

The Mills Residential Subdivision
Project, New Norfolk

Aboriginal Heritage Assessment Report
Final Draft Version 1

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Executive Summary

Project Details

CHMA Pty Ltd and Aboriginal Heritage officer (AHO) Rocky Sainty were engaged by Treelight Pty Ltd to undertake an Aboriginal heritage assessment for the proposed Gateway Estate Residential Development. CHMA (2018) prepared an Aboriginal Heritage Assessment report (AHAR) which presented the findings of the assessment. This report was submitted to Aboriginal Heritage Tasmania (AHT) for review and was endorsed by AHT (advice provided by AHT on the 12/9/2018).

Subsequently, the project has been taken over by ISG Financial Services Limited, and has been re-branded as The Mills development. The extent of the study area is largely the same as the area covered by the assessment undertaken by CHMA (2018). However, there is an additional area immediately to the north-west, that was not covered by the CHMA (2018) assessment. This area is known as the Mills Central Precinct Zone.

Figure 1 shows the proposed development footprint for the Mills Development, with Figure 2 showing the current proposed Masterplan for the Mills Development. Figure 3 is an aerial image showing the original area covered by the CHMA (2018) assessment, and the additional Central Precinct Zone not covered by the CHMA (2018) assessment.

CHMA Pty Ltd and Aboriginal Heritage Officer (AHO) Rocky Sainty have now been engaged by ISG Financial Services Limited to undertake a range of heritage services for this project. This report presents the key findings of the review and assessment process, and constitutes the updated AHAR for the Mills development.

Registered Aboriginal Sites in the Vicinity of the Study Area

As part of the current assessment for the Mills Residential development project, a search was undertaken of the Aboriginal Heritage Register (AHR) in order to determine the current extent of registered Aboriginal heritage sites that are located within or in the immediate surrounds of the study area.

The search results show that in addition to the 11 Aboriginal heritage sites previously confirmed by CHMA (2018) as being present within or in the immediate vicinity of the Mills study area (as summarised in section 4.2), there is one additional registered Aboriginal heritage site recorded in this area (site AH13802). The site is classified as an Isolated artefact, and was recorded by AHT staff in March 2020. Table I provides the summary details for these sites.

The AHR search results show that there are no registered Aboriginal heritage sites that are situated within the Mills Central Precinct Zone which was not covered by the CHMA (2018) assessment.

Summary Survey Results

The field survey assessment was focused on the Mills Central Precinct Zone, which was not covered by the original assessment undertaken by CHMA (2018) for the Gateway Estate.

The Mills Central Precinct Zone encompasses an area of approximately 20ha. The survey was implemented over a period of 1 day (13-5-2020) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). The field team walked a total of 3.75km of survey transects across this area, with the average width of each transects being 10m.

No Aboriginal heritage sites, suspected features, or specific areas of elevated archaeological potential was identified during the field survey assessment of the Mills Central Precinct Zone. The AHR search results have confirmed that there are no registered Aboriginal sites present within this area. On this basis it is confirmed that there are no known Aboriginal sites present within the Mills Central Precinct Zone,

Based on the negative survey results, the observed levels of prior land disturbances, and the absence of previously registered sites, the Mills Central Precinct Zone has been assessed as being of very low archaeological sensitivity.

The detailed survey results are presented in section 7 of this report.

Overview of Aboriginal Sites Present Within the Mills Development Study Area

Previous archaeological investigations have resulted in the identification of 12 Aboriginal heritage sites that are situated either within, or in the immediate vicinity of the Mills Development study area. Six of these sites are classified as isolated artefacts, five sites are classified as artefact scatters, and there is one Aboriginal stone quarry site. Table i provides the summary details for these 12 sites, with Figure i showing the location of these sites in relation to the Mills Development study area. The detailed site descriptions for those sites recorded by CHMA (2018) as part of the original Gateway Estate assessment are provided in Appendix 1.

