

7.0 Environmental assessment

7.7 Aboriginal heritage

This section outlines the potential Aboriginal cultural heritage impacts associated with the construction and operation of the proposed modification and recommends mitigation measures to address the impacts identified. A detailed Aboriginal cultural heritage assessment has been prepared as part of the impact assessment for the proposed modification. This assessment is documented within the Archaeological Survey Report (ASR) included in **Appendix I** (Aboriginal cultural heritage ASR).

7.7.1 Introduction

Table 7-58 sets out the SEARs relevant to Aboriginal cultural heritage and identifies where the requirements have been addressed in this section.

Table 7-58 SEARs – Aboriginal cultural heritage

Desired Performance Outcome	SEAR	Where addressed within the Modification Report
The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of Aboriginal objects and places.	1. The Proponent must provide an assessment of Aboriginal cultural heritage, prepared in accordance with relevant sections of the current guidelines, identifying, describing and assessing potential impacts to Aboriginal cultural heritage sites or values associated with the modification.	Refer to Section 7.7.2 and Section 7.7.5
The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of Aboriginal objects and places	2. The Proponent must provide evidence of consultation with Aboriginal communities in determining and assessing impacts, developing and selecting options and mitigation measures (including the final proposed measures), in accordance with relevant sections of current guidelines.	Current assessment has been undertaken in accordance with Stage 2 of the <i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> (PACHCI) (NSW RMS, 2011b). Refer to Section 7.7.2 for overview of consultation with key Aboriginal stakeholders. Refer to Section 7.7.6 for mitigation measures.

7.7.2 Method of assessment

The methodology used for the preparation of the ASR was guided by the PACHCI (NSW RMS, 2011b) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010). It involved a combination of desktop research, consultation with key Aboriginal stakeholders and a site survey. This approach is outlined below.

Legislation and policy context

Potential impacts to Aboriginal cultural heritage values due to the proposed modification were assessed with reference to and in accordance with the following legislation, guidelines and policies:

- *Aboriginal and Torres Strait Islander Protection Act 1984* (Commonwealth)
- *Native Title Act 1993* (Commonwealth)
- *Environment Protection and Biodiversity Act 1999* (Commonwealth)
- *Aboriginal Land Rights Act 1983* (NSW)
- *Environmental Planning and Assessment Act 1979* (NSW)

- *National Parks and Wildlife Act 1974* (NSW)
- *Blacktown Local Environmental Plan 2015* (Blacktown LEP 2015)
- *Fairfield Local Environmental Plan 2013* (Fairfield LEP 2015)
- *Liverpool Local Environmental Plan 2008* (Liverpool LEP 2015)
- *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (RMS, 2011)
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010)
- Westlink M7 Indigenous Heritage Archaeology Management Sub Plan 2004.

Further information on the above legislation, guidelines and policies and how they relate to the proposed modification is provided in **Appendix I** (Aboriginal cultural heritage ASR).

Method of assessment

Desktop research

The desktop research component of this assessment involved:

- Searches of the National Native Title Register, Register of Native Title Claims and Register of Indigenous Land Use Agreements
- A search of the NSW Register of Aboriginal Land Claims (for Crown land parcels within the proposed modification footprint)
- Searches of relevant heritage databases and lists, including:
 - The Australian Heritage Database, covering the World Heritage List, National Heritage List, Commonwealth Heritage List, Register of the National Estate and List of Overseas Places of Historic Significance to Australia
 - The NSW Aboriginal Heritage Information Management System (AHIMS) database
 - The NSW State Heritage Inventory
 - Schedule 5 of the Blacktown LEP 2015
 - Schedule 5 of the Fairfield LEP 2013
 - Schedule 5 of the Liverpool LEP 2008
- A review of the landscape context of the study area (refer to **Section 7.7.3**), with specific consideration to its implications for past Aboriginal land use and the survival of associated archaeological materials
- A thorough review of past Aboriginal heritage assessment reports prepared to inform both the construction of the Westlink M7 and other development projects in its vicinity (including the approved M12 Motorway)
- A critical review of existing AHIMS data for the study area and its surroundings, including site cards, undertaken to clarify existing site locations and extents
- A review of the Indigenous Heritage Archaeology Management Sub Plan (IHMSA) prepared for the Westlink M7, to assist in determining previously implemented management strategies and current site statuses

Searches of the *National Native Title Register*, *Register of Native Title Claims* and *Register of Indigenous Land Use Agreements* (ILUAs) were undertaken in June 2022 for the Blacktown, Fairfield and Liverpool LGAs. These searches returned no registered native title determinations, claims or ILUAs.

Consultation with Aboriginal stakeholders

Aboriginal stakeholders for this assessment were identified by Transport in accordance with the PACHCI and are outlined in Table 7-59.

Table 7-59 Aboriginal stakeholders

Aboriginal Stakeholders	Local Aboriginal Land Council (LALC) Jurisdiction
Deerubbin LALC	All areas north of Elizabeth Drive
Gandangara LALC	All areas south of Elizabeth Drive

Both LALCs provided site officers for participation in the site survey undertaken to inform the assessment and assist in identifying areas of cultural heritage value. Each LALC produced their own cultural heritage survey reports, as per the PACHCI. These reports are attached to **Appendix I** (Aboriginal cultural heritage ASR).

Management and mitigation measures provided in the ASR were developed in consultation with both LALCs.

Transport has also undertaken an advertising campaign to engage with the Aboriginal community and gain an understanding of cultural values in the area. Transport will seek to embed these values in the detailed design of the proposed modification. Further information is provided in **Section 6.4.1**.

Archaeological Survey

The aims of the archaeological survey undertaken to support the assessment were as follows:

- To identify and record existing surface evidence of past Aboriginal activity within the study area
- To physically re-assess previously recorded artefact scatter sites 'MC-2' (45-5-0779; refer Figure 5-1 of **Appendix I**) and 'EC-OS-1' (45-5-2433; refer Figure 5-4 of **Appendix I**)
- To identify areas that, irrespective of the presence or absence of surface artefacts, are likely to contain subsurface archaeological deposit (i.e. areas of potential archaeological deposit (PAD))
- To ground-truth levels of past ground disturbance within surveyed areas
- To generate data relevant to the development of appropriate management and/or mitigation measures for the identified Aboriginal heritage values of the study area.

