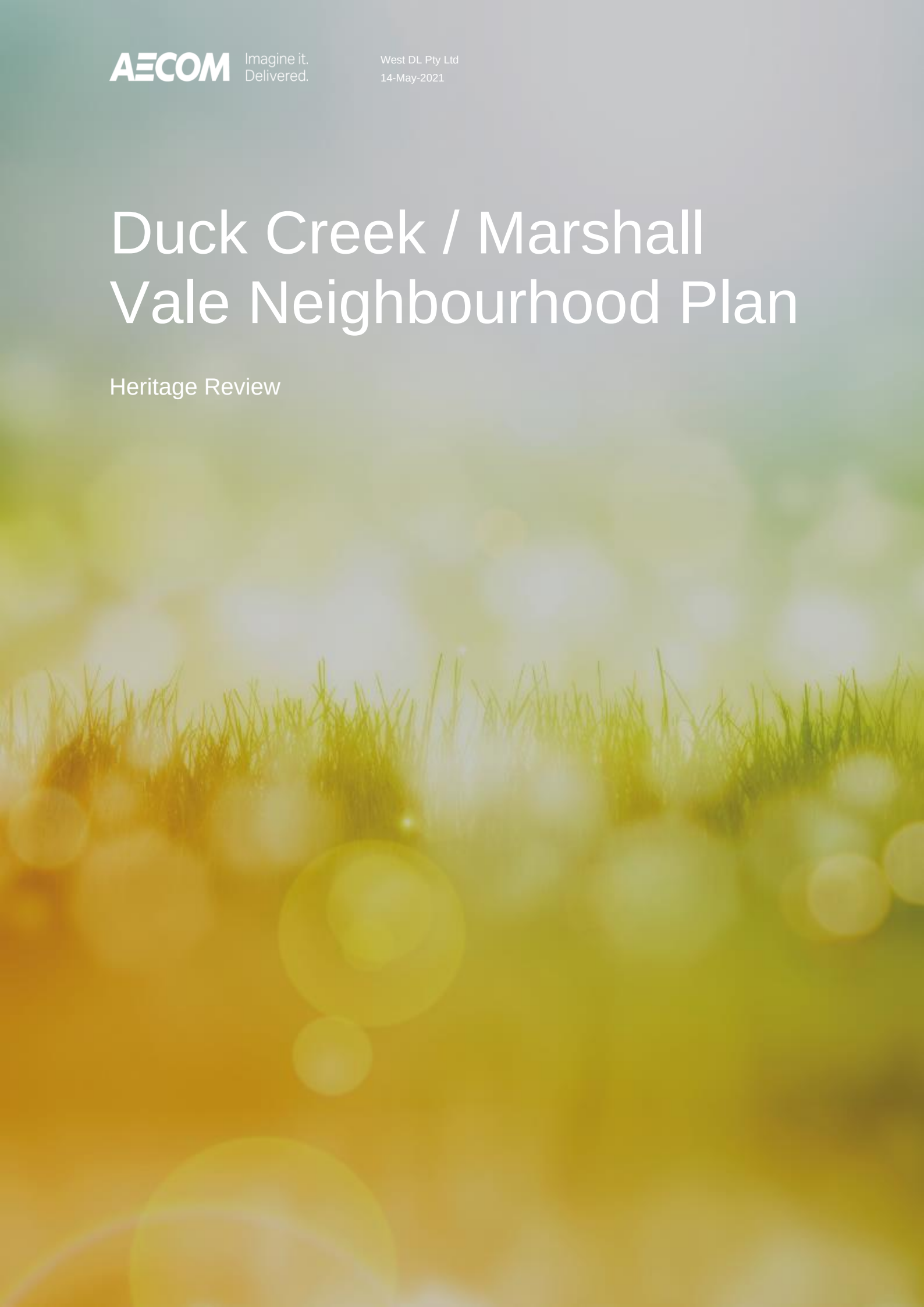
AECOM Imagine it. Delivered.

West DL Pty Ltd
14-May-2021

Duck Creek / Marshall Vale Neighbourhood Plan

Heritage Review



Duck Creek / Marshall Vale Neighbourhood Plan

Heritage Review

Client: West DL Pty Ltd

ABN: 627339397

Prepared by

AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia
T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com
ABN 20 093 846 925

In association with

Urbanco

14-May-2021

Job No.: 60618536

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

Quality Information

Document Duck Creek / Marshall Vale Neighbourhood Plan

60618536

Ref c:\users\oakesg1\desktop\downloads\60618536_fnlrpt_neighbourhood plan dc-mm_heritage_2020_11_16_cl.docx

Date 14-May-2021

Prepared by Geordie Oakes

Reviewed by Andrew McLaren

Revision History

Rev	Revision Date	Details	Authorised
			Name/Position
A	13-Nov-2019	Draft	A.McLaren/Principal Heritage Specialist
B	02-Nov-2020	Update	G.Oakes/Principal Heritage Specialist
C	13-Nov-2020	Final draft	G.Oakes/Principal Heritage Specialist
D	13-May-2021	Update	C. Lewczak/Principal Heritage Specialist

Table of Contents

List of Figures

List of Tables

Executive Summary

AECOM Australia Pty Ltd (AECOM) was commissioned by West DL Pty Ltd, on behalf of Urbanco, to undertake an Aboriginal and historic (European) heritage review to inform the preparation of a Neighbourhood Plan for the Duck Creek and Marshall Vale precincts of the West Dapto Release Area (WDRA).

A Neighbourhood Plan has been developed for these precincts and is currently being used to inform further specialist investigations. Alongside those generated through other specialist investigations, the results of the current heritage review will assist Urbanco in finalising the Neighbourhood Plan. The Plan, which incorporates residential and environmental land uses, is being prepared to satisfy the requirements of the Wollongong Local Environmental Plan 2009 (Wollongong LEP 2009).

The study area for this investigation encompasses the Duck Creek and Marshall Vale precincts of the WDRA. Irregularly-shaped, it covers an area of 247 hectares ,adjacent to Marshall Mount Road, in the suburbs of Avondale and Marshall Mount, approximately 15 km southwest of Wollongong's Central Business District (CBD).

The endorsement of the Neighbourhood Plan does not incorporate any approval for physical works which would impact on identified Aboriginal heritage sites, places or values. As such, the primary aim of Aboriginal and historic heritage assessments conducted for the Neighbourhood Plan is to identify heritage constraints and opportunities relevant to the development of site masterplans and to provide guidance around the appropriate management of identified values post-rezoning.

It is noted that the Neighbourhood Plan area comprises multiple fragmented land holdings, which will be developed in different timeframes and intensities.

A detailed flowchart for Aboriginal Heritage assessment has been included in this report and is recommended to be adopted in the Neighbourhood Plan DCP chapter to ensure a consistent approach to heritage review across the Neighbourhood Plan area.

The assessment has identified a series of Aboriginal heritage values within the study area including previously recorded sites and areas of moderate and high archaeological sensitivity. Recorded Aboriginal archaeological sites within the study area consists of two previously recorded sites - AHIMS subsurface artefact sites 'WDRA_AX_34' (#52-5-0490) and WDRA_AX_35' (#52-5-0491).

A review of potential impacts associated with zoning within the Neighbourhood Plan against the study area's Aboriginal heritage values indicates that one previously recorded AHIMS site has the potential to be impacted by future developments. Likewise, several areas of moderate and high archaeological sensitivity will potentially be impacted.

Two LEP listed locally significant historic heritage items are located directly within the study area - Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027) and Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983). A review of LEP Heritage Map sheet HER_014 indicates that the curtilage for Marshall Mount Progress Association Hall (#61027) extends into the adjacent lot (i.e., Lot 12 DP790746). However, this area comprises a tennis court constructed in the 1960s and does not form part of either the Progress Association Hall or the school (F Duncan 2018,pers.comm., 10 July). Accordingly, the LEP curtilage which extends over the Tennis Court area should be removed.

A significance assessment of unlisted Miala House, its outbuildings and associated cultural plantings has been completed as part of this assessment. The assessment determined that the house has undergone extensive renovations / modifications over its lifespan with much of its original fabric modified. Nonetheless, the house has been assessed as of local heritage significance.

AECOM was not granted access some of the land holdings within the study area. As such, it is possible that other historic heritage structures and associated cultural plantings of local significance may be present within the study area on properties not accessible. Where possible, these items should be conserved as part of the planning process, with decisions concerning their long-term management to be made in consultation with Wollongong Council. However, where conservation is not possible, Statements of Heritage Impact (SoHIs) should be prepared, inclusive of updated significance assessments, in accordance with the *NSW Heritage Branch's guidelines: Statements of*

Heritage Impact (NSW Heritage Office, 2002). A copy of the SoHI and details of the proposed works should be provided to Council allowing a 21 day response period.

On the basis of the above findings the following controls should be included with the Wollongong DCP:

Aboriginal Heritage

1. Known Aboriginal archaeological sites within the study area are shown on Figure 27. An AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) is required for any works which impact these sites.
2. Areas of high archaeological sensitivity, shown on Figure 27 warrant a full Aboriginal cultural heritage assessment prior to any development works.

   If impacts to any Aboriginal objects identified through these assessments cannot be avoided, an AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) will be required.
3. Areas of moderate archaeological sensitivity, shown on Figure 27, warrant an Aboriginal archaeological due diligence assessment prior to any development works. This assessment is to be conducted in accordance with Heritage NSW's *Due Diligence Code of Practice for the protection of Aboriginal Objects in New South Wales*. Depending on the results of the due diligence assessment undertaken, a full Aboriginal cultural heritage assessment may be required.
4. Areas of low archaeological sensitivity, shown on Figure 27 do not contain any known Aboriginal heritage constraints.

   If any Aboriginal objects are encountered during development, and impacts cannot be avoided, an AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) will be required.

Historic Heritage

1. LEP listed local heritage items Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027) and Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983) are to be retained. Consideration should be given to the interplay zone between these structures and future development with options such soft planting or hard fencing considered.
2. Miala Homestead has been assessed as having local heritage significance and would be impacted based on development plans within the current Neighbourhood Plan (and subsequent detailed designs as part of the future development). Opportunities for the retention of Miala house have been investigated, however, retention of the item is not considered possible given topographic, layout, earthworks and bushfire protection constraints.

   When detailed design for the subdivision, including all road, crossing and service locations, has been prepared, a Statement of Heritage Impact is required to be prepared to determine the appropriate mitigation measures for Miala house and associated historical archaeological remains. Recommendations may include undertaking additional heritage recording, including archival recording of the homestead, associated buildings and cultural planting be completed prior to any impact works. This would be undertaken in accordance with Heritage NSW's guidelines *How to Prepare Archival Records of Heritage Items* (1998) and *Photographic Recording of Heritage Items using Film or Digital Capture* (2006).

   In regards to historical archaeological potential identified at Miala House, any Development Application (DA) for works incorporating significant ground disturbance is to be accompanied by an historical archaeological research design (HARD). Subject to the report, a s140 permit application to Heritage NSW, may be required to be submitted prior to any works starting on the site.
3. Should additional historic heritage items be identified within the study area or properties that have not been surveyed, these must be included in future Statements of Heritage Impact prepared for the next stages of the project.

1.0 Introduction and Background

1.1 Introduction

AECOM Australia Pty Ltd (AECOM) was commissioned by West DL Pty Ltd, on behalf of Urbanco, to undertake an Aboriginal and historic heritage review to inform the preparation of a Neighbourhood Plan for the Duck Creek and Marshall Vale precincts of the West Dapto Release Area (WDRA) (Figure 2).

A preliminary Neighbourhood Plan has been developed for these precincts and is currently being used to inform further specialist investigations. Alongside those generated through other specialist investigations, the results of the current heritage review will assist Urbanco in finalising the Neighbourhood Plan (Figure 3). The Plan, which incorporates residential and environmental land uses, is being prepared to satisfy the requirements of the Wollongong Local Environmental Plan 2009 (Wollongong LEP 2009).

1.2 Background

Urbanco is preparing a Neighbourhood Plan for the Duck Creek/Marshall Vale neighbourhood precincts (the 'study area', Figure 1) of the West Dapto Release Area (WDRA) to support rezoning across the area.

A Neighbourhood Plan is an immediate step between the West Dapto Structure Plan and a Development Application (DA) and allows issues to be considered on a neighbourhood/precinct/ catchment scale. A Neighbourhood Plan enables adjoining land owners to jointly consider common constraints and design issues. The Neighbourhood Plan is put on public exhibition and should be in place prior to the determination of any development applications. In relation to heritage, the Neighbourhood Plan should identify heritage constraints and opportunities, and provide Council with heritage information to support the development of land within the study area. The key objectives of the Neighbourhood Plan are to:

- consider issues, mitigate impacts or propose solutions on a precinct / neighbourhood / catchment scale, rather than property by property.
- ensure adjoining land owners consider the proposals, concepts, and development timeframes of each other.
- encourage the integration of development sites, development sequencing and economies of scale.
- update the West Dapto master plan with more detailed information.
- To avoid problems of other release areas, where development on adjoining lots is not integrated.

The current assessment fulfils the heritage requirement component of the Neighbourhood Plan.

1.3 Study Area

The study area for this investigation, shown on Figure 4, encompasses the Duck Creek and Marshall Vale precincts of the WDRA. Irregularly-shaped, it covers an area of 247 hectares ,adjacent to Marshall Mount Road, in the suburbs of Avondale and Marshall Mount, approximately 15 km southwest of Wollongong's Central Business District (CBD). Registered as lot 1, DP396101; lot 1, DP396100; lot 2, DP1184741; lots 2022 and 2021, DP810874; lots 1 and 2, DP1039888; lot 101, DP879381; lot 100, DP712786, lots 11 and 12, DP790746 and part lot 1 DP170817, the study area is bounded to the south by Marshall Mount Road, to the north by foothills of the Illawarra Escarpment, to the west, partially, by North Marshall Mount Road and to the east by the boundary of lot 1 DP170817. Situated between MGA (Zone 56) grid coordinates 291978 and 294940 east and 6175509 and 6176880 north, the study area makes up a small portion (c.5.4%) of the WDRA. Reference to the Geographical Name Register (GNR) of NSW indicates that the study area falls wholly within the Wollongong LGA and is situated within the Parish of Calderwood in the County of Camden.

1.4 Investigation Objectives

The overarching objectives of this heritage review were as follows:

- to identify the known and potential Aboriginal and historic heritage values of the study area through background research, a site inspection and predictive modelling;
- to assess the suitability of the Neighbourhood Plan in relation to Aboriginal and historic heritage;
- to provide appropriate management controls for the identified Aboriginal and historic heritage values of the study area; and
- to compile a heritage assessment report that will assist Council in their assessment of the Neighbourhood Plan.

The endorsement of the Neighbourhood Plan does not incorporate any approval for physical works which will impact on identified Aboriginal heritage sites, places or values.

As such the primary aim of Aboriginal and historic heritage assessments conducted for the Neighbourhood Plan is to identify heritage constraints and opportunities relevant to the development of site masterplans and to provide guidance around the appropriate management of identified values post-rezoning.

Once the Neighbourhood Plan is adopted, it is the responsibility of individual proponents to conduct, where appropriate, additional heritage investigations for areas involving physical impacts as part of a DA. Where required, such assessments will involve opportunities for more detailed archaeological investigations (e.g., archaeological test excavation) and conservation outcomes.

As no ground surface impacts are proposed as part of Neighbourhood Plan, the current assessment will not be used to support applications for any heritage-related impact permits (e.g., Aboriginal Heritage Impact Permits (AHIPs) under Section 90 of the *National Parks and Wildlife Act 1974*, Section 57/60 permits under Section 140 of the *Heritage Act 1977* etc. Such applications will need to be supported by standalone assessments prepared in accordance with relevant guidelines.

1.5 Aboriginal Heritage Assessment Process

This heritage review has been undertaken as part of the broader heritage assessment process that will be undertaken for the Duck Creek and Marshall Vale precincts of the WDRA. As noted above, the purpose of this review is to identify known and potential Aboriginal heritage constraints relevant to the study area and to provide controls around future development within the area.

This phase of the assessment process provides high level guidance around heritage constraints for the master planning processes. Figure 1 shows the general Aboriginal heritage assessment process adopted for the broader master plan process.

This process has been adopted and implemented across growth centre / release areas across NSW and is recognised as delivering high quality Aboriginal heritage outcomes, particularly in areas of fragmented / multiple land ownership.

Two release area wide Aboriginal heritage assessments have been undertaken that encompass the Duck Creek and Marshall Vale precincts, both of which incorporated consultation with the Aboriginal community in accordance with Heritage NSW's *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) and one of which included archaeological test excavation.

As indicated on Figure 1, this heritage review is the initial phase of works, with future assessment to be undertaken within areas with known or potential Aboriginal heritage values as part of future Development Applications (DAs). It is noted, that should Aboriginal heritage values be identified impacts would be guided by Aboriginal community members and would be subject to AHIPs approved by Heritage NSW.

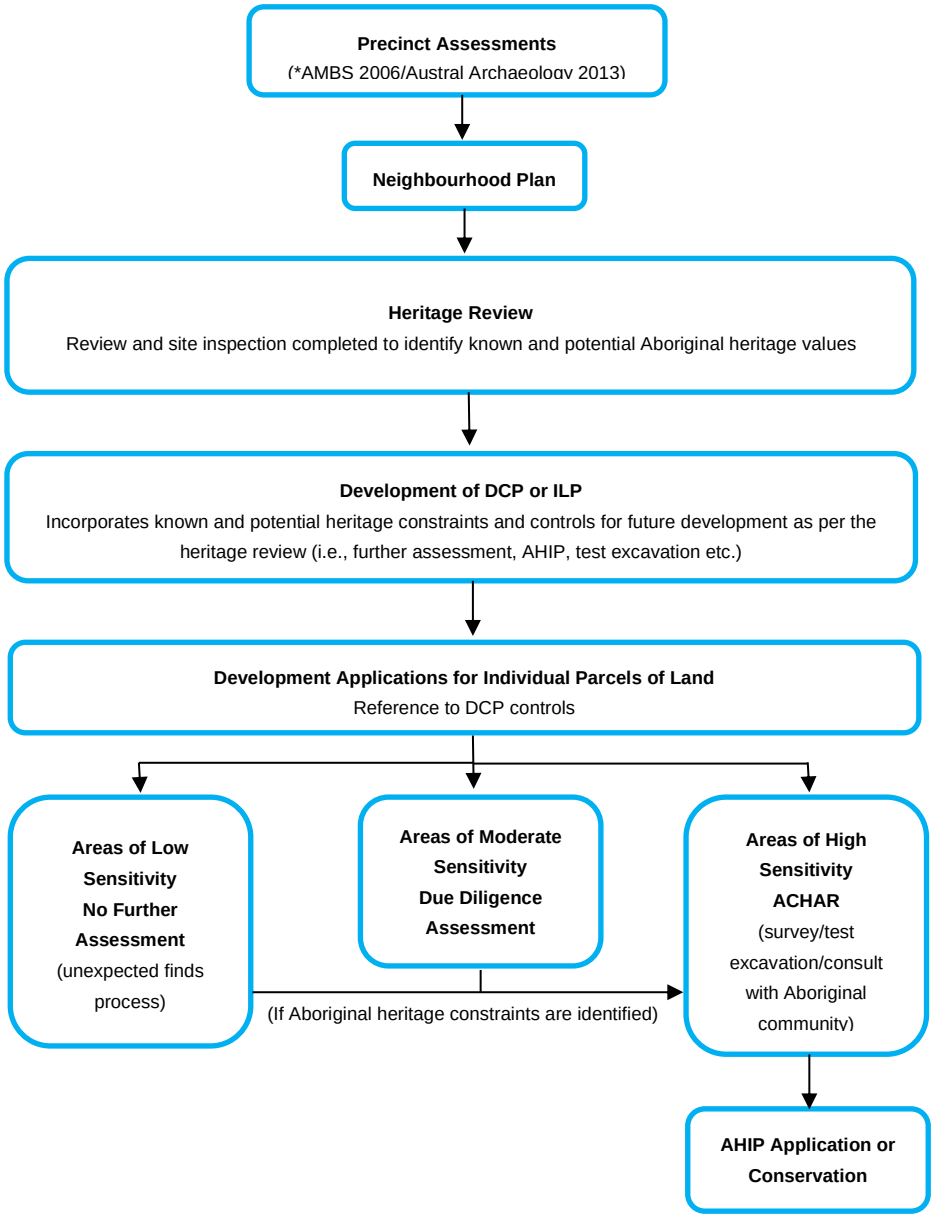


Figure 1 Aboriginal heritage process

The above process is considered both a robust methodology for this Neighbourhood Plan, as well as the most practical one considering constraints around property ownership and access. The process is robust as it provides multiple opportunities to identify, assess and protect Aboriginal heritage values within the study area, including early identification of any highly significant Aboriginal sites.

It is the most practicable approach as the study area has multiple landowners with various sized parcels of land and varying future development ambitions. Considering this, undertaking a single detailed Aboriginal heritage assessment across the entire study area (incorporating test excavation) at this stage of the process would place a significant financial burden on existing owners, one which, depending on future development plans, might be both unwarranted and unrealistic.

Moreover, not all current landowners have consented to land access for master planning purposes. Accordingly, it is considered pragmatic that each landowner (or future landowner) be responsible for completing detailed assessment (as required by the DCP controls) across their own land parcels as part of any future DAs.

It is also noted that a detailed assessment completed today may not be valid to support future DAs (or AHIPs) due to the time delay between completion of the assessment and submission of any DA.

Finally, archaeological test excavation is a destructive process and should only be undertaken on land where development is going ahead with some certainty.

At the detailed assessment stage, where a DA is being prepared/submitted by an individual land owner, should Aboriginal sites be identified, development would be guided through consultation with Registered Aboriginal Parties (RAPs) and Heritage NSW with an AHIP required for any impacts to identified Aboriginal heritage values.

While it is understood that Wollongong Council has requested that a detailed assessment be undertaken at this time, including test excavation, AECOM does not consider this appropriate at this stage of the assessment process due to the above factors.

It is noted, that for this heritage review multiple attempts were made to engage the Illawarra Local Aboriginal Land Council to provide input into the document. However, these attempts were unsuccessful at the time of finalising this document. Appendix A provides a consultation log.

1.6 Data Sources

Information regarding the known and potential Aboriginal and historic heritage values of the study area was obtained from:

- A review of the landscape context of the study area and surrounds;
- A review of existing Aboriginal Heritage Information Management System (AHIMS) data for land within and surrounding the study area, obtained from Heritage NSW on 12 November 2019;
- A search of historic heritage registers and lists;
- Land title and parish map searches;
- A review of the findings of past Aboriginal archaeological investigations and historic heritage assessments within the local area; and
- A visual inspection of accessible portions of the study area on Friday 22 November 2019 and 21 October 2020 by AECOM Principal Heritage Specialists Geordie Oakes and Andrew McLaren.

1.7 Project Team

Geordie Oakes (AECOM Principal Heritage Specialist) managed all aspects of the investigation detailed in this report. Geordie was assisted in the field by Dr Andrew McLaren (AECOM Principal Heritage Specialist). Geordie was the primary author of this report with Chris Lewczak (AECOM Principal Historic Heritage Specialist providing text for the historic heritage section.

Geordie holds a Bachelor of Arts (Honours) degree in historic and prehistoric Archaeology from Sydney University and a Graduate Certificate in Paleo-anthropology from the University of New England. Geordie has over thirteen years of Australian Aboriginal cultural heritage management experience. Andrew holds a Bachelor of Arts (Honours) degree from the University of Queensland, a Master of Cultural Heritage from Deakin University, and a PhD from the University of Cambridge in England and has over ten years of Australian Aboriginal cultural heritage management experience.