Two of these sites (AH8745 and AH13802) are situated outside (to the west) of the Mills Development study area, within an adjoining residential subdivision development. Both sites are classified as Isolated artefacts. Site AH8745 was originally recorded by AHS (2000), as part of the survey assessment of the Lachlan River Estate development but could not be relocated by CHMA (2018) during the survey assessment of the Gateway Estate area. Site AH13802 was recently recorded by AHT staff. A third site (AH13574) is situated partially within this adjoining residential subdivision development, and partially within the Mills development. This site is classified as an artefact scatter, which was recorded by CHMA (2018). It is understood that this adjoining land is being developed by a separate proponent, however, in the future this land will be purchased by Noble Ventures, and will be included within the Mills development area.

The remaining nine Aboriginal site are all situated within the Mills Development study area, and were recorded by CHMA (2018) the survey assessment of the Gateway Estate

area. There are no recorded Aboriginal sites that are situated within the Mills Central Precinct Zone.

Table i: Summary details for Aboriginal heritage sites previously recorded within and in the immediate surrounds of the Mills Development study area

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH7174	Artefact scatter	E506972 N5262993 E506992 N5262996 E507001 N5263025 E506958 N5263041 E506911 N5263063 E506928 N5262995	The site is positioned on the broad, gently sloping saddle that sits between two low relief hills. A low-moderate density scatter (comprising 19 stone artefacts) was identified across an area measuring approximately 60m x 60m. The artefacts were exposed across a series of large erosion scalds and along the vehicle tracks that run across the saddle area.
AH8744	Artefact scatter	E506795 N5262967	Site originally recorded as an artefact scatter. However only one artefact relocated during the CHMA (2018) survey. The artefact is situated on the lower north side slopes of the Ironstone Hills. An ephemeral creek is situated 100m to the east of the site. The artefact was identified on a 4m wide graded vehicle track that runs in a north-south direction down the hill side slopes.
AH8745	Isolated artefact	E506647 N5262931	Site not relocated during the CHMA (2018) survey assessment. Site is situated within the boundaries of an adjacent property subdivision.
AH13574	Artefact scatter	E506767 N5263078 E506794 N5263065 E506770 N5263108 E506810 N5263097	The site is positioned on the broad, gently sloping spine of a prominent south-west to the north-east trending spur line. An unnamed ephemeral creek line runs along the eastern edge of the spur. A low-moderate density scatter (comprising 16 stone artefacts) was identified across an area measuring approximately 40m x 30m. The artefacts were exposed across a series of large erosion scalds on the spine of the spur. Site is partially within the boundaries of an adjacent property subdivision, and partially within the Mills study area.
AH13578	Isolated artefact	E507263 N5261916	The artefact is situated on the mid west side slopes of a low relief hill.. These slopes run down to an ephemeral creek, which is situated 300m to the west of the site. The artefact was identified on a 2m x 1m erosion scald.
AH13579	Isolated artefact	E507014 N5261664	The artefact is situated on the gentle basal west side slopes of a low relief hill. These slopes run down to an ephemeral creek, which is situated 30m to the west of the site. The artefact was identified on a large 30m x 25m erosion scald that occurs along the creek margins.
AH13580	Isolated artefact	E506936 N5262908	The site is situated on the narrow spine of a small, north-south orientated spur line. On both the west and east side of the spur are unnamed ephemeral creek lines. The artefact was identified on a 4m wide graded vehicle track that runs along the spine of the spur.