The archaeological survey undertaken to inform the ASR was completed over two days on 31 August 2021 and 15 October 2021, with survey restricted to those portions of the study area either known to contain potentially valid AHIMS sites or assessed as retaining reasonable potential for the presence of Aboriginal objects in surface and/or subsurface contexts. Areas selected for survey were identified based on the findings of the desktop research and in consultation with Deerubbin LALC and Gandangara LALC.

In all instances, survey was undertaken on foot by a field team consisting of one AECOM archaeologist (Dr Andrew McLaren) and one relevant LALC site officer, with Steve Randall attending for the Deerubbin LALC and Darren Duncan for the Gandangara LALC. Additional information on the survey undertaken is provided in **Section 7.7.4** and a detailed description of the sampling strategy and methodology is provided in **Appendix I** (Aboriginal cultural heritage ASR).

7.7.3 Study area

The study area for this assessment was informed by the construction footprint for the proposed modification, which includes those areas required for roadworks, bridge works, access for construction vehicles and plant, drainage infrastructure, noise walls, utilities and services adjustments, temporary stockpiles, temporary property adjustments and temporary construction ancillary facilities (such as construction compounds). The study area included two construction ancillary facility sites that were initially considered as part of the proposed modification but were subsequently discounted. These two sites are located adjacent to Pikes Lane and Richmond Road in Eastern Creek and Colebee respectively. These ancillary facility sites were removed from the proposed modification based on the results of the archaeological survey, but have been retained as part of the study area for completeness.

The study area has been split into five precincts (Figure 7-68 and Figure 7-69), described in Table 7-60. The precincts cover the study area south to north and are between 5 and 10 kilometres long.

Table 7-60 Study area precincts

Study area precinct	Description
1	Prestons to Elizabeth Hills (southern extent starts north of the M5 Motorway interchange)
2	Elizabeth Hills to Horsley Park (this includes the approved M12 Motorway interchange, which is currently the intersection between the Westlink M7 and Elizabeth Drive)
3	Horsley Park to Eastern Creek
4	Eastern Creek to Rooty Hill (this includes the M4 Motorway interchange)
5	Rooty Hill to Dean Park (northern extent up to the intersection with Richmond Road)

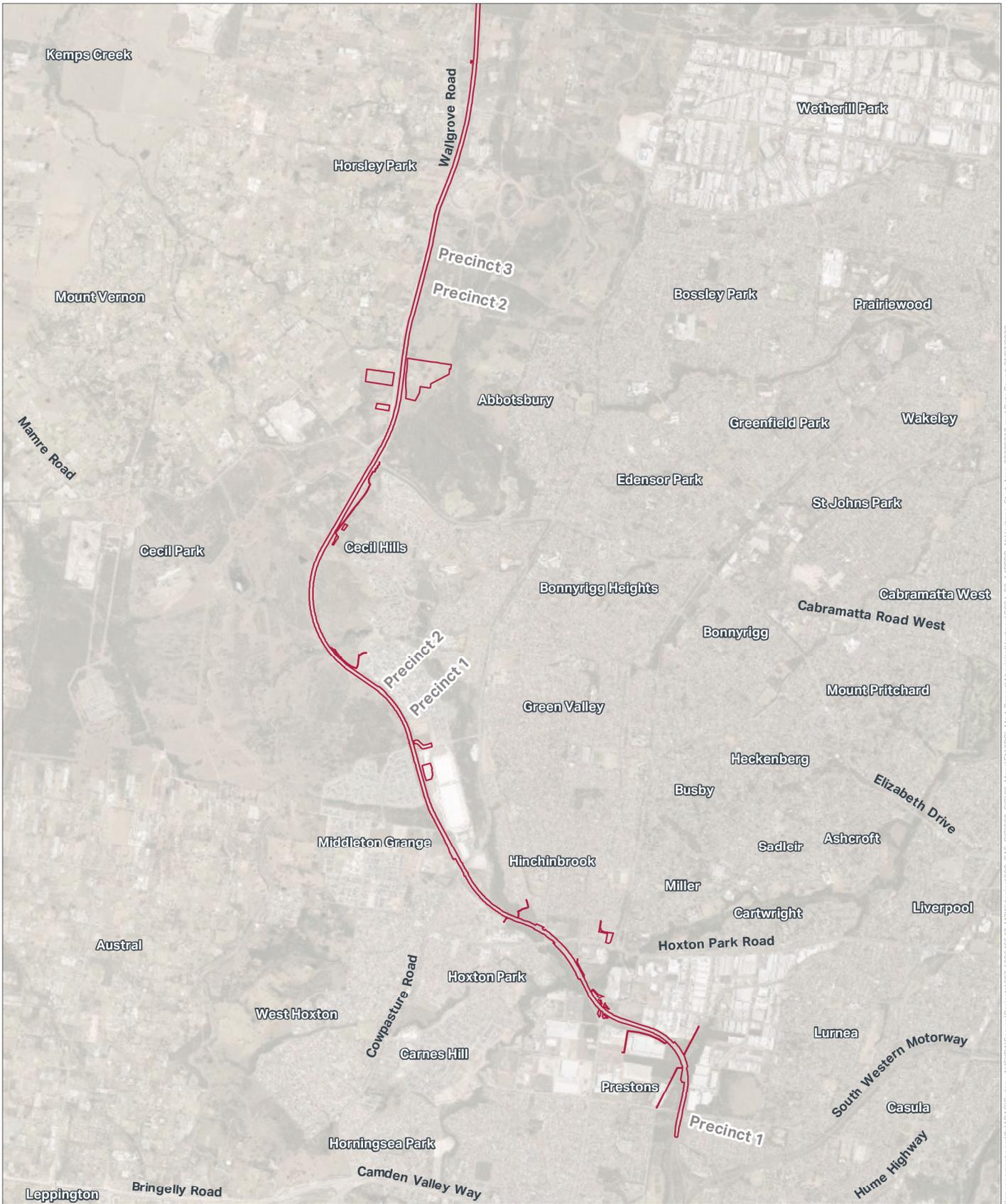


FIGURE 7-68: ABORIGINAL HERITAGE ASSESSMENT STUDY AREA (SHEET 1 OF 2)



