silty clay loam with a moderate pedal structure and rough ped fabric. It generally occurs as a topsoil (A1 Horizon) and overlies **bg2**, a bleached, clay loam to fine sandy clay loam with a weak pedal to apedal massive structure that is hardsetting when dry. This material occurs as an A2 Horizon and contains large amount of silt and fine sand. Peds present are rough-faced, angular blocky and range in size from 100-200 millimetres. Otherwise an earthy, apedal massive structure is present. The pH of this soil ranges from moderately acidic (pH 5.5) to slightly acidic (pH 6.5). This soil overlies **bg3**, which is an orange, mottled fine sandy clay loam to silty clay with a moderate pedal structure and smooth-faced dense peds fabric. This soil occurs as a subsoil (B Horizon) and peds are smooth-faced, prismatic, angular blocky and range in size from 50-100 millimetres. The pH of this soil varies from moderately acidic (pH 5.5) to slightly acidic (pH 6.5). This soil overlies **bg4**, which is a commonly brown, mottled medium clay with strongly pedal structure and dense, rough-faced ped structure. This soil occurs as a subsoil (B Horizon) and the texture can range from light to heavy clay. Peds are large (100-200 millimetres) and prismatic or angular blocky and readily break down to smaller (10-20 millimetres) polyhedral peds. The pH of this soil varies from strongly acidic (pH 4.5) to slightly acidic (pH 5.5). This soil overlies **bg5**, which is light grey, mottled, light medium clay to heavy clay with moderate to strong pedal structure and dense smooth ped fabric. This soil is saline and occurs as deep subsoil (C or D Horizon) overlying bedrock. Peds are dense, smooth-faced and range in size from 50-100 millimetres and sub-angular blocky. Prominent dark red mottles are common, which occupy 40% of the material and form reticulated patterns. The red mottles often contain iron concretions that harden on exposure. The pH of this soil ranges from strongly acidic (pH 4.5) to slightly acidic (pH 6.0) (Bannerman & Hazelton 2011, pp.84–85).

On floodplains and drainage lines, the A1 horizon associated with the Birrong (**bg**) landscape is generally 100 to 400 millimetres in depth, overlaying the B horizons which can be up to 2 metres in depth. The lower slopes and the edges of floodplains normally have more shallow soils (Bannerman & Hazelton 2011, pp.84–85).

Previous Aboriginal archaeological investigations, including testing and salvage excavations, within the Birrong soil landscape have shown that archaeological potential in this soil landscape is limited due to the high erosion within these landscapes. This was particularly argued in an Aboriginal heritage assessment conducted by AECOM as part of the M5 Westconnex EIS (AECOM 2015, p.24) where it was identified that Aboriginal archaeological sites within the Birrong soil landscape is significantly lower in number compared to surrounding soil landscapes due to the high natural erosion.

The western edge of the study area is situated on the Blacktown (**bt**) soil landscape, which is located within the Wianamatta Group and consists of Ashfield Shale and Bringelly Shale, with occasional claystone, laminate and coal (Figure 3.2) (Bannerman & Hazelton 2011, pp.84–85). The topography of this soil landscape is gently undulating rises on the Wianamatta Shale with a local relief of 10-30 metres and slopes generally <5%, but up to 10%. Crests and ridges are broad (200-600 millimetres) and rounded with convex upper slopes grading into concave lower slopes. As with the Birrong soil landscape, The Blacktown soil landscape are associated with intensive residential and industrial activities (Bannerman & Hazelton 2011, pp.84–85).

The stratigraphy of the Blacktown (**bt**) soil landscape consists of:

- **bt1** – Friable brownish black loam
- **bt2** – Hardsetting brown clay loam
- **bt3** – Strongly pedal, mottled brown light clay
- **bt4** – Light grey plastic mottled clay

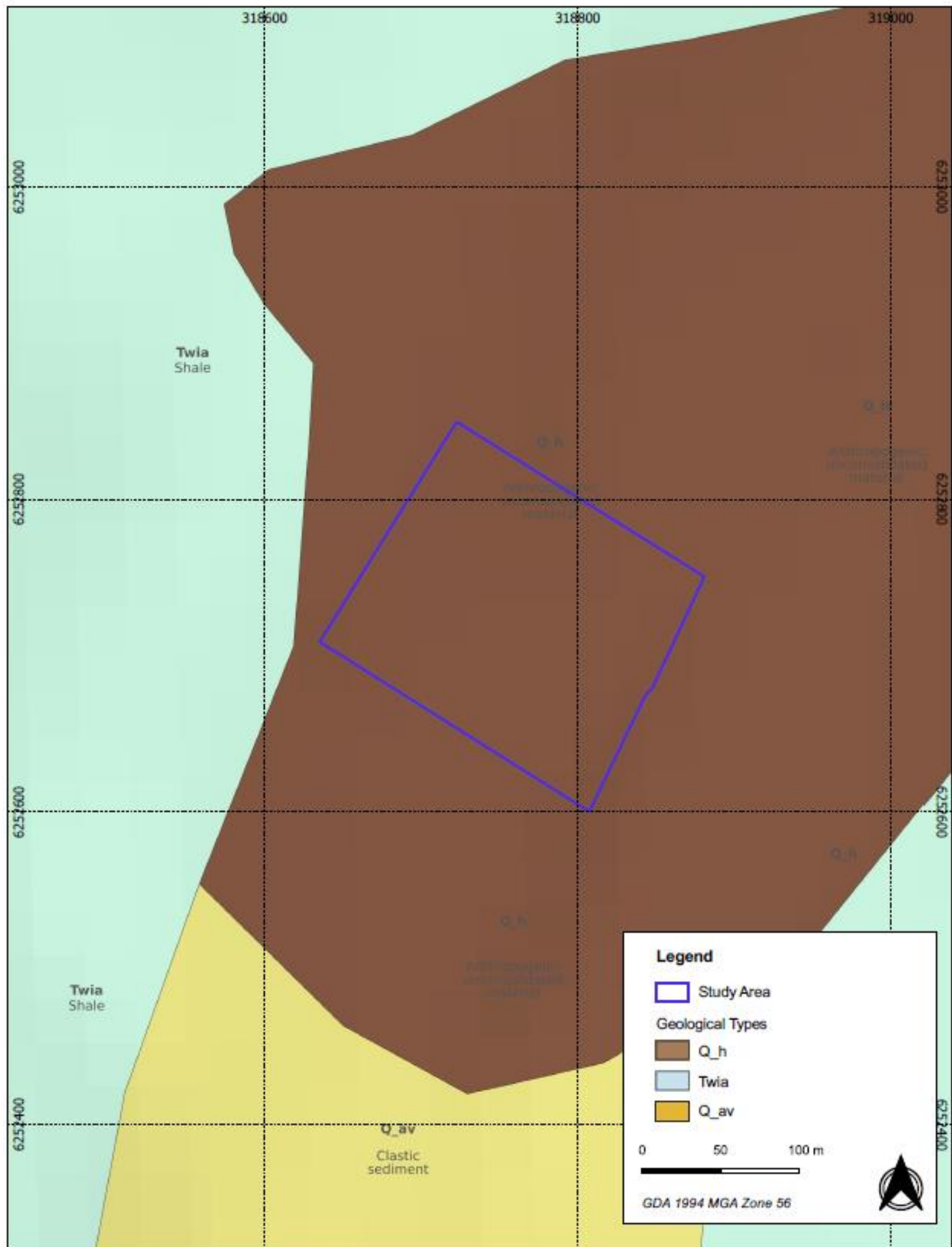
The top of the stratigraphic unit consists of **bt1**, a friable brownish-black loam to clay loam with moderately pedal sub-angular blocky structure and rough-faced porous ped fabric. This material occurs as a topsoil (A1 Horizon). Peds are well-defined and sub-angular blocky and range in size from 2 millimetres to 20 millimetres. The pH of this soil ranges from slightly acidic (pH 5.5) to neutral (pH 7.0). This soil overlies **bt2**, which is a hardsetting brown clay loam to silty clay loam with apedal massive to weakly pedal structure and slowly porous earthy fabric. It commonly occurs as an A2 Horizon. The peds, when present, are weakly developed, sub-angular blocky and rough-faced and porous. The pH of this soil ranges from moderately acidic (pH 5.0) to slightly acidic (pH 6.5). Platy ironstone gravel-sized shale fragments are common within **bt2**. This soil overlies **bt3**, which is a brown light to medium clay with strongly pedal polyhedral or subangular-blocky structure and smooth-faced dense ped fabric. This material usually occurs as a subsoil (B Horizon). The pH of this soil ranges from strongly acidic (pH 4.5) to slightly acidic (pH 6.5). This soil overlies **bt4**, which is a plastic light grey silty clay to heavy clay with moderately pedal polyhedral to sub-angular blocky structure and smooth-faced dense ped fabric. This material usually occurs as deep subsoil above shale bedrock (B3 or C horizon). Peds range in size from 2 mm to 20 millimetres. The pH ranges from strongly acid (pH 4.0) to moderately acid (pH 5.5). Strongly weathered ironstone concretions and rock fragments are common (Bannerman & Hazelton 2011, pp.84–85).

Previous Aboriginal archaeological excavations within this soil landscape has demonstrated that the vast majority of Aboriginal artefactual material are retrieved from **bt1**, with artefacts also being recovered in **bt2** at a high quantity (Urbis 2016b, p.28). However, as will be further discussed in this report and verified in the Geotechnical Investigation Report of the study area, the topsoil layer, including A1 and A2 horizons, has been entirely disturbed and removed as a result of previous development in the study area (Geo-Logix 2019).

### 3.2 TOPOGRAPHY AND LANDFORM

The study area is within a heavily modified landscape with no discernible landform features. The study area would likely have consisted of a series of slopes, flats and flood plains associated with Haslam's Creek prior to its modification, however there is limited information to provide any additional information of the types of landforms that may have been present.