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH13581	Isolated artefact	E507462 N5263040	The site is situated on the lower northern side slopes of a low relief hill. An unnamed ephemeral creek is situated around 80m to the east of the site. The artefact was identified on a 4m wide graded vehicle track that runs in an east-west direction across the hill slopes.
AH13582	Artefact Scatter	E507139 N5263127 E507138 N5263171 E507165 N5263167 E507189 N5263153 E507189 N5263136 E507160 N5263122	The site is positioned on the gently sloping spine of a small east-west trending spur line. An unnamed ephemeral creek line runs along the south-east edge of the spur. A moderate to high density scatter (comprising 100+ stone artefacts) was identified across an area measuring approximately 50m x 30m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the spine of the spur.
AH13583	Artefact Scatter	E507146 N5263090 E507164 N5263096 E507192 N5263095 E507210 N5263084 E507195 N5263067 E507181 N5263071 E507163 N5263075	The site is positioned on the gentle lower northern side slopes of a low relief hill. An unnamed ephemeral creek line runs along the north-west edge of the basal hill slopes, around 30m to the north-west of the site. A moderate density scatter (comprising 50+ stone artefacts) was identified across an area measuring approximately 60m x 25m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the lower hill slopes.
AH13584	Stone Quarry	E507354 N5263114 E507356 N5263105 E507347 N5263093 E507300 N5263086 E507285 N5263091 E507277 N5263118 E507288 N5263126 E507302 N5263103 E507321 N5263104 Silcrete core E507315 N5263122	The site is positioned on the gentle basal northern side slopes of a low relief hill. At the base of this cliff is a modern-day quarry area, which is located immediately to the south of the Lyell Highway. A high density scatter (comprising 500+ stone artefacts) was identified across an area measuring approximately 80m x 20m. The artefacts are predominantly concentrated within 20m of the edge of the cliff line. The artefact assemblage is mostly comprised of silcrete and metamorphosed indurated siltstone flakes, primary flakes and debitage. A large silcrete nodule was also recorded at the base of the cliff line, within the modern-day quarry area.
AH13802	Isolated Artefact	E506598 N5263108	Site was recorded by AHT staff in March 2020. The site was reported to be situated in cleared agricultural land, with subdivisions occurring to the north and west of the site. The site area and surrounds was reported to be highly disturbed, with all vegetation having been removed and a gravelly ground surface. The artefact was described as a retouched hornfel flake. Site is situated within the boundaries of an adjacent property subdivision.

Significance Assessments

A total of 12 Aboriginal sites are confirmed as being present within the Mills Development study area and the adjoining property subdivision. These 12 sites have been assessed and allocated a rating of significance. The significance assessment is based primarily on the previous significance ratings provided by CHMA (2018), as part of the previous assessment of the Gateway Estate. For sites AH8745 and AH13802, which were not recorded by CHMA (2018), the significance ratings have been based on available site information.

A five tiered rating system has been adopted for the significance assessment; low, low-medium, medium, medium-high and high. Table ii provides the summary details for the significance ratings allocated to the 12 Aboriginal sites. A more detailed explanation for the assessment ratings are presented in section 9 of this report. Section 10 of this report deals with the Cultural/Social significance of these sites and the study area as a whole.

Table ii: Summary significance ratings for the 12 Aboriginal sites recorded within and in the immediate vicinity of the Mills Development study area

Site Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH7174	Artefact scatter	Low-Medium	Medium	N/A	Medium-High
AH8744	Artefact scatter	Low-Medium	Medium	N/A	Medium-High
AH13574	Artefact scatter	Low-Medium	Medium	N/A	Medium-High
AH13578	Isolated artefact	Low	Medium	N/A	Medium
AH13579	Isolated artefact	Low	Medium	N/A	Medium
AH13580	Isolated artefact	Low	Medium	N/A	Medium
AH13581	Isolated artefact	Low	Medium	N/A	Medium
AH13582	Artefact Scatter	Medium	Medium	N/A	High
AH13583	Artefact Scatter	Medium	Medium	N/A	High
AH13584	Stone Quarry	Medium-High	Medium	N/A	High
AH8745	Isolated artefact	Low	Medium	N/A	Medium
AH13802	Isolated artefact	Low	Medium	N/A	Medium

Management Recommendations

Heritage management options and recommendations provided in this report are made on the basis of the following criteria:

- Consultation with Rocky Sainty (Aboriginal Heritage Officer);
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (The Act);
- The results of the investigation as documented in this report; and
- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region.

The recommendations are aimed at minimising the impact of the proposed Mills Development Project on the Aboriginal heritage sites identified in this area. Table iii provides the summary management recommendations developed for this project,

with Figure i showing the location of the Aboriginal sites discussed in the management recommendations. Figure ii shows the location of the Aboriginal sites overlaid on the current proposed Masterplan for the Mills development. The more detailed recommendations are presented in section 12 of this report.