Legend
 Study area

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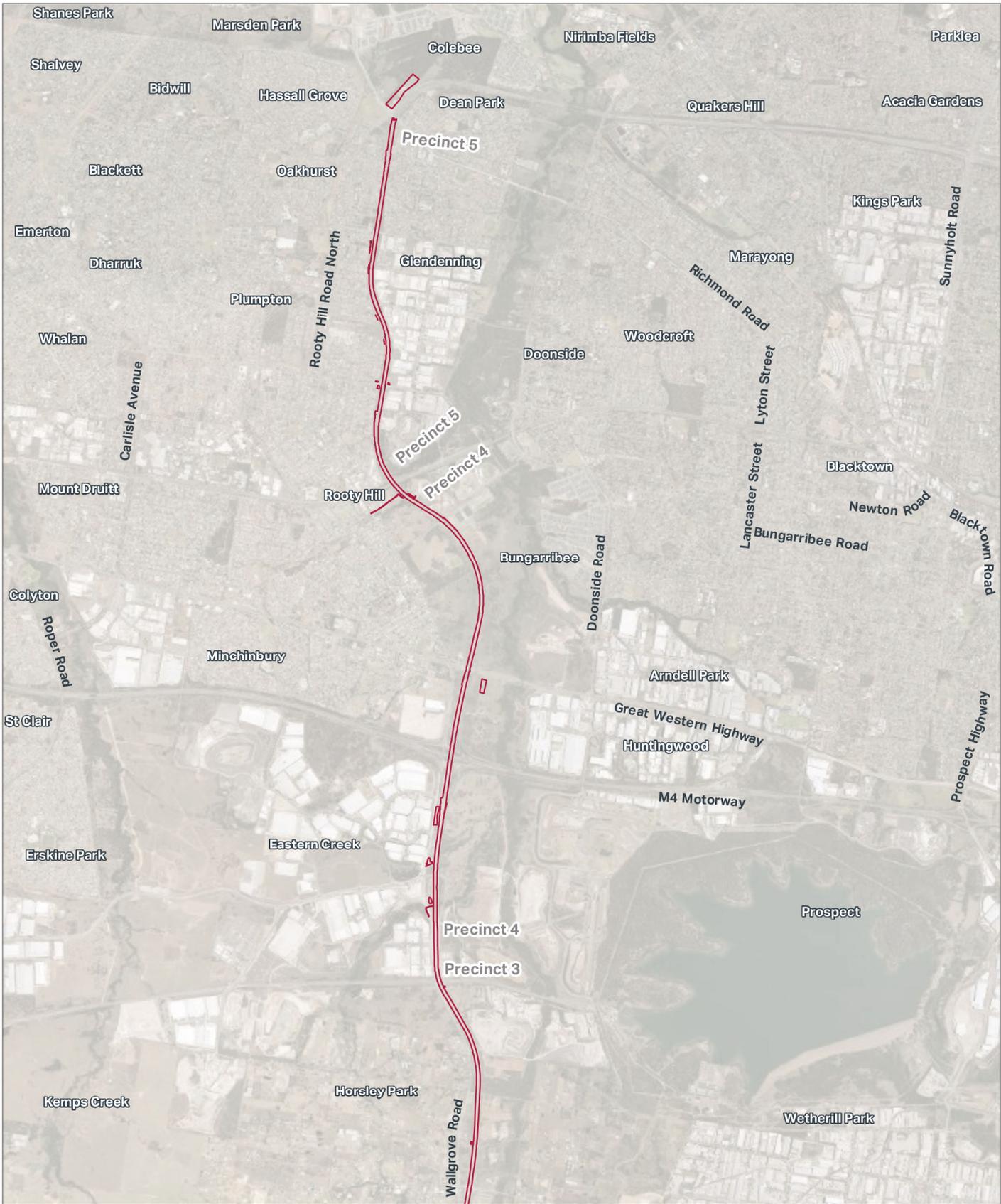


FIGURE 7-69: ABORIGINAL HERITAGE ASSESSMENT STUDY AREA (SHEET 2 OF 2)



Legend
 Study area

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7.7.4 Existing environment

Environmental context

The M7 Motorway is located within the Liverpool, Fairfield and Bankstown LGAs and the Deerubbin and Gandangara LALC areas. The environmental/landform context of the study area forms the basis for interpreting the results of the archaeological survey. 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 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 assessments of subsurface archaeological potential.

Topography and drainage

The landscape in the study area generally consists of the following:

- Gently undulating rises to steep, low hills
- Broad rounded crests and ridges with gently inclined slopes
- Flat to gently sloping alluvial plain with occasional terraces/levees
- Convex narrow ridges and hill crests grading into moderately inclined sideslopes with narrow concave drainage lines.

The elevation range in the study area is between approximately 26 metres Australian Height Datum (AHD) and approximately 136 metres AHD, and the drainage from the study area commonly intercepts various waterbodies in the surrounding area.

Surface geology

The study area is underlain by the following geologies:

- **Rwb:** Bringelly shale from the Middle Triassic Wianamatta group (majority of the study area)
- **Qpn:** Medium grained sand, clay and silt of Quaternary antiquity (majority of Precinct 1 and parts of Precinct 2)
- **Qal:** Fine grained sand, silt and clay of Quaternary antiquity (parts of Precincts 4 and 5).

Outside of the study area, locally occurring (within 10 kilometres) geological formations/phenomena of demonstrated or potential Aboriginal archaeological significance include the Tertiary St Marys (Ts) and Rickabys Creek Gravel (Tr) formations, volcanic diatremes (Jv) of Cretaceous to Jurassic antiquity and the Middle Triassic Hawkesbury Sandstone (Rh).

The St Marys formation consists of materials that are suitable for flaked stone artifact production. In terms of geographic extent, the St Marys formation has been mapped at various localities in the Mulgoa, South and Eastern Creek catchments, with archaeologically significant outcrops occurring along the upper parts of Plumpton Ridge between Bells and Eastern Creeks. The formation is known to be more widely distributed than currently mapped.

Volcanic diatremes (Jv) are known to occur concurrently with Silcrete and other knappable rock types, although the presence of such flakeable rocks in the study area cannot be confirmed. Furthermore, it is believed that the volcanic diatremes, dykes and intrusions within the Sydney Region are deeply weathered and contain rock that would not have been suitable for making stone tools.

Middle Triassic Hawkesbury Sandstone has been mapped to the immediate south of Bunbury Curran Creek, around four kilometres south of the southernmost extent of the study area. Rockshelters, grinding grooves and rock art, both engraved and pigment, are common archaeological features of this

formation, which also contains stone suitable for the production of flaked stone artefacts in the form of pebbles of white vein quartz, typically less than six millimetres in diameter.