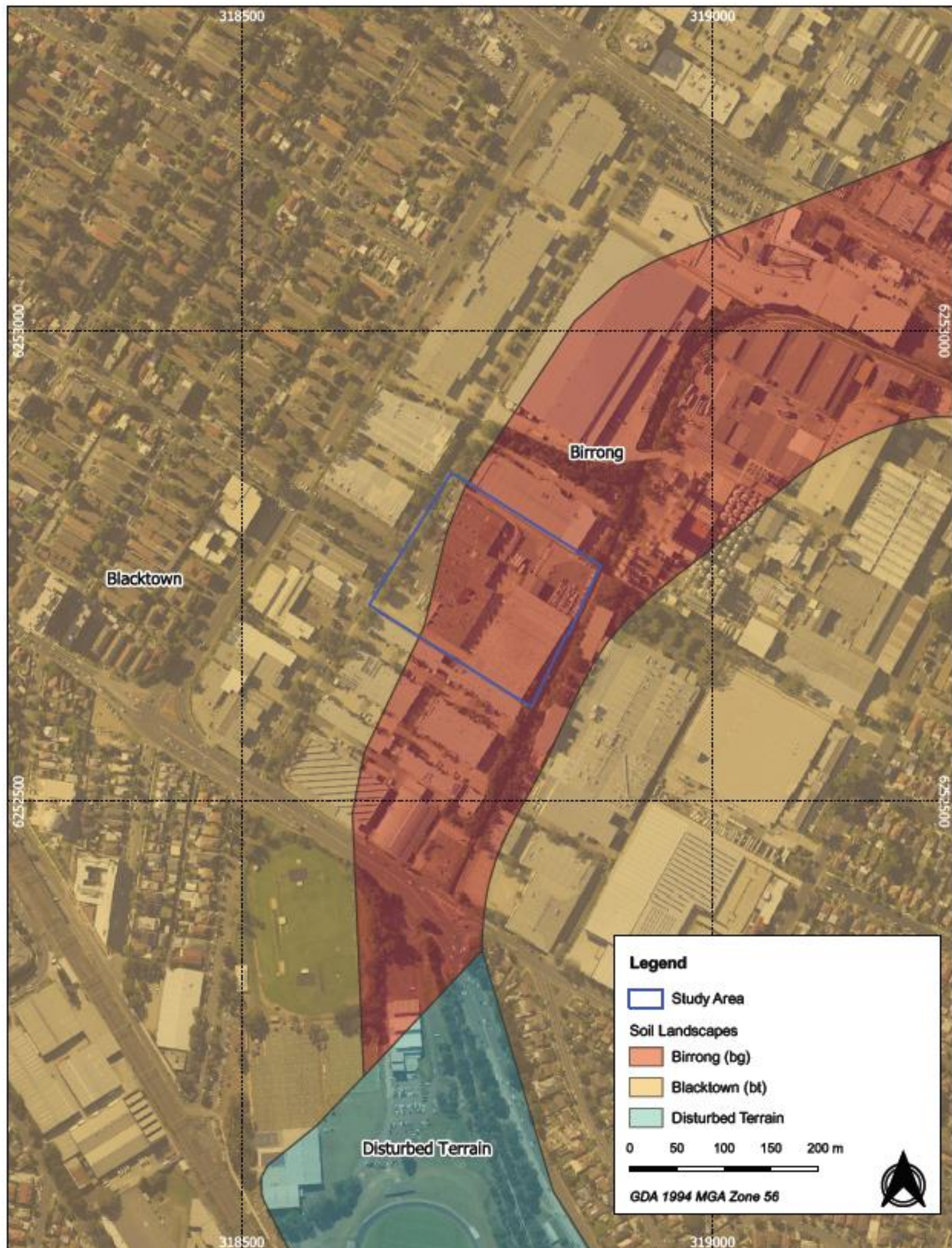


**Figure 3.1 Geological Landscapes Associated with the Study Area**

11-13 Percy Street, Auburn ACHA







**Figure 3.2 Soil Landscapes Associated with the Study Area**

11-13 Percy Street, Auburn ACHA

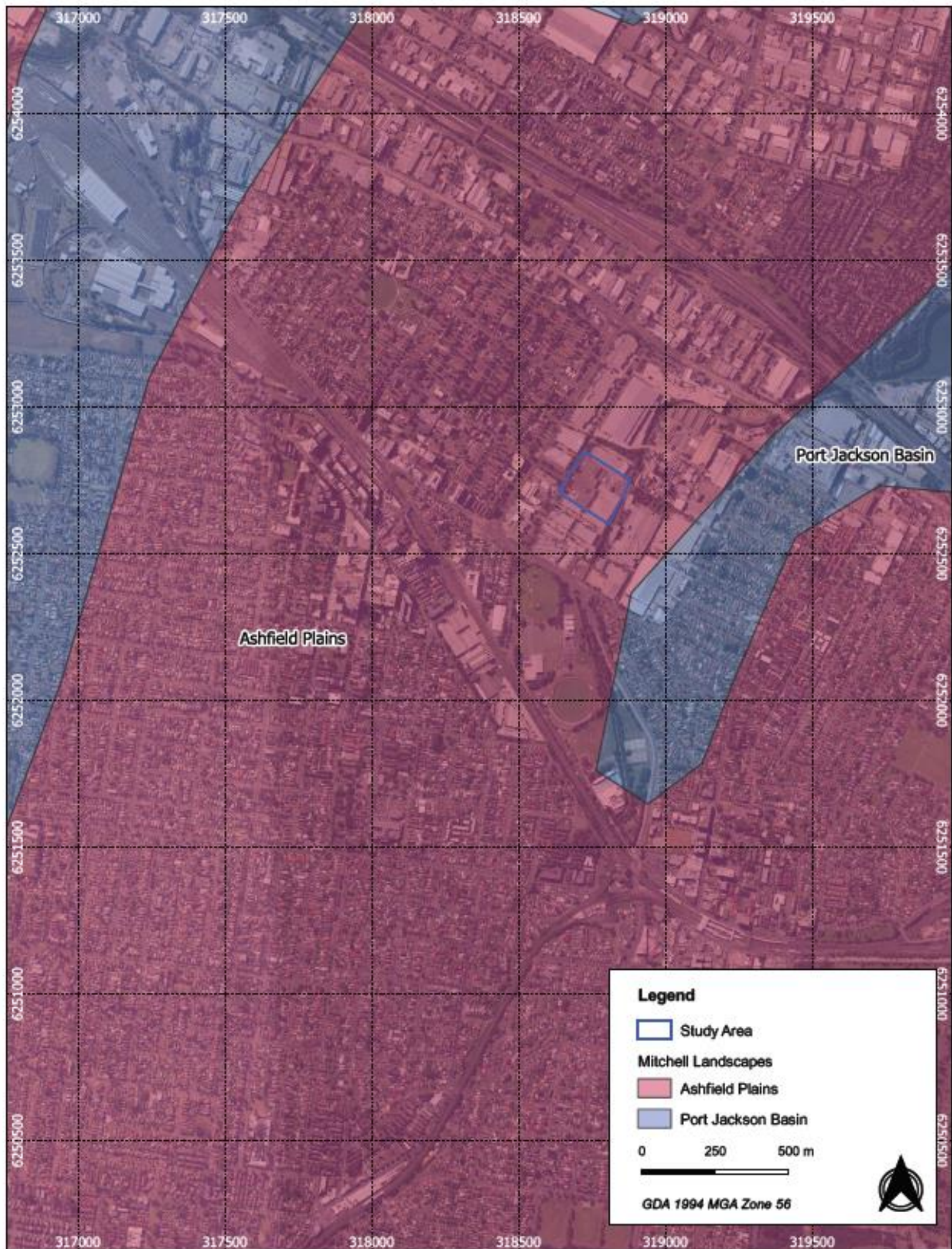
Source: eSPADE

Drawn by: MR Date: 21/08/2020



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**Figure 3.3 Mitchell Landscapes Associated with the Study Area**

11-13 Percy Street, Auburn ACHA

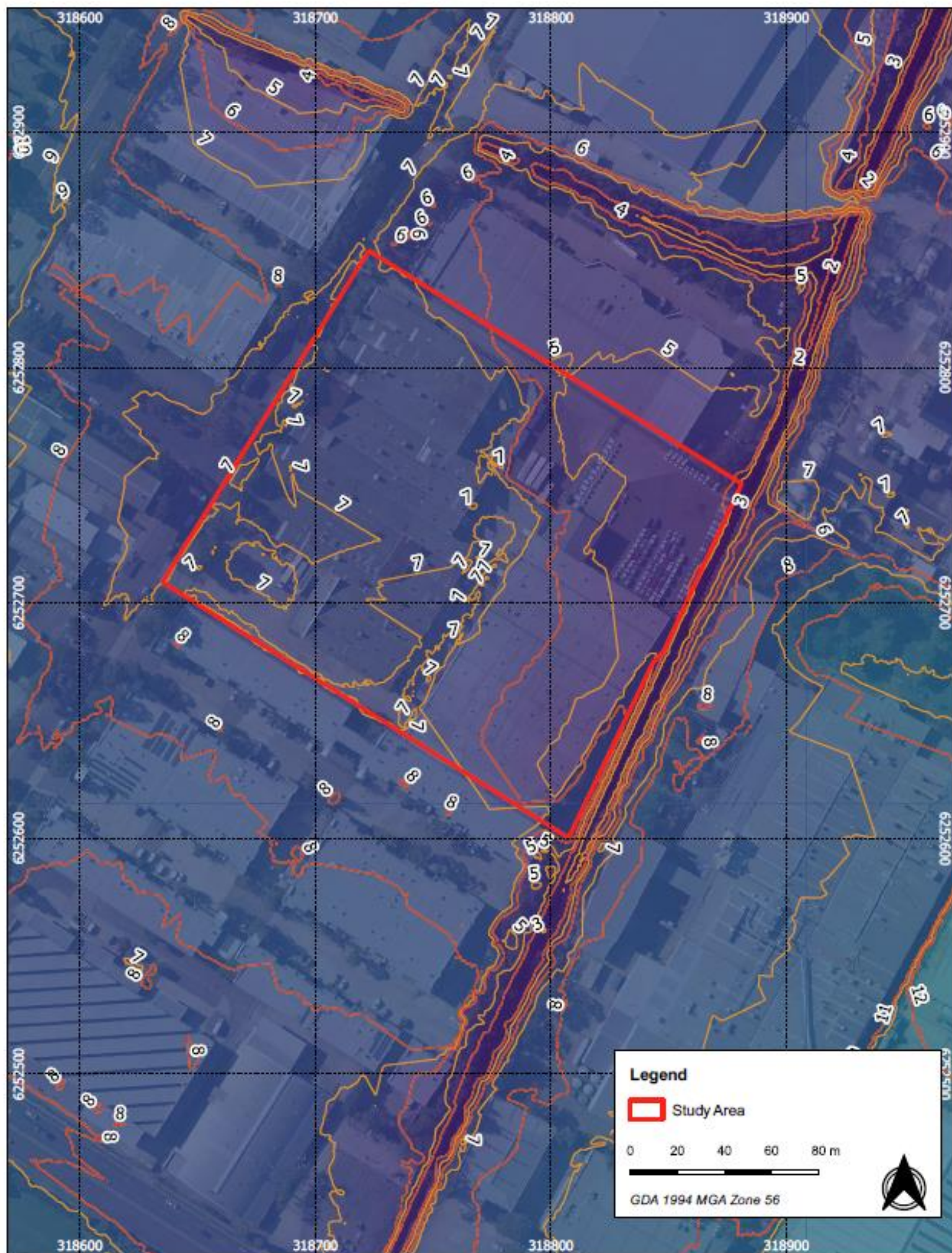
Source: SEED

Drawn by: MR Date: 21/08/2020



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**Figure 3.4 AHD Heights Associated with the Study Area**