Figure 2 Regional context

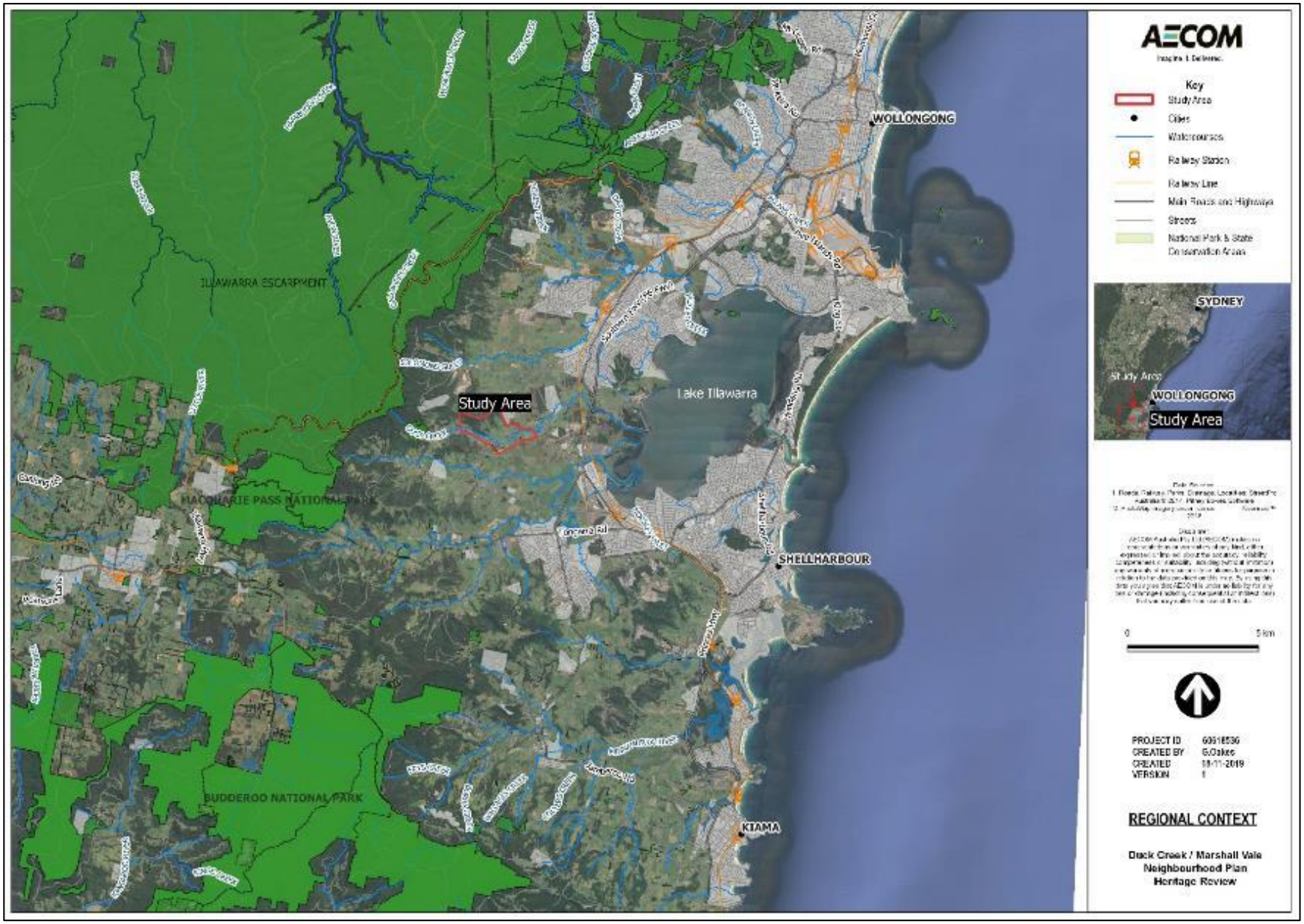


Figure 3 Neighbourhood plan (source: Urbanco, 2020)

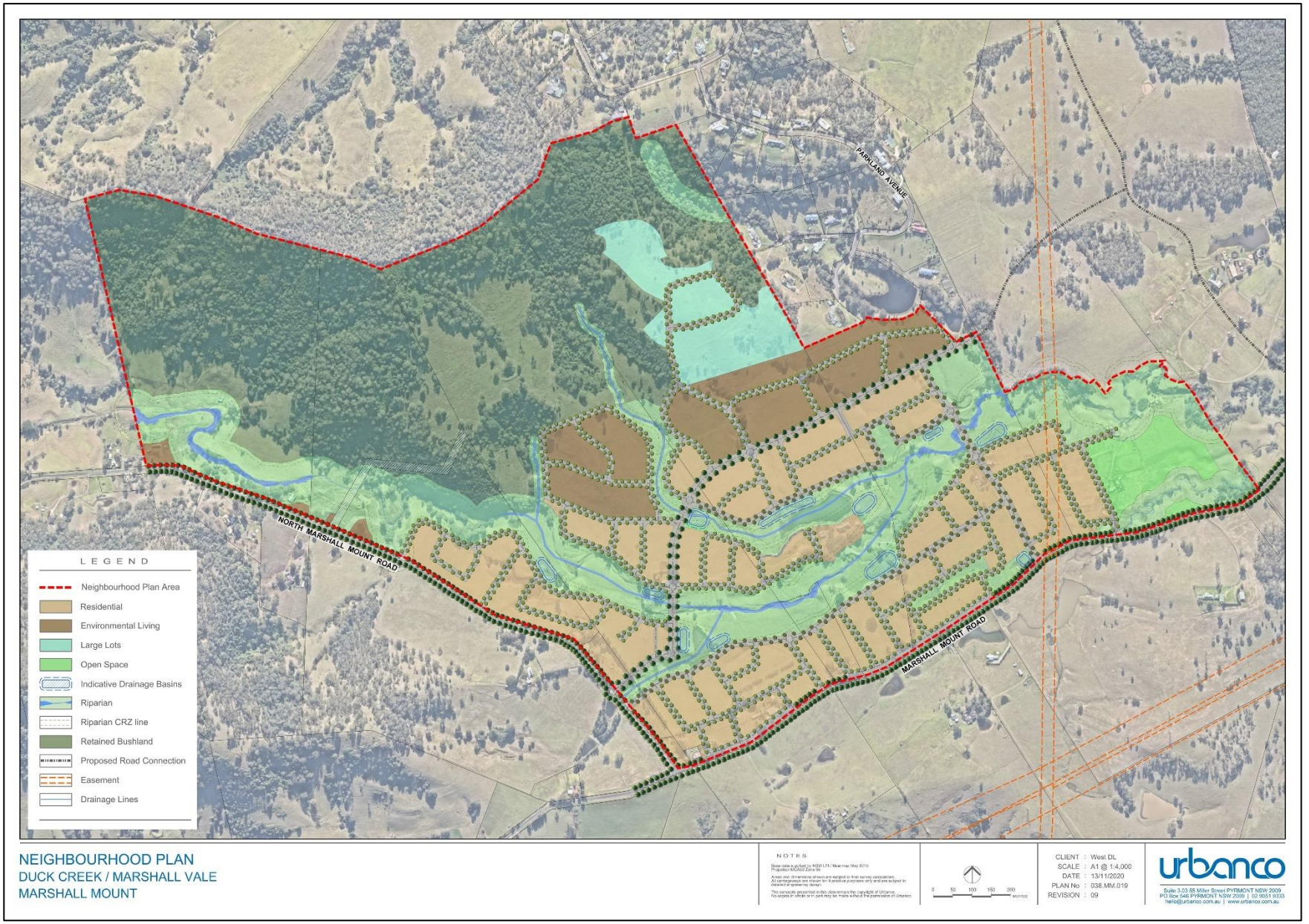
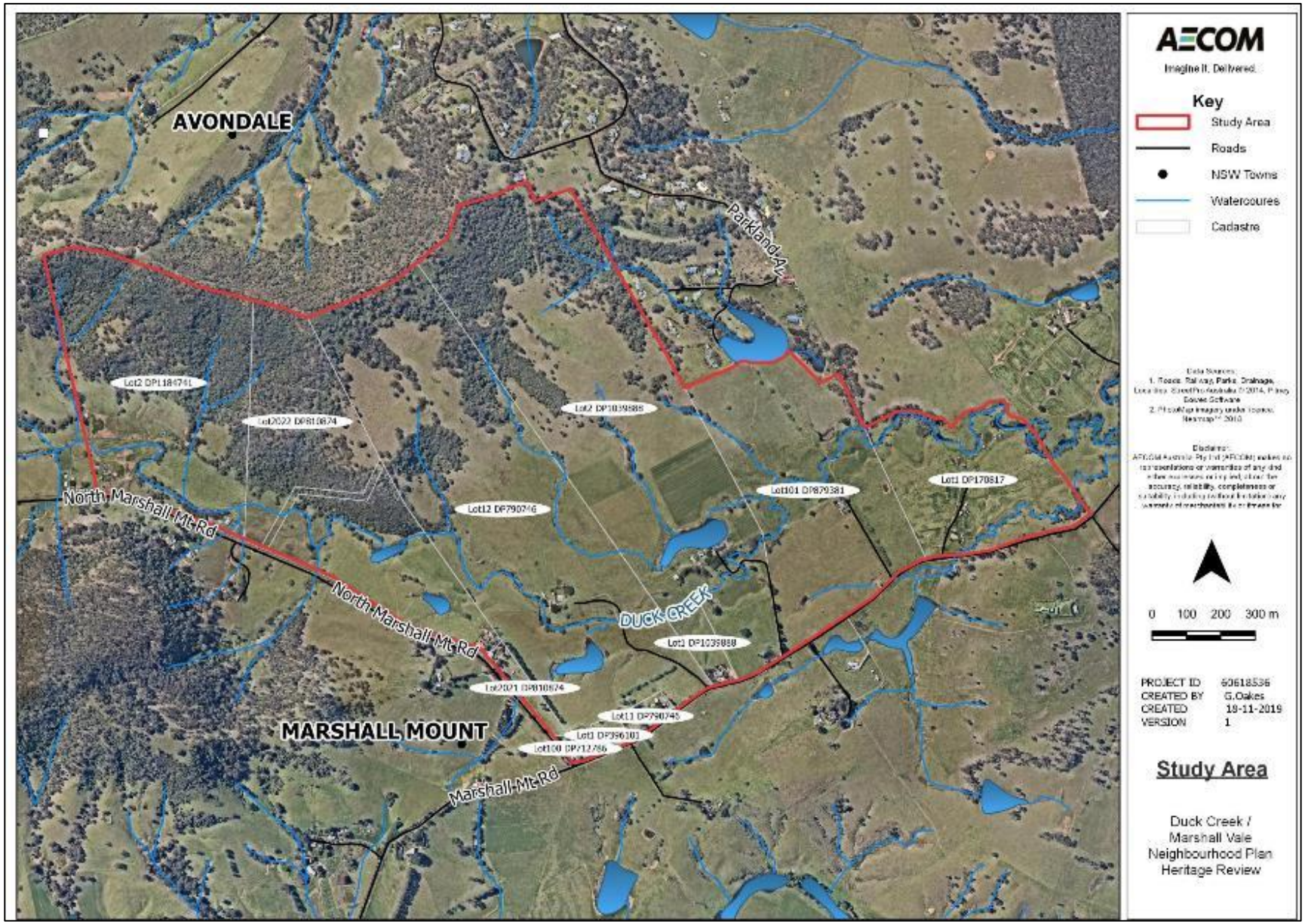


Figure 4 Study area



2.0 Relevant Legislation and Policy

2.1 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act), administered by Heritage NSW, is the primary legislation for the protection of Aboriginal cultural heritage in NSW. The NPW Act gives the Director General responsibility for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places', defined under the Act as follows:

- an *Aboriginal object* is any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of NSW, before or during the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).
- an *Aboriginal place* is a place declared so by the Minister administering the NPW Act because the place is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to harm them and includes a 'strict liability offence' for such harm. A 'strict liability offence' does not require someone to know that it is an Aboriginal object or place they are causing harm to in order to be prosecuted. Defences against the 'strict liability offence' in the NPW Act include the carrying out of certain 'Low Impact Activities', prescribed in Clause 80B of the *National Parks and Wildlife Amendment Regulation 2010* (NPW Regulation), and the demonstration of due diligence.

An Aboriginal Heritage Impact Permit (AHIP) issued under Section 90 of the NPW Act is required if impacts to Aboriginal objects and/or places cannot be avoided. An AHIP is a defence to a prosecution for harming Aboriginal objects and places if the harm was authorised by the AHIP and the conditions of that AHIP were not contravened. Applications for an AHIP must be accompanied by assessment reports compiled in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b). Applications must also provide evidence of consultation with the Aboriginal communities. Consultation is required under Part 8A of the NPW Regulation and is to be conducted in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a). AHIPs may be issued in relation to a specified Aboriginal object, Aboriginal place, land, activity or person or specified types or classes of Aboriginal objects, Aboriginal places, land, activities or persons. Section 89A of the NPW Act requires notification of the location of Aboriginal sites within a reasonable time, with penalties for non-notification. Section 89A is binding in all instances.

1.1.1 The Heritage Act 1977

The *Heritage Act 1977* was enacted to conserve the environmental heritage of NSW. Parts 3 and 6 of the Heritage Act 1977 provide specific protection for heritage items of local or State significance by means of Interim Heritage Orders (IHO) (Part 3), listing on the State Heritage Register (SHR) (Part 3A) and the requirement for excavation permits (Part 6). Items that are assessed as having State heritage significance can be listed on the SHR by the Minister on the recommendation of the Heritage Council.

Archaeological relics (any relics that are buried) are protected by the provisions of Division 9 of the *Heritage Act 1977*. Under Section 139, a person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with a Section 140 Excavation Permit.

Proposals to alter, damage, move or destroy heritage items protected by an IHO or listed on the SHR require an approval under Section 60 of the *Heritage Act 1977*. Demolition of whole buildings will not normally be approved except under certain conditions (Section 63).

Under Section 170 of the *Heritage Act*, NSW government agencies are required to maintain a register of heritage items and to review and, if necessary, amend this register not less than once each year. Each agency is responsible for ensuring that listed items are maintained with due diligence in accordance with State Owned Heritage Management Principles (NSW Heritage Office, 2005).

1.2 Wollongong LEP 2009

The study area is located wholly within the Wollongong Local Government Area (LGA), in which the relevant Environmental Planning Instrument (EPI) is the Wollongong Local Environmental Plan (LEP) 2009. Part 5 of the Wollongong LEP provides specific provisions for the protection of heritage items and relics within the Wollongong LGA. In relation to heritage the LEP states the following.

(2) *Requirement for consent*

Development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

(i) a heritage item

(ii) an Aboriginal object,

(iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

(i) on which a heritage item is located or that is within a heritage conservation area, or on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,

(f) subdividing land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance

Reference to Schedule 5 of the LEP indicates that there are two locally significant historic heritage items located directly within the study area - Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027) and Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983).

Wollongong Development Control Plan

Clause 6.2 (1) of the Wollongong LEP 2009 states that a Development Control Plan (DCP), that includes specific controls for development, be prepared prior to Council granting development consent in an urban release area. The Duck Creek/Marshall Vale neighbourhood precincts form part of the WDRA and have been mapped as Urban Release Areas under the Wollongong LEP 2009, consequently, triggering clause 6.2.

Chapter D16 of the Wollongong DCP addresses development within the WDRA as outlined within the West Dapto Structure Plan (WDSP) and the West Dapto Master Plan. Section 6 of Chapter D16 includes the requirement to develop a neighbourhood plan within the Duck Creek/Marshall Vale precincts prior to development consent to act as an immediate step between the WDSP and a DA.

In relation to heritage to Neighbourhood Plan should include "known or likely heritage sites, including Indigenous Heritage cultural issues". Section 6.3 (Chapter D16) of the Wollongong DCP, requires DAs submitted for land within the area to be supported by detailed specialist reports. Aboriginal heritage assessments are to be completed in accordance within Chapter E10 of the DCP. Section 2.2 Development Controls/Requirements of Chapter E10 requires Aboroginal archaeological and cultural heritage assessments to completed for the any new land use activity or development upon the following land:

a. any beach or coastal foredune area (i.e., both primary and secondary dune areas) (excluding any portion of land subject to past development disturbance).

b. (b) land within 40 metres from top of bank of any watercourse / riparian land (excluding any portion of land subject to past development disturbance).

c. (c) land within 40 metres from the mean high water mark (MHWM) of any estuary or tidal inlet (excluding any portion of land subject to past development disturbance). Part E – General Controls – Environmental Controls Chapter E10: Aboriginal Heritage 2 Wollongong Development Control Plan 2009

d. (d) any land zoned Environmental Protection zone within the Illawarra Escarpment (excluding any portion of land which has been subject to past development disturbance).

e. (e) lands zoned Rural / Non-urban (excluding any portion of land which has been subject to past development disturbance).

f. (f) land within new 'greenfield' release areas (excluding any portion of land where a detailed Aboriginal archaeological / cultural heritage impact assessment has been undertaken at the rezoning stage or where Development Consent has been previously granted for subdivision or development of that portion of the land).

g. (g) All known sites containing either Aboriginal objects and / or places of Aboriginal cultural heritage significance

Figure 7.5 – Heritage Map (Chapter 16) of the Wollongong DCP provides mapping of heritage items within the WDRA. Reference to Figure 7.5 indicates there are one or more heritage items within the study area.

3.0 Aboriginal Heritage

3.1 Environmental Context

3.1.1 Introduction

Consideration of the landscape context of the study area is based on the proposition that the nature and distribution of Aboriginal archaeological materials are closely connected to the environments in which they occur. Environmental variables such as topography, geology, hydrology and the composition of local floral and faunal communities will have played an important role in influencing how Aboriginal people moved within and utilised their respective Country. Amongst other things, these variables will have affected the availability of suitable campsites, drinking water, economic[1] plant and animal resources, and raw materials for the production of stone and organic implements. At the same time, an assessment of historical and contemporary land use activities, as well as geomorphic processes such as soil erosion and aggradation, is critical to understanding the formation and integrity of archaeological deposits, as well as levels of subsurface archaeological sensitivity.

3.1.2 Physical Location

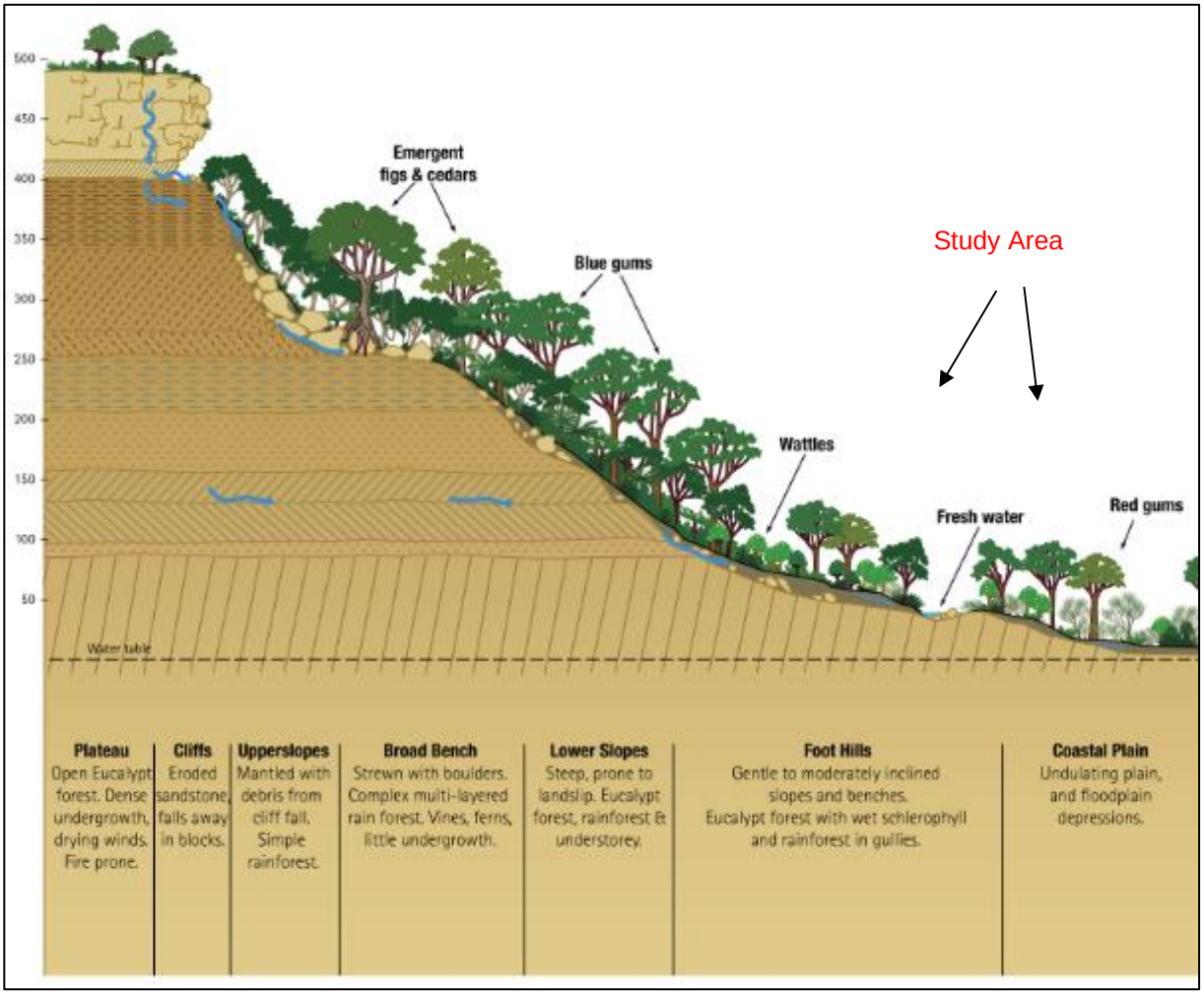
As indicated in Section 1.3, the study area for this investigation comprises an irregularly shaped 228-hectare parcel of land located adjacent to Marshall Mount Road, in the suburbs of Avondale and Marshall Mount approximately 15 km southwest of the Wollongong's Central Business District (CBD). Registered as lot 1, DP396101; lot 1, DP396100; lot 2, DP1184741; lots 2022 and 2021, DP810874; lots 1 and 2, DP1039888; lot 101, DP879381; lot 100, DP712786, lots 11 and 12, DP790746 and part lot 1 DP170817, the study area is bounded to the south by Marshall Mount Road, to the north by foothills of the Illawarra Escarpment, to the west, partially, by North Marshall Mount Road and to the east by the boundary of lot 1 DP170817. Situated between MGA (Zone 56) grid coordinates 291978 and 294940 east and 6175509 and 6176880 north, the study area makes up a small portion (c.5.4%) of the WDRA. Reference to the Geographical Name Register (GNR) of NSW indicates that the study area falls wholly within the Wollongong LGA and is situated within the Parish of Calderwood in the County of Camden.

3.1.3 Topography

The study area encompasses the foothills of the Illawarra Escarpment and the western extent of the Illawarra coastal plain (Figure 5). While the Illawarra Escarpment itself comprises plateaus and cliff faces of Hawkesbury Sandstone, the foothills are characterised by slopes, benches and ridges systems ranging from gently to steeply inclined. The coastal plain, meanwhile, is characterised by undulating plains and floodplain depressions. Topographically, land within the study area encompasses the crest and steep southern flank of a broadly east-west trending ridge system, as well as flats/terraces associated with Duck Creek. Elevations within the study area range from 226 AHD on the northern boundary of the study area to 32 m AHD adjacent to Duck Creek, providing a total local relief of 194 m (Figure 6).