Table iii: Summary Management Recommendations for the Mills Development Project

Site Name	Site Type	Management Recommendations
Sites AH13802 and AH8745	Isolated Artefacts	Sites are situated outside (to the west) of the Mills Development study area, within an adjoining residential subdivision development. Seek advice from AHT whether there are any existing Permits or conservation agreements for these two sites.
Site AH13574	Low-moderate density Artefact scatter	<p>West portion of the site is situated within the adjoining residential subdivision development described above. Seek advice from AHT whether there are any existing Permits or conservation agreements for this portion of the site.</p> <p>The east portion of the site is within the Mills Development. Preferred management option is to conserve this portion of the site in open space, and put measures in place to protect site during construction (see detailed recommendations).</p> <p>If site cannot be conserved and protected, then implement a program of sub-surface investigations to inform future mitigation/management requirements. Permit required.</p>
AH7174, AH8744, AH13582 AH13583	Moderate to high density Artefact scatters	<p>These four sites are confirmed as being situated within the Mills Development study area. Preferred management option is to conserve these four sites in open space, and put measures in place to protect sites during construction (see detailed recommendations).</p> <p>If any or all of these sites cannot be conserved and protected, then implement a program of sub-surface investigations to inform future mitigation/management requirements. Permit required.</p>
AH13584	Aboriginal Stone Quarry	Site is confirmed as being situated within the Mills Development study area. Site is to be conserved in open space, and measures put in place to protect site during construction (see detailed recommendations).
AH13578, AH13579, AH13580 AH13581	Isolated Artefacts	<p>These four sites are confirmed as being situated within the Mills Development study area. Preferred management option is to conserve these four sites in open space, and put measures in place to protect sites during construction (see detailed recommendations).</p> <p>If any or all of these sites cannot be conserved and protected, then seek Permit to impact prior to construction works proceeding.</p>
The Mills Central Precinct Zone		It is confirmed that there are no known Aboriginal sites present within the Mills Central Precinct Zone. It is assessed that there is a very low potential for undetected Aboriginal heritage sites to be present in this area. It is advised that there are no Aboriginal heritage constraints to development proceeding in this area.

Site Name	Site Type	Management Recommendations
General Recommendations		<ul style="list-style-type: none"> - If, during the course of proposed residential development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 2). A copy of the Unanticipated Discovery Plan should be kept on site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the <i>Aboriginal Heritage Act 1975</i> (the Act). - Consideration should be given to providing construction workers with a site specific cultural heritage induction presentation, which informs them of the Aboriginal cultural heritage values within the study area, and the importance of protecting these values. - Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) and the Aboriginal Heritage Council (AHC) for review and comment.