11-13 Percy Street, Auburn ACHA

Source: ELVIS

Drawn by: MR Date: 21/08/2020



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### 3.3 HYDROLOGY

Haslams Creek forms the eastern boundary of the study area and consists of a concrete lined channel. An analysis of historical aerals for the study area indicates that the original alignment of Haslams Creek ran through the centre of study area (Figure 3.5). The creek was backfilled between 1951 and 1975, as evident in the historical aerals of the study area (Figure 3.7 and Figure 3.8). Prior to its realignment and backfill, Haslams Creek would have been a 2<sup>nd</sup> or 3<sup>rd</sup> order watercourse.

The nearest major watercourse is Duck River, a 3<sup>rd</sup> order stream located approximately 2 kilometres to the west of the study area (Figure 3.5). Duck River feeds directly into the Parramatta River, which would have been one of the most important and utilised resources for the Aboriginal population within the Sydney Basin. Given the likely landform features and hydrological features associated with the study area, and particularly the proximity of both Haslams Creek and Duck River and their associated resources, it is likely that the surrounding landscape would have experienced occupation and use by Aboriginal people.

As evident in the comparisons of the 1951 and 1975 historical aerals of the study area, the backfill of the original alignment of Haslams Creek and the construction of the canal along the eastern boundary of the study area would have caused significantly high levels of disturbances that would have removed any Aboriginal archaeological material that may have existed in the vicinity.

In addition, the 1943 historical aerial of the study area shows that the original alignment of Haslams Creek meant that much of the study area was highly floodprone, thus causing displacement and removal of any Aboriginal objects that may have been present in the study area.

### 3.4 CLIMATE

The climate of Auburn is warm and temperate due to its close vicinity to Parramatta River, resulting in cool to mild winters and warm to hot summers. Average temperatures at Auburn range from a summer average of 28.8°C to winter average of 18.6°C, with occasional overnight frosts. Rainfall totals are highest in the autumn, with rain occurring on an average of 84 days per year and with approximately 695 millimetres of rainfall each year (Bureau of Meteorology 2020). The temperate climate and moderate average rainfall would have provided optimum conditions for both temporary and long term Aboriginal occupation of the area.

### 3.5 FLORA AND FAUNA

The study area has been entirely cleared of its vegetation due to the intense industrial land-use of the surrounding area.

Originally, the study area would have predominately comprised vegetation of the Cumberland Lowland Woodlands. The Cumberland Lowlands vegetation community typically features eucalypt species including grey box, forest red gum, narrow-leaved ironbark, and spotted gum, though it is the dominance of grey box and red forest gum that make the community distinctive (Urbis 2016b, p.16).

Prior to European settlement and the subsequent clearance of vegetation, this vegetation community would have provided habitats for a variety of animals, as well as potential food and raw material sources for Aboriginal people. Eucalyptus trees were a particularly important resource; leaves were crushed and soaked for medicinal purposes, bowls, dishes, and canoes were made from the bark, and spears, boomerangs and shields were crafted from the hard wood. Typical animals which may have been harvested by Aboriginal people include kangaroos, wallabies, sugar gliders, possums, echidnas, a variety of lizards and snakes, birds, as well as rats and mice. The bones of such animals have been recovered from Aboriginal sites excavated in the Sydney region suggesting that they were sources of food, although the hides, bones and teeth of some of the larger mammals may have been used for Aboriginal clothing, ornamentation, or other implements (Urbis 2016b, p.16).

The study area is in close vicinity to Parramatta River, which would have been habitats for a range of faunal species, including snapper, trevally, whiting, bream, flounder and flathead (Urbis 2016b, p.21).

A list of flora and fauna native to the Auburn district is shown in Table 3.1 and Table 3.2.

**Table 3.1 Native flora present within the Auburn district**

Scientific name	Common name
<i>Nyssanthus diffusa</i>	Barbed-wire weed
<i>Carissa ovata</i>	currantbush
<i>Parsonsia eucalyptophylla</i>	gargaloo
<i>Parsonsia lanceolata</i>	northern silkpod
<i>Parsonsia straminea</i>	monkey rope
<i>Polyscias elegans</i>	celery wood
<i>Ozothamnus diosmifolius</i>	white dogwood
<i>Pandorea pandorana</i>	wonga vine
<i>Ehretia membranifolia</i>	weeping koda
<i>Wahlenbergia gracilis</i>	sprawling bluebell
<i>Capparis arborea</i>	brush caper berry
<i>Capparis sarmentosa</i>	scrambling caper
<i>Commelina diffusa</i>	wandering jew
<i>Callitris endlicheri</i>	black cypress pine
<i>Diospyros geminata</i>	scaly ebony
<i>Acalypha eremorum</i>	soft acalypha
<i>Alstonia constricta</i>	Bitterbark
<i>Acacia complanata</i>	Flatstem wattle

**Table 3.2 Native fauna present within the Auburn district**

Scientific name	Common name
<i>Canis familiaris</i>	Dingo
<i>Petrogale herberti</i>	Herbert's rock-wallaby
<i>Trichosurus vulpecula</i>	common brushtail possum
<i>Petaurus norfolcensis</i>	Squirrel glider
<i>Neochmia modesta</i>	Plum-headed finch
<i>Zosterops lateralis</i>	Silvereye
<i>Corvus coronoides</i>	Australian raven
<i>Rhipidura leucophrys</i>	willie wagtail
<i>Cracticus nigrogularis</i>	pied butcherbird
<i>Entomyzon cyanotis</i>	blue-faced honeyeater
<i>Manorina melanoccephala</i>	noisy miner
<i>Eulamprus quoyii</i>	eastern water skink
<i>Gehyra dubia</i>	dubious dtella
<i>Tandanus tandanus</i>	freshwater catfish



Scientific name	Common name
<i>Intellagama lesueurii</i>	eastern water dragon
<i>Emydura macquarii krefftii</i>	Krefft's river turtle

### 3.6 PAST LAND USE PRACTICES

The study area is located within a reclaimed creek that was originally part of two separate crown grants. These included a 30 acre grant given to James Wright in 1819, while Samuel Haslam (also known as Haslem) was given a 50 acre block in 1816 (Primary Application 8863). These were separated by the sprawling Hacking Creek, which was later renamed Haslams Creek (Austral Archaeology 2020b, p.12).

The first land grant that encompassed a small portion on the eastern side of the study area was given to Samuel Haslem in 1816, who utilised the land for agricultural purposes. The majority of the study area was given as a land grant to James Wright in 1819. He was granted a second piece of land in 1823 that became his primary residence (Thorp 1999, 'Advertising' 1843). This land was within a rural farming community so reasoning would suggest that James farmed the land during his time living there ('Government and General Orders' 1811, Thorp 1999, p.10).

In 1870, the study area was purchased by the Sydney Meat Preserving Company Limited (SMPC Ltd), which was part of 140 acres that was occupied by SMPC Ltd in the Auburn and Homebush areas. The companies buildings were located to the north-east corner of the property, near the intersection of Percy Street and Parramatta Road while the study area was located within the holding pens that were located across the rest of the property (Austral Archaeology 2020b, p.13).

In the mid-20<sup>th</sup> century, Haslams Creek was realigned into a canal as part of a larger public works act that was undertaken to create employment after the great depression. This included a large amount of reclamation within the study area. The section of creek adjacent to the study area was completed prior to 1943, as evident in Figure 3.6. The creek was realigned into a gentle stormwater canal, formed from concrete. This reduced the size of the creek significantly and turned the land into an area of useable space for building construction (Austral Archaeology 2020b, p.16).

During the mid-20<sup>th</sup> century, SMPC Ltd subdivided off sections of their land, which included the study area in 1946. This was purchased by Malley Limited, a steel production company, which constructed a warehouse along the western edge of the study area adjacent to Percy Street in 1968. A second building was constructed in the following decade on the eastern half of the study area. Following on from this, the property went through several phases of ownership and occupation, with very limited modifications being made to either of the buildings at the sites (Austral Archaeology 2020b, p.16).





**Figure 3.5 Hydrology Associated with the Study Area**

11-13 Percy Street, Auburn ACHA

Source: Nearmap

Drawn by: MR Date: 21/08/2020



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**Figure 3.6** 1943 Historic Aerial Imagery Associated with the Study Area (after (Geo-Logix 2019))





**Figure 3.7** 1951 Historic Aerial Imagery Associated with the Study Area (after (Geo-Logix 2019))



**Figure 3.8** 1975 Historic Aerial Imagery Associated with the Study Area (after (Geo-Logix 2019))





**Figure 3.9** 1991 Historic Aerial Imagery Associated with the Study Area (after (Geo-Logix 2019))





**Figure 3.10** 2007 Historic Aerial Imagery Associated with the Study Area (after (Geo-Logix 2019))





**Figure 3.11** 2019 Historic Aerial Imagery Associated with the Study Area (after (Geo-Logix 2019))







**Figure 3.12 Disturbances Associated with the Study Area**

11-13 Percy Street, Auburn ACHA

Source: Nearmap

Drawn by: MR Date: 21/08/2020



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## 4 PREDICTIVE STATEMENT

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In general, an archaeological predictive statement on any study area draws on surrounding environmental data, previous archaeological research and predicative models for Aboriginal occupation. Another essential aspect to predicting the archaeological integrity of a site and something that must be considered is previous land uses and the degree of disturbance across the study area. These are addressed in the following sections.