[1] I.e., edible and/or otherwise useful (e.g., medicine, clothing)

Figure 5 Topographic location (source: Wesson, 2009: Figure 4)



3.1.4 Hydrology

The study area is located within the Duck Creek Catchment, a catchment formed by Duck Creek and a series of its tributaries that covers parts of the suburbs of Marshall Mount, Avondale, Yallah, Howards Bay and Dapto. The catchment encompasses an area of approximately 19 km², largely comprising undeveloped rural pasture land, as well as bushland and small pockets of land impacted by urban development (Rhelm, 2019). Duck Creek rises as an ephemeral drainage channel approximately 2.6 km west of the study area, at the base of the Illawarra Escarpment. Flowing east, it passes through the study area as a 3rd order creekline (Strahler, 1952) before continuing eastward for 4.5 km to feed into Lake Illawarra. Within the study area the creek forms an incised central channel located within a degraded and widened macro-channel that cuts across floodplain, as well as adjacent slopes to varying depths.

Reference to the Duck Creek Flood Study (Rhelm, 2019) indicates that land adjacent to Duck Creek and its tributaries represents a variable flood risk, with the lower reaches of the creek, particularly low lying areas adjacent to Lake Illawarra, comprising a high flood risk. The upper reaches of the creek, which form part of the study area, are less prone to flooding due to adjacent steep slopes which constrain flows to the macro-channel. However, overtopping of the macro-channel has been recorded around tributaries feeding into the central channel for short periods during flood event.

Archaeologically, understanding the nature and extent of flooding within an area is particularly important given that landscapes prone to flooding are liable to impart bias on the preservation of Aboriginal archaeological materials and features. As Brown (1997: 280) has highlighted, the factors responsible for this bias include the erosion and destruction (though movement) of sites by channel

activity as well as sediment deposition which acts to bury/preserve sites but also renders them invisible.

More broadly, the hydrology of the region is dominated by Lake Illawarra, a shallow coastal lagoon, covering an area of approximately 35 km², located about 8 k m south of Wollongong on the coastal plain. The lake likely formed approximately 6,000 years ago when sea levels peaked, inundating the plain before receding again around 2000 years ago (Donaldson, Bursill, & Jacobs, 2015). Today, and historically, the lake supports a diverse suite of floral and faunal communities. Existing archaeological survey data for the Wollongong region indicates a strong trend for the presence of open artefact sites along watercourses, specifically, on creek banks and 'flats' (i.e., flood/drainage plains), terraces and bordering lower slopes, as well as along the foreshore of Lake Illawarra (e.g., Navin 1993; Biosis Research Pty Ltd 2007; Comber Consultants Pty Ltd 2010; GML 2012; Austral Archaeology Pty Ltd, 2013; RPS 2016; EcoLogical 2017 and GML Heritage Pty Ltd, 2018. Such features would have provided a wide variety of economic plant and animal resources for Aboriginal people occupying the region.

3.1.5 Geology

Reference to the 1:100,000 Geological Map Sheet for Kiama (9028-1) indicates that the study area has been mapped as comprising Berry Silstone (Psb) and Budgong Sandstone (Psg) both of which form part of the Shoalhaven Group of sand and silt units. Units of the Shoalhaven Group were deposited in variably low to high energy, fluvial to marine environments and primarily comprise sandstone with interbedded shale and mudstone (Hutton, 2009). Berry Siltstone includes lithologies of mid-grey to dark-grey siltstone to fine sandstones. Budgong Sandstone is of Late Permian antiquity and consists primarily of tuff material from local Illawarra volcanic rocks, as well as red-brown and grey volcanic sandstone.

Together with available geological mapping, the results of previous archaeological investigations in the greater Wollongong area suggest that surface and/or near-surface deposits of stone suitable for flaked stone artefact manufacture are unlikely to occur within the study area.

3.1.6 Soils and Geomorphology

Soils within the study area have been mapped by Hazelton (1992) as belonging to the Fairy Meadow (fa), Wattamolla Road (wt) and Albion Park (ap) soil landscapes. Soils of the Fairy Meadow soil landscape are characterised as moderately deep alluvial loams and siliceous sands on terraces, and prairie soils and podzolic soils on drainage plains. Dominant 'A' horizon soils comprise brownish black sandy loams with neutral pH levels. These soils are found in the southern portion of the study area associated with Duck Creek.

Soils of the Wattamolla Road soil landscape are characterised as moderately deep red podzolic soils on upper slopes and benches, and yellow podzolic soils siliceous on middle and lower slopes. Dominant 'A' horizon soils comprise hardsetting brownish black fine sandy loams with neutral pH levels. These soils are found in the central portion of the study area.

Soils of the Albion Park soil landscape are characterised as moderately deep brown podzolic soils on crests, yellow podzolic soils on midslopes, and soloths on footslopes and drainage lines. Dominant 'A' horizon soils comprise friable brownish black sandy clay loams with neutral pH levels. These soils are found in the northern portion of the study area.
Findings from geomorphological testing undertaken by AMBS (2006) for the WDRA found that land within the study area comprises a combination of Holocene terraces (alluvial flats), Pleistocene terraces (alluvial flats), hillslopes and spurs. Reference to mapping of these features across part of the study area (AMBS, 2006:Figure 3) indicates it contains both Holocene and Pleistocene terraces. Holocene terraces are defined by deep, homogenous deposits of recent Holocene age with archaeological deposits within these landforms associated with these features unlikely to be of significant age due to frequent floods that redistribute the alluvia sediments. Pleistocene terraces, meanwhile, are noted to predate Aboriginal occupation of the region but may feature Holocene deposits containing archaeological material sitting above Pleistocene deposits. Hillslopes and crests are characterised as erosional landscapes with archaeological deposits considered unlikely to occur within these areas.

3.1.7 Flora and Fauna

Native vegetation within the study area has been extensively modified as a result of historical land use activities, with the site's current vegetation regime consisting principally of managed and unmanaged native/exotic grasses in the central and southern portions and patches of regenerating woodland and in the north. Reference to the 1948 aerial for the site suggests this clearing took place prior to this date (Figure 8). Historical clearance notwithstanding, field observations and existing native vegetation mapping for the area suggests that the study area was once covered in patches of Box-Red Gum Foothills Forest, Coastal Grassy Red Gum Forest, Lowland Dry-Subtropical Rainforest and Acacia scrub with species representation differing according to landform and prevailing soil conditions (NSW National Parks and Wildlife Service, 2002).

Figure 6 Topography and hydrology

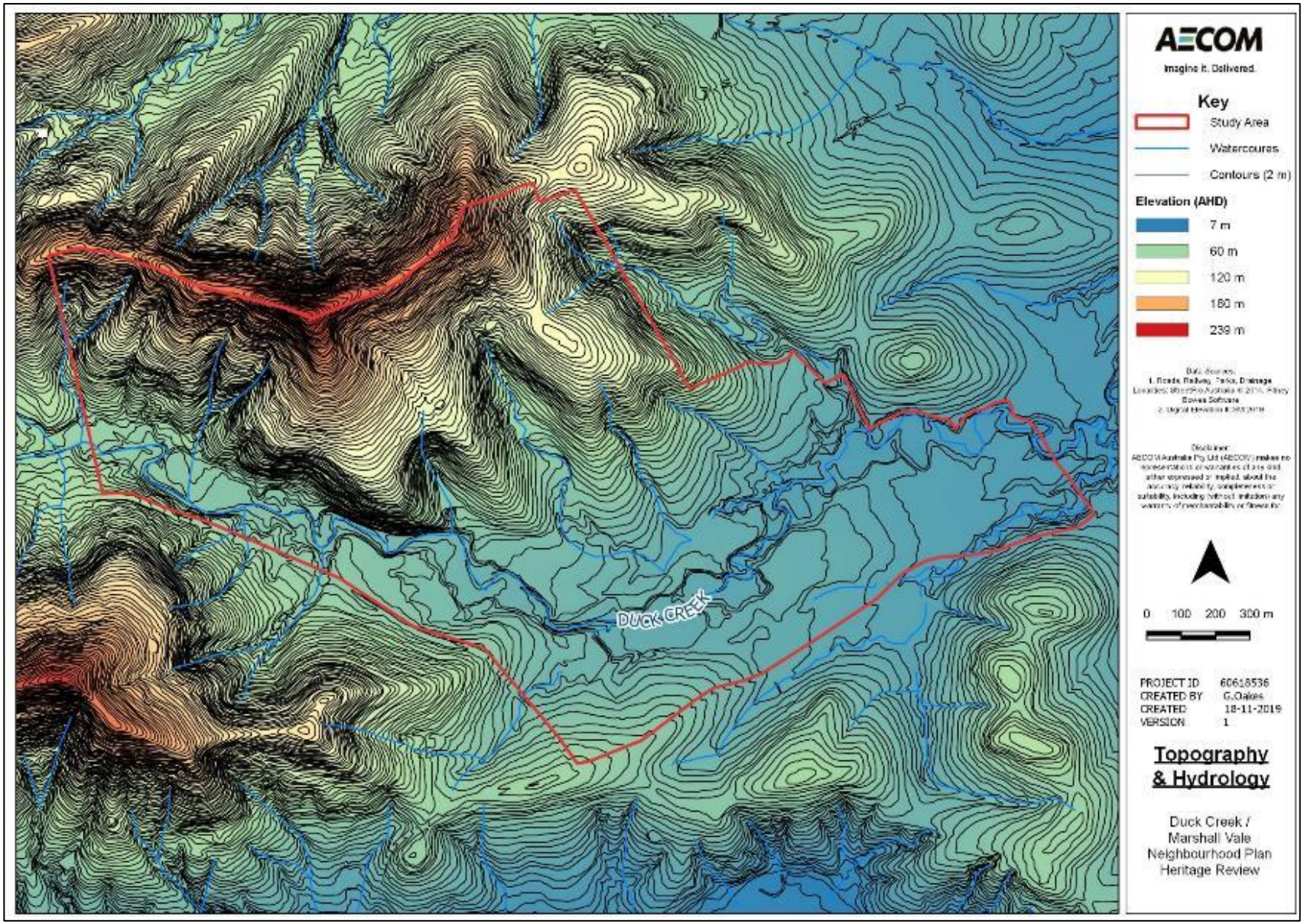
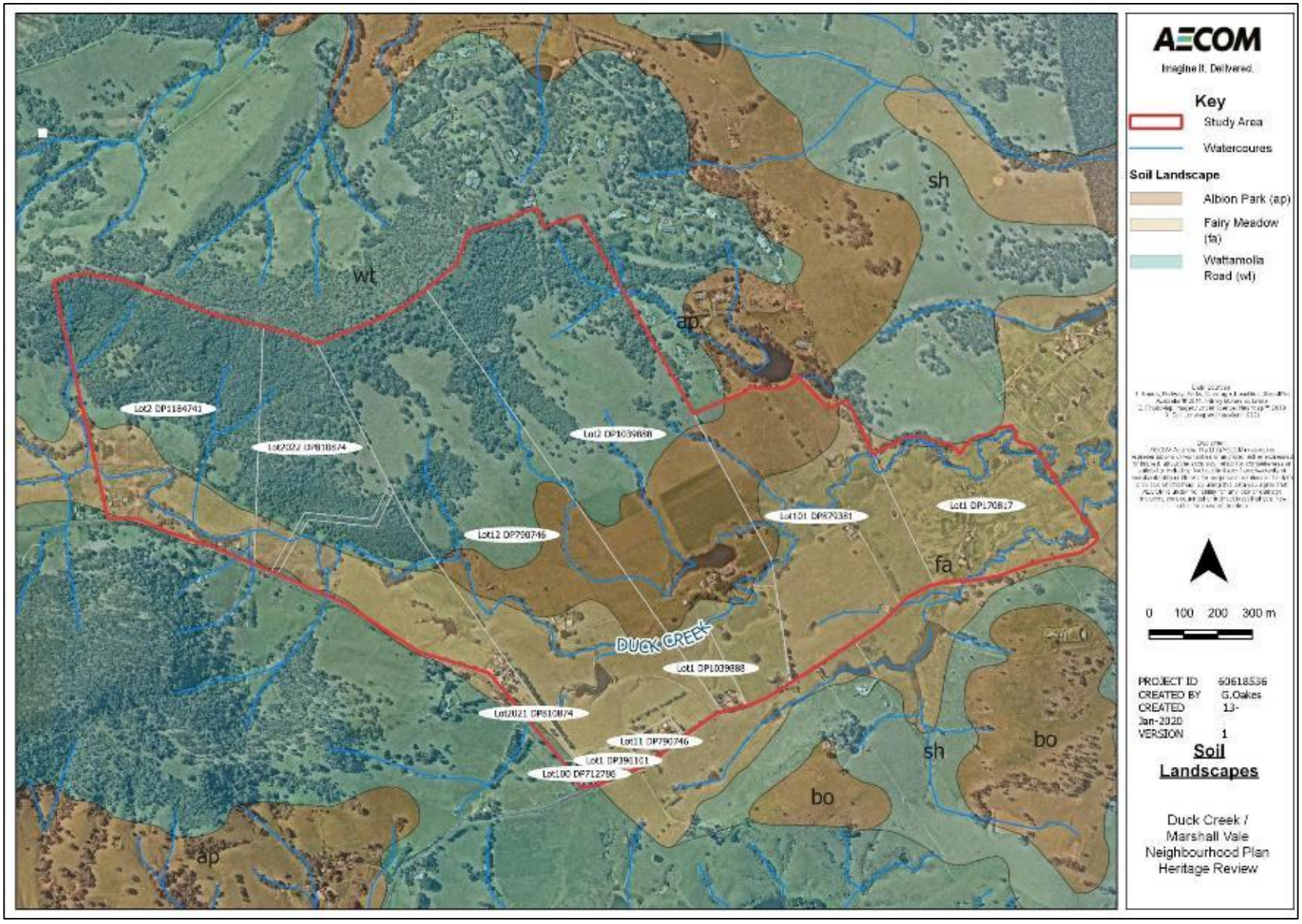


Figure 7 Soil landscape



3.1.8 Historic Land use and Disturbance

Historical aerial photographs for the study area provide a framework for assessing the nature and extent of post-European settlement land use activities and associated ground disturbance across it. Aerials from 1948 (Figure 8), 1963 (Figure 9), 1974 (Figure 10), 1984 (Figure 11), 1993 (Figure 12), and 2016 (Figure 13), provided below, indicate a range of activities and associated ground surface impacts including:

- Large scale vegetation clearance across the study area prior to 1948 alongside periodic clearing throughout the 20th century;
- Cropping and ploughing within various parcels of land prior to and post 1948;
- Construction of various dams throughout the 20th century;
- Agricultural activities, including fence construction, cattle and sheep grazing across the study area;
- Widespread sheet and gully erosion, with several notable instances of stream incision; and
- Construction of buildings and farm related structures throughout the 20th Century.

To varying degrees, all of the above-cited land use activities and associated ground impacts are relevant to the survival, integrity and identification of Aboriginal archaeological evidence within the study area. Key implications for the current assessment include the disturbance of pre-existing archaeological deposits, both surface and subsurface, through direct (e.g., earthworks) and indirect means, resulting in a loss of archaeological integrity and a reduced likelihood for the presence of culturally scarred trees.

Figure 8 1948 aerial photograph of the study area (Source: Land & Property Information NSW)

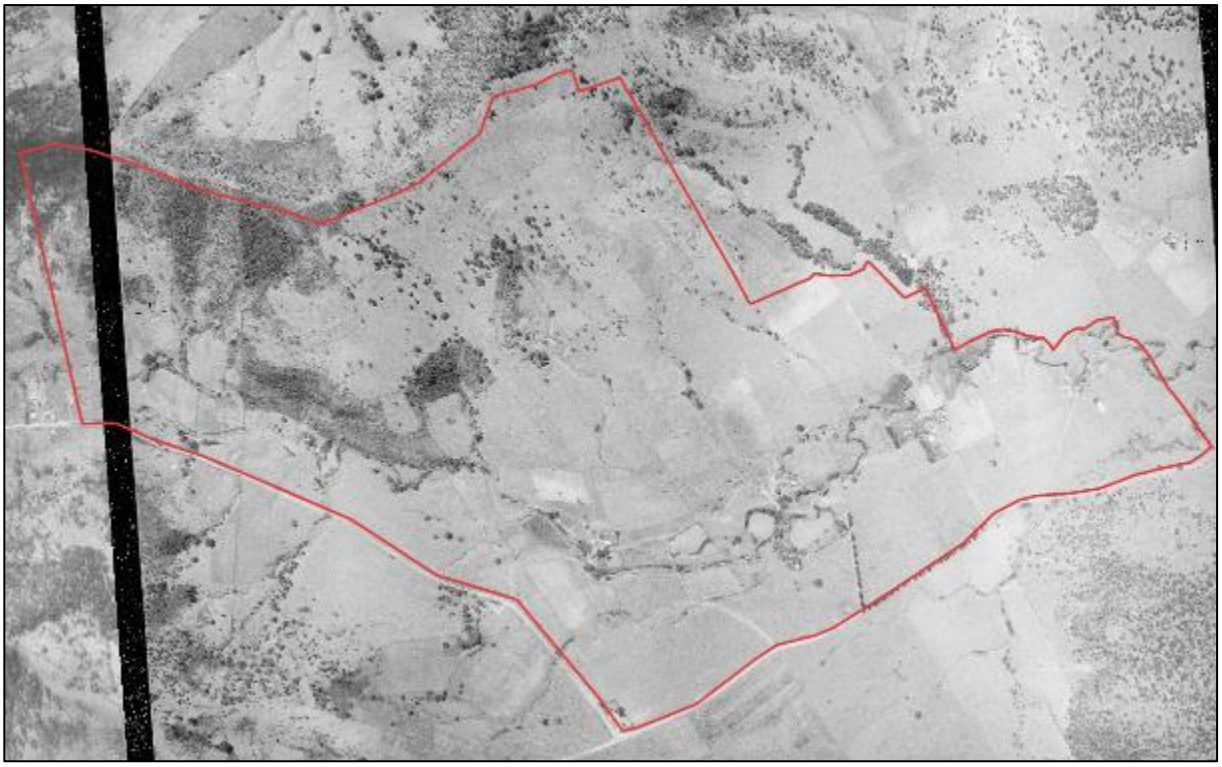


Figure 9 1963 aerial photograph of the study area (Source: Land & Property Information NSW)

Figure 10 1974 aerial photograph of the study area (Source: Land & Property Information NSW).

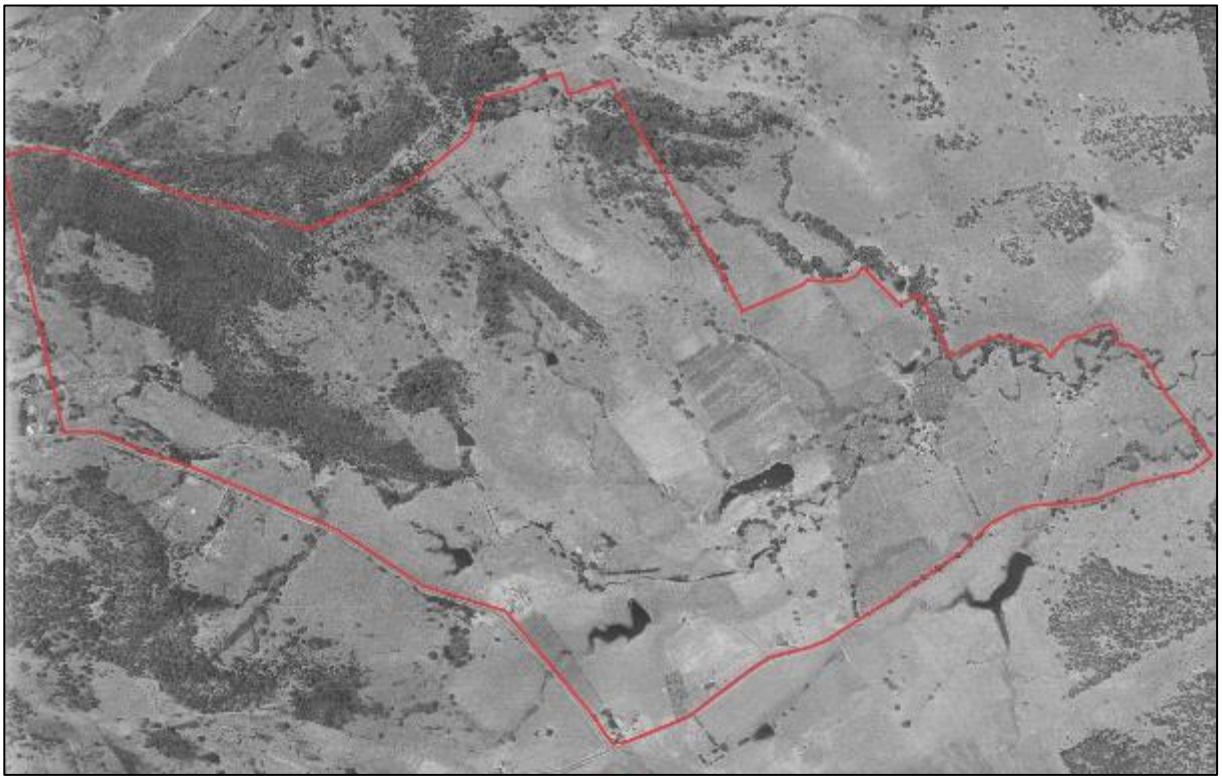


Figure 11 1984 aerial photograph of the study area (Source: Land & Property Information NSW)

Figure 12 1993 aerial photograph of the study area (Source: Land & Property Information NSW)

Figure 13 2016 aerial photograph of the study area (Source: Land & Property Information NSW)

3.2 Archaeological Context

This section describes the archaeological context of the study area on a regional and local scale. Archaeological data of relevance to this area, including the results of previous archaeological investigations associated with the Illawarra region, are reviewed in order to contextualise the results of the current assessment.

3.2.1 Regional Context

As indicated in Section 3.1.3, the study area is located within the western portion of the Illawarra coastal plain, extending into the foothills of the adjoining Illawarra Escarpment. Recent decades have seen hundreds of Aboriginal archaeological investigations incorporating survey and/or excavations carried out across the plain, with the overwhelming majority occurring in development-impact contexts. Collectively, these investigations have revealed a rich and diverse record of past Aboriginal occupation, with hundreds of Aboriginal archaeological sites now registered on the AHIMS database. While a detailed review of the Aboriginal archaeology and prehistory of the coastal plain is beyond the scope of this report, a high-level synthesis of investigations completed for the plain is provided below.

During the Pleistocene the Illawarra landscape was substantially different to that of today. Around 25,000 to 15,000 BP the sea level was over 100 metres lower than it is today with the current coastline approximately 24-32 km east of its current alignment (Bowdler, 1970). With the establishment of current sea levels approximately 6000BP, and the associated inundation of the coastal plain, Aboriginal foreshore sites of Pleistocene antiquity would have been submerged by rising sea levels. Nonetheless, available archaeological data for the Illawarra coastal plain suggest that Aboriginal people have occupied this area since the Late Pleistocene, with radiometric dates from an Aboriginal midden site at Bass Point located on the current coastline, approximately 15 km east of the study area, returning a 17,010±650 (ANU-536) kyr age for the site (Bowdler, 1976; Hughes & Djohaze, 1980). With the sea level changes described above this site likely represented an inland occupation site during the Pleistocene, rather than a coastal site, as it is today. Such sites are rare however, and compared with the late Pleistocene, archaeological evidence for mid-to-late Holocene Aboriginal occupation of the coastal plain is common, with numerous excavated sites, many comprising shell middens, containing occupational evidence of this antiquity (e.g.,Donlan, 1988; Fullagar & Head, 1990; GML Heritage Pty Ltd, 2018; Navin, 1987).