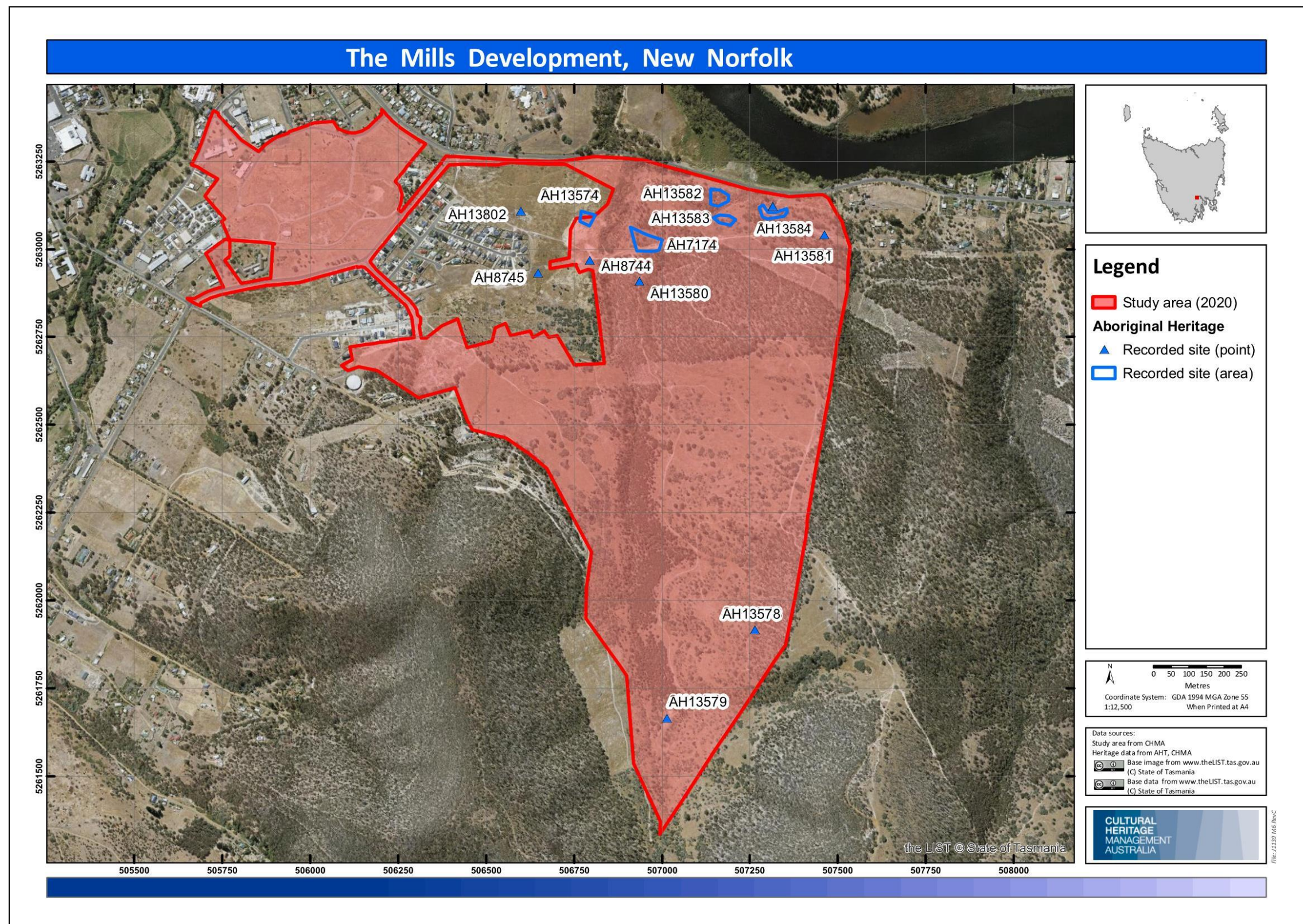


Figure i: Aerial map showing the location of known Aboriginal heritage sites within and in the immediate vicinity of the current Mills Development study area