The Auburn area is believed to have experienced a moderate climate during the Holocene and this, together with its location within the wider Parramatta River catchment, made the region conducive to Aboriginal occupation in the past. The study area lies within a resource base associated primarily with the Parramatta River and small tributaries running into the Parramatta River and Sydney Harbour. Habitats associated with these water systems would have supported a wide range of flora, animals, fish, birds and mammals.

Due to the ideal environmental setting, the landscape surrounding the study area would have been subject to a wide variety of human activities. This primarily would have been due to the presence of good resource availability, followed by the possible presence of permanent water sources in the immediate area. Activities would have included camping, hunting, gathering, cooking, ceremonies, and other cultural activities associated with semi-permanent settlement sites in the region. Some of these activities, mainly stone tool knapping, are seen in the archaeological record.

In predicting site types within the study area, based on previously identified sites within the vicinity, one would expect to find surface isolated artefacts and scatters on the ground surface of sensitive landforms and estuarine shell midden sites. However, given the high level of historical disturbance in which the study area has been subject to, surface sites will probably not be visible in the entirety of the study area.

If stone tools are recorded, they are likely to conform to other known sites in the region. This means that tools are likely to be from a late Holocene occupation with stone technologies attributed to the Bondaian phase of the Eastern Regional Sequence. If stone tools are present on site, they will predictably be made from silcrete, quartzite, chert or quartz sourced from local quarries. These sites may be the results of activities attributed to the people within the Wann-gal clan.

In summary the main trends broadly seen across eastern New South Wales are that:

- Archaeological sites occur on most landforms;
- Site frequency and density are dependent on their location in the landscape;
- There is a dominance of low density surface open artefact scatters and isolated finds;
- There is a noted paucity of scarred trees due to land clearance;
- Artefact scatters are commonly located in close proximity to permanent water sources along creek banks, alluvial flats and low slopes, largely concentrated within the first 100 metres of the creekline. More complex sites are usually located close to water sources with major confluences being key locations for occupation sites.
- Archaeological material is also present beyond the immediate creek surrounds in decreasing artefact densities;
- There may be concentrations of sites occurring on ridge tops and crests that are associated with pathways through the landscape;
- Subsurface archaeological deposits are often recovered in areas where no visible surface archaeological remains are evident;
- The dominant raw material used in artefact manufacture is silcrete and fine grained silicious material with smaller quantities of chert, quartz and volcanic stone seen;
- Artefact assemblages usually comprise a small proportion of formal tool types with the majority of assemblages dominated by flakes and debitage;



- While surface artefact scatters may indicate the presence of subsurface archaeological deposits, surface artefact distribution and density may not accurately reflect those of subsurface archaeological deposits;
- Aboriginal scarred trees may be present in areas where remnant old growth vegetation exists; and
- PADs are most likely to occur along valley floors and low slopes in well-drained areas.

While these statements provide an adaptable framework for applying a predictive model to the study area, based on the previous models it is possible to further expound on the generalisations made above. For sites surrounding the study area, it can also be predicted that:

- Sites are likely to be found across broad topographic zones at varying densities, however this can be influenced by micro-topographic variables such as relatively level ground without significant exposed geology, freshwater accessibility and well drained, elevated ground;
- Sites are most likely to occur at or close to ecotones, i.e. where different environments meet;
- Artefact scatters are most likely to occur on raised, level ground, near sources of freshwater or wetlands, or along spur crest or ridgelines;
- Low lying wetland areas subject to constant inundation will be unlikely to contain Aboriginal occupation;
- A low density “background” of artefacts in the form of isolated finds, subsurface or surface scatters will exist in areas not considered primary occupation sites;
- Ridges on higher ground are likely to have been used as transport links and may contain residual evidence of occupation.

As a result of these statements, it is reasoned that undisturbed areas within the study area are considered archaeological and culturally sensitive with frequent Aboriginal sites in the vicinity. The general studies of the Auburn and Greater Sydney region, the specific investigations surrounding the study area and the search of the AHIMS database have helped to predict what certain site types can be expected during the test excavations for this assessment. These are:

- Stone artefacts are unlikely to be present due to the continuous historical occupation and disturbance that has occurred within the study area.
- Scarred trees are unlikely to be present due to the lack of old growth vegetation within the study area.
- Pigment rock art sites are unlikely to be present due to a lack of suitable geological requirements (sandstone overhangs).
- Engraved rock art sites are unlikely to be present due to a lack of suitable geological requirements (exposed sandstone bedrock).
- Grinding grooves are unlikely to be present due to a lack of suitable geological requirements (exposed bedrock near to a water source).
- Ceremonial grounds are unlikely to be present due to their general rarity within New South Wales.
- Burials are unlikely to be present due the lack of deep sandy locations suitable for burial.
- Shell middens are unlikely to be present due to the high level of historical disturbance within the study area.
- Stone arrangements are unlikely to be present due to their general rarity within New South Wales.

## 5 ABORIGINAL SURVEY

## ARCHAEOLOGICAL

### 5.1 SURVEY METHODOLOGY

The specific survey methodology developed for this assessment was guided by the survey requirements as set out in the code of practice. The survey methodology was designed to optimise the investigation of areas where archaeological materials may be present and visible, as well as investigation of the broader archaeological potential of the study area. The field inspection of the study area therefore paid close attention to areas of favourable landform conditions.

The key survey variables of ground visibility, which considers the amount of ground surface which is visible and not covered by any vegetation; and exposure, which defines areas where dispersed surface soils and vegetative matter afford a clear assessment of the ground, were assessed across the study area and within each landform element. Overall survey coverage and calculated survey effectiveness was recorded. Note that the effectiveness of the field survey was largely dependent on the degree of ground surface visibility.

### 5.2 SURVEY RESULTS

An archaeological survey of the study area was undertaken on 21 August 2020 by David Marcus (Director, Austral). No Aboriginal objects or sites were identified during the archaeological survey undertaken as part of this assessment. This is due to the entirety of the site being developed with the construction of factory buildings utilised for industrial purposes.

The study area has been built up slightly from the current road level for the construction of the existing warehouse buildings that make up the vast majority of the study area (Figure 5.1). It was assessed during the archaeological survey that the road level most likely represents the original ground level, as the surrounding development within the area has been raised slightly above the road level.

The western half of the study area demonstrated extreme levels of historical disturbance as a result of the construction of the two-storey factory buildings within this portion of the site (Figure 5.4). It was determined that the subsurface impact caused by the construction of these factory buildings would have removed any traces of the original soil profile. This was further verified in the Geotechnical Report, which determined that much of the study area contains fill deposits up to a depth of 1.8 metres (Geo-Logix 2019).

The eastern half of the study area also portrayed high levels of historical disturbance caused by the construction of factory buildings and carpark areas (Figure 5.3). Similarly, this would require deep level ground impacts for the construction of the building in this portion of the site. It was also assessed during the archaeological survey that much of the eastern edge of the study area has been benched out during the modification of Haslam's Creek between the 1950s and mid-1970s.

Overall, it was assessed that the study area contained very limited potential for containing subsurface Aboriginal cultural material as a result of the very high levels of historical disturbances present within the study area.



**Table 5.1 Survey Coverage**

Survey Unit	Landform	Survey unit area (m <sup>2</sup> )	Visibility (%)	Exposure (%)	Effective Coverage area (m <sup>2</sup> )	Effective Coverage (%)
1	Unknown (Unable to determine original landform type due to significant historical disturbance present in the study area)	33,400	5%	5%	1670	2%

**Table 5.2 Landform Summary**

Landform	Landform area (m <sup>2</sup> )	Area effectively surveyed (m <sup>2</sup> )	Landform effectively surveyed (m <sup>2</sup> )	No. of Aboriginal sites	No. of artefacts or features
Unknown (Unable to determine original landform type due to significant historical disturbance present in the study area)	33,400	1670	1670	0	0



**Figure 5.1** East-facing view showing the existing warehouse buildings fronting Percy Street along the western edge of the study area.



**Figure 5.2** East-facing view showing the truck parking and loading zone in the south-west portion of the study area.





**Figure 5.3** South-facing view showing the loading zone within the central portion of the study area and the two-storey warehouse buildings to the right.