In keeping with broader Australian developments (Lourandos, 1997; Ulm, 2013), the social and economic systems of Aboriginal groups occupying the coastal plain during the mid-to-late Holocene appear to have become increasingly complex, with researchers pointing to various structural changes in the archaeological record as evidence of this 'complexity'. Well documented examples include:

- increases in 'intensity of site occupation', as evidenced by increases in implement and sediment accumulation rates;
- the emergence and/or proliferation of complex fishing and stoneworking technologies (e.g., hook and line fishing, backed artefacts); and
- offshore island use (e.g., Blackwell, 1982; Bowdler, 1976; Hughes & Lampert, 1982; Lampert & Hughes, 1974; Sullivan, 1982b, 1987).

For the coastal plain and the south coast more broadly, dramatic mid-to-late Holocene increases in implement and sediment accumulation rates at several sites, including Bass Point, have been linked by some researchers to population increase (e.g., Hughes & Lampert, 1982; Lampert & Hughes, 1974). However, the probable influence of other factors, such as changes in stone artefact technologies, has also been noted (e.g., Hiscock, 1981; see also Attenbrow, 2006; Hiscock, 2008).

The archaeological record of the coastal plain is dominated by open artefact sites (i.e., artefact scatters and isolated artefacts). Aboriginal shell midden sites are also a common feature of the coastal zone and around Lake Illawarra but less numerous than open artefact sites. Other site types, such as scarred trees, quarries, fish traps and grinding grooves are comparatively rare across the board.

Existing analyses of archaeological site distribution across the Illawarra region and the South Coast's coastal and hinterland zones (e.g., Boot, 2002; Sullivan, 1976, 1982a) have provided a range of insights into Aboriginal peoples' differential use of these broad zones. Along the coast, shell midden deposits have been identified in a variety of topographic contexts (e.g., headlands, lake/river/creek banks, dunes, sand flats) with availability of food and accessibility of drinking water identified as key influences on the selection of campsites (Sullivan, 1976: 59). Foredunes behind sandy beaches adjacent to rock platforms appear have been favoured site locations, particularly those on the northern side of associated headlands. Sullivan (1976: 66) has characterised such areas as "a logical compromise between readily available shellfish, access to water which is often derived from drainage off the headland, sand to sit on and shelter from the prevailing winds". Further inland, an analysis of archaeological site distribution across the region's hinterland zone has shown that, while all hinterland environments were utilised by Aboriginal people, high biodiversity woodlands and dry open forests in major river valleys were more intensively exploited than other ecological zones (Boot, 2002: 119). At the same time, areas of flat terrain therein, as well as on low altitude, broad, forested ridges, appear to have been favoured for sustained and/or repeated occupation.

This is supported by ethnographic accounts from early observations of Aboriginal people occupying the Illawarra Escarpment and Coastal zone that suggest local Aboriginal people exploited the resources around Lake Illawarra and the coastal zone during the summer, camping in the littoral sand dunes, and moving into rockshelters at the base of the escarpment in hinterland zones during winter (Illawarra Mercury 1923-25, in Barwick-Hooke 1988:40). Rockshelters at the base of the escarpment would have provided both shelter during cold periods as well as access to complex multi-layered Eucalypt and rain forests, and potable water.

As noted above, open artefact sites dominate the archaeological record of the coastal plain. Alongside associated radiometric dates, technological and typological data for the majority of excavated flaked stone artefact assemblages from the region suggest that these belong to the 'Australian small-tool tradition', a term coined by Gould (1969) to describe what was then thought to be the first appearance, in the mid-Holocene[2], of a new suite of flaked stone tool forms in the Aboriginal archaeological record of Australia, including backed artefacts, adzes and points. Complex, hierarchically-organised reduction sequences associated with the production of these tools contrast markedly with the simple sequences of earlier periods (Moore, 2011). Tools of the Australian small-tool tradition, it has been suggested, formed part of a portable, standardised and multifunctional tool kit aimed specifically at risk reduction

[2] More recent research into the chronology of backed artefacts and points in Australia (e.g., Hiscock & Attenbrow 1998, 2004; Hiscock 1993b) has demonstrated a long history of production and use for these implement types, with backed artefacts, for example, now known to have been produced in the early Holocene and late Pleistocene as well (albeit in small numbers).

(Hiscock, 1994, 2002, 2006). Stone artefact assemblages from late Pleistocene and early Holocene contexts, in contrast, are described by archaeologists as belonging to the 'Australian core tool and scraper tradition', a term first used by Bowler et al. (1970) to describe the Pleistocene assemblages recovered from Lake Mungo in western New South Wales. Bowler et al. (1970) saw the main components of these assemblages - core tools, steep-edged scrapers and flat scrapers - as characteristic of early Australian Aboriginal assemblages and as being of a distinctly different character to those associated with the proceeding small-tool tradition.

In southeastern Australia, including the Illawarra and South Coast regions, the Australian 'small-tool' and 'core tool and scraper' traditions are most commonly described in terms of McCarthy's (1967) Eastern Regional Sequence (ERS) of stone artefact assemblages. Based on appreciable changes in the composition of chipped stone artefact assemblages over time, the ERS hypothesises a three phase sequence of 'Capertian' (earliest), 'Bondaian' and 'Eloueran' (most recent) assemblages and was developed on the basis of McCarthy's (1948, 1964) pioneering analyses of stratified flaked stone assemblages from Lapstone Creek rockshelter, on the lower slopes of the Blue Mountains eastern escarpment, and Capertee 3 rockshelter in the Capertee Valley north of Lithgow. At present, the most widely cited characterisation of the ERS in southeastern Australia is that of a four-phase sequence beginning with the Pre-Bondaian (McCarthy's 'Capertian') and moving successively through the Early, Middle and Late phases of the Bondaian, the last of which equates to McCarthy's (1967) Eloueran phase (Table 1). The tripartite division of the Bondaian is based principally on the presence/absence and relative abundance of backed artefacts (Attenbrow, 2010: 101). However, other factors, such as changes in the abundance of bipolar artefacts and different stone materials, as well as the presence/absence of edge-ground hatchet-heads are also relevant. While providing a useful chronological framework for archaeologists working in southeastern Australia, it should be noted that, based as they are on archaeological datasets from different regions, published and unpublished versions of the sequence do differ with respect to the dating of individual phases, as well the relative frequencies of various diagnostic traits.

As in other regions of southeastern Australia (e.g., Attenbrow, 2006, 2010; McDonald, 2008), various excavated assemblages from the NSW south coast attest to a shift, over time, in the relative significance of particular raw materials for flaked stone artefact manufacture, as well as the relative importance of both backed artefact manufacture and bipolar flaking (see, for example, Boot, 2002; Lampert, 1971; ANUTECH, 1986; Sullivan, 1984). Excavated flaked stone artefact assemblages from middens in the Pambula-Merimbula district (e.g., ANUTECH, 1986; Sullivan, 1984), for example, document a change, around 2000 years BP, from 'early' silcrete or rhyolite -dominated assemblages containing backed artefacts to 'later' quartz-dominated assemblages without these implements.

Table 1 McCarthy's (1967) Eastern Regional Sequence (ESR) of stone artefact assemblages, as proposed by McDonald (2008) for the adjoining Sydney region

Current phasing	McCarthy's (1967) Phasing	Approximate date range	Backed artefact frequency	Bipolar artefacts	Edge-ground hatchet heads	Silicified tuff predom.	Silcrete and/or quartz predom.
Pre-Bondaian	Capertian	30,000-8,000 BP	Absent	Rare	Absent	Yes	No
Early Bondaian	Bondaian	8,000-4,000 BP	Very low	Rare	Absent	No	Yes
Middle Bondaian		4,000-1,000 BP	Very high	Increasingly common	Present	No	Yes
Late Bondaian	Eloueran	1,000 BP to European contact	Low	Very common	Present	No	Yes

Alongside open artefact sites, Aboriginal shell middens are a common archaeological feature of the Illawarra coastal plain, with numerous midden sites recorded on the coastal foreshore, as well as inland bordering Lake Illawarra, many of which have seen archaeological test excavation (see Bowdler, 1970; Lanendoen, 1971; White 1973; Navin 1987; Donlan and Sefton 1988). Excavated coastal and inland shell midden deposits have varied significantly in size and composition, with

associated archaeofaunal assemblages attesting to the exploitation, for food and tool manufacture, of a large and diverse suite of aquatic, avian and terrestrial fauna, with site-based assemblages indicating an emphasis on locally available resources. At least two coastal shell midden sites have been found to contain burials with a midden at Winding containing two skeletons (Donlan and Sefton, 1988), one of which post-date European arrival, and a midden located in Thirroul containing one skeleton and what were thought to be personal belongings (Fullager and Donlan, 1988).

3.2.2 AHIMS Search

The AHIMS database, administered by Heritage NSW, contains records of all Aboriginal objects reported to the Director General of the Department of Premier and Cabinet in accordance with Section 89A of the *National Parks and Wildlife Act 1974*. It also contains information about Aboriginal places, which have been declared by the Minister to have special significance with respect to Aboriginal culture. Previously recorded Aboriginal objects and declared Aboriginal places are known as 'Aboriginal sites'.

A search of the AHIMS database was undertaken on 14 October 2020 for a 5 x 5 km area centred on the study area. A total of 64 Aboriginal archaeological sites were identified within the search area comprising 60 open artefact sites, two with associated areas of Potential Archaeological Deposit (PAD), two shell middens, one scarred tree and one area of PAD. Consideration of the location of previously recorded sites indicates that two sites are located within the study area - AHIMS subsurface artefact sites 'WDRA_AX_34' (#52-5-0490) and WDRA_AX_35' (#52-5-0491).

Site WDRA_AX_34 consisted of 12 subsurface artefacts recovered by AMBS (2005) during an archaeological test pitting program. The artefacts were recovered from a 1 m² test pit located on a slope above a 3rd order section of Duck Creek in the western portion of the study area. Artefacts comprised complete flakes and flake debitage of chert, quartz, petrified wood, quartzite and silcrete.

Site WDRA_AX_35 consisted of six subsurface artefacts recovered by AMBS (2005) during the same archaeological test excavation program as those from site WDRA_AX_34. The artefacts were recovered from a 1 m² test pit located on a flat overlooking a 3rd order section of Duck Creek in the eastern portion of the study area. Artefacts comprised complete flakes and flake debitage of chert, quartz, petrified wood, quartzite and silcrete.

Table 2 provides a summary of site types within the search area with their locations shown on Figure 27. Table 3 provides site details for WDRA_AX_34 and WDRA_AX_35.

Table 2 Site search results

Site Type	Count	%
Open artefact site (i.e., isolated artefacts and artefact scatters)	58	90.6
Open artefact site with PAD	2	3.1
Shell midden	2	3.1
PAD	1	1.6
Scarred tree	1	1.6
Total	**64**	**100**

Table 3 Sites within the study area

AHIMS Site ID	Site name	AHIMS Centroid Coordinates		Site type	Location	AHIMS status	Reference
		MGAE	MGAN				
52-5-0490	WDRA_AX_34	293855	6175598	Subsurface artefact scatter	Within study area	Valid	AMBS (2005)
52-5-0491	WDRA_AX_35	292080	6176149	Subsurface artefact scatter	Within study area	Valid	AMBS (2005)

3.2.3 Previous Heritage Assessments

Existing AHIMS data indicate that numerous Aboriginal archaeological investigations have been carried out in greater Marshall Mount area over the past three decades. Notable investigations in the area include surveys by Sefton (1994), Steele (2000), Biosis Research Pty Ltd (2006), Austral Archaeology Pty Ltd (2013) and subsurface testing programs by AMBS (2006), Navin (1993), Biosis Research Pty Ltd (2007), Comber Consultants Pty Ltd (2010), GML (2012, 2018), RPS (2016) and EcoLogical (2017). Of these, two have been completed directed within the study area and are discussed below.

Aboriginal Museum Business Services (AMBS). (2006). *Aboriginal Heritage Management Plan: West Dapto Release Area*. Unpublished report for Wollongong City Council.

In 2004, AMBS was engaged by Wollongong City Council to prepare an Aboriginal heritage management plan for the WDRA for the purposes of identifying both Aboriginal archaeological and cultural sites located within the WDRA to inform the Master planning process. AMBS (2006) noted portions of the study area as having moderate to high archaeological sensitivity. A four week survey across the WDRA was undertaken that included survey coverage of a small portion of the eastern study area. A total of 24 archaeological sites were identified during the survey, none of which were located within the study area. In addition to archaeological survey, a subsurface testing program was completed incorporating three stages.

Stage 1 comprised a geomorphological sampling program consisting of the excavation of 54 test pits that were completed independently by Dr Phillip Hughes in order to investigate soils across the WDRA (Hughes, 2005, in AMBS, 2006). While no geomorphological test pits were excavated within the study area, the investigation concluded that creek systems within the WDRA are characterised by extensive alluvial terraces of both Holocene and Pleistocene age, of which both are noted within parts of the study area. Hughes argued that subsurface archaeological deposit was unlikely to be present on Pleistocene aged terraces and associated soils as the formation of these features predate known Aboriginal occupation of the area. However, it was noted that Aboriginal occupation of Pleistocene terraces may have occurred during the Holocene with evidence of this occupation forming part of shallow Holocene aged deposits on the surface of Pleistocene aged features. Holocene aged terraces were noted to occur as lower inset features, located closer to the creek, where they would experience more significant effects from flooding including more frequent and voluminous overbank flow and deposition events during flooding. Hughes suggested that Holocene terraces would likely have a higher potential to contain archaeological deposits than Pleistocene, although these may be 'much more disturbed by floods and perhaps buried in deeper alluvium' (Hughes 2005:3, in AMBS 2006). Finally, Hughes noted that the archaeological sensitivity of ridges, hillslopes, crests and footslopes located above alluvial terraces is dependent on the steepness of the slope with archaeological deposits more likely to be present on ridge crests and gentle footslopes adjacent to creeks rather than mid slopes. However, Hughes goes on to suggest that ridges and hillslopes will be erosional and transportational, with subsurface deposits likely to be thin if present.

Stage 2 of the program comprised archaeological test excavation of 100 x 1 m² test pits sampling identified landforms within the WDRA. This included 34 test pits excavated within 10 m of a watercourse channel, 33 test pits located on alluvial flats, 17 on hillslopes and 16 on spur crests. Of these, two, as discussed in Section 3.2.2, were excavated within the study area. A total of 381 Aboriginal objects were recovered from 59 test pits during the program. Surprisingly, the highest number of artefacts were found on hillslopes (155), followed by alluvial flats (102), watercourses (86) and crests (38). The high artefact count for hillslopes was a result of one test pit (MC_33) that contained 146 artefacts and was located, according to the site card on a benched lower hillslope. As noted, exclusion of this test pit from the artefact counts reduced the number of artefacts identified on hillslopes to nine resulting in hillslopes becoming the least sensitive landform. Based on the results of Stage 2, AMBS concluded that higher order watercourses and alluvial flats (primarily Pleistocene terraces away from watercourses) were the most archaeological sensitive, followed by lower order watercourses and crests. Artefact types included broken flakes (48%), complete flakes (26.5%), flaked pieces (19.9%) and cores (5.5%). Raw materials included chert (49%), quartz (25.7%), p.wood (10%), quartzite (10%), silcrete (8.7%), tuff (3.4%) and FGS (1.3%).

Stage 3 of the program included archaeological test excavation of 36 1 m x 1 m test pits in the proposed locations of the Darkes Road and Bong Bong Road town centres. A total of 41 artefacts were recovered from 13 of the 30 the excavated test pits. Highest artefact counts were identified on crests, followed by alluvial flats with the lowest counts found on hillslopes. Artefact types included broken flakes (n=24), complete flakes (n=11), flaked pieces (n=5) and cores (n=1). Raw materials included chert (43.9%), p.wood (31.7%), silcrete (9.8%), quartzite (7.3%) quartz (4.9%) and FGS (2.4%).

In total, 425 artefacts were recovered from 136 test pits as part of Stages 2 and 3. Alluvial flats were confirmed as being the most archaeologically sensitive, followed by land adjacent to watercourses (non-alluvial flat), spur crests and hillslopes (excluding test pit MC_33). While all landforms were considered to have some archaeological potential, AMBS specifically highlighted a number of spur crests within the Mullet Creek corridor and benched foot slopes directly adjacent to watercourses within escarpment foothills as highly sensitive.

In addition to archaeological sites, AMBS noted two Aboriginal cultural heritage values, one within and one directly adjacent to the study area. Drawing on information from the *Early Contact Map* (DEC 2005) for the Illawarra region, it was identified that Duck Creek formed a travel route for Aboriginal people moving between Lake Illawarra and the Coast, and the Illawarra Escarpment. In addition, it was identified that during the early Nineteenth Century, Aboriginal people used to camp across from the Marshall Mount School.

Austral Archaeology Pty Ltd. (2013). *Yallah-Marshall Mount Urban Release Precinct Wollongong, NSW Aboriginal Archaeological and Cultural Heritage Assessment*. Unpublished report for Wollongong City Council.

In 2013, Austral Archaeology Pty Ltd (Austral) was commissioned by Wollongong City Council to complete an Aboriginal cultural heritage assessment for the proposed Yallah-Marshall Mount Urban Release Area (YMMURA) which encompasses the study area. The assessment included targeted survey across the YMMURA over five days with small sections of the current study area sampled. A total of 17 sites were identified during the survey, one of which was identified within the study area - YMMURA_PAD1. The site consists of a large PAD area located across the midslope and uppers slope of the study area's ridge system approximately 630 m north of Duck Creek. The site was not registered on AHIMS and the assessment stated no further work is required for it.

3.2.4 Summary

Key observations drawn from a review of the local and regional archaeological context of the study area are as follows:

- Prior to European settlement, the floral and faunal resources of the study area will have been sufficient to facilitate intensive and/or repeated occupation by Aboriginal people.
- Duck Creek will have been focal resource feature for Aboriginal people camping within and passing through the study area.
- Alluvial flats, both Holocene and Pleistocene aged, are considered the most archaeologically sensitive landforms within the study area. While less sensitive, crests are also considered to have some archaeological sensitivity. Hillslopes, particularly middle and upper slopes are not considered archaeologically sensitive.
- AMBS (2006) noted portions of the study area as having moderate to high archaeological sensitivity as well as likely containing both Holocene and Pleistocene alluvial deposits.
- Outcrops and/or deposits of stone suitable for the production of flaked stone artefacts have not been identified within the study area and are considered unlikely.
- Artefact scatters and isolated finds - collectively referred to as open artefact sites - are the most common site types within the region. Recorded stone artefact assemblages consist principally of flake and non-flake debitage (i.e., flakes (complete and broken), flake shatter fragments and flaked pieces), with cores, retouched tools and groundstone implements comparatively poorly represented.

- Existing archaeological survey data for the region indicate a strong trend for the presence of open artefact sites along watercourses, specifically, on creek banks and 'flats' (i.e., flood/drainage plains), terraces and bordering lower slopes. Although this distribution pattern can be attributed in part to geomorphic dynamics and archaeological sampling bias, with extensive fluvial erosion activity along watercourses resulting in higher levels of surface visibility and, by extension, concentrated survey effort, an occupational emphasis on watercourses is supported by the results of subsurface investigations in the area;
- Aboriginal shell midden sites, with other forms of evidence (i.e., burials, stone artefacts etc) are common across the coastal plain, particularly associated with Lake Illawarra and coastal zones.
- Other site types, such as rockshelters, burials, fish traps, earth mounds, scarred trees, carved trees, quarries, grinding grooves and stone arrangements are comparatively rare on the coastal plain.
- Native vegetation within the study area has been extensively modified as a result of European land use practices. Nonetheless, existing areas of regenerating native vegetation retain some, albeit limited, potential for mature trees with cultural scarring. Scattered mature paddock trees may likewise exhibit cultural scars.
- Two previously recorded sites are located within the study area - AHIMS subsurface artefact sites 'WDRA_AX_34' (#52-5-0490) and WDRA_AX_35' (#52-5-0491).
- One area of PAD (YMMURA_PAD1) was recorded across the midslope and uppers slope of the study area's ridge system approximately 630 m north of Duck Creek. The site was not registered on AHIMS.
- Two Aboriginal cultural heritage values, one within and one directly adjacent to the study area have been identified. Duck Creek has been identified as a travel route for Aboriginal people moving between Lake Illawarra and the Coast, and the Illawarra Escarpment. In addition, it was identified that during the early Nineteenth Century, Aboriginal people used to camp across from the Marshall Mount School.

4.0 Historic Heritage

4.1 Historical Background

4.1.1 Regional

Initial contact by Europeans with the Illawarra Region is generally dated to 28 April 1770 when Captain James Cook sailing on the Endeavour is thought to have approached the shoreline at 'Red Point' but was unable to find suitable ground to land. Over 25 years later, in 1796, George Bass and Mathew Flinders landed near Red Point locating a large lagoon they named Tom Thumbs Lagoon (Lake Illawarra). Not long after, squatters and settlers began visiting the area with the fist load of timber being shipped from the area in 1812. In 1815, Dr Charles Throsby explored the area, having travelled with Aboriginal guides from Liverpool, following an existing Aboriginal trail down Bulli Mountain. Following Throsby's visit to the area, Surveyor General John Oxley and surveyor James Meehan began measuring grants near Lake Illawarra. The earliest grants in the region were issued in 1817 to Richard Brooks, George Johnston (which included part of the current study area), Andrew Allan, Robert Jenkins and David Allan, all of whom did not reside in the area but rather ran cattle (Kass, 2010: 91). Following these initial grants in the region, the Colony's survey department were unable to keep up with settlement and began issuing 'promises' which permitted existing landowners to take up land for cultivation and grazing even though their grants were not officially recorded until years later. Many employees on these properties were assigned convicts.

The earliest settlement of land in the Parish of Calderwood, which encompasses the study area is dated to 1817 with the granting of a 1,500 acre parcel of land to George Johnston known as Johnston's Meadows and marked as Macquarie's Gift on Parish maps (Figure 14). In 1828, George Brown, a hotelier in Wollongong, was also granted land in Calderwood and had a man making salt on the beach near Wollongong. Likewise, Henry Osborne was given authority to occupy large parcel of

land (2,560 acre) land in Calderwood which he named Marshall Mount after his wife's maiden name (Kass, 2010: 93).

The 1841 Census indicates that there were 468 males and 296 females living in northern Illawarra, 637 males and 294 females living in Wollongong, 233 males and 143 females on the small farms around Dapto and a population of 588 males and 340 females in the Lake Illawarra area totalling 659 houses of which were of wood and 88 of brick (Kass, 2010: 93).

Throughout the 1810s and 1820s Wollongong was established as the regional centre, aided by a garrison being built in 1826 under Captain Bishop. Originally, the garrison was located at Red Point near Port Kembla but was later moved. In 1826, Surveyor-General John Oxley reported that land had been set aside for a town at Wollongong with an order issued in 1829 for a survey of the area. A military barracks was completed in 1830 which was occupied by mounted police in 1832. By the 1840s the town boasted two inns, a post office, a brewery and a steam mill with 120 houses and 500-600 people living there by 1849. Development of the town continued throughout the remainder of the century with Wollongong being the major centre to the present day (Kass, 2010: 95).

In the rural areas, industry went through three main phases – grazing, agriculture and then dairying. The initial phase of settlement (1810s to 1820s), grazing was the primary land use due to apparent dampness of the climate. In the 1830s and 1840s agriculture dominated with crops such as wheat, maize and potatoes grown. From the 1840s, dairying was dominant due to drought and rust outbreaks with clover and native trefoil introduced as feed for dairy cattle. For much of the Nineteenth Century, Wollongong was the only urban centre in the region but by the 1870s small centres emerged at Dapto and Woonona/Bulli. The establishment of coal mines in the northern part of the Illawarra resulted in a number of small villages at their locations housing so that a network of small villages focussed on coalmines was evident by 1900. With the railway constructed in the 1890s the region opened up further to settlement and development (Kass, 2010: 108).