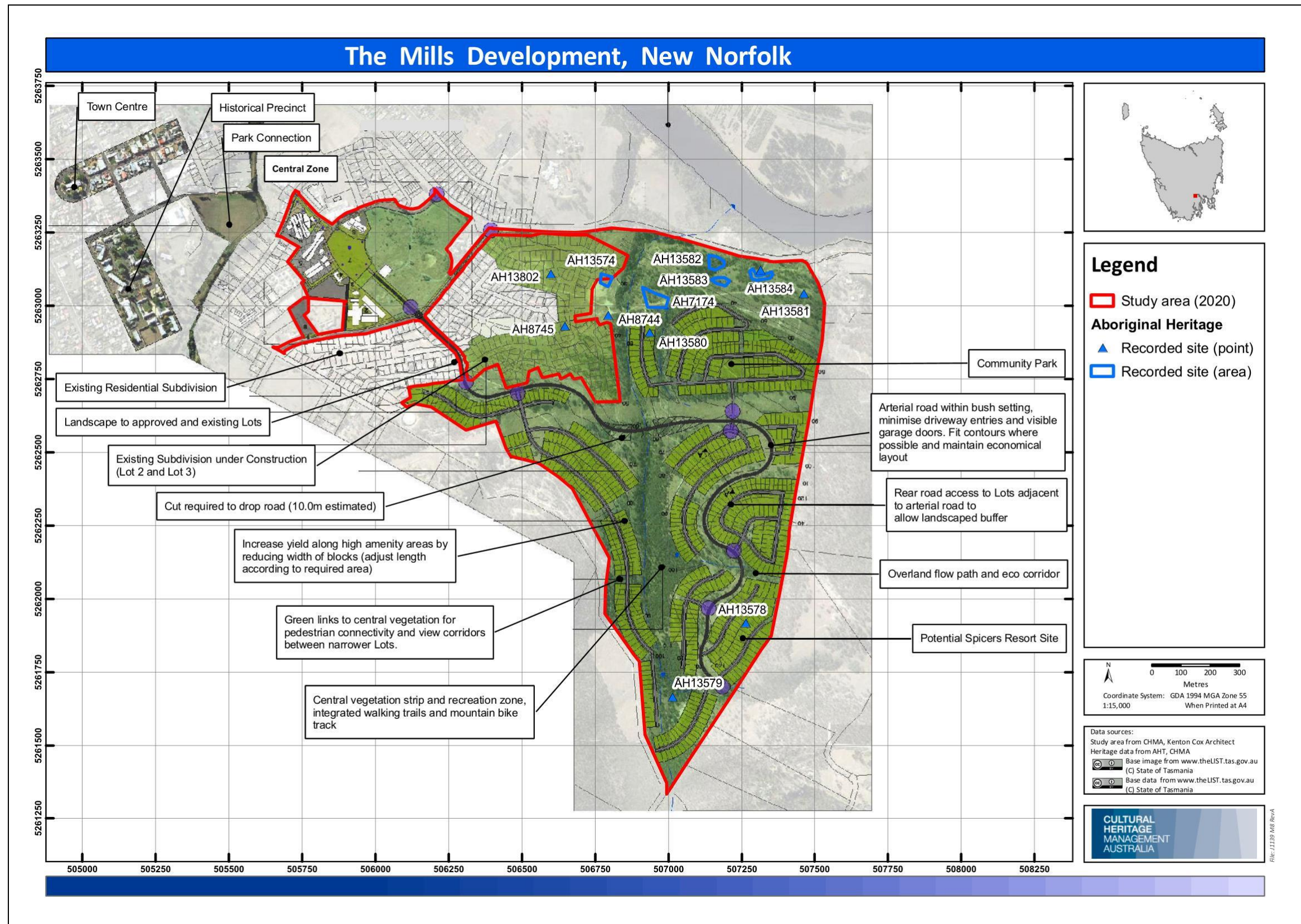


Figure ii: The location of known Aboriginal heritage sites within and in the immediate vicinity of the current Mills Development study area, overlaid on the current Mills Development Masterplan

1.0 Project Outline

1.1 Project Details

CHMA Pty Ltd and Aboriginal Heritage officer (AHO) Rocky Sainty were engaged by Treelight Pty Ltd to undertake an Aboriginal heritage assessment for a proposed residential subdivision at New Norfolk. The proposed subdivision area encompassed approximately 50ha, and was known as the Gateway Estate Residential Development. CHMA (2018) prepared an Aboriginal Heritage Assessment report (AHAR) which presented the findings of the assessment. This report was submitted to Aboriginal Heritage Tasmania (AHT) for review and was endorsed by AHT (advice provided by AHT on the 12/9/2018).

Subsequently, the project has been taken over by ISG Financial Services Limited, and has been re-branded as The Mills development. The extent of the study area is largely the same as the area covered by the assessment undertaken by CHMA (2018). However, there is an additional area immediately to the north-west, that was not covered by the CHMA (2018) assessment. This area is known as the Mills Central Precinct Zone.

Figure 1 shows the proposed development footprint for the Mills Development, with Figure 2 showing the current proposed Masterplan for the Mills Development. Figure 3 is an aerial image showing the original area covered by the CHMA (2018) assessment, and the additional Central Precinct Zone not covered by the CHMA (2018) assessment.

CHMA Pty Ltd and Aboriginal Heritage Officer (AHO) Rocky Sainty have now been engaged by ISG Financial Services Limited to undertake a range of heritage services for this project. This includes the following works.

- Confirmation of cultural heritage sensitivities across the Mills study area
- A high level review of the master plan and advice regarding implications for cultural heritage.
- Advice regarding approval pathway and engagement required with relevant authorities.
- Preparation of a desktop assessment report.
- Implementation of any additional field survey assessments that may be required.
- Preparation of updated Aboriginal heritage assessment report to accompany planning submission

This report presents the key findings of the review and assessment process, and constitutes the updated AHAR for the Mills development.

1.2 Aims of the Investigation

The principal aims of the current Aboriginal Heritage assessment are as follows.

- To prepare a revised Aboriginal cultural heritage assessment for The Mills Subdivision Project (the study area, as shown in Figures 1-3) The assessment is to be compliant with both State and Commonwealth legislative

regimes, in particular the intent of the *Aboriginal Heritage Act 1975* and the associated *Aboriginal Heritage Standards and Procedures*.