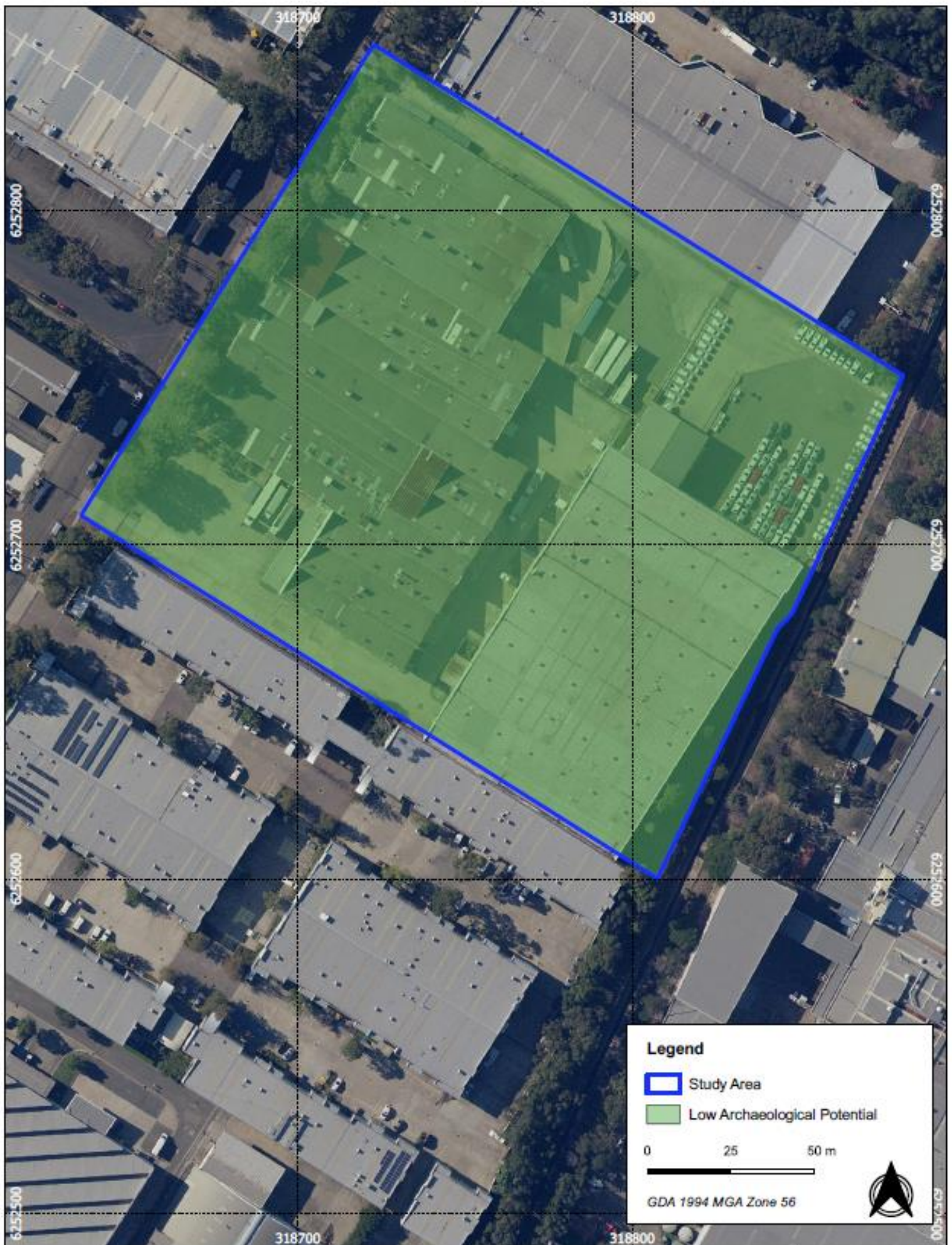


**Figure 5.4** South-west facing view showing the central loading zone in the foreground and the two-storey warehouse buildings in the background that are located along the western boundary of the study area.



**Figure 5.5** North-facing view showing the loading zone, two-storey warehouse buildings fronting Percy Street to the left and adjacent warehouses to the east.





**Figure 5.6 Archaeological Potential within the Study Area**

11-13 Percy Street, Auburn ACHA

Source: Nearmap

Drawn by: MR Date: 21/08/2020



**AUSTRAL**  
ARCHAEOLOGY

## 6 CULTURAL HERITAGE VALUES

An assessment of significance seeks to determine and establish the importance or value that a place, site or item may have to the community at large. The concept of cultural significance is intrinsically connected to the physical fabric of the item or place, its location, setting and relationship with other items in its surrounds. The assessment of cultural significance is ideally a holistic approach that draws upon the response these factors evoke from the community.

### 6.1 BASIS FOR THE ASSESSMENT

The significance values provided in the Australia ICOMOS *Charter for the Conservation of Places of Cultural Significance* (the Burra Charter) are considered to be the best practice heritage management guidelines in Australia (Australia ICOMOS 2013a). The Burra Charter defines cultural significance as:

*“...aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.”* (Australia ICOMOS 2013a, p.2)

The Burra Charter significance values outlined in Table 6.1; these are frequently adopted by cultural heritage managers and government agencies as a framework for a more holistic assessment of significance.

**Table 6.1 Definitions of Burra Charter significance values (Australia ICOMOS 2013b)**

Value	Definition
<b>Aesthetic</b>	Refers to the sensory and perceptual experience of a place. That is how a person responds to visual and non-visual aspects such as sounds, smells and other factors having a strong impact on human thoughts, feelings and attitudes. Aesthetic qualities may include the concept of beauty and formal aesthetic ideals. Expressions of aesthetics are culturally influenced.
<b>Historic</b>	Refers to all aspects of history. For example, the history of aesthetics, art and architecture, science, spirituality and society. It therefore often underlies other values. A place may have historic value because it has influenced, or has been influenced by, an historic event, phase, movement or activity, person or group of people. It may be the site of an important event. For any place the significance will be greater where the evidence of the association or event survives at the place, or where the setting is substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of such change or absence of evidence.
<b>Scientific</b>	Refers to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions.
<b>Social</b>	Refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds for them.
<b>Spiritual</b>	<p>Refers to the intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related places.</p> <p>The qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place, purpose and obligations in the world, particularly in relation to the spiritual realm.</p> <p>The term spiritual value was recognised as a separate value in the Burra Charter, 1999. It is still included in the definition of social value in the Commonwealth and most state jurisdictions. Spiritual values may be interdependent on the social values and physical properties of a place.</p>



In addition to the Burra Charter significance values, other criteria's and guidelines have been formulated by other government agencies and bodies in NSW to assess the significance of heritage places in NSW. Of particular relevance to this assessment are the guidelines prepared by the Australian Heritage Council and the Department of the Environment, Water, Heritage and the Arts (DEWHA), and Heritage NSW (Australian Heritage Council & DEWHA 2009, DECCW 2010a, Office of Environment and Heritage 2011, NSW Heritage Office 2001).

The Guide (Office of Environment and Heritage 2011, p.10) states that the following criteria from the NSW Heritage Office (2001, p.9) should be considered:

- **Social value:** Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?
- **Historic value:** Is the subject area important to the cultural or natural history of the local area and/or region and/or state?
- **Scientific value:** Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state?
- **Aesthetic value:** Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state?

OEH (2011, p.10) states that when considering the Burra Charter criteria, a grading system must be employed. Austral will use the following grading system to assess the cultural values of the study area and its constituent features. These are outlined in Table 6.2.

**Table 6.2 Gratings used to assess the cultural values of the study area**

Grading	Definition
<b>Exceptional</b>	The study area is considered to have rare or outstanding significance values against this criterion. The significance values are likely to be relevant at a state or national level.
<b>High</b>	The study area is considered to possess considerable significant values against this criterion. The significance values are likely to be very important at a local or state level.
<b>Moderate</b>	The study area is considered to have significance values against this criterion; these are likely to have limited heritage value but may contribute to broader significance values at a local or State level.
<b>Little</b>	The study area is considered to have little or no significance values against this criterion.

## 6.2 ASSESSMENT OF SIGNIFICANCE

The following section addresses the Burra Charter significance values with reference to the overall study area.

### 6.2.1 AESTHETIC SIGNIFICANCE VALUES

Aesthetic values refer to the sensory, scenic, architectural and creative aspects of the place. These values may be related to the landscape and are often closely associated with social and cultural values.

The immediate area surrounding the study area has been heavily developed and modified from its original landscape that would have existed prior to European settlement. The study area and the neighbouring properties have been transformed and significantly built up and utilised for various industrial and commercial activities. The modification of the section of Haslam's Creek adjacent to the study area into a concrete canal has also meant the adaptation and removal of the natural environment associated with the creekline. As such, the heavy development and modification of the original landscape has caused a significant loss to the aesthetic significance of the study area.

Based on this assessment, the study area is considered to have **little** aesthetic significance values.

### 6.2.2 HISTORIC SIGNIFICANCE VALUES

The assessment of historic values refers to associations with particular places associated with Aboriginal history. Historic values may not be limited to physical values, but may relate to intangible elements that relate to memories, stories or experiences.

The ethnographic record suggests that the locality around the study area

Based on this assessment, the study area is considered to have **little** historic significance values.

### 6.2.3 SCIENTIFIC SIGNIFICANCE VALUES

Scientific significance generally relates to the ability of archaeological objects or sites to answer research questions that are important to the understanding of the past life-ways of Aboriginal people. Australia ICOMOS (2013b, p.5) suggests that to appreciate scientific value, that the following question is asked: *“Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?”*.

In addition to the above criteria, The Guide (Office of Environment and Heritage 2011, p.10) also suggests that consideration is given to the Australian Heritage Council and DEWHA (2009) criteria, which are particularly useful when considering scientific potential:

- **Research potential:** does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state’s natural and cultural history?
- **Representativeness:** how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- **Rarity:** is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- **Educational potential:** does the subject area contain teaching sites or sites that might have teaching potential?

The results of the Aboriginal archaeological survey has demonstrated that the majority of the study area shows high levels of disturbance caused by the historical development of the study area and its use for industrial activities from the late 19<sup>th</sup> century onwards. As noted in Section 3.6, much of the study area is covered with large, two storey factory buildings that would have caused deep impacts to the ground surface. Other disturbances within the study area include the levelling and benching out of the eastern edge of the study area as a result of the modification of Haslam’s Creek in between 1950s and mid-1970s. As a result of these high level impacts to the ground surface, it is considered very unlikely that the stratigraphy and soil profile that existed prior to European development of the study area remains intact and undisturbed. As such, the likelihood of Aboriginal cultural material being present within the study area is considered is very low.

It is therefore considered that there is a low potential that any archaeological investigations within the study area would recover any significant quantity of Aboriginal cultural material, and if material, including stone artefacts, were present on site they would most likely be present in disturbed stratigraphic contexts and not be *in-situ*. Thus, if any Aboriginal cultural material was present on site, it would provide limited information on the Aboriginal occupation of the study area, which is a key requirement of the research potential criterion.

In summary, the overall research value of the study area is considered to be very low.

Given the highly intense development of the study area from the late 19<sup>th</sup> century onwards, which has consequently removed any traces of the original landscape within the boundaries of the study area, the representativeness and rarity of the site is considered very low.



The Aboriginal cultural material contained within the study area is not considered to be of high educational value. The survey undertaken as part of this assessment has considered that a very large portion of the study area has been highly disturbed as a result of its use for industrial activities and the construction of the factory buildings. As such, it is considered unlikely that Aboriginal cultural material is present within the study area, and if present, it would most likely be within a disturbed stratigraphic context. The overall educational value of the study area is therefore considered to be low.

#### 6.2.4 SOCIAL AND SPIRITUAL SIGNIFICANCE VALUES

As social and spiritual significance are interdependent, Austral has undertaken a combined assessment of these values. The Consultation Requirements specify that the social or cultural values of a place can only be identified through consultation with Aboriginal people.