By the 1940s, the northern region of Illawarra shifted from coal mining to manufacturing with a blast furnace being built at Port Kembla in 1927. While the northern portion of the Illawarra industrialised, the southern portion, to the southwest of Wollongong and Port Kembla, remained largely rural with market gardens and dairying continuing to this day (Kass, 2010: 108).

4.1.2 Study Area

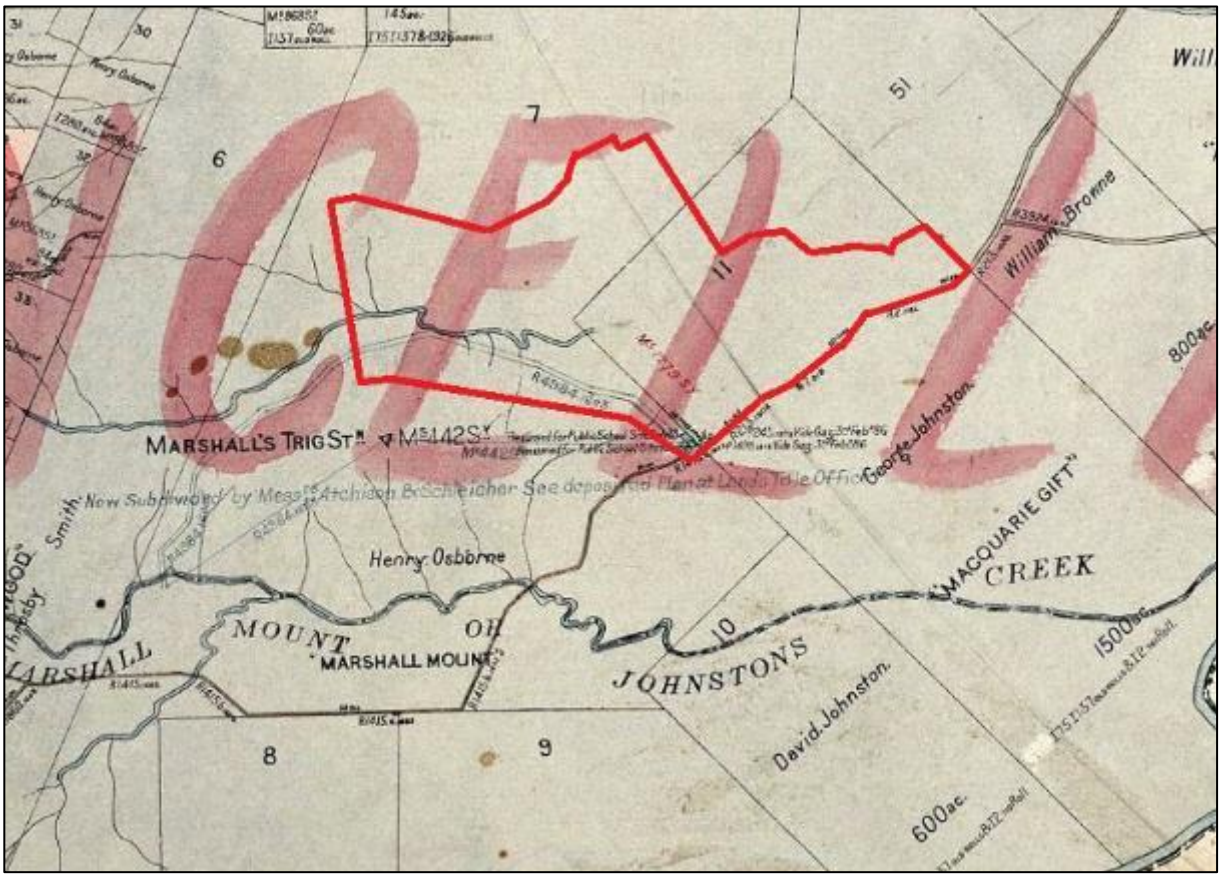
With regard to the study area, two original land grants are relevant. The first, a 1500 acre parcel of land that sat astride Duck Creek and partially encompassed the eastern portion of the study area, was granted to George Johnston in 1817, and is referred to as "Macquarie Gift" on a number of Parish maps (Figure 14).

George Johnston was a Scottish born soldier (1st Lieutenant) and farmer who sailed with the marine detachment of the First Fleet, and by some accounts was reputedly the first man ashore at Port Jackson in January 1788. Johnston rose through the military ranks over the next decade and was promoted to Major in 1800, holding a number of positions of responsibility in the early colony including Governor King's *Adjunct of Orders*, Governor Hunter's *Aide de Camp* and commander of the corps. Not always on the right side of the law, in 1800 Johnston was arrested and sent to England for illegal trading in spirits but was not put on trial and returned to Sydney. In 1804, he suppressed an armed rising of Irish convicts at Castle Hill, riding to meet the group and demanding parley before overpowering the leaders of the uprising and leaving their followers to be shot. After playing a significant role in the downfall and arrest of Governor Bligh, Johnston was court-martialled in 1811 eventually being cashiered (dismissed and removed) from his military position. In 1813 he returned to the colony after suffering huge financial losses and without a commission but gained the friendship of Governor Macquarie, a colleague from the American war of independence. Johnston and his family were often entertained by Macquarie and received large grants of land (Yarwood, 1967).

Throughout his time in the colony Johnston received a number of land grants including 602 acres (244 ha) at Annandale and Bankstown, 2,000 acres (809 ha) and the 1,500 acre (607 ha) grant from Macquarie near Lake Illawarra. Johnston was very successful as a farmer and grazier (as a supplier of meat rather than as a wool-grower). Johnston died on 5 January 1823 and his son David Johnston inherited his lands including those in Illawarra which now form the eastern part of the study area (Figure 14)

A review of Parish maps for Calderwood show that over time this original grant was subdivided and sold off to various other landowners in the region including to the Osborne and Weston families. Throughout this period, and through to today much of this land has been used for primarily for grazing and dairying.

Figure 14 1895 Parish Map for Calderwood (study area in red)



The other early land grant relevant to the study area is part of a large 2,560 acre parcel of land officially granted to Henry Osborne in 1841 which encompasses the western study area (although it appears he occupied the area well before the official grant). Henry Osborne was an Irish born pastoralist who sold his farm in Ireland and sailed for Sydney arriving in May 1829. After spending some time gaining experience on one of Captain Thompson's properties at Liverpool, he was granted his 2,560 acre property in Illawarra which he used for dairying and breeding cattle (Figure 15 and Figure 16). The property entitled him to 25 labourers which he used to run the lands. He named the property Marshall Mount after his wife's maiden name and built his first house on the property 'Pumpkin Cottage' in 1829 (Figure 17). In 1839, he commenced a two storey stone and brick building, which was widely regarded as one of the best in Illawarra. This same year he set out with one free settler, three convicts and three Aboriginal people for South Australia, arriving four months later (Osborne, 1967).

Not long after, he began to acquire large holdings of land in the area between the Murrumbidgee and Murray Rivers south of Wagga Wagga including "Barren Garry", "Arejoel", and "Brooking" near Lockhart, all along the route which he had taken to South Australia. As noted above, by the 1850s he owned very large holdings not only in Marshall Mount but more broadly in the Illawarra region, as well as Mount Keira and other coal-mines in the Maitland district. In fact, he owned so much land where an Act of parliament was required to deprive him of much of the land later occupied by the town of Maitland. On his Marshall Mount/Illawarra properties he ran a huge cattle business which was later taken over by his descendants (Osborne, 1967).

Figure 15 1890 Plan showing the Marshall Mount Estate (Source: State Archives of NSW Application No. 8056)

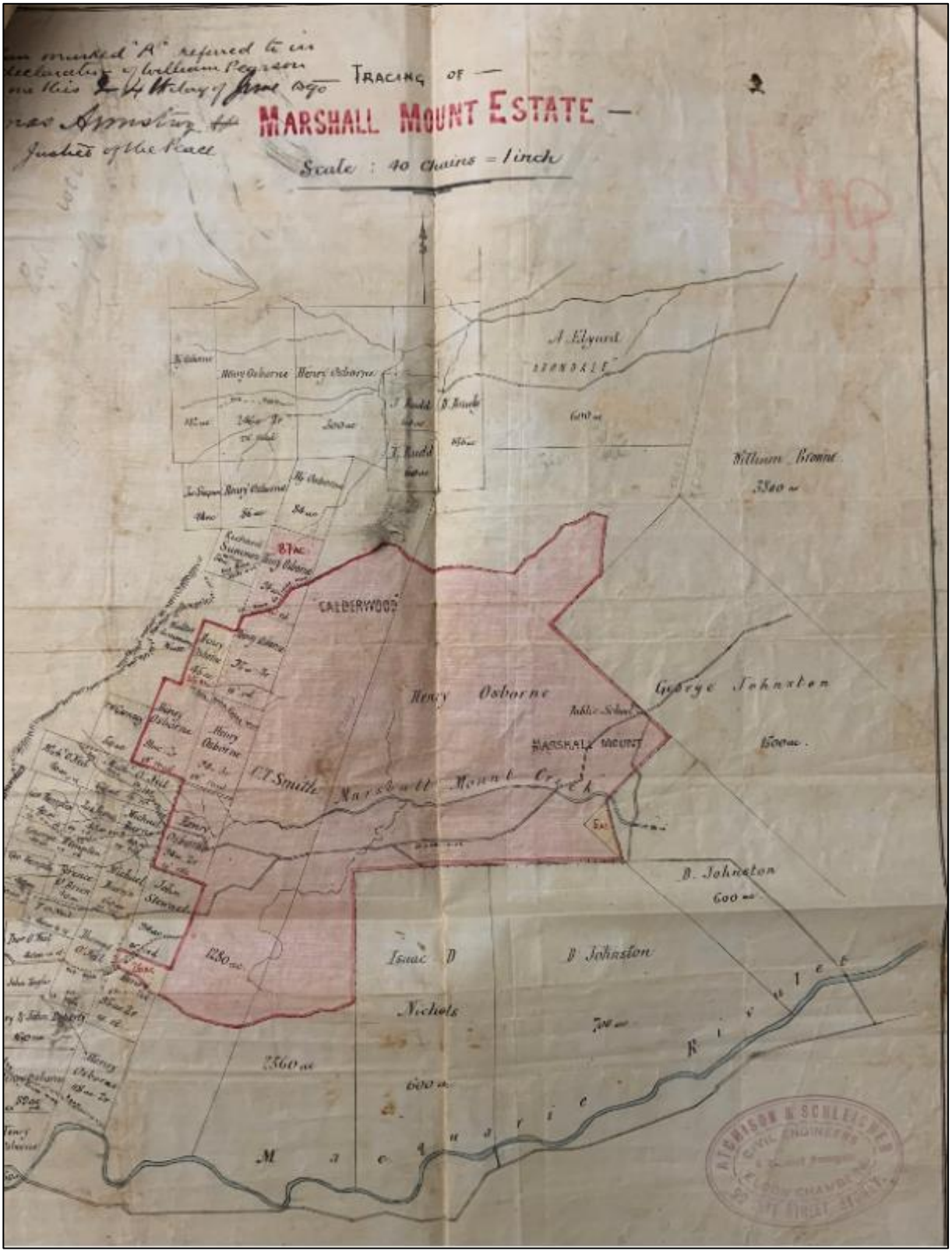


Figure 16 Henry Osborne's original 2,560 land grant (Source: State Archives of NSW)

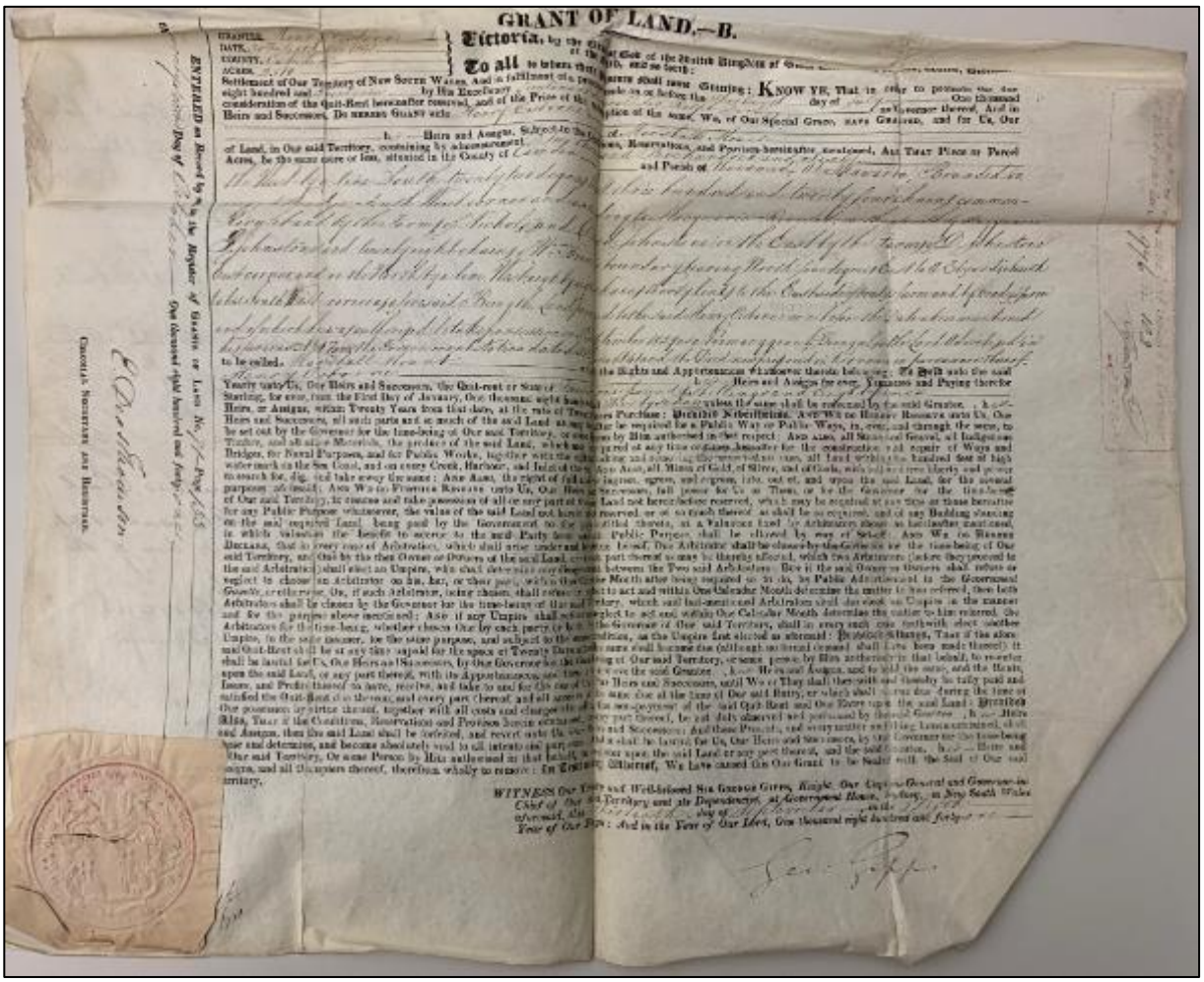
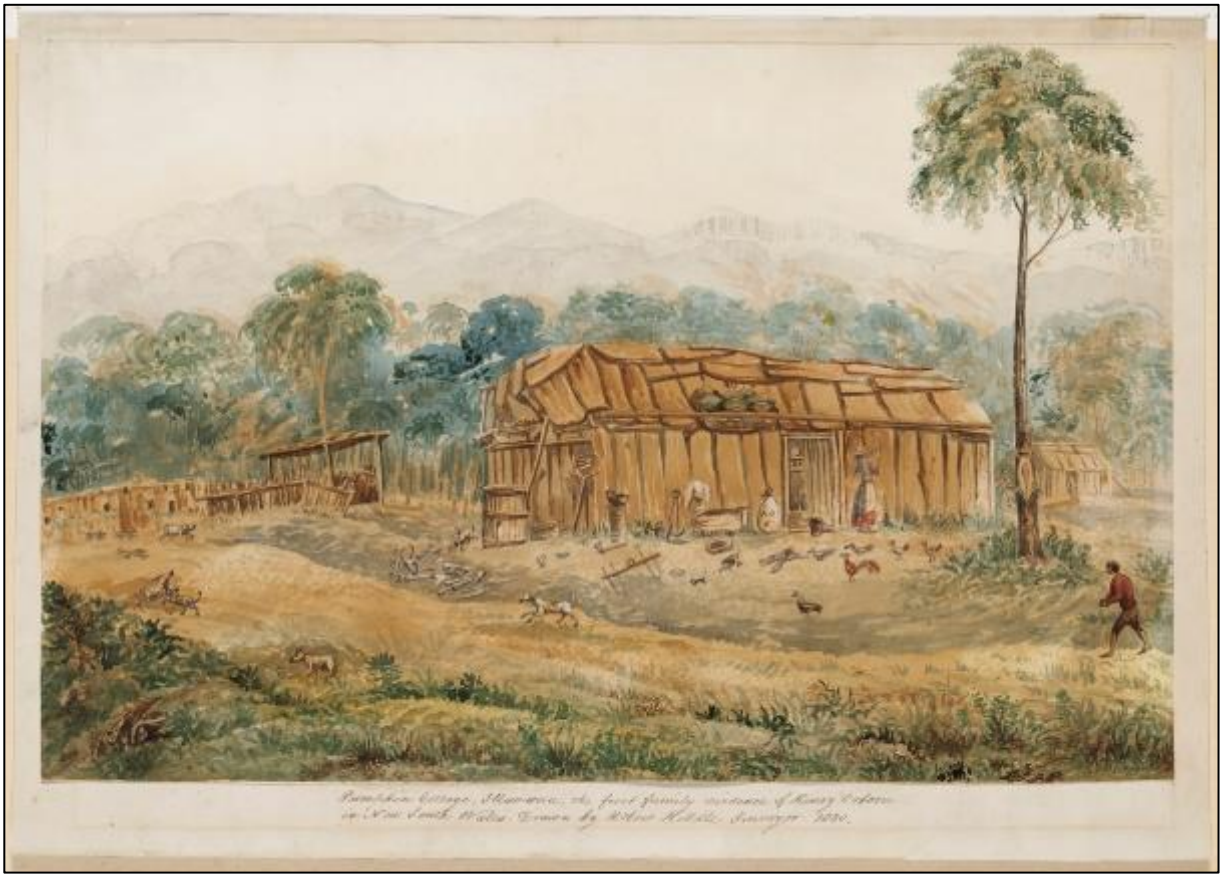


Figure 17 Pumpkin Cottage (source: State Library of NSW)



4.2 Register Searches

A search of historic heritage registers/lists (statutory and non-statutory) was undertaken on 14 October 2020 to identify previously recorded historic heritage items located within the study area. The search results are provided in Table 4 and indicate there are two locally significant historic heritage items located directly within the study area - Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027) and Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983). Appendix B provides a copy of the inventory sheet for the Former Marshall Mount School and Master's Residence from the City of Wollongong Heritage Study (McDonald McPhee Pty Ltd, Rogers, Conacher, & Fullarton, 1991). No heritage sheet was provided for the Progress Association Hall. A further review of the City of Wollongong Heritage Study indicates that no additional historic heritage items are located within the study area.

Table 4 Historic heritage register/list searches

Heritage Register	Results	Location
NSW State Heritage Register (SHR)[1]	None	N/A
Wollongong LEP 2009[1]	Marshall Mount Progress Association Hall (#61027) Former Marshall Mount School and Master's Residence (#5983)	Lot 1 DP396100 Lot 100 DP712786
World Heritage List[1]	None	N/A
National Heritage List[1]	None	N/A
Commonwealth Heritage List[1]	None	N/A
Register of National Estate[2]	None	N/A

Heritage Register	Results	Location
EPBC Protected Matters Search Tool	None	N/A
Roads and Maritime Heritage and Conservation Register[1]	None	N/A
Sydney Water Heritage Register[1]	None	N/A

*1 – Statutory Heritage Registers 2 – Non-Statutory Heritage Registers

4.2.1 Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027)

The Marshall Mount Progress Association Hall in listed on the Wollongong LEP but is not listed in the Wollongong Heritage Study (1991) and very little information is available regarding the listing. The hall was officially opened in 1953 by Hughie Stevenson, President of the Progress Association. It is understood the farmer Hughie Stevenson donated half an acre of land for the Hall and locals raised £627 to pay for its construction (Verity, 2013). The item is listed as having local heritage significance.

A review of LEP Heritage Map sheet HER_014 indicates that the curtilage for the hall extends into the adjacent lot (i.e., Lot 12 DP790746). However, a close review of mapping and a site inspection indicates that this area comprises a disused tennis court (Plate 2 and Plate 3). During the site inspection, the landowner for Miala indicated that the tennis court was constructed in the 1960s and does not form part of either the Progress Association Hall or the school (F Duncan 2018,pers.comm., 10 July).

A review of historic aerials for the period likewise indicates that tennis court was constructed after the Marshall Mount Progress Association Hall. Shown below, the tennis is not present on a 1963 aerial (Figure 18) but is clearly visible on 1974 aerial (Figure 19) indicating is was constructed between that period.

The tennis court is not considered to be a heritage item or to form part of the Marshall Mount Progress Association Hall, having been constructed well after its opening in 1953. While limited research into the social attachment locals have to the tennis court has been carried out, the general lack of knowledge about it or interest in it points towards a lack of any social significance. The LEP curtilage for this item should be updated accordingly to only include the hall site.

Plate 1 View north showing Marshall Mount Hall (Source: AECOM 2018)

Plate 2 View west showing tennis court (Source: AECOM 2018)

Plate 3 View south showing tennis court (Source: AECOM 2018)

Figure 18 1963 aerial showing the school and hall. Note, tennis court not present (Source: NSW Spatial Collaboration Portal 2020)

Figure 19 1974 aerial showing tennis court (Source: NSW Spatial Collaboration Portal 2020)

4.2.2 Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983)

The Former Marshall Mount School and Master's Residence was gazetted on 19 December 1886 on land granted by Henry Osborne directly adjacent to George Jonhston's Macquaries gift land. The school was constructed the following year in 1897. The building consists of a single storey weatherboard building with skillion gable roof or short hip on residence. It is of typical Victorian vernacular school house architecture. The item is listed on the Wollongong LEP as having local heritage significance.

Plate 4 View north of Marshall Mount Public School (Source: AECOM 2018)

4.3 Unlisted Items

4.3.1 Miala House – 410 Marshall Mount Road

4.3.1.1 Property History

Historical research, including a review of Parish maps and aerials, indicate that the majority of the broader study area has been historically used for agricultural uses and formed part of much larger farming properties with the owners of the properties having homesteads outside the study area. One potential exception to this is the homestead located on the "Miala" property – 410 Marshall Mount Road where the site inspection indicated some of the buildings may have heritage value. A review of the history of this property is provided below.

Originally, 410 Marshall Mount Road (Lot 12 DP790746) comprised parts of two land grants – part of George Johnston's 1817 grant and part of the 1841 grant to Henry Osborne (Figure 20). The title history of the southern portion of the property, taken from documents held by the State Archives of NSW (Application No.10090,) is outlined on Figure 21. A review of historical documents indicate that the land exchanged hands multiple times throughout the Nineteenth Century and was primarily used for grazing and dairying. Reference to an 1897 plan for the southern portion of the property shows a

homestead and ancillary buildings present on the site suggesting that Miala Homestead and outbuildings were constructed on or prior to 1897 (Figure 22).