Soils

Soils within the study area have been mapped by Bannerman and Hazelton (2011) as belonging to the Blacktown Residual (REbt), Luddenham Erosional (ERlu), South Creek Alluvial (ALsc), Berkshire Park Alluvial (ALbp), Picton Colluvial (COpn) and Disturbed Terrain (DTxx) soil landscapes. Three soil landscapes predominate the study area (REbt, ERlu and ALsc soils) and the dominant soil materials for these landscapes, including their occurrence and relationships, are described in **Appendix I** (Aboriginal cultural heritage ASR). Further information on soils is provided in **Section 7.11** (Soils and contamination).

Flora and fauna

Native vegetation within and immediately surrounding the study area has been extensively modified, with the majority historically cleared for grazing and/or cropping, and remaining vegetation communities affected more recently by residential and industrial development, as well as road construction.

Historical and more recent clearance activities notwithstanding, field observations and remnant native vegetation mapping for the Cumberland Plain suggest a pre- and early-post European settlement vegetation regime dominated by woodland communities; specifically, Shale Plains Woodland, Shale Hills Woodland and Alluvial Woodland communities. Within the construction footprint for the proposed modification, seven specific plant community types were identified, which are described in **Section 7.6** (Biodiversity), along with further information on flora and fauna within the footprint.

While available historical records provide only limited insight into Aboriginal exploitation of plants across the Cumberland Plain and Sydney Region more broadly, it can be confidently asserted that the original vegetation communities of the study area and its environs would have supplied Aboriginal people camping within or travelling through the area with an extensive array of edible and otherwise useful plant species. Recorded native vegetation communities and locally occurring watercourses would likewise have supported a large and diverse range of economic terrestrial, aquatic and avian fauna. Historical evidence for Aboriginal peoples' uses of the floral and faunal resources of Sydney's Cumberland Plain is discussed in further below.

Land disturbance

Aerial photographs examined for the current assessment indicate that the majority of land within the study area has been severely disturbed, with the most significant impacts to natural landform elements and features occurring as a result of the construction of the Westlink M7, as well as adjoining residential, commercial and industrial development activities.

Archaeological Context

Archaeological data is reviewed in order to contextualise the results documented within the ASR. Key observations can be drawn from a review of the local and regional archaeological context in combination with the environmental context of the study area. The archaeological context is summarised below and discussed in further detail in **Appendix I** (Aboriginal cultural heritage ASR).

Cumberland Plain

Available radiometric dates indicate that Aboriginal people have occupied the Sydney Region, including the Cumberland Plain, since the late Pleistocene (more than 36,000 years). However, 'early' (i.e. late Pleistocene / early Holocene) occupational evidence remains rare, with the majority of sites identified to date likely of mid-to-late Holocene. Surface and subsurface distributions of stone artefacts (i.e. open artefact sites) are the most common and widely distributed form of Aboriginal archaeological site on the Cumberland Plain. Existing archaeological survey data for the Cumberland Plain, including land within and surrounding the study area, 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. Unless severely disturbed through historical or recent land use activities, all landform elements across the Cumberland Plain retain potential for the presence of Aboriginal archaeological materials, although of highly variable character and extent.

Local Context

Searches of the AHIMS database on 21 July 2021 for a 500 metre buffer zone centred on the study area (AHIMS search area) returned 162 site entries, details of which may be found in Table 7-61.

Table 7-61 AHIMS search results

Site type	Site feature(s)	Number	Percentage (%)
Open artefact site	Artefact; Potential Archaeological Deposit (PAD)	149	92.0
PAD	PAD	7	4.3
Rock art (pigment or engraved)	Art (Pigment or Engraved)	2	1.2
Scarred tree	Modified Tree; Artefact	3	1.9
Contact site	Aboriginal Ceremony and Dreaming	1	0.6
Total	-	162	100

Of the 162 previously recorded Aboriginal sites, 40 were placed within or immediately adjacent (i.e. within 50 metres) of the study area. Removal of two duplicate entries for an open artefact site revised this number to 38. Of these, eight sites have centroids that place them within the study area. Five are listed on the AHIMS database as 'valid' sites, with the remaining three listed as 'destroyed'. However, of the five sites listed as valid (45-5-0747, 45-5-2304, 45-5-2477, 45-5-2793, 45-5-2433), all but two (45-5-2433, 45-5-2793) should, in fact, be listed as destroyed. Open artefact site 'EC-OS-1' (45-5-2433) should be listed as partially destroyed, with survey undertaken for the current assessment confirming the destruction of that portion of the site within the fenced Westlink M7 lease area (including the study area). Open artefact site 'PAD-OS-4' (45-5-2793) should likewise be listed as partially destroyed, with that portion of the site located outside of the study area but within the Westlink M7 lease area remaining extant.

Further consideration of the location of AHIMS registered sites relative to the study area indicates that an additional five sites are located at least partially within the study area (according to AHIMS records), these are comprised of:

- 'PAD-OS-5' (45-5-2723)
- 'PAD-OS-7' (45-5-2721)
- 'PAD-OS-9' (45-5-2719)
- 'PAD-OS-10' (45-5-2718)
- 'MC-2' (45-5-0779).

Open artefact site 'PAD-OS-7' was identified as part of an Aboriginal archaeological test excavation program originally undertaken for the approved project (Mills, 2002). Reference to the *Aboriginal Cultural Salvage Strategy* (Kelleher Nightingale Consulting, 2021) for the approved M12 Motorway project lists the management strategy for 'PAD-OS-7' as one of 'passive avoidance', described as "[n]o active protection measures required due to lack of direct impacts or low archaeological significance".

Open artefact site 'MC-2' (45-5-0779) was recorded by Smith (1989) as part of an archaeological site survey and planning study for the Liverpool Release Areas. However, survey undertaken for the current assessment has confirmed that it should, in fact, be listed as destroyed.

Open artefact sites PAD-OS-5 (45-5-2723), 'PAD-OS-9' (45-5-2719) and 'PAD-OS-10' (45-5-2718) directly about the study area within the existing Westlink M7 lease area. As with 'PAD-OS-7' (45-5-2721), all were identified as part of Mill's (2002) Aboriginal archaeological test excavation program for the approved project. All three sites are listed on AHIMS as valid sites but should, in fact, be listed as partially destroyed, with those sections of these sites located within the study area destroyed as a result of the approved project under National Parks and Wildlife Service (NPWS) Section 90 Consent #1396.