The following submissions were received from RAPs during the completion of the project. Phil Khan of Kamilaroi-Yankuntjatjara Working Group has provided information regarding the social and spiritual significance of the study area, which is present below:

*"I have reviewed your ACHA methodology for 11-13 Percy St, Auburn, as you may know this whole area is highly significant and spiritual to us Aboriginal people, as this is part of river land and our people lived for thousands of years, fishing and hunting game. Aboriginal People also would have camped & used firepits to cook kangaroos and other animals. This then softens the ground beneath over time allowing the fire pit to be easier to dig the ground and become a burial place, they would put stones over the top to protect the from dingos [sic] and also mark the tree to let our people know that it was a burial site, that would then then make the area a sacred place and they would move their camp site to another place.*

*All the markings have been removed by the first fleet, so the burial sites are still there somewhere unknown. To us Aboriginal people we still respect our old people and want to protect and acknowledge there passing."*

A copy of this letter from Kamilaroi-Yankuntjatjara Working Group is present in Appendix F of this report.

Based on this assessment, the study area is considered to have **high** social and spiritual significance values.

### 6.3 STATEMENT OF SIGNIFICANCE

The statement of significance for the study area has been formulated using the Burra Charter significance values and relevant NSW guidelines (DECCW 2010a, Office of Environment and Heritage 2011, Australia ICOMOS 2013a).

Heritage NSW specifies the importance of considering cultural landscapes when determining and assessing Aboriginal cultural values. The principle behind this is that *'For Aboriginal people, the significance of individual features is derived from their inter-relatedness within the cultural landscape. This means features cannot be assessed in isolation and any assessment must consider the feature and its associations in a holistic manner'* (DECCW 2010b).

The historical research of the past land-use practices and European development within the study area has shown that the site has been subject to continuous development from the mid 19<sup>th</sup> century onwards. This includes the ownership and use of the study area by the Sydney Meat Preserving Company Limited (SPMPC Ltd) from 1870 until 1947, as holding pens associated with SPMPC Ltd were located within the study area. From the 1960s onwards large industrial buildings were constructed along the western boundary of the study area as the study area was purchased by Malley Limited, a steel production company. From the late 1970s onwards the entirety of the study area was developed, with large industrial factory buildings comprising a vast portion of the study area. The Aboriginal archaeological survey undertaken as part of this assessment has confirmed the presence of high levels of disturbances associated with the previous developments within the study area. The construction of the various buildings within the study area would have caused high levels of subsurface impacts, which would most likely have removed any traces of Aboriginal cultural material that were present. In addition, it is likely that subsurface impacts would have been caused by the construction of the factory buildings, landscaping works and the installation of any associated services.

No Aboriginal objects or sites were identified during the archaeological survey, which was determined to be the case due to the high level of development present across the entirety of the study area. The results of the survey have determined that there is a very low potential for subsurface Aboriginal cultural material to be present due to the high levels of disturbances present that were caused by the construction of factory buildings from the 1960s onwards that were associated with Malley Limited.

Overall, on the balance of the current evidence it is considered that the archaeological character of the study area has been sufficiently determined by the survey, and that the study area holds very low potential to contain Aboriginal cultural material.

As has been identified during the consultation stages of the project, the study area and its surroundings hold high cultural and spiritual significance to the Aboriginal community. This was stated in a letter provided by Phil Khan of Kamilaroi-Yankuntjajara Working Group (KYWG) dated to 6 October 2020, which outlined an occupational history of the surrounding land and demonstrated the importance of the natural resources to the local Aboriginal population. This letter also highlighted the sacred nature of the area surrounding the study area with the possible presence of unknown Aboriginal burials in the vicinity. The letter provided by KYWG also outlined the need for further investigation of the study area in the form of test excavations due to the site's close vicinity to Haslam's Creek. These comments from KYWG are acknowledged, although the high levels of historical disturbance that has been assessed within the study area would suggest that there is a very low likelihood that any burials are present.

The overall significance of the study area in terms of its Aboriginal archaeological heritage is considered low.



## 7 IMPACT ASSESSMENT

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This section outlines, according to Heritage NSW guidelines, the potential harm that the proposed activity may have on identified Aboriginal objects and places within the study area (Office of Environment and Heritage 2011, DECCW 2010a).

### 7.1 IMPACT ASSESSMENT

This ACHA has included a programme of investigations that have characterised the nature, extent and significance of Aboriginal sites within the study area.

A review of AHIMS determined that no previously recorded sites are located within the boundaries of the study area.

The main impacts on the subject land relate to extensive land clearance and the construction of large factory buildings associated with Malley Limited from 1968 onwards. Land clearance would have resulted in soil disturbance and topsoil movement and this activity is commonly destructive to Aboriginal artefacts. The modification of Haslam's Creek and the construction of the concrete canal in the central and eastern portions of the study area would have also greatly impacted the original soil profile. The 1943 and 1951 historical aerials indicate that prior to this modification and the construction of the canal, the study area had been subject to earthworks associated with drainage channels, dams and extensive erosion over the elevated portions of the study area (Figure 3.6 and Figure 3.7). The lower portions of the study area appear to comprise channels and flood zones associated with the original alignment of Haslam's Creek. As noted in the Geotechnical report of the study area, alluvial sediments comprising interbedded layers of mixed sand, silts and clays with occasional peat layers were identified across the eastern and central portion of the site, which are up to 7 metres deep and originate from the infill of the former channel of Haslam's Creek (Geo-Logix 2019).

The continual development of the study area associated with the operation of the steel production factories associated with Malley Limited from the 1860s onwards has caused high levels of impact and disturbance to the natural landscape. The study area was subdivided in 1961 and was fully developed by 1970 as a warehouse facility. The development of the study area would have involved extensive excavations across the study area that would have displaced any Aboriginal material that would have been present. Disturbances would have included the backfill of the original alignment of Haslam's Creek for the construction of the canal, excavation of footings associated with the warehouses, landscaping and the installation of services and underground tanks. Substantial benching would have taken place, with one of the buildings being constructed with a suspended slab with an undercroft area for vehicle storage. Several large retaining walls are also present across the study area indicating that the ground level has been reduced by several metres. As stated in the Geotechnical Investigation report of the study area, fill material was encountered across the study area to a maximum depth of 1.8 metres (Geo-Logix 2019).

As a result, whilst sandy silts on the margins of waterways are often favourable conditions for Aboriginal archaeological material to survive, the land-use history and previous disturbance within the study area has most likely removed any evidence of Aboriginal cultural material that may have existed. In the instance that Aboriginal archaeological material is present within the study area, it will most likely have been removed from situ and its original context given the high disturbance that the study area has been subject to.

Details of the proposed activity is outlined in Figure 7.1 and Figure 7.2.

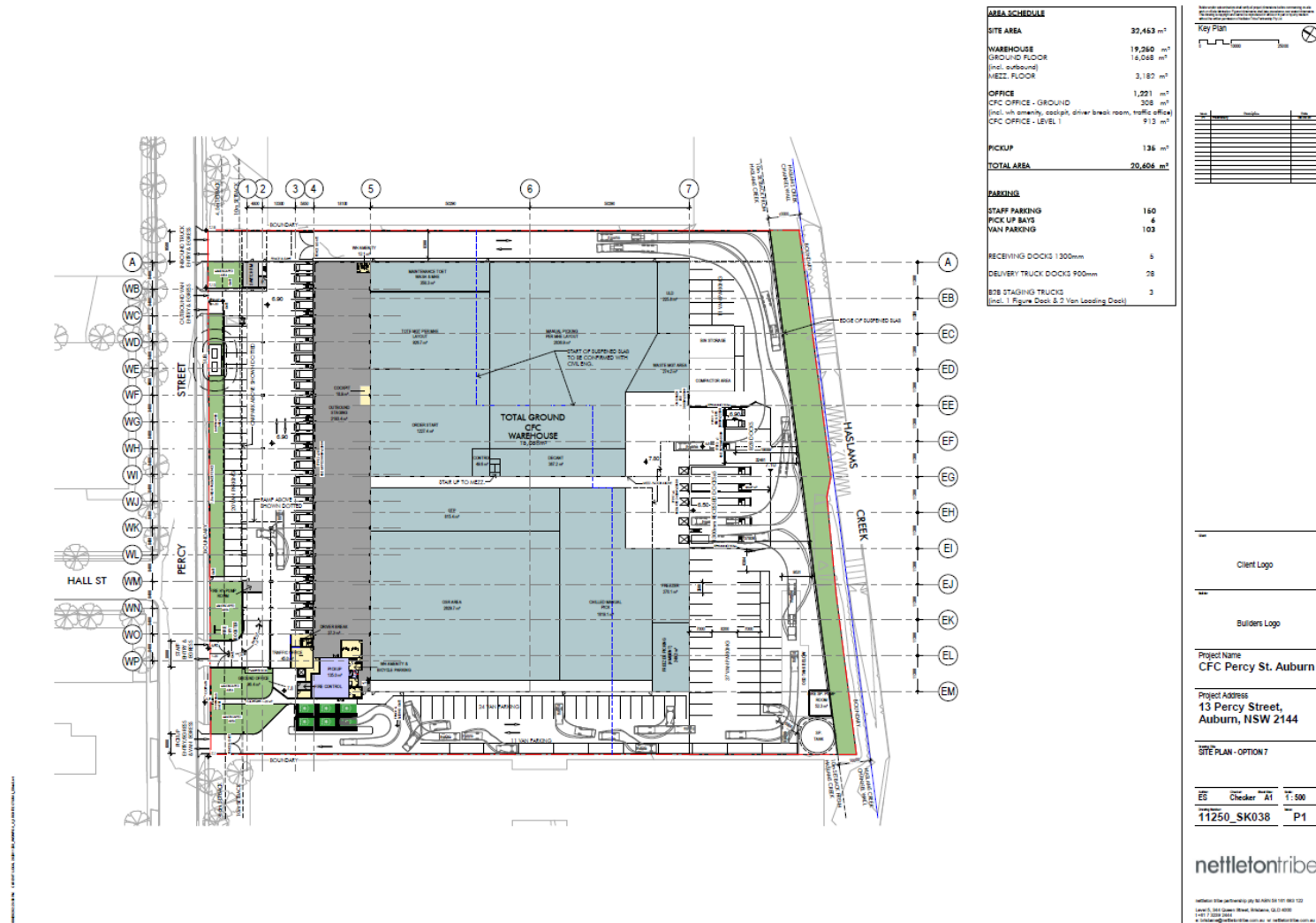
**Table 7.1**                      **Summary of Past Land uses within the Study Area, and the Potential Impacts on Archaeological Resources**

Past Land Uses	Potential Impacts on Archaeological Resources
Historical Land Clearance	Loss of native trees, shrubs and grasses would lead to the potential loss of scarred trees, increased erosion and potential dispersal or disturbance of surface and subsurface artefacts across the study area.
Construction of factory and warehouse buildings	High levels of earth disturbance leading to the potential disturbance and dispersal of artefacts from their stratigraphic context.
Modification of Haslam's Creek	High levels of earth disturbance associated with the benching and levelling of the land immediately adjacent to Haslam's Creek, leading to the potential disturbance and dispersal of artefacts from their stratigraphic context.