The title history of the northern portion of the property, that was granted to Henry Osborne, is outlined on Figure 23. This portion of the land was used primarily for grazing with no evidence of buildings or structures having been constructed on it and a far less complex title history than the southern portion.

Figure 20 1895 Calderwood Parish Map showing George Johnston's grant (purple), Henry Osborne's grant (green) and Miala (red)

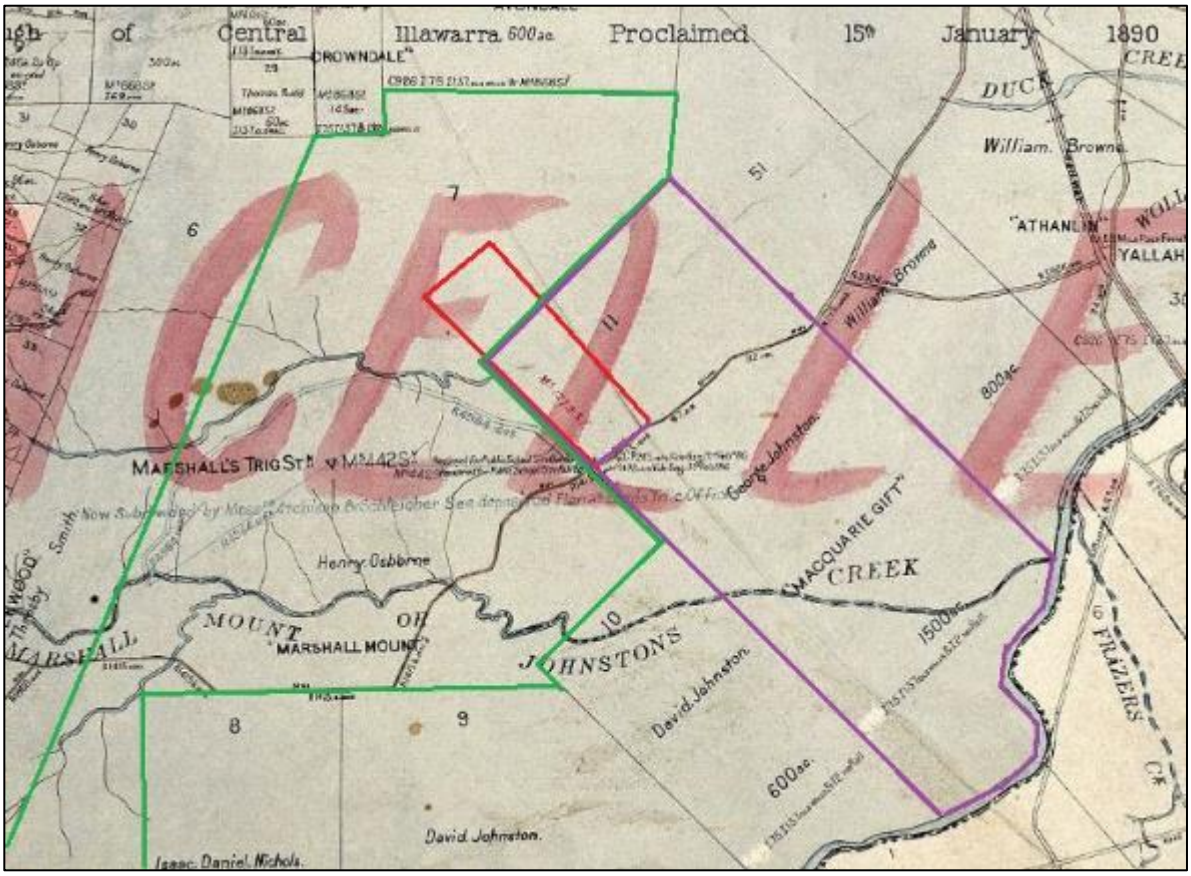


Figure 21 Title history of the southern portion of the Miala property

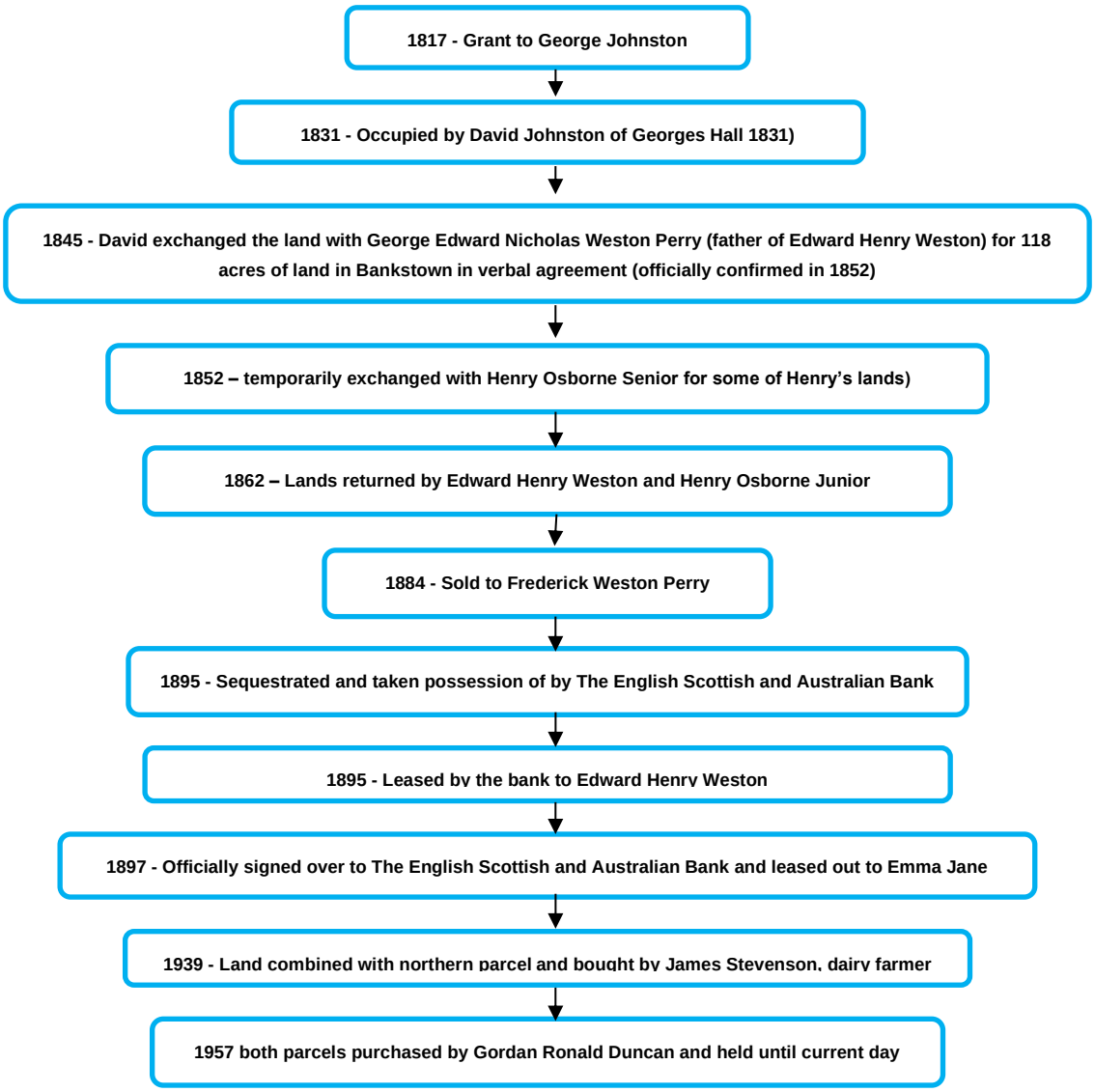


Figure 22 A 1897 plan of the southern portion of the study area showing homestead (Source: Application No. 10090 NSW State Archives)

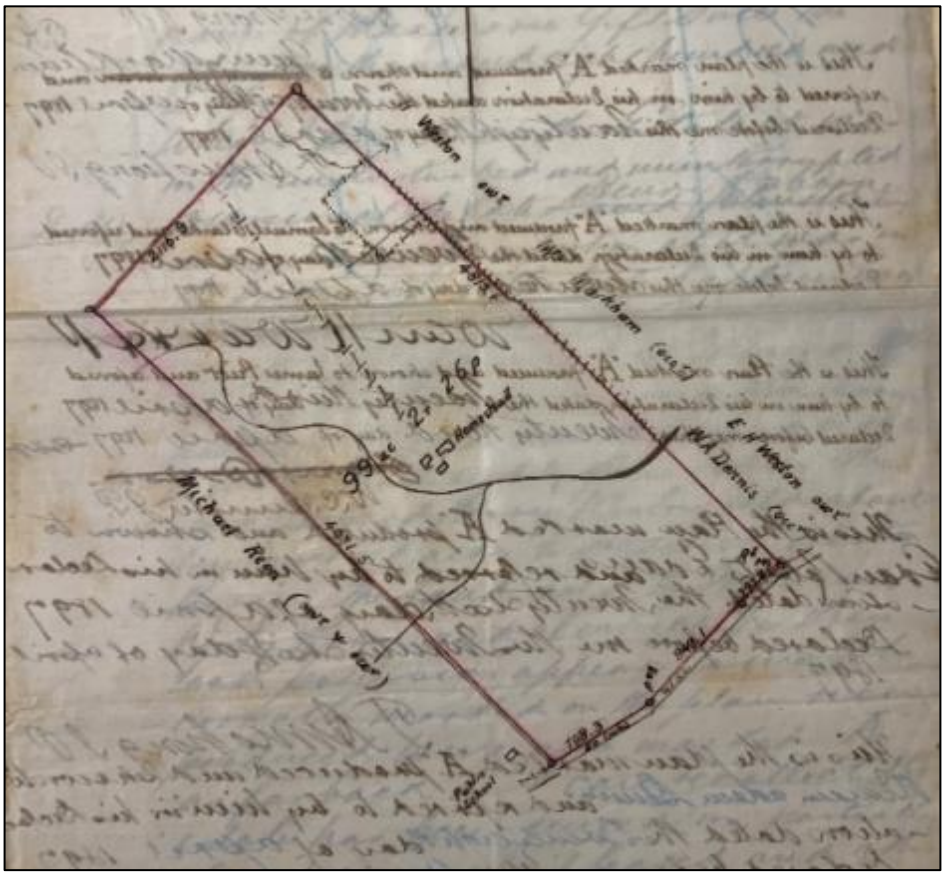
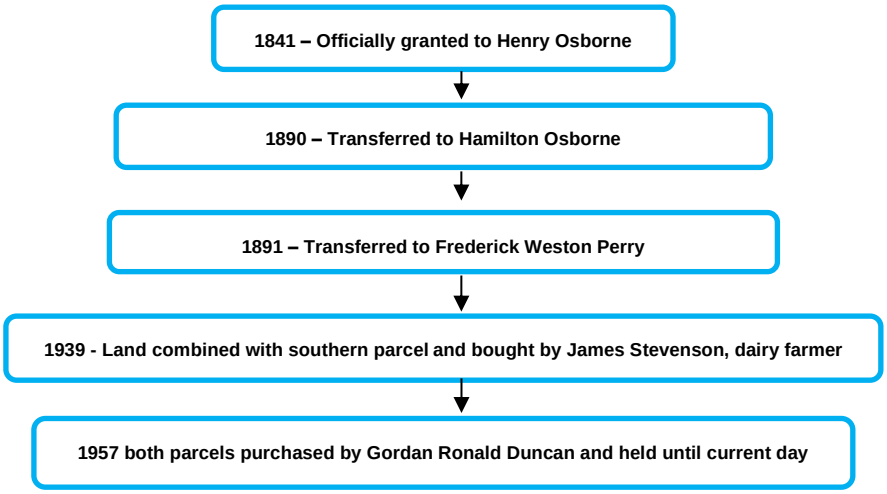


Figure 23 Title history of the northern portion of the Miala property



4.3.1.2 Description of Homestead and Ancillary Buildings

Built structures currently present on the Miala property include the homestead, dairy building, silo, two modern sheds and two modern water tanks. In addition, two cultural plantings (fig trees) are associated with the property. The locations of these structures are shown on Figure 24 and a discussion of each (excluding modern structures) is provided below.

Figure 24 Miala Homestead and buildings

Homestead

The homestead comprises a Late Victorian (1880-1900) style single storey timber frame and cladded house with corrugated galvanised iron roof and verandahs on the eastern (front) and northern sides (Plate 5 and Plate 6). The central roof is primarily hipped but has various hipped and gabled extensions running off it. The external cladding of the house consists of a timber weatherboard clad, with an older rough sawn timber cladding on the front (east) and southern walls, and a more modern cut pine timber cladding on the northern and western façade walls. The older timber cladding appears to be in good condition, while the more modern cladding varies in condition, with sections of this cladding degrading.

Windows are a combination of double hung sash windows typical of the style and timber casement. The building sits on timber stumps that are visible below the eastern (front verandah) and is without a chimney.

The structure has undergone obvious and significant modifications, both externally and internally, since its original construction. An inspection of the building and discussions with the current landowner, who's family (Duncan) purchased the property in the 1950s indicate the original structure was a simple square plan with pyramidal hipped roof and a semi-detached kitchen as shown on Figure 26. This was prior to the family undertaking significant modification in the 1990s (F Duncan 2018,pers.comm., 10 July). Reference to a 1948 aerial image for the site supports this claim with a simple rectangular building present with an attached kitchen on the western end and chimney showing on the southern portion of the rooftop (Figure 26). It is not known if this was the original detached kitchen/laundry area that was then incorporated under one roofline to the main house, or if this was an early addition to modernise the house. A number of additional buildings are shown on the 1948 aerial, but their function/use is unclear – though it is likely they were associated with the practice of dairying. Additional known modifications to the homestead include the following (shown on Figure 25):

- Roofing across the entire building renovated and modified to compensate for additions;
- Addition of a sunroom in the northeast corner with associated changes to the roof;
- Extension to the building northward to create a living area and westward to include a kitchen;
- Addition of a bathroom and storage area with gable roof;
- Recladding of central hallway dividing the northern extension from the original building; and
- Removal of the chimney that would have stood towards the southern side of the original building (fireplaces are still present in the two bedrooms).

Internally, the floors of the original structure and the major extensions are carpeted which are modern additions. The sunroom floor is of varnished pine and the kitchen/bathroom slate tiles. Internal walls within portions of the central sections of the house that have had the least modifications, are generally horizontal tongue and groove timber (pine) and ceilings likewise timber (pine). Fixture and fittings are a combination of contemporary and original. Two disused and closed fireplaces are present in the two main bedrooms of the original building. Both have been renovated with their mantels, legs, plinths and hearths replaced but their brickwork likely original.

Overall, the following features of the building are considered to be original fabric associated with its likely construction around 1890 and not part of the renovations:

- eastern (front) facade including windows and doors Plate 7;
- southern façade including windows and doors Plate 8;
- internal doors and associated fixtures in two main bedrooms; and
- fireplace brickwork in two main bedrooms Plate 9 and Plate 10.

Plate 5 View east showing front facade of homestead and entry (source: AECOM 2020)

Plate 6 View northwest showing front and southern side of homestead (source: AECOM 2020)

Figure 25 Homestead showing approximation of original footprint (red) and modifications (blue)

Figure 26 1948 aerial showing homestead and surrounding structures (source: Department of Lands 2020)

Plate 7 Cladding and window on eastern (front) façade (source: AECOM 2020)

Plate 8 Cladding and window on southern façade (source: AECOM 2020)

Plate 9 Main bedroom fireplace 1 (source: AECOM 2020)

Plate 10 Main bedroom fireplace 2 (source: AECOM 2020)

Dairy

The dairy consists of a simple rectangular structure measuring approximately 19 m long and 4.5 m wide with a front façade of part machine cut timber slabs and part corrugated galvanised iron. The rear wall consists of a part brick, part corrugated galvanised iron construction. The roof is a simple gabled corrugated galvanised iron structure that runs its entirety. Windows are present along the front only, comprising both double casement and double hung, all of which appear to be modern installations. The building sits on a cement slab and is typical of a dairy from around the turn of the century.

Internally the building has been subject to significant modifications. Discussion with the landowner family indicated that it was modified in the 1990s in order for the family to live in it during renovations of the main homestead (L. Bell 2020,pers.comm., 21 October). An inspection internally of the building shows that the original cattle stalls and associated fittings have all been removed. The front facade has a contemporary timber stud framing with insulation that was likely constructed in the 1990s to enclose the building. The external timber slabs were likely salvaged from somewhere on the property or elsewhere (L. Bell 2020,pers.comm., 21 October). Internal flooring is exposed cement slab. It appears that very little of the structure's original fabric remains.

Plate 11 View north showing dairy (source: AECOM 2020)

Plate 12 Internal dairy showing timber framework on front façade (source: AECOM 2020)

Silo

The silo consists of a circular concrete structure with a diameter of approximately 3 m and a height of around 7 m. Constructed of stacked interlocking rings and a corrugated galvanised iron roof, the silo is typical of the early Twentieth Century. It's in generally poor condition with vegetation clinging to its exterior and rust evident on the roof. The silo is present on the 1948 aerial image for the property.

Plate 13 View north showing silo (source: AECOM 2020)

Archaeological Potential

The potential for archaeological relics on the site is dependent on the original construction and use of the site, as well as associated disturbance. It is known the original use of the property was for dairy purposes. Until the latter part of the Nineteenth Century the property formed part of larger land grant and was used for grazing with built structures unlikely to be present. It was not until the original land grant was subdivided in that use, other than agricultural, began.

The current homestead was part of a larger formation of buildings likely constructed in 1890s. The original homestead is likely to have included the main house, detached kitchen/laundry building. Other structures built during this initial site establishment would have included a well or water collection infrastructure, such as a beehive well, and a separate privy. The earliest plan that shows building on the site relates to a property dealing image from 1897 (Figure 22). The plan shows three buildings, including the homestead and two additional larger nearby buildings. This may have been the original dairy buildings. The layout of the homestead appears to be the same layout shown in the 1948 aerial (Figure 26). The two other buildings are not similar to buildings that appear in the 1948 aerial, indicating that these buildings have been replaced by subsequent structures.

The location of the original well and privies are not known and are not visible in the surrounding landscaped area. Archaeological remains of these items may still remain today; however, were not identified during the site visit. It is likely that remains associated with the original kitchen/laundry area may be present underneath part of the western portion of the current homestead building. The former privy and well/water storage area are likely to be at the side or rear of the original building layout but have been knocked down to ground level and landscaped over.

Dairying facilities would have included the main dairy building, believed to be still standing today, and associated shed and storage buildings, including possibly skimming room. These may have been represented in the 1897 dealing plan. The next plan of the site does not appear until the 1948 aerial. The dairy building that appears in the 1948 building is the same as the building that appears today, however, there are many other buildings that appear around the homestead/dairy complex that are not present today. The building immediately to the west of the homestead appears to be connected to the homestead as an annex. This building may have been the former privy or wash room. Another building is present immediately to the southwest of the homestead yard may have been associated with a store for the dairying activities, or a separate shed for the homestead (Figure 26).

The dairy complex to the west of the homestead also appears to be larger, and includes a larger series of sheds to the south (Figure 26).

To the rear of the homestead building, to the northwest and appearing in front of the silo building, is a large shed. This building may be connected to the silo building but is separated from both the homestead and dairy yards.

Archaeological relics associated with the earliest phases on the post subdivision property would relate to the earliest establishment of smaller dairying industry in the greater Wollongong area. Archaeological remains, if present, would include parts of the original kitchen/laundry area, remains of the former well and possible remains or the original privies. These archaeological remains may also contain relics associate with the time they were filled in. It was common to infill former wells and privies with refuse material. This material would relate to the time of infilling only but could provide a snapshot of the material cultural associated with the residence at the house at the time.

Archaeological remains associated with the former dairy industry would be limited to the foundations associated with the former buildings. Relics would be limited to the use of the dairying industry. The archaeological potential, other than for the foundations of these buildings, would be low.

There are not expected to be any historical archaeological remains associated with the site prior to the subdivision of the original land grant. The area was used for grazing purposes and therefore unlikely to contain any early structures.

4.3.1.3 Significance Assessment

The significance assessment of the homestead and associated buildings against the NSW Heritage Branch guidelines *Assessing Heritage Significance* (NSW Heritage Office, 2001) is provided in Table 5.

Table 5 Significance Assessment (against NSW heritage significance criteria)

APPLICATION OF CRITERIA	
Historical significance **SHR criteria (a)**	*The homestead is considered of local significance being associated with the establishment of an early dairying industry in the area. The original land grant established an early dairy, and the subsequent subdivision lead to the continuation of this industry. The homestead present today remains as one of the earliest associated with the late Nineteenth Century subdivision of the area. Despite renovations and additions to the building, the house and facade remaining relatively intact.*
Historical association significance **SHR criteria (b)**	*The land was formerly associated with George Johnstone an early influential and prominent person associated with the establishment of the early colony. While the land was associated with his early land grant, the property today does not reflect or is associated with him today. The property is not considered to meet the threshold for State or local listing under this criterion.*
Aesthetic significance **SHR criteria (c)**	*The homestead retains particular characteristics associated with the original late Victorian design and aesthetics. These have been diminished by the extensions and renovations that have been undertaken. Specifically, these relate to the internal walls and floors within the original footprint of the house. The external cladding, roof and some of the windows have also been replaced. Despite this, the Homestead is considered to be of local significance under this criterion.*
Social, cultural or spiritual significance **SHR criteria (d)**	*The homestead is not considered to have social, cultural or spiritual significance and does not meet the threshold for listing under this criterion.*
Cultural or natural history significance **SHR criteria (e)**	*Archaeological potential has been identified to be present on the property, both related to the homestead and to the former dairy industry. This potential may include remain associated with the original kitchen and laundry area, well(s) and privies. The location of these items would assist in better understanding the former layout of the homestead complex dating from the late Nineteenth Century. These remains would have local research value and significance under this criterion.*
Rarity **SHR criteria (f)**	*The homestead can be considered to be of local significance for rarity significance. Reference to the Wollongong Heritage Study (McDonald McPhee Pty Ltd et al., 1991) indicates that homesteads dating to the Nineteenth Century that are in good condition are not common and it is these that give "the give the general landscape its character". This homestead building has been extended and modified internally and externally, however, some of the internal layout and external facades do still represent some of the late Nineteenth Century Victorian period characteristics.*
Representativeness **SHR criteria (g)**	*The homestead is considered to be of a typical of a modified and extended late Victorian architectural design; however, it is not considered to be complete or intact to be considered to be a good representative example. As such, the homestead is not considered to meet the State or local heritage listing under this criterion.*
Integrity/Intactness	*Overall, the building is in good condition as the building was repaired and modified with extensions undertaken from the 1980s onwards. The original front and southern facades are considered in good condition.*

4.3.1.4 Statement of Significance

Miala homestead is considered to be of local historical, aesthetic and rarity significance. The homestead is one of the earliest remaining building from the Nineteenth Century in the area. The building has undergone significant modifications, including internal modifications and extensions to the house. The front and southern facades are reminiscent of the Late Victorian period and retain some of this aesthetic style despite extensions to the property. The homestead also contains research potential in the form of potential historical archaeological remains associated with the formation and running of the homestead and dairying complex.