Archaeological predictions

Taking into consideration the environmental context of the study area, as well as available archaeological data, the following predictions are made regarding the Aboriginal archaeological record of the study area:

- Historical and recent ground disturbance activities within the study area will have destroyed all but a fraction of its associated Aboriginal archaeological record
- Any Aboriginal archaeological deposits that may once have existed within areas of severely disturbed terrain associated with the construction of the Westlink M7 and adjoining residential/light industrial development, will have been destroyed
- If present, remaining archaeological deposits within the study area will consist of surface and/or subsurface distributions of stone artefacts and be restricted to areas of minimally or moderately disturbed terrain
- Other archaeological site types with limited potential to occur within the study area include scarred trees and stone quarries
- Flaked stone artefact assemblages will be dominated by artefacts manufactured out of silcrete and will consist principally of flake debitage
- The complexity of any surviving deposits will vary in relation to landform and stream order, with larger, more complex deposits occurring in association with higher order creeks.

Ethnohistoric Context

This section builds on the foundation of the archaeological context of the study area and summarises the relevant ethnohistoric information at a regional and local scale. Further detail is provided in **Appendix I** (Aboriginal cultural heritage ASR).

The Darug language and people

Available sources indicate that the study area is located within the traditional country of the Darug people, who speak the Darug (also spelt Dhaŕ-rook, Dharrook, Dhafook, Dharruk and Dharug) language. Historical reference materials indicate that two distinct dialects of Darug were spoken at the time of European contact, a coastal dialect and a hinterland dialect. The estimated population size of the coastal Darug at contact is believed to be a minimum population density of more than 0.75 persons per square kilometre. Whereas the estimated population density for the hinterland Darug is believed to be more than 0.5 persons per square kilometre.

The size of the individual groups occupying the Cumberland Plain at contact was activity and season dependent. However, an upper limit of around 50 individuals, consisting of several nuclear families, has been suggested (Kohen, 1988). Individual band sizes notwithstanding, much larger groups of Aboriginal people, numbering in the hundreds, are known to have come together for events such as corroborees, ritual combats and feasts.

Food

Available historical records indicate that a wide range of marine and freshwater fauna were exploited by Darug-speaking peoples for food and other resources (Attenbrow, 2010). Along the coast, there was a general exploitation of marine resources and further inland an emphasis on the hunting of land mammals. Freshwater fish, shellfish and eels are also known to have been exploited by hinterland groups (Attenbrow, 2010).

Compared with their faunal counterparts, the plant food resources of coastal and hinterland Darug-speaking peoples are poorly represented in the writings of early colonial observers. However, available descriptions do suggest that plants formed a regular part of the diets of groups in both areas (see Attenbrow, 2010).

Tools

A wide range of hunting and gathering 'gear' was employed by Darug speaking peoples, with distinctive repertoires for men and women (McDonald, 2008). Men's gear included several different forms of spears (variously barbed), spear throwers, clubs, 'swords', boomerangs, shields and hafted stone hatchets known as *mogo*. Women's toolkits, in contrast, included fishing hooks, lines and sinkers, digging sticks and various containers (shell and wood). Net bags made from plaited wood fibre appear to have been used by both men and women. Bark canoes were also widely used (Attenbrow, 2010).

Shelter

Two major forms of shelter appear to have been utilised by Darug speaking peoples at the time of European contact: rockshelters and small huts built from sheets of bark, branches and bushes (Barrington 1802; Collins 1798, 1802; Tench 1793). There are reported differences in the nature of huts built along the coast and in the hinterland, with the former reportedly larger consisting of both bark and dense wood and the latter mostly comprised of bark. There is no consensus on how long the Darug stayed at one campsite, what motivated them to move and/or how often they moved.

Ceremonies and rituals

The Darug have been documented to perform 'ceremonial' activities including corroborees, male initiation ceremonies, ritual combats and various burial, body adornment and personal decoration practices. Although very little information on the subject exists, spiritual authority amongst Aboriginal language groups in the Sydney Region, including the Darug, appears to have been vested in a number of supernatural beings, chief amongst which was Baiame (Attenbrow, 2010).

Post-contact history

In common with other parts of NSW and Australia more generally, the post-contact history of Aboriginal peoples of the Sydney Region is primarily one of dispossession and loss, with groups alienated from their traditional hunting, gathering and camping grounds, populations decimated by a combination of introduced diseases and frontier violence (Attenbrow, 2010) and surviving groups subject to various colonial initiatives aimed at assimilating them into a European way of life. Nonetheless, active resistance and friendly relations are also attested in available records.

Most of the early colonial expeditions away from the coast - including Governor Phillip's Expedition to Belle Vue (Prospect Hill) in April 1788 - did not encounter any Aboriginal people. Once made, initial contacts between Aboriginal people and the exploring colonists appear to have been friendly in nature.

Establishment of the settlement at Rose Hill (Parramatta) in November 1788 did not initially result in the loss of the goodwill that characterised the region's earliest Aboriginal-European contacts, with reports of a barter system between local Aboriginal people and resident military officers. Relations, however, appear to have soured quickly, with the barter system ending abruptly in mid-1791.

The growth of Parramatta township, the establishment of "out-settlements" at Prospect and Toongabbie, and subsequent establishment of farms along the Hawkesbury River restricted Aboriginal peoples' access to their traditional lands and food resources and resulted in severe conflict. Here, as in other parts of the Sydney Region, loss of access to traditional hunting and gathering grounds was one of a number of sources of Aboriginal settler-conflict, with unprovoked murders, the abduction and rape of Aboriginal women and unfair work conditions on farms also contributing to poor relations and/or directly resulting in armed conflict (Kohen, 1993).

By 1816, with populations decimated by introduced diseases and frontier violence, and many clans alienated from their traditional country, Aboriginal people increasingly turned to Europeans to meet their basic needs (Kohen, 1993). While traditional practices continued in many areas, many survivors began to congregate on the estates of Europeans sympathetic to their plight, with the 'Mulgoa Tribe', for example, congregating on the estate of William Cox in the Mulgoa Valley, and the 'South Creek Tribe' residing on Charles Marsden's estate close to the junction of South and Eastern Creeks.

Governmental initiatives to 'civilise' the Cumberland Plain's remaining Aboriginal population can also be traced to this period, with Governor Macquarie pursuing a policy of assimilation. Macquarie's key initiatives to this end were the Parramatta Native Institution, established in December 1814, and the annual Native "Conference" or "Feast" held annually until 1833. In 1823, the Native Institution was moved by Governor Brisbane to a parcel of land adjoining what was then known as the 'Black Town', a community of Aboriginal people living on and around Governor Macquarie's 30-acre land grant to Colebee and Nurragingy. The Blacktown Native Institute and the Colebee and Nurragingy Land Grant have been recognised as being of State heritage significance, located just 100 meters from the intersection of the Westlink M7 and Richmond Road.