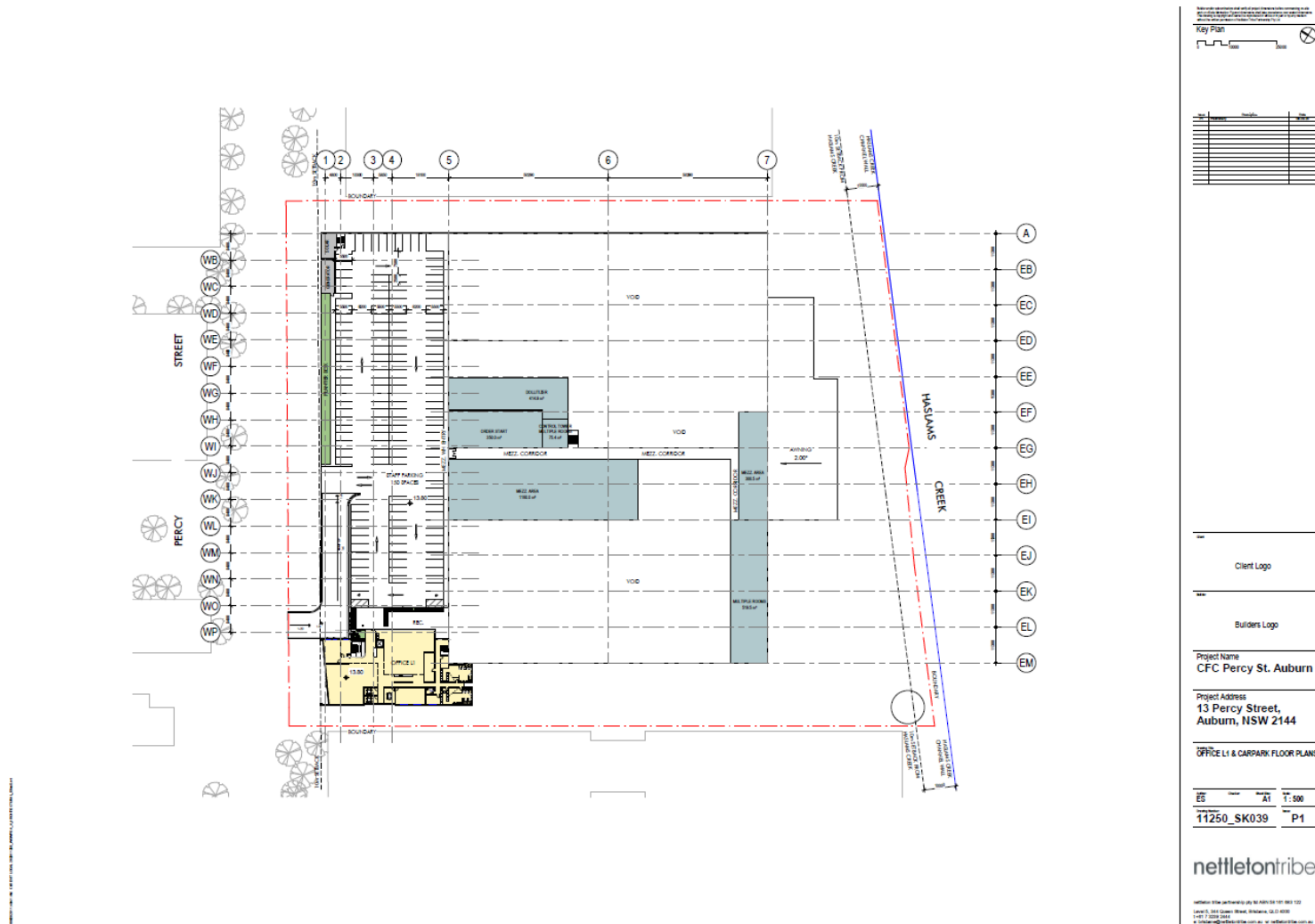
**Table 7.2**                      **Summary of Impact Assessment**

Site Name/ Number	Type of Harm (Direct / Indirect / None)	Degree of harm (Total / Partial / None)	Consequence of harm (Total loss of value / Partial loss of value / No loss of value)
No sites present in the study area	None	None	No loss of Value



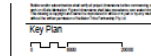
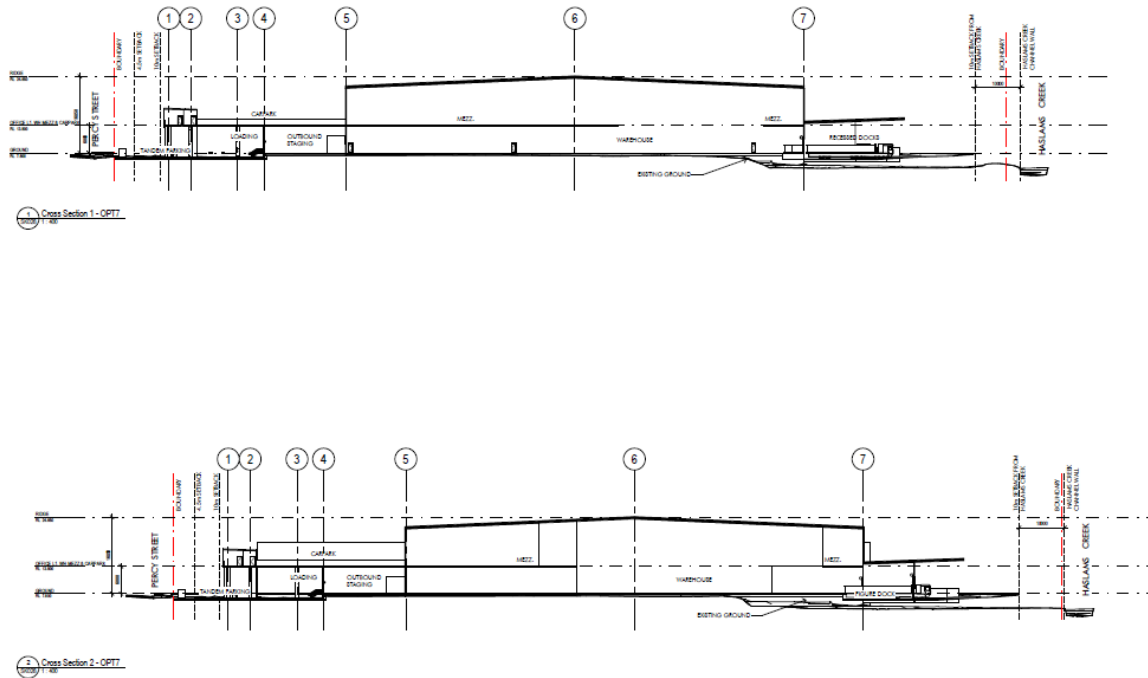
**Figure 7.1 Site Plan associated with the Study Area (Plan provided by the proponent)**


**Figure 7.2 Office Level 1 and Carpark Floor Plans associated with the study area (Plan provided by the proponent)**





**Figure 7.3** Cross-sections associated with the development within the study area (Plan provided by the proponent)



Rev	Description	Date

Client Logo

Builders Logo

Project Name  
CFC Percy St. Auburn

Project Address  
13 Percy Street,  
Auburn, NSW 2144

CROSS SECTION - OPTION 7

Author	Checker	Rev
11250_SK032	A1	P1

nettletontribe

nettletontribe Pty Ltd ABN 55 151 883 122  
Level 3, 344 Green Road, Winkler, QLD 4030  
1-800-725-883  
#nettletontribe or nettletontribe.com.au or nettletontribe.com.au

## 8 RECOMMENDATIONS

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The following recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, the findings of the archaeological survey and the predicted impact of the proposed development on archaeological resources. It is recommended that:

- 1) No further Aboriginal archaeological works are required to be undertaken.
- 2) All contractors undertaking earthworks on site should be briefed on the protection of Aboriginal heritage objects under the *National Parks and Wildlife Act 1974* and the penalties for damage to these items.
- 3) A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project and to the AHIMS Registrar.

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# APPENDICES

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## APPENDIX A: AHIMS SEARCH RESULTS




 Office of  
 Environment  
 & Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : 2034

Client Service ID : 529708

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-6-2591	Duck Creek;Guildford;	AGD	56	314750	6251320	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2339	Haslams Ck 1	AGD	56	319810	6251690	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2344	Duck River 21;Granville South;	AGD	56	316314	6251800	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2347	Duck River 19;	AGD	56	316494	6252800	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2348	Duck River 20;	AGD	56	316394	6252500	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2349	Duck River 22;	AGD	56	316414	6251970	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2627	HP-1	AGD	56	315850	6255210	Open site	Valid	Artefact : -		102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2098	Duck River 1;	AGD	56	316305	6251180	Open site	Valid	Artefact : -	Open Camp Site	102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2682	Wanngal Woodland Axe-Marked Tree	AGD	56	321152	6254826	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2683	Wanngal Woodland IF1	AGD	56	321154	6254823	Open site	Valid	Potential Archaeological Deposit (PAD) : -		102142,102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2684	Wanngal Woodland IF2	AGD	56	321386	6255227	Open site	Valid	Potential Archaeological Deposit (PAD) : -		102142,102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2685	Wanngal Woodland IF3	AGD	56	321319	6255192	Open site	Valid	Potential Archaeological Deposit (PAD) : -		102142,102196
	<a href="#">Contact</a>							<a href="#">Permits</a>		
45-6-2758	Duck River 3	AGD	56	316235	6250935	Open site	Partially Destroyed	Artefact : 1		102196
	<a href="#">Contact</a> T Russell							<a href="#">Permits</a> 3532		
45-6-2759	Duck River 5	AGD	56	316205	6250840	Open site	Valid	Artefact : -		102196
	<a href="#">Contact</a> T Russell							<a href="#">Permits</a>		