5.0 Site Inspection

A targeted site inspection of accessible properties within the study area was undertaken on Friday 22 November 2019 and 21 October 2020 by AECOM Principal Heritage Specialist Geordie Oakes. The purpose of this inspection was to identify the Aboriginal and historic heritage values within the study area and establish whether development within the area, as guided by the Neighbourhood Plan will, or is likely to, harm any Aboriginal objects or historic heritage items. Accessible properties included 36 and 169 North Marshall Mount Road, 346, 386, 410 and 444 Marshall Mount Road. During the site inspection notes were taken regarding Ground Surface Visibility (GSV), Ground Integrity (GI, i.e. land condition), archaeological sensitivity and impact risk. Key findings from the site inspection are provided below:

- No Aboriginal objects were identified during the site inspection.
- With the exception of Miala House, no buildings or structures of heritage value were identified during the site inspection with most residences and farm buildings inspected constructed over the past few decades. However, it is noted that a number of properties were not accessible during the site inspection.
- Miala homestead, located at 410 Marshall Mount Road (Lot 12DP 790746) has been assessed of local historical and aesthetic heritage significance. While significantly modified, the house is representative of Late Victorian style that was popular from 1880 to 1900. A number of cultural plantings (fig trees) were identified across the study area including two associated with Miala homestead.
- Aboriginal subsurface sensitivity mapping completed by AMBS (2006) was refined during the site inspection with several terraces and alluvial flats located adjacent to Duck Creek identified as being archaeologically sensitive (Figure 27).
- An reassessment of PAD site YMMURA_PAD1 was completed during the site inspection resulting in its boundary being reduced and it being assessed as of moderate archaeological sensitivity on the basis of its landform, slope and distance from Duck Creek. The likelihood of subsurface Aboriginal objects being present in greater quantities than low density background scatter was assessed as of low.
- Areas of severe impact to natural soil profiles were identified occurring as part of construction of farm related infrastructure (i.e., residential buildings, roads, farm buildings, fences etc.) as well as areas of severe erosion along sections of Duck Creek and its tributaries.

Figure 27 Aboriginal heritage values

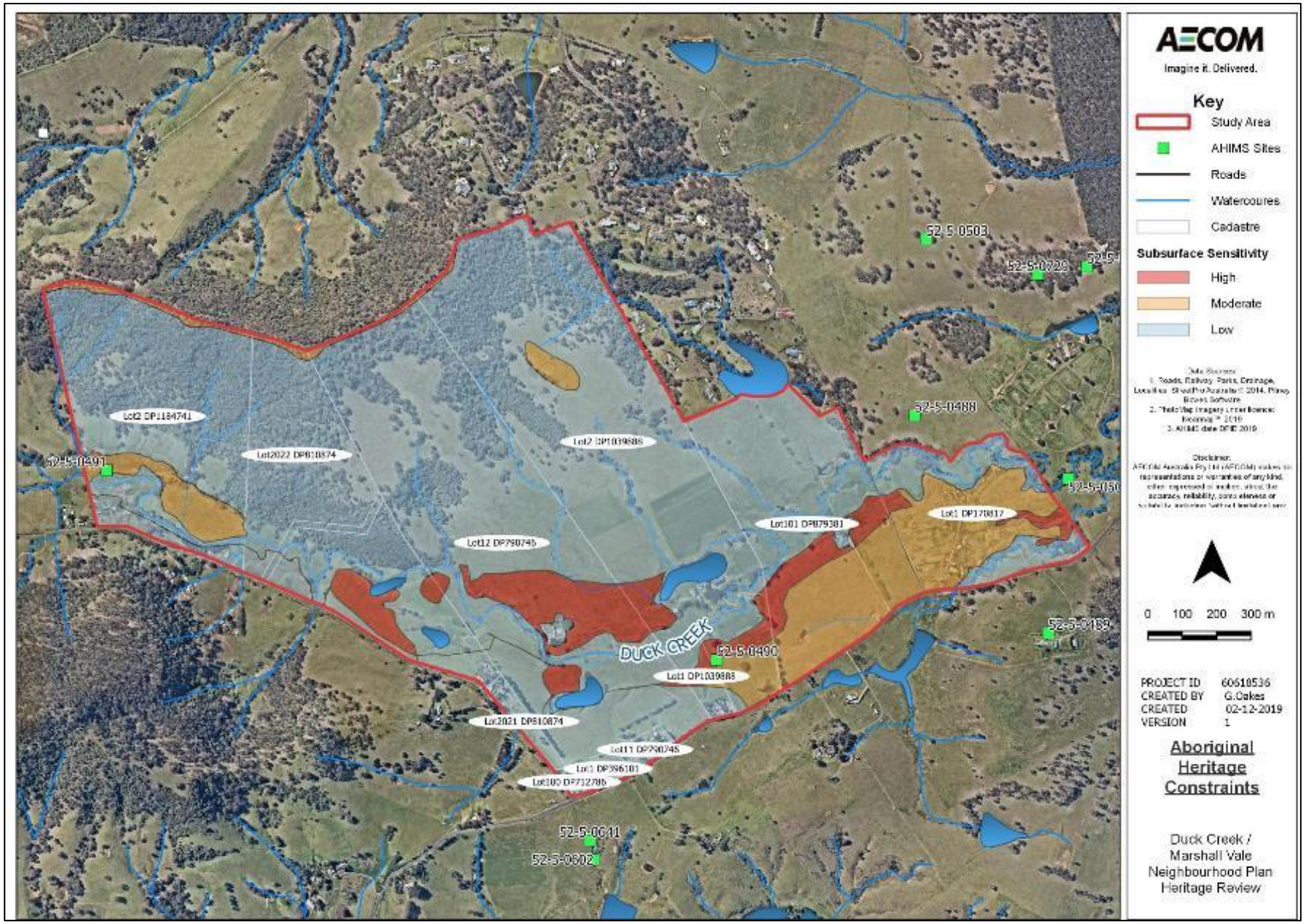


Figure 28 Aboriginal heritage values over Neighbourhood Plan

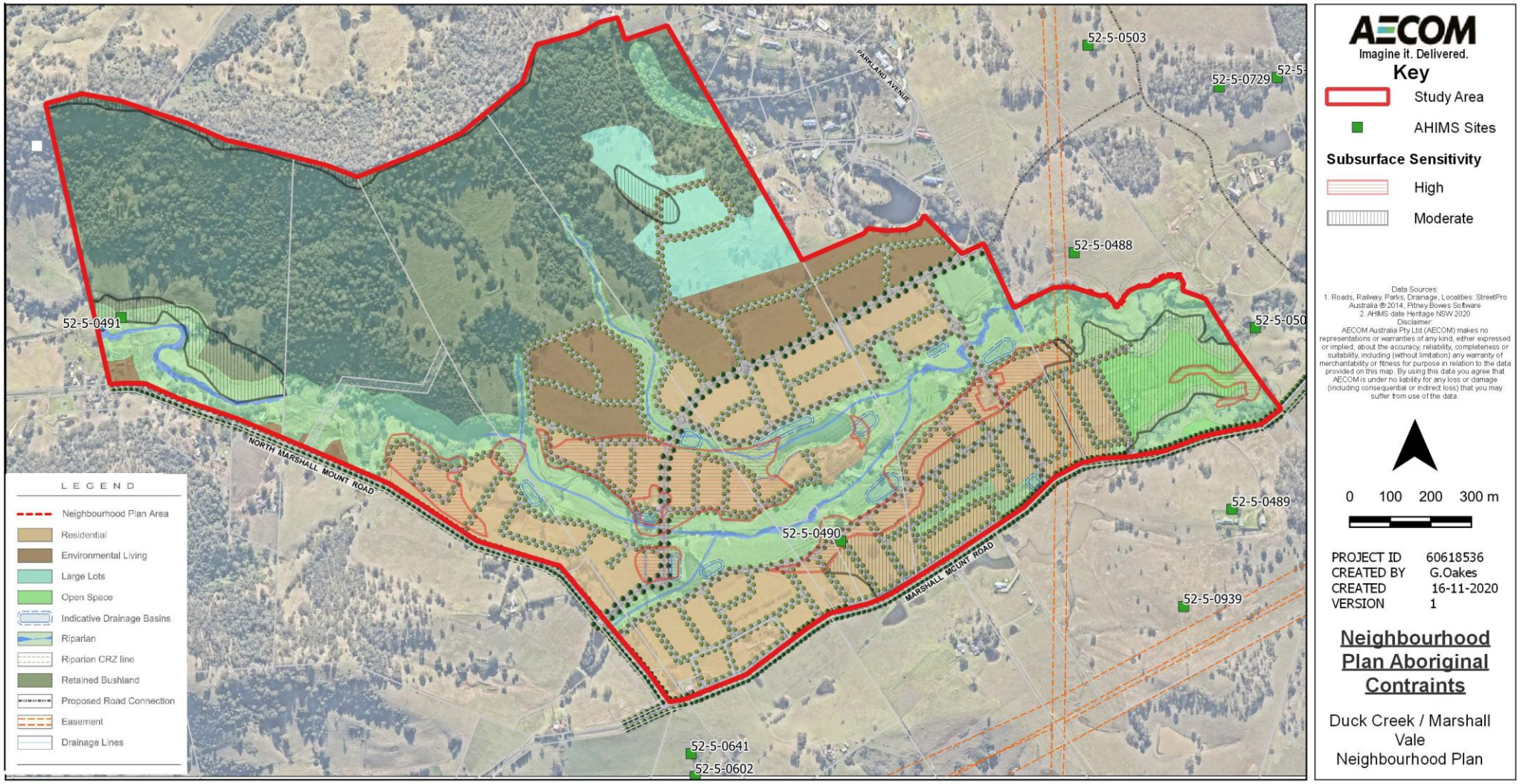


Figure 29 Historic heritage values

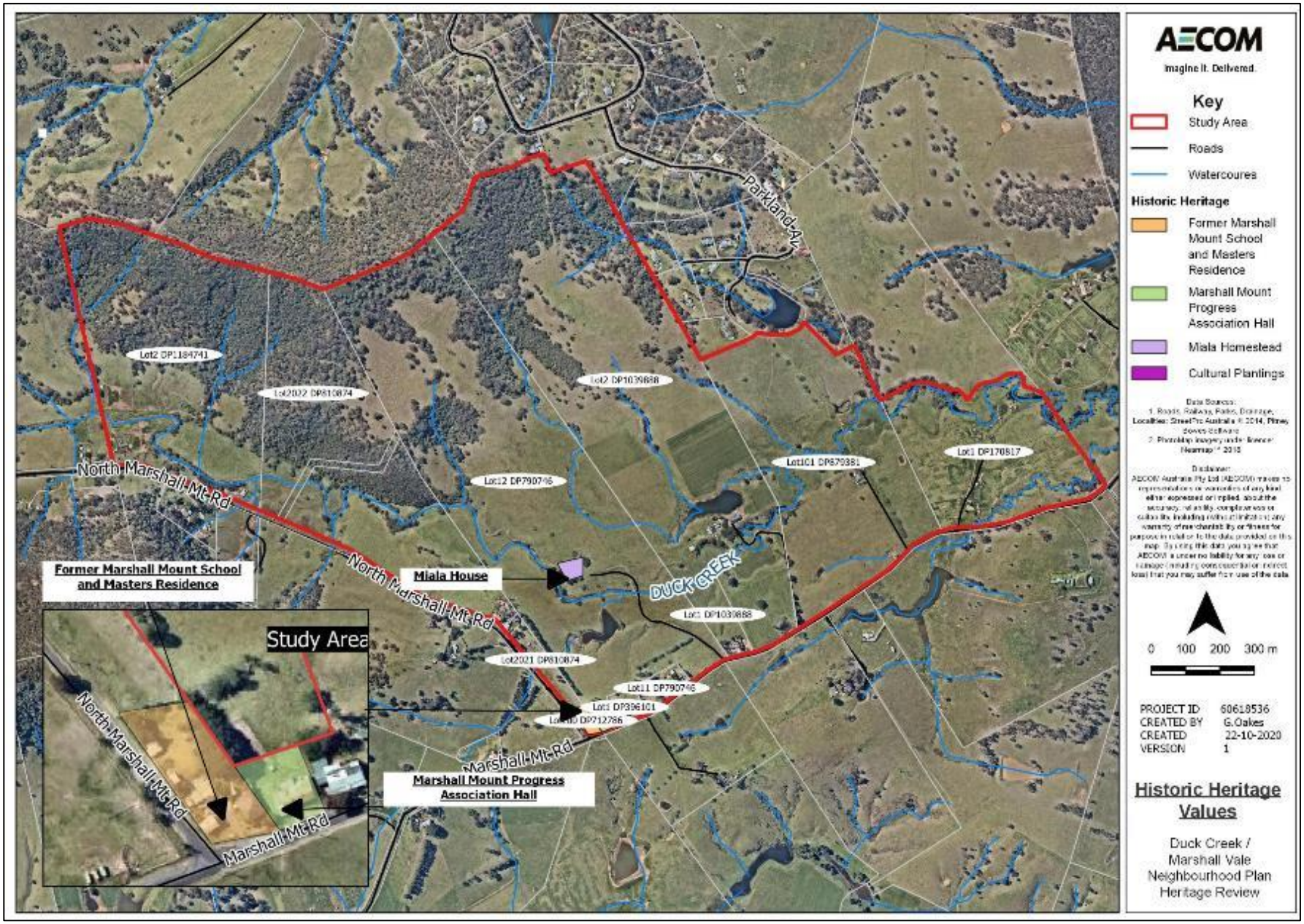
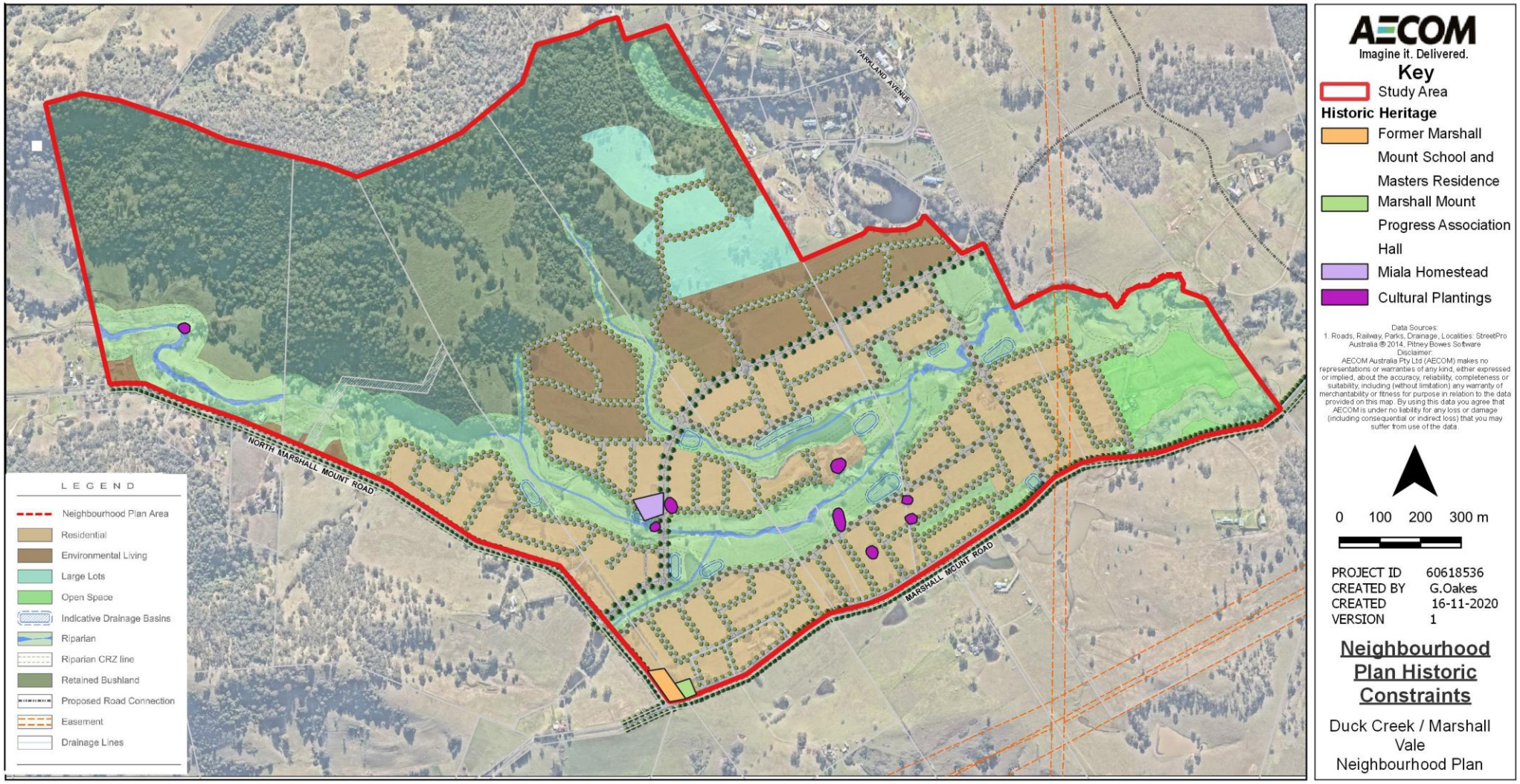


Figure 30 Historic heritage values over Neighbourhood Plan



6.0 Neighbourhood Plan Assessment

6.1 Introduction

Urbanco's Neighbourhood Plan for the study area has been reviewed in relation to its impacts on Aboriginal and historic heritage values (including archaeological). This section describes the results of this review process.

6.2 Aboriginal heritage Values

Section 3.2 has identified a series of Aboriginal heritage values within the study area including previously recorded sites and areas of archaeological sensitivity. Recorded Aboriginal archaeological sites within the study area consists of two previously recorded sites - AHIMS subsurface artefact sites 'WDRA_AX_34' (#52-5-0490) and WDRA_AX_35' (#52-5-0491).

Areas of high archaeological sensitivity within the study area, shown on Figure 27, are defined here as those that have not been grossly disturbed and are located on terraces or alluvial flats adjacent to Duck Creek. Areas of moderate archaeological sensitivity are defined as those located on terraces and alluvial flats over 100 m from Duck Creek or areas of crest or flat on slopes. Conversely, areas of low sensitivity comprise areas that have be grossly disturbed by modern and/or historic European land use practices or comprise landforms (i.e., hillslopes) with low archaeological potential. Relative to areas of low sensitivity, it is predicted that subsurface archaeological deposits located within areas of moderate to high sensitivity will exhibit higher mean artefact counts, densities and assemblage richness values (i.e., with respect to the representation of technological types and raw materials). Archaeological features such as knapping floors and hearths are also more likely to occur these areas.

Table 6 provides the results of a review of potential impacts associated with zoning within the Neighbourhood Plan against the study area's Aboriginal heritage values. As indicated, one previously recorded AHIMS site has the potential to be impacted by future developments. Likewise, several areas of moderate and high archaeological sensitivity will potentially be impacted.

Table 6 Aboriginal heritage values

Site/Item	Description	Zoning	Impact
52-5-0490 (WDRA_AX_34)	Subsurface artefact site	Residential	Impacted
52-5-0491 (WDRA_AX_35)	Subsurface artefact site	Open space	Impacted
Areas of high and moderate Aboriginal archaeological sensitivity	Potential Archaeological Deposit	Residential	Impacted
		Environmental living	Impacted
		School site	Impacted
		Open space	Impacted
		Environmental living	Impacted
		Drainage basins	Impacted
		Riparian	Impacted
		Roads/easement	Impacted
		Retained bushland	Not impacted

6.3 Historic Heritage Values

Section 4.0 identified three locally significant historic heritage items located directly within the study area - Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027), the Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983) and unlisted Miala Homestead (Lot 12 DP790746). In addition, potential historic heritage structures and associated cultural plantings of local significance may be present within the study area on properties that were not accessible. Table 7 provides the results of a review of potential impacts associated with zoning within the Neighbourhood Plan against the study area's historic heritage values. As indicated, historic heritage items have been identified within areas zoned for future developments.

Table 7 Historic heritage items

Site/Item	Description	Zoning	Impact
Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027)	Listed on Wollongong LEP (local significance)	Residential	Not directly impacted. Would be retained.
Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983)	Listed on Wollongong LEP (local significance)	Residential	Not directly impacted. Would be retained.
Miala Homestead (Lot 12 DP790746)	Unlisted (local significance)	Residential	Would be directly impacted
Cultural plantings	Planted trees associated with various original farms (local significance)	Various	Some impacted

7.0 Historic Heritage Opportunities and Constraints

Based on the historical research and site investigations that have been undertaken so far indicates that land within the Duck Creek and Marshall Vale precincts has been used historically for agricultural purposes. The majority of the precinct areas were part of early, larger land grants, with the owners of the properties having homesteads outside the study area. Archaeological potential in these areas would be limited to early fence lines, water/dam management practices and ephemeral structures for livestock. These would leave limited archaeological remains present in the precinct areas. The archaeological research value of these items would be low to nil.

Historic plantings associated with the former agricultural uses of the site also present an opportunity and constraint for the neighbourhood plan. Detailed surveys and investigations on the properties would need to be undertaken to identify the location of such plantings, and if they could be incorporated into the design and alignment of the roads, green spaces or allotment boundaries. Detailed surveys of the properties would be required and a Statement of Heritage Impact would be completed that included investigating the retention of any identified cultural plantings into the detailed design for each stage.

The identification of Miala House within the Duck Creek precinct as a locally significance item presents a constraint for the neighbourhood plan. The house has not previously been identified in the Wollongong local heritage study. Roads, drainage and other services associated with the proposed Neighbourhood Plan layout would impact the house site, and any potential historical archaeological remains associated with its former layout.

Opportunities to retain the homestead and realign the access road around the Miala house are not possible, and are constrained by the larger urban design considerations, including road, topographic, earthworks and bushfire protection. Urbanco have provided the following details.

Central Collector Road

The central Collector Road as accommodated in the Neighbourhood Plan is a major local roadway connecting North Marshall Mount Road in the south with a planned extension of Yallah Road to the north. This roadway and alignment is identified in the West Dapto Structure Plan and as a Major Collector Road under the West Dapto DCP.

Due to the higher order nature of the roadway and multiple connection points between land holdings, there is no opportunity to significantly alter the alignment to reduce impacts on Miala House. Also, the roadway has specific road geometry design considerations which restrict road curvature and vertical geometry.

The Council adopted Structure Plan has the alignment of this roadway traversing directly through Miala House.

Topography and Creek Crossing

The roadway is required to be constructed with a bridge crossing over the creek line adjoining Miala House. Due to the local topography, there are limited opportunities to deliver the bridge crossing. The crossing point proposed has been selected to minimise the bridge length and construction impacts, minimise vegetation removal and achieve required road design parameters discussed above.

The crossing point selected is the most appropriate and suitable location when considering all design outcomes.

Site earth works

Preliminary earthworks designs have been completed across the Neighbourhood Plan area which reflect the current road alignments. In order to achieve Council required road grades, it is anticipated that the land on which Miala House is located will likely be in cut, up to 2m.

In this regard, the house will not be able to be retained due to the earthworks required.

Planning for Bushfire Protection – Perimeter Road

Planning for Bushfire Protection requires Asset Protection Zones and edge roadways be provided as part of any residential subdivision. Miala House is located adjacent to the creek line which is required to be revegetated as part of the Neighbourhood Plan. It is not possible to provide the required Asset Protection Zones or edge road required under Planning for Bushfire Protection.

Miala House is not able to be retained as it will not be possible to meet required bushfire protection and design outcomes.

As it has been stated that redesign of the neighbourhood plan cannot be done to avoid impact to the homestead site, mitigation measures would be required to be prepared during the preparation of a full Statement of Heritage Impact Assessment Report. This assessment has identified the Miala House as having local heritage significance (including archaeological potential), despite not being listed on any formal heritage register. As such, the house would need to be managed in accordance with the relevant heritage policies and principals. This would include possible recording of the building and archaeological monitoring during demolition works.

8.0 Management Recommendations

8.1 Introduction

The endorsement of the Neighbourhood Plan does not incorporate any approval for physical works which will impact on identified Aboriginal heritage sites, places or values.