Archaeological Survey

A total of six areas were subject to survey, four north of Elizabeth Drive, within the boundaries of the Deerubbin LALC, and two south of Elizabeth Drive, within the boundaries of the Gandangara LALC. These 'survey units' are shown on Figure 7-70.

The results of the survey found in consultation with representatives of the Deerubbin LALC and the Gandangara LALCC (including coverage data) are presented in Table 7-62.

One previously unrecorded Aboriginal site, consisting of an area of PAD, was identified within Survey Unit 2 in Eastern Creek, this PAD has been designated as 'Pikes Lane PAD'. Pikes Lane PAD consists of an irregularly-shaped area of PAD on the left bank floodplain of Eastern Creek within Lot 7 on DP545017 (refer Figure 7-71). This site has subsequently been registered on the AHIMS database and assigned the AHIMS ID #45-5-5548. As mentioned above, the Pikes Lane construction ancillary facility was removed as a result of this PAD finding and is no longer a part of the proposed modification. It is therefore not assessed in the impact assessment.

Consistent with available historical aerials and surveys undertaken for the current assessment, the portion of the PAD site 'EC-OS-1' (45-5-2433) located within the existing fenced Westlink M7 lease area is destroyed.

Registered artefact scatter site 'MC-2' (45-5-0779), formerly located within the Ash Road reserve in Prestons, inside the study area, is similarly considered to have been destroyed, with field observations confirming severe ground disturbance at the site's former location.

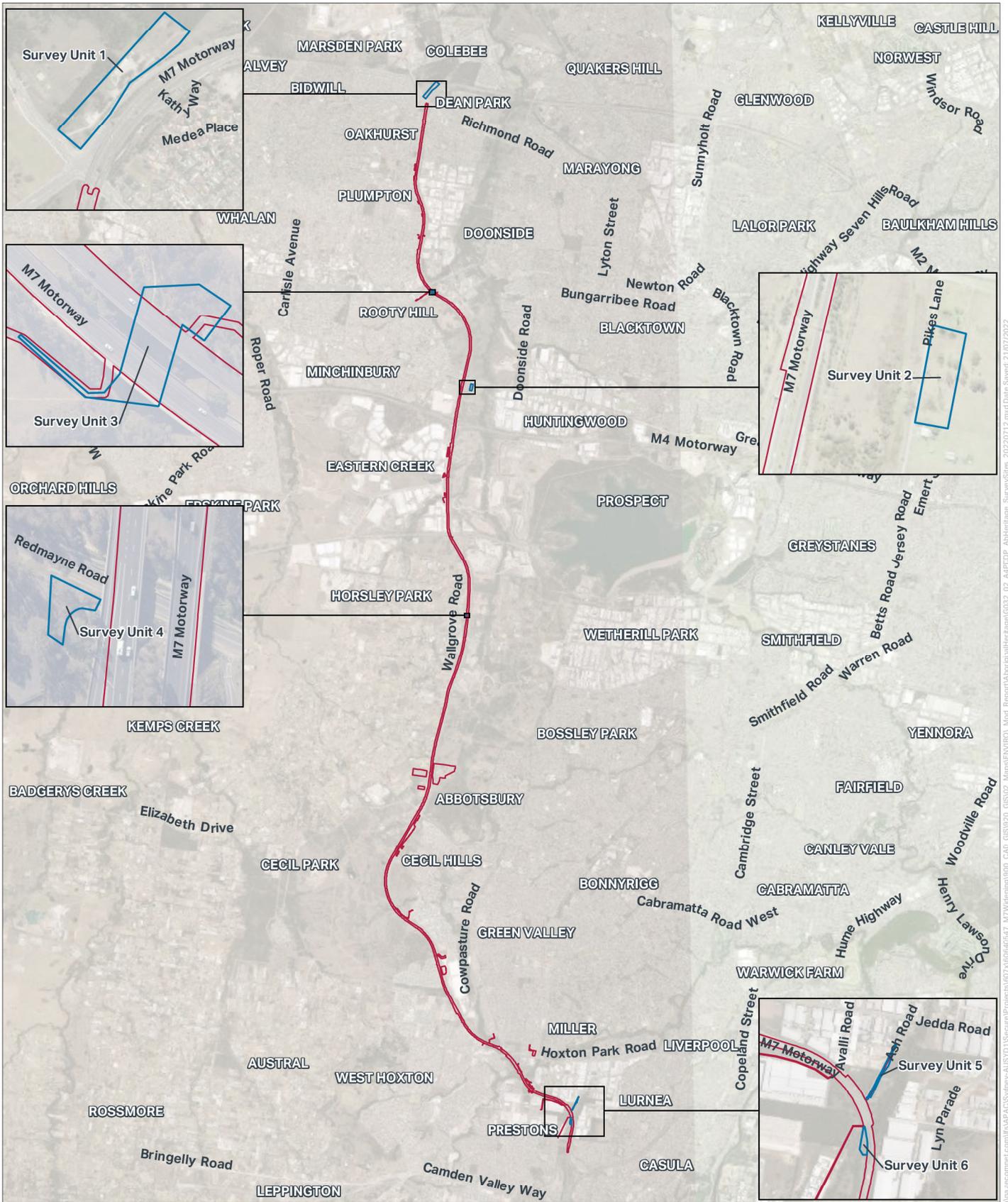


FIGURE 7-70: LOCATION OF SURVEY UNITS ACROSS STUDY AREA



- Legend**
- Study area
 - Survey unit

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Table 7-62 Survey results

Survey unit	Landform unit(s) (pre disturbance)	Area (m ²)	Visibility (%)	Exposure (%)	Effective coverage (m ²)	Effective coverage (%)	Disturbance rating (observed)	Aboriginal site(s) identified	Plates
1	Hillslope; drainage depression	34,615	60	40	8,308	24	High	None	Plate 1, Plate 2 and Plate 3
2	Floodplain	7,266	40	10	291	4	Low to moderate	Single area of PAD, designated as, 'Pikes Lane PAD' identified.	Plate 4, Plate 5 and Plate 6
3	Hillslope; floodplain	2,458	40	20	197	8	High	None. Consistent with historical aerial photographs, field observations suggest that the section of 'EC-OS-1' (45-5-2433) located within the fenced Westlink M7 lease area (including the study area) has been destroyed.	Plate 7 and Plate 8
4	Hillslope; drainage depression	351	10	5	2	0.5	Moderate to high	None	Plate 9 and Plate 10
5	Floodplain	4,092	80	30	982	24	High	None. Consistent with historical aerial photographs, field observations suggest that 'MC-2' (45-5-0779) has been destroyed.	Plate 11, Plate 12, Plate 13 and Plate 14