Report generated by AHIMS Web Service on 24/08/2020 for Miles Robson for the following area at Datum :GDA, Zone : 56, Eastings : 314452 - 322793, Northings : 6249891 - 6255866 with a Buffer of 0 meters. Additional Info : archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 34  
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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : 2034

Client Service ID : 529708

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-6-2760	Duck River 2	AGD	56	316320	6251120	Open site	Valid	Artefact : -		102196
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2761	Duck River 4	AGD	56	316230	6250840	Open site	Partially Destroyed	Artefact : -		102196
	<u>Contact</u> T Russell	<u>Recorders</u>	Michael Guider					<u>Permits</u>	3532	
45-6-2916	Duck River 6	GDA	56	316105	6250850	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2917	Duck River 7	GDA	56	316035	6250850	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2918	Duck River 8	GDA	56	316135	6250975	Open site	Partially Destroyed	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>	3532	
45-6-2919	Duck River 9	GDA	56	316160	6251055	Open site	Partially Destroyed	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>	3532	
45-6-2920	Duck River 10	GDA	56	316215	6251175	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2921	Duck River 12	GDA	56	316200	6250800	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2922	Duck River 11	GDA	56	316080	6250785	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2923	Duck River 13	GDA	56	316210	6250695	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2924	Duck River 16	GDA	56	316325	6250565	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2925	Duck River 14	GDA	56	316270	6250618	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2926	Duck River 15	GDA	56	316325	6250575	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2927	Duck River 17	GDA	56	316200	6250520	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		
45-6-2928	Duck River 18	GDA	56	316215	6249935	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Michael Guider					<u>Permits</u>		

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : 2034

Client Service ID : 529708

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-6-3158	Robin Thomas Reserve	GDA	56	316100	6250300	Open site	Valid	Artefact : -, Aboriginal Resource and Gathering : -, Potential Archaeological Deposit (PAD) : -		
	<b>Contact</b>									
	<b>Recorders</b>							Ms.Jillian Comber,Extent Heritage Pty Ltd - Pyrmont - Individual users,Mr.Cameron	<b>Permits</b>	4439
45-6-3625	Granville MPC PAD	GDA	56	316175	6254420	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		104230
	<b>Contact</b>									
	<b>Recorders</b>							Extent Heritage Pty Ltd - Pyrmont - Individual users,Ms.Fenella Atkinson	<b>Permits</b>	4352
45-6-3642	Little Duck Creek AFT 1	GDA	56	315498	6252574	Open site	Valid	Artefact : -		
	<b>Contact</b>									
	<b>Recorders</b>							Niche Environment and Heritage,Mr.Samuel Ward	<b>Permits</b>	4464
45-6-2785	Wanngal Woodland PAD2	GDA	56	321185	6254699	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		102196
	<b>Contact</b>									
	<b>Recorders</b>							Mr.Paul Irish	<b>Permits</b>	
45-6-2786	Wanngal Woodland PAD1	GDA	56	320840	6254603	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		102196
	<b>Contact</b>									
	<b>Recorders</b>							Mr.Paul Irish	<b>Permits</b>	

Report generated by AHIMS Web Service on 24/08/2020 for Miles Robson for the following area at Datum :GDA, Zone : 56, Eastings : 314452 - 322793, Northings : 6249891 - 6255866 with a Buffer of 0 meters. Additional Info : archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 34

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## APPENDIX B: GLOSSARY OF TERMS USED IN ABORIGINAL CULTURAL HERITAGE ASSESSMENTS AND ARCHAEOLOGICAL REPORTS

This glossary is an extract from

### GLOSSARY OF TERMS USED IN "LITHIC" ANALYSIS

Author: Peter Hiscock, Dept. Archaeology and Anthropology

Feedback: [peter.hiscock@anu.edu.au](mailto:peter.hiscock@anu.edu.au).

Date Last Modified: 28-August-97

URL: <http://artalpha.anu.edu.au/web/arc/resources/stonegloss/gloss.htm>

And

### SYDNEY'S ABORIGINAL PAST

Author: Val Attenbrow

Year Published: 2002

Publisher: University New South Wales Press

Place of Publication: Sydney, NSW, Australia.

**ABORIGINAL SITE:** Place at which Aboriginal people have undertaken certain activities and special events.

**ARCHAEOLOGICAL DEPOSIT:** Soil or sediment which contains cultural materials associated with past human activities.

**ARCHAEOLOGICAL SITE:** A location in which evidence of past human activities exists or has previously existed.

**ANGLE OF APPLIED FORCE:** The angle at which the force of flaking is applied to a rock.

**APPLIED FORCE:** The force exerted upon a core or retouched flake.

**ARTEFACT:** Any object which is physically modified by humans.

**ATTRIBUTE:** A physical characteristic of an artefact.

**BIFACIAL:** An artefact which shows evidence of working on two faces.

**BULB OF FORCE:** The bulb of force is a convex protuberance located at the proximal end of the ventral surface of a flake, immediately below the ring crack. Also called the Positive Bulb of Force or simply 'the bulb'.

**BULBAR SCAR:** The negative scar that results from the bulb of force.

**BURIAL SITES:** Locations where people were buried and where skeletal remains have been found.

**CAMPSITE:** Locations where people slept overnight as well as a place where other domestic activities were undertaken.

**CONCHOIDAL FRACTURE:** A type of fracture which gives smoothly curved surfaces resembling the form of a bivalve shell.

**CONE:** Shorthand term for Hertzian cone crack, a cone shaped fracture plane extending from a circular ringcrack as a result of loading from a blunt indenter

**CORE:** A piece of flaked stone which has one or more negative flake scars but no positive flake scars.

**CULTURAL MATERIALS:** The products of human behaviour, such as stone artefacts or food debris.

**DEBITAGE:** Cores and unretouched flakes.

**DEBRIS:** 1. Any refuse discarded from a cultural system. 2. Debitage.

**DISCARD:** The movement of an object from its systemic context to an archaeological context.

**EDGE:** The junction of two surfaces of a body.

**EDGE DAMAGE:** The removal of small flakes from the edge of an artefact.

**ERRAILURE FLAKE:** A flake formed between the bulb of force and the bulbar scar. Sometimes the errailure flake adheres to the core in the bulbar scar. The errailure flake leaves no scar on the core, but always leaves a scar on the ventral surface of the flake. The errailure flake is convex/concave (like a meniscus lens), has no distinct features on the "dorsal face", but may contain compression rings on the bulbar face.

**FEATHER TERMINATION:** A termination of the fracture plane that occurs gradually (ie. there are no sharp bends in the plane), producing a thin, low angled distal margin.

**FLAKE:** 1. Any piece of stone fractured from a larger mass by the application of an external force. 2. The piece of stone struck off a core. It has a series of characteristics showing that it has been struck off. The most indicative of these features are ringcracks, showing where the hammer hit the core. Also the ventral surface may be deformed in characteristic fashion, for example having a bulb or errillure.

**FLAKING:** The process of fracturing stone by the application of an external force.

**FORCE:** The quantity of energy exerted by a moving body; power exerted; energy exerted to move another body from a state of inertia.

**FRACTURE:** Irregular surface produced by breaking a mineral across rather than along cleavage planes.

**GRINDING STONE:** An implement with a smooth, shallow concave surface which was created through use, either to abrade the surface of another artefact or to process food.

**HAMMER:** A fabricator used to apply a dynamic load.

**HINGE TERMINATION:** A fracture plane that turns sharply toward the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is rounded and should not be confused with a step termination.

**HOLOCENE:** A geological time-scale period lasting from 10,000 years ago to the present.

**IN-SITU:** An undisturbed archaeological feature or deposit.

**KNAPPER:** A human who creates stone artefacts by flaking.

**KNAPPING:** The process of striking rocks and causing them to fracture.

**LENGTH:** The distance from the platform to the termination of a flake or flake scar. Also Percussion Length.

**MIDDEN:** Cultural deposit in which material, such as shell, are built up in an archaeological site.

**NEGATIVE BULB OF FORCE:** The concave surface left after a flake has been removed.

**OUTREPASSE:** 1. A fracture termination where the fracture path curves markedly away from the core face and continues directly into the core, removing the base of the core and giving the flake a J shape in longitudinal cross section. 2. Any flake containing an outrepasse termination.

**PLATFORM:** Any surface to which a fabricator is applied when knapping.



**PLATFORM ANGLE:** 1. The angle between the platform and core face on a core. 2. The angle between the platform and dorsal surface on a flake. 3. The angle between the platform and flaked surface on a retouched flake.

**PLEISTOCENE:** A geological time-scale lasting from 2 million years ago to 10,000 years ago.

**POINT OF FORCE APPLICATION:** The area of the platform in contact with the indenter during knapping.

**QUARRY:** A location where stone or ochre has been removed by humans from a source of rock.

**PRESSURE FLAKING:** The process of detaching flakes by a pressing force. Also Static Loading.

**REDUCTION:** Process of breaking down stone by either flaking or grinding.

**RETOUCHED FLAKE:** A flake that has subsequently been re-flaked.

**RETOUCHING:** The act of knapping a flake into a retouched flake.

**RING CRACK:** A circular pattern of micro-fissures penetrating into the artefact around the Point of Force Application and initiating the fracture. It appears on the ventral surface usually as a semi-circular protuberance on the edge of the platform.

**ROCK SHELTER:** A sheltered area within a cliff-line, outcrop or boulder which has formed naturally through weathering or other geological process.

**SCAR:** The feature left on an artefact by the removal of a flake. Includes negative bulb, negative ringcrack and negative termination.

**SCARRED TREE:** Trees in which have scars formed by the removal of bark or wood in order to make canoes, shields or baskets.

**SILICEOUS:** Having a high silica content.

**STEP TERMINATION:** A fracture plane that turns sharply towards the free surface of the core immediately prior to the termination of the fracture. The bend of the ventral surface is sharp, often a right angle.

**STRATIGRAPHY:** The layers of sediment and cultural material that are able to be distinguished in a deposit.

**TERMINATION:** The point at which the fracture plain reaches the surface of a core and detaches a flake.

**USE:** The performance of a stone artefact in an activity involving non-stone objects.

**USE-WEAR:** Damage to the edges or working surfaces of tools sustained in use.

**VENTRAL SURFACE:** The surface of a flake created when it is removed and identified mainly by the presence of a ring crack.