As such the primary aim of Aboriginal and historic heritage assessments conducted for the Neighbourhood Plan is to identify heritage constraints and opportunities relevant to the development of site masterplans and to provide guidance around the appropriate management of identified values post-rezoning.

Once the Neighbourhood Plan is adopted, it is the responsibility of individual proponents to conduct, where appropriate, additional heritage investigations for areas involving physical impacts as part of a DA. Where required, such assessments will involve opportunities for more detailed archaeological investigations (e.g., archaeological test excavation) and conservation outcomes.

As noted within Section 6.3 (Chapter D16) of the Wollongong DCP, DAs within the WDRA will need to be supported by detailed specialist reports with such assessments potentially involving opportunities for more comprehensive archaeological investigations (e.g., archaeological test excavation) as well as conservation outcomes. In relation to Aboriginal heritage assessments, these are to be completed in accordance within Chapter E10 of the DCP. The requirements of the Wollongong DCP have been considered as part of the development controls provided below.

8.2 Management Advice

8.2.1 Aboriginal Heritage Values

8.2.1.1 Aboriginal Archaeological Sites

Two Aboriginal archaeological sites have been identified within the study area, both of which comprise subsurface sites identified as part of a subsurface archaeological investigation completed within the WDRA (AMBS 2006). One of these sites will be impacted under this Neighbourhood Plan.

As such, it is recommended that the DCP for the study area include a specific development control for known Aboriginal archaeological sites. This control should specify at a minimum that any works which directly affect these sites will require an AHIP under Part 6 of the NPW Act 1974.

Applications for an AHIP must be accompanied by Aboriginal Cultural Heritage Assessment and Aboriginal Archaeological Reports prepared in accordance with the with Heritage NSW's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010b).

Applications must also provide evidence of consultation with the Aboriginal communities. Consultation is required under Part 8A of the NPW Regulation and is to be conducted in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* DECCW, 2010a).

Further investigation, including archaeological survey and or test excavation, may be required as part of the application in order to define the nature and extent of the archaeological deposit associated with these sites, and to assist the Director General of Heritage NSW in his or her consideration and determination of the application.

8.2.1.2 Subsurface Archaeological Sensitivity

As indicated, three levels of Aboriginal archaeological sensitivity have been identified across the study area on the basis of basis of observed archaeology (i.e., its distribution and character), the results of previous Aboriginal heritage investigations within and surrounding the study area, levels of past land disturbance and the predicted complexity of deposits within each category. Appropriate management options and recommendations for each level of sensitivity are as follows:

- Areas of ***high archaeological sensitivity*** warrant a full Aboriginal heritage assessment prior to any development impacts and it is recommended that the DCP for these areas include a development control to this effect. Aboriginal heritage assessments in areas of high

archaeological sensitivity should be undertaken in accordance with Heritage NSW's *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011), *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) and *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a). Archaeological survey and test excavation, will be required as part of the application in order to define the nature and extent of the archaeological deposit associated with these areas.

- Areas of ***moderate archaeological sensitivity*** warrant an Aboriginal archaeological due diligence assessment prior to any development impacts and it is recommended that the DCP for the study area include a development control to this effect. Due diligence assessments in areas of moderate sensitivity should be undertaken in accordance with Heritage NSW's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010c). Recommendations for a full Aboriginal heritage assessment may be an outcome of the due diligence assessment.
- Areas of ***low archaeological sensitivity*** do not contain any known Aboriginal heritage constraints and it is recommended that the DCP for these areas contain a development control to this effect. Nonetheless, the development control should also specify that Aboriginal objects may still occur in these areas and works must cease should they be identified. If Aboriginal objects are identified during construction, an AHIP would be required.

8.2.1.3 Aboriginal Heritage Controls for the Wollongong DCP

The following controls should be included in the Wollongong DCP:

5. Known Aboriginal archaeological sites within the study area are shown on Figure 27. An AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) is required for any works which impact these sites.
6. Areas of high archaeological sensitivity, shown on Figure 27 warrant a full Aboriginal cultural heritage assessment prior to any development works.

   If impacts to any Aboriginal objects identified through these assessments cannot be avoided, an AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) will be required.
7. Areas of moderate archaeological sensitivity, shown on Figure 27, warrant an Aboriginal archaeological due diligence assessment prior to any development works. This assessment is to be conducted in accordance with Heritage NSW's *Due Diligence Code of Practice for the protection of Aboriginal Objects in New South Wales*. Depending on the results of the due diligence assessment undertaken, a full Aboriginal cultural heritage assessment may be required.
8. Areas of low archaeological sensitivity, shown on Figure 27 do not contain any known Aboriginal heritage constraints.

   If any Aboriginal objects are encountered during development, and impacts cannot be avoided, an AHIP issued under Part 6 of the National Parks and Wildlife Act 1974 (NPW Act 1974) will be required.

8.2.2 Historic Heritage Values

Two LEP listed locally significant historic heritage items are located directly within the study area - Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027) and Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983). Unlisted Miala Homestead has been assessed as of local significance and is also within the study area. In addition, other historic heritage structures and associated cultural plantings of local significance may be present within the study area on properties not accessible for this assessment. Where possible, these items should be conserved as part of the planning process, with decisions concerning their long-term management to be made in consultation with Wollongong Council. However, where conservation is not possible, Statements of Heritage Impact (SoHIs) should be prepared in accordance with the *NSW Heritage Branch's guidelines: Statements of Heritage Impact* (NSW Heritage Office, 2002). A copy of the SoHI and details of the proposed works should be provided to Council allowing a 21 day response period.

A review of LEP Heritage Map sheet HER_014 indicates that the curtilage for Marshall Mount Progress Association Hall (#61027) extends into the adjacent lot (i.e., Lot 12 DP790746). However, this area comprises a tennis court constructed in the 1960s and does not form part of either the Progress Association Hall or the school. The LEP curtilage for this item should be updated accordingly.

8.2.2.1 Historic Heritage Controls for Wollongong DCP

1. LEP listed local heritage items Marshall Mount Progress Association Hall (Lot 1 DP396100, #61027) and Former Marshall Mount School and Master's Residence (Lot 100 DP712786, #5983) are to be retained. Consideration should be given to the interplay zone between these structures and future development with options such soft planting or hard fencing considered.
2. Miala Homestead has been assessed as having local heritage significance and would be impacted based on development plans within the current Neighbourhood Plan (and subsequent detailed designs as part of the future development). Opportunities for the retention of Miala house have been investigated, however, retention of the item is not considered possible given topographic, layout, earthworks and bushfire protection constraints.

   When detailed design for the subdivision, including all road, crossing and service locations, has been prepared, a Statement of Heritage Impact is required to be prepared to determine the appropriate mitigation measures for Miala house and associated historical archaeological remains. Recommendations may include undertaking additional heritage recording, including archival recording of the homestead, associated buildings and cultural planting be completed prior to any impact works. This would be undertaken in accordance with Heritage NSW's guidelines *How to Prepare Archival Records of Heritage Items* (1998) and *Photographic Recording of Heritage Items using Film or Digital Capture* (2006).

   In regards to historical archaeological potential identified at Miala House, any Development Application (DA) for works incorporating significant ground disturbance is to be accompanied by an historical archaeological research design (HARD). Subject to the report, a s140 permit application to Heritage NSW, may be required to be submitted prior to any works starting on the site.
3. Should additional historic heritage items be identified within the study area or properties that have not been surveyed, these must be included in future Statements of Heritage Impact prepared for the next stages of the project.

9.0 References

Aboriginal Museum Business Services (AMBS). (2006). *Aboriginal Heritage Management Plan: West Dapto Release Area*. Unpublished report for Wollongong City Council.

Attenbrow, V. (2010). *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*. Sydney: University of New South Wales Press.

Attenbrow, Val. (2006). *What's Changing: Population Size or Land-Use Patterns? The Archaeology of Upper Mangrove Creek, Sydney Basin* (Terra Aust). Canberra: ANE E-Press.

Austral Archaeology Pty Ltd. (2013). *Yallah-Marshall Mount Urban Release Precinct Wollongong, NSW Aboriginal Archaeological and Cultural Heritage Assessment*. Unpublished report for Wollongong City Council.

Australian Museum Business Services. (2005). *Aboriginal heritage Study of the West Dapto Release Area*.

Biosis Research Pty Ltd. (2006). *Aboriginal and Historic Cultural Heritage Assessment Amended Tallawarra Gas Pipeline Easement Yallah, NSW*. Unpublished report for URS Australia Pty Ltd.

Biosis Research Pty Ltd. (2007). *Archaeological sub-surface testing of Tallawarra Pipelines 1 and 2, Yallah, NSW*. Unpublished report for URS Australia Pty Ltd.

Blackwell, A. (1982). Bowen Island: Further Evidence for Economic Change and Intensification on the South Coast of New South Wales. In S. Bowdler (Ed.), *Coastal Archaeology in Eastern Australia: Proceedings of the 1980 Valla Conference on Australian Prehistory* (pp. 46–51). Canberra: Department of Prehistory, Research School of the Pacific, Australian National University.

Boot, P. (2002). *Didthul, Bhundoo, Gulaga and Wadbilliga: An Archaeological Study of the Aboriginals of the New South Wales South Coast Hinterland*. Australian National University, Canberra.

Bowdler, S. (1970). *Bass Point: The Excavation of a South-Eastern Australian Shell Midden Showing Cultural and Economic Change*. University of Sydney.

Bowdler, Sandra. (1976). Hook Line and Dilly Bag: An Interpretation of an Australian Coastal Shell Midden. *Mankind*, *10*(4), 248–258.

Bowler, J., Jones, R., Allen, H., & Thorne, A. (1970). Pleistocene Human Remains From Australia: A Living Site and Human Cremation from Lake Mungo, Western New South Wales. *World Archaeology*, *2*, 29–60.

Brown, A. G. (1997). *Alluvial Geoarchaeology: Floodplain Archaeology and Environmental Change*. Cambridge: Cambridge University Press.

Comber Consultants Pty Ltd. (2010). *Archaeological Excavations Consent No. 2563 Lots 107 and 108 Larkins Land, Yallah*. Unpublished report for Wollongong City Council.

Donaldson, M., Bursill, L., & Jacobs, M. (2015). *A history of Aboriginal Illawarra Volume 1: Before colonisation* (Vol. 1). Retrieved from http://ro.uow.edu.au/asdpapers/581

Donlan, D. (1988). *Archaeological Survey of Proposed Sand Mining Site on Tilligerry Peninsula, Port Stephens, NSW*. Unpublished report for ACI Resources Ltd.

EcoLogical Australia. (2017). *Calderwood Development Stage 3 , Calderwood Road and North Macquarie Road , North Macquarie Archaeological Technical Report*. Unpublished report for Lend Lease.

Fullagar, R., & Head, L. (1990). *McCauley's Beach Midden, Thirroul, NSW: Report on the archaeological excavation*. Report to the NSW National Parks and Wildlife Service.

GML Heritage Pty Ltd. (2018). *McPhails Lands , West Dapto Post Excavation Report*. Unpublished report for Stockland Development.

Godden Mackay Logan Pty Ltd (GML). (2012). *Lot 12 Ashburton Drive , Albion Park, Aboriginal*

Cultural Heritage Assessment. Unpublished report for Lyndal Pty Ltd.

Gould, R. (1969). Puntutjarpa Rockshelter: A Reply to Messrs Glover and Lampert. *Archaeology and Physical Anthropology in Oceania*, *4*, 229–237.

Hazelton, P. A. (1992). *Soil Landscapes of the Kiama 1:100 000 Sheet*. Sydney: Soil Conservation Service of NSW.

Hiscock, P. (1981). Comments on the Use of Chipped Stone Artefacts as a Measure of "Intensity of Site Usage." *Australian Archaeology*, *13*, 30–34.

Hiscock, P. (2008). *Archaeology of Ancient Australia*. London: Routledge.

Hiscock, P., & Attenbrow, V. (2004). A Revised Sequence of Backed Artefact Production at Capertee 3. *Archaeology in Oceania*, *39*(2), 49–63.

Hiscock, Peter. (1993). The Distribution of Points Within Nauwalabila 1. *The Beagle*, (10), 173–178.

Hiscock, Peter. (1994). Technological Responses to Risk in Holocene Australia. *Journal of World Prehistory*, *8*(3), 267–292.

Hiscock, Peter. (2002). Pattern and Context in the Holocene Proliferation of Backed Artefacts in Australia. In R. Elston & S. Kuhn (Eds.), *Thinking Small: Global Perspectives on Microlithization* (pp. 163–177). Archaeological Papers of the American Anthropological Association.

Hiscock, Peter. (2006). Blunt and to the Point: Changing Technological Strategies in Holocene Australia. In I. Lilley (Ed.), *Archaeology of Oceania: Australia and the Pacific Islands* (pp. 69–95). Oxford: Blackwell.

Hiscock, Peter, & Attenbrow, V. (1998). Early Holocene Backed Artefacts From Australia. *Archaeology in Oceania*, *33*(2), 49–63.

Hughes, P. J., & Djohaze, V. (1980). Radiocarbon dates from archaeological sites on the south coast of New South Wales and the use of depth/age curves. *Occasional Papers in Prehistory No 1*, (April), 1–28.

Hughes, P. J., & Lampert, R. J. (1982). Prehistoric Population Change in Southern Coastal New South Wales. In S. Bowdler (Ed.), *Coastal Archaeology in Eastern Australia: Proceedings of the 1980 Valla Conference on Australian Prehistory* (Occasional, pp. 16–28). Canberra: Department of Prehistory, Research School of Pacific Studies, Australian National University.

Hutton, A. C. (2009). Geological Setting of Australasian Coal Deposits. In R. Kininmonth & E. Baafi (Eds.), *Australasian Coal Mining Practice* (pp. 40–84). Victoria: The Australasian Institute of Mining and Metallurgy.

Kass, T. (2010). *A Thematic History of the City of Wollongong*. Report prepared for Wollongong City Council.

Lampert, R. J., & Hughes, P. J. (1974). Sea Level Change and Aboriginal Coastal Adaptions in Southern New South Wales. *Archaeology and Physical Anthropology in Oceania*, *9*(3), 226–235.

Lourandos, H. (1997). *Continent of Hunter-Gatherers. New Perspectives in Australian Prehistory*. Cambridge: Cambridge University Press.

McCarthy, F.D. (1948). The Lapstone Creek Excavation: Two Culture Periods Revealed in Eastern New South Wales. *Records of the Australian Museum*, *22*(1), 1–34.

McCarthy, F.D. (1964). The Archaeology of the Capertee Valley, New South Wales. *Records of the Australian Museum*, *26*(6), 197–264.

McCarthy, Frederick David. (1967). *Australian Aboriginal Stone Implements* (2nd Ed.). Sydney: The Australian Museum Trust.

McDonald, J. (2008). *Dreamtime Superhighway: Sydney Basin Rock Art and Prehistoric Information Exchange*. Canberra: Australian National University Press.

McDonald McPhee Pty Ltd, Rogers, B., Conacher, A., & Fullarton, D. (1991). *City of Wollongong Heritage Study*. Unpublished report for City of Wollongong Council.

Moore, M. W. (2013). Simple Stone Flaking in Australasia: Patterns and Implications. *Quaternary International*, *285*, 140–149.

Navin, K. (1987). *What hasn't happened to Lake Illawarra?* Canberra: Australian National University.

Navin, K. (1993). *An Investigation of Potential Archaeological Deposits at Duck Creek and Yallah Gully, Tallawara Power Station*. Unpublished report for the Electricity Commission of New South Wales.

NSW Department of Environment Climate Change & Water. (2010a). *Aboriginal Cultural Heritage Consultation Requirements for Proponents*. Department of Environment, Climate Change and Water.

NSW Department of Environment Climate Change & Water. (2010b). *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Department of Environment, Climate Change and Water.

NSW Department of Environment Climate Change & Water. (2010c). *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. NSW Department of Environment, Climate Change and Water.

NSW Heritage Office. (2001). *Assessing Heritage Significance*. Retrieved from http://www.heritage.nsw.gov.au/docs/assessingheritagesignificance.pdf

NSW Heritage Office. (2002). *Statements of Heritage Impact*. Parramatta: Heritage Office.

NSW Heritage Office. (2005). *State Agency Heritage Guide: Management of Heritage Assets by NSW Government Agencies*. Retrieved from NSW Heritage Office website: http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/StateAgencyHeritageGuide.pdf

NSW National Parks and Wildlife Service. (2002). *Bioregional Assessment Study Part I Native Vegetation of the Illawarra Escarpment and Coastal Plain*. NSW National Parks and Wildlife Service.

NSW Office of Environment & Heritage. (2011). *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*. Office of Environment and Heritage.

Osborne, P. J. . (1967). Osborne, Henry (1803–1859). Retrieved October 14, 2020, from Australian Dictionary of Biography website: http://adb.anu.edu.au/biography/osborne-henry-2527

Rhelm. (2019). *Duck Creek Flood Study Final Report* (Vol. 1). Unpublished report for Wollongong City Council.

RPS Australia East Pty Ltd. (2016). *225 Crest Road , Albion Park NSW, Aboriginal Cultural Heritage Assessment Report*.

Sefton, C. (1994). *Archaeological Assessment of Haywards Bay Estate - Yallah*. Unpublished report for Macquarie Bank Limited.

Steele, D. (2000). *Aboriginal Archaeological Assessment Albion Park Water Supply Upgrade*. Unpublished Report for SMEC Australia Pty Ltd.

Strahler, R. L. (1952). Hypsometric (Area-Altitude) Analysis of Erosional Topography. *Geological Society of America Bulletin*, *63*, 1117–1142.

Sullivan, M. E. (1976). Archaeological Site Locations on the South Coast of New South Wales. *Archaeology and Physical Anthropology in Oceania*, *11*(1), 56–69.

Sullivan, M. E. (1982a). *Aboriginal Shell Middens in the Coastal Landscape of New South Wales*. Australian National University.

Sullivan, M. E. (1982b). Exploitation of Offshore Islands along the New South Wales Coastline.

Australian Archaeology, *15*, 8–19.

Sullivan, M. E. (1987). The Recent Prehistoric Exploitation of Edible Mussel in Aboriginal Shell Middens in Southern New South Wales. *Archaeology in Oceania*, *22*(3), 97–106.

Ulm, S. (2013). 'Complexity' and the Australian Continental Narrative: Themes in the Archaeology of Holocene Australia. *Quaternary International*, *285*, 182–192.

Verity, W. (2013, May 10). Marshall Mount old time dance celebrates 60 years. *Illawarra Mercury*. Retrieved from https://www.illawarramercury.com.au/story/1492413/gallery-marshall-mount-old-time-dance-celebrates-60-years/

Wesson, S. (2009). *Murni Dhungang Jirrar Living in the Illawarra*. Department of Environment and Conservation, NSW.

Yarwood, A. T. (1967). Johnston, George (1764–1823). Retrieved October 14, 2020, from Australian Dictionary of Biography website: http://adb.anu.edu.au/biography/johnston-george-2277

Appendix A

Consultation Log

Appendix A Consultation Log

Date	Group	Contact	Type	Correspondence/Comments
8/09/2020	Illawarra Local Aboriginal Land Council (ILALC)	Paul Knight (CEO)	Phonecall	AECOM (Geordie) and Paul discussed the project and obtaining input from the LALC. Paul suggested sending an email with details and he would provide a proposal to complete a due diligence assessment
15/09/2020	Illawarra Local Aboriginal Land Council	ILALC	Email	AECOM sent email with project details and a request for proposal
21/09/2020	Illawarra Local Aboriginal Land Council	Reception	Phonecall	AECOM called ILALC to follow up on proposal. Paul was not available, so a message was left with reception
21/09/2020	Illawarra Local Aboriginal Land Council	Paul Knight (CEO)	Email	AECOM sent a follow up email requesting a proposal
16/10/2020	Illawarra Local Aboriginal Land Council	Paul Knight (CEO)	Email	AECOM sent a follow up email requesting a proposal
16/10/2020	Illawarra Local Aboriginal Land Council	Paul Knight (CEO)	Email	Paul replied and setup a time for phone meeting
16/10/2020	Illawarra Local Aboriginal Land Council	Paul Knight (CEO)	Phonecall	AECOM (Geordie) and Paul had a phone discussion about the project and proposal. Paul indicated a proposal would be provided early the following week (i.e., 19-20/10/2020)
27/10/2020	Illawarra Local Aboriginal Land Council	Paul Knight (CEO)	Email	AECOM sent a follow up email requesting a proposal

Appendix B

Historic Heritage Inventory Pages

Appendix B Historic Heritage Inventory Pages

GREATER WOLLONGONG HERITAGE STUDY

CONSULTANT TEAM

Brian McDonald	BMcD	Catherine Macarthur	CM
Andrew Conacher	AC	Rob Gansl	RG
Don Fullerton	DF	Peter Smit	PS

ITEM: Former Marshall Mount Public School and School Masters Residence

LOCATION: Marshall Mount Road

LAND TITLE: PTY 816.280, LOT 100, DP 712786

LISTING:

Listing	
National Estate	
Heritage Council	
National Trust	
RAIA	
LEP 1990	X
REP	
Other	

INVENTORY NUMBER: B48 - SW

DESCRIPTION: Single storey weatherboard building with skillion gable roof or short hip on residence. 1897

PRESENT USE: Residence

THEME: Rural/ urban development; Institutional/ residential

SIGNIFICANCE: STATE [ ] REGIONAL [X] LOCAL [ ]

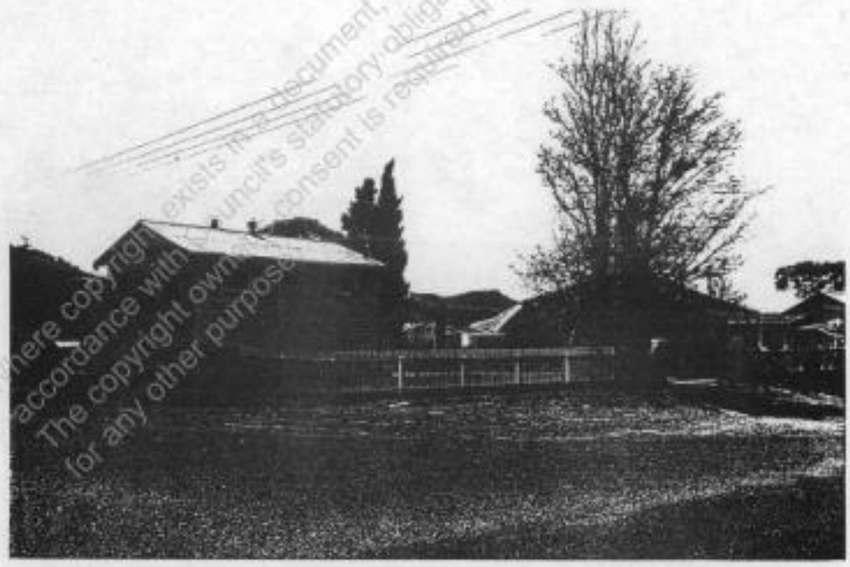
STATEMENT: Typical vernacular Victorian school house architecture, a significant element within a small village district. Representative of small town educational buildings.

CONTEXTUAL VALUES		TYPE OF SIGNIFICANCE			
				landscape	
rarity		historic	X	archaeological	
group value		scientific		architectural	X
landmark value	X	technological		townscape	X
representative value	X	cultural	X	natural	
integrity		social	X	aesthetic	

COMMENTS: Good condition.

REFERENCES:

MAP/PHOTO



AUTHOR	FILM NO.	NEG NO.	DATE
BMcD AC DF PS CM RG (X: RG)	WD 1	23	9.10.90