Survey unit	Landform unit(s) (pre disturbance)	Area (m ²)	Visibility (%)	Exposure (%)	Effective coverage (m ²)	Effective coverage (%)	Disturbance rating (observed)	Aboriginal site(s) identified	Plates
6	Floodplain	4,358	40	20	349	8	High	None	Plate 15, Plate 16 and Plate 17



Plate 1: Survey Unit 1 - vehicle track and adjoining fenced compound (on left)



Plate 2: Survey Unit 1 - highly modified first order stream in southernmost portion of unit



Plate 3: Survey Unit 1 - view across northernmost section of unit



Plate 4: Survey Unit 2 - view toward Eastern Creek at southern end of unit



Plate 5: Survey Unit 2 - view across unit, facing north



Plate 6: Survey Unit 2 - view across newly identified PAD site 'Pikes Lane PAD'. Facing north east and located on a potential but discounted ancillary facility site.



Plate 7: Survey Unit 3 - view across unit. Note channelised section of Angus Creek in foreground



Plate 8: Survey Unit 3 - view east from right hand bank of Angus Creek. Artefact scatter with PAD site 'EC-OS-1' (45-5-2433) formerly located at rear in treeline



Plate 9: Survey Unit 4 - view across unit, facing north



Plate 10: Survey Unit 4 - view east down drainage channel, north eastern corner of unit



Plate 11: Survey Unit 5 - view south from northernmost extent of unit



Plate 12: Survey Unit 5 - View south, central portion of unit



Plate 13: Survey Unit 5 - View across former location of artefact scatter 'MC-2' (45-5-0779), facing south-south east



Plate 14: Survey Unit 5 - View across former location of artefact scatter 'MC-2' (45-5-0779), facing north



Plate 15: Survey Unit 6 - view across northernmost extent of unit, Westlink M7 at rear. Note flood debris in foreground



Plate 16: Survey Unit 6 - northern portion of unit, looking towards Maxwells Creek



Plate 17: Survey Unit 6 - view across Maxwells Creek, looking north east

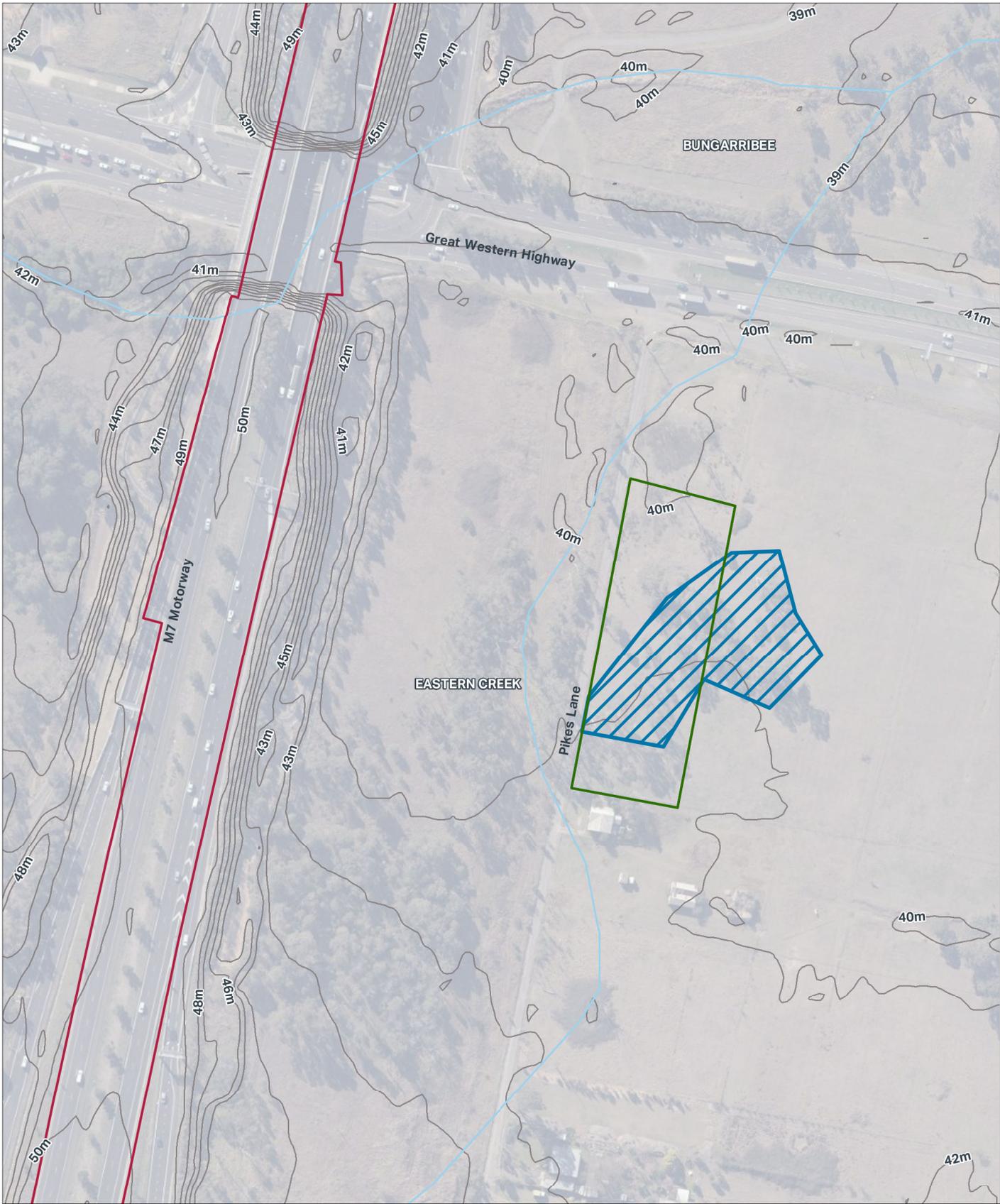


FIGURE 7-71: NEWLY IDENTIFIED PAD SITE 'PIKES LANE PAD'



Legend

- Study area
- Survey Unit 2
- ▨ Pikes Lane PAD
- Drainage line
- 1m contour

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Significance Assessment

Heritage sites hold value for different communities in a variety of different ways. All sites are not equally significant and therefore not equally worthy of conservation and management (Pearson & Sullivan, 1995). The purpose of a significance assessment, also known as the assessment of cultural significance, is to determine which sites are worthy of preservation and management and conversely, which are not. In Australia, the primary guide to the assessment of cultural significance is the Australian International Council on Monuments and Sites (ICOMOS) *Charter for Places of Cultural Significance* (2013), informally known as *The Burra Charter*, which defines cultural significance as the “*aesthetic, historic, scientific, social or spiritual value for past, present or future generations*” of a site or place (ICOMOS Australia, 2013). Under the Burra Charter model, the cultural significance of a heritage site or place is assessed in terms of its aesthetic, historic, scientific, social and spiritual values, none of which are mutually exclusive. The overall significance of a site is determined by its average rating across the five Burra Charter values.

Desktop research and archaeological survey have identified two valid Aboriginal sites within the study area: ‘PAD-OS-7’ (45-5-2721) and ‘Pikes Lane PAD’ (45-5-5548) (shown on Figure 7-72), and four sites directly adjacent to it.

Previously recorded open artefact site ‘PAD-OS-7’ (45-5-2721) is located on Lot 14 DP1021940, partially within the study area, but outside of the construction footprint for the proposed modification. The site would not be impacted by the proposed modification as all construction activities in its vicinity would be restricted to the construction footprint and the refined construction footprint for approved M12 Motorway project. ‘PAD-OS-7’ has been previously assessed as being of high scientific significance (see Mills, 2002: 95).

Newly identified PAD site ‘Pikes Lane PAD’ (45-5-5548) site is similarly located outside the construction footprint for the proposed modification. The significance of the newly identified ‘Pikes Lane PAD’ (45-5-5548) has not been outlined here, as it is no longer a site of potential impact. Further details on the significance assessment performed on this site may be found in **Appendix I** (Aboriginal cultural heritage ASR).

A further four previously recorded open artefacts sites - ‘PAD-OS-4’ (45-5-2793), ‘PAD-OS-5’ (45-5-2723), ‘PAD-OS-9’ (45-5-2719) and ‘PAD-OS-10’ (45-5-2718) – directly abut the study area but are located outside of the proposed construction footprint and would also not be impacted by the proposed modification. All construction activities in the vicinity of these sites would be restricted to the construction footprint for the proposed modification. Previously assessed levels of scientific significance for these sites range from low to high (see Mills, 2002).

7.7.5 Impact assessment

This section provides an assessment of construction and operation impacts from the proposed modification.

Construction

Aboriginal sites identified within and directly adjacent to the study area include previously recorded open artefact sites 'PAD-OS-4' (45-5-2793), 'PAD-OS-5' (45-5-2723), 'PAD-OS-7' (45-5-2721), 'PAD-OS-9' (45-5-2719), 'PAD-OS-10' (45-5-2718) and newly recorded PAD site 'Pikes Lane PAD' (45-5-5548).

As previously indicated, none of these sites would not be impacted by the proposed modification. All construction activities in their vicinity would be restricted to the construction footprint for the proposed modification.

Operation

The operational footprint of the proposed modification would be contained within the existing Westlink M7 lease area and includes areas required for both operation and maintenance. No impacts to Aboriginal heritage values are expected as a result of the operation of the proposed modification.

7.7.6 Management and mitigation

Mitigation measures that will be implemented to avoid Aboriginal cultural heritage impacts of the proposed modification and manage unexpected finds, including the responsibility and timing for those measures, are outline in Table 7-63.

Subject to Transport's implementation of the measures presented in Table 7-63, it is concluded that there is no trigger to proceed to Stage 3 of the PACHCI process and no further impact assessment is warranted for the proposed modification.

Table 7-63 Mitigation measures

Impact	ID	Mitigation measure	Responsibility	Timing
N/A – AHIMS database currency	AH1	Aboriginal Site Impact Recording (ASIR) forms will be submitted to the AHIMS Registrar for all Aboriginal sites known to have been destroyed or partially destroyed as a result of the approved project (as indicated in the final approved IHMSP).	Construction contractor's Aboriginal Cultural Heritage Advisor	Prior to construction
N/A – AHIMS database currency	AH2	An Aboriginal Site Impact Recording (ASIR) form will be submitted to the AHIMS Registrar for Aboriginal site 'MC-2' (45-5-0779), indicating that the site has been destroyed.	Construction contractor's Aboriginal Cultural Heritage Advisor	Prior to construction
Accidental construction-related impacts to known Aboriginal sites as well as unexpected finds	AH3	An Aboriginal Cultural Heritage Management Plan (ACHMP), to be included in the Construction Environmental Management Plan (CEMP), shall be prepared prior to construction of the proposed modification. An unexpected Aboriginal heritage finds procedure will be included in the ACHMP.	Construction contractor	Prior to construction Construction

Impact	ID	Mitigation measure	Responsibility	Timing
Accidental construction-related impacts to known Aboriginal sites as well as unexpected finds	AH4	All standard environment site inductions prepared for the proposed modification will include an Aboriginal heritage component. At a minimum, this will outline current protocols and responsibilities with respect to the management of Aboriginal heritage within the construction footprint (including unexpected finds) and provide an overview of the diagnostic features of potential Aboriginal site types/objects.	Construction contractor	Prior to construction Construction
Avoidance of impacts to nearby Aboriginal sites during construction	AH5	Aboriginal sites located outside of the construction footprint, but directly adjacent to it, will be actively protected during construction via temporary fencing. Fencing is to be installed along relevant sections of the construction footprint and remain in place for the duration of construction works in the vicinity. Where fencing is to be installed along the construction footprint, individual fencing lengths will be determined by a qualified archaeologist on the basis of both a visual inspection of the registered AHIMS site location and critical review of relevant existing data sources (e.g. associated site cards and assessment reports). All relevant staff and contractors are to be made aware of the nature and locations of these sites as part of standard site inductions. All sites will be identified on relevant site plans.	Construction contractor	Construction
Avoidance of impacts to community, the environment and Aboriginal sites	AH6	Stakeholder consultation will occur prior to construction in order to: <ul style="list-style-type: none"> Identify key cultural values or features within the study area Document stories that belong to the Deerubbin and Gandangara community and with permission, may be used educate Transport's personnel and contractors Inform an environmental impact assessment under the <i>Environmental Planning & Assessment Act 1979</i>. 	Transport	Prior to construction