- To determine the extent of previously identified Aboriginal heritage sites within and in the immediate vicinity of the study area.
- To implement a survey inspection for those parts of the study area not previously covered by the CHMA (2018) assessment (The Mills Central Precinct Zone). The purpose of the survey is to locate and document Aboriginal heritage sites that may be present within this area. .
- To assess the archaeological sensitivity values of the study area.
- To assess the scientific and Aboriginal cultural values of identified Aboriginal heritage sites.
- Consult with (or ensure the Aboriginal community representative consults with) Aboriginal organisation(s) and/or people(s) with an interest in the study area in order to obtain their views regarding the cultural heritage of the area.
- To advise on the management of Aboriginal heritage in line with best practice archaeological guidelines, including The Burra Charter (ICOMOS 2013) and *Practice Note: The Burra Charter and Indigenous Cultural Heritage Management*.
- Prepare an updated AHAR for The Mills Residential Subdivision Project, which meets the standards and requirements of the current *Aboriginal Heritage Standards and Procedures* prepared by AHT, Department of Primary industries, Parks, Water and Environment.

1.3 Limitations of the Investigation

All archaeological investigations are subject to limitations that may affect the reliability of the results.

The main constraint to the present assessment was restricted surface visibility within the Mills Central Precinct Zone. As noted previously, this area was not covered by the previous CHMA (2018) assessment undertaken for the Gateway Estate project, and was therefore surveyed as part of the current assessment for The Mills development.

The constraints in visibility within the Mills Central Precinct Zone was due primarily to vegetation (grass) cover and the presence of introduced gravels and built surfaces. The area was previously the focus of residential development, with the vast majority of the buildings having been subsequently demolished. Only a few buildings remain, including a church. Throughout the area there are a network of sealed roads, cement slabs, and demolition rubble. Thick grass covers much of the site. There are only a few discrete areas where the natural soils are available for inspection. Overall, the surface visibility across the Mills Central Precinct Zone was restricted to an estimated average of 5%. These constraints limited to some extent the effectiveness of the survey assessment. The issue of surface visibility is further discussed in Section 6 of this report.

1.4 Project Methodology

A three stage project methodology was implemented for this assessment.

Stage 1 (Desktop Assessment)

Stage 1 of the project involved undertaking a desk top heritage assessment for the Mills residential subdivision project (the study area). The primary goals of the desk top assessment were as follows.

- Identify known Aboriginal heritage sites within the study area.
- Provide an overview of those parts of the study area that have been the focus of Aboriginal assessments.
- Identify those parts of the study area not previously covered by Aboriginal heritage assessments.
- Provide recommendations for any further heritage assessment works that may be required.

The desk top assessment involved the following components.

The collation of relevant documentation for the project

The following research was carried out and background information was collated for this project:

- A review of the relevant heritage registers (AHR register) and the collation of information pertaining to any registered heritage sites located within the general vicinity of the study area;
- Maps of the study area;
- Relevant reports documenting the outcomes of previous Aboriginal heritage studies in the vicinity of the study area;
- Ethno-historic literature for the region;
- References to the land use history of the study area;
- GIS Information relating to landscape units present in the study area;
- Geotechnical information for the study area, including soil and geology data.

Consultation with Rocky Sainty (Aboriginal Heritage Officer)

Rocky Sainty is the designated Aboriginal Heritage Officer for the present investigations. As part of Stage 1 works Stuart Huys (CHMA archaeologist) and Rocky Sainty were in regular contact. The main purpose of this contact was to discuss the scope of the present investigations, to ratify the proposed methodology for the investigations and to co-ordinate the timeframes for implementing field work.

Consultation with Aboriginal Heritage Tasmania (AHT)

Aboriginal Heritage Tasmania (AHT) was contacted and informed that CHMA had been engaged to undertake an Aboriginal heritage assessment for the Mills residential subdivision project. As part of this initial contact, CHMA sought advice from AHT regarding the requirements for the assessment of the Mills Central Precinct Zone, which was not covered by the previous CHMA (2018) assessment undertaken for the Gateway Estate project. AHT advised that a survey assessment should be undertaken for the Mills Central Precinct Zone, with the findings of the assessment to be incorporated into the revised AHAR for the project (advice provided by AHT on the 30/4/2020).

Stage 2 (Field Work)

Stage 2 involved the field work component of the project. The field survey assessment was focused on the Mills Central Precinct Zone and was implemented over a period of 1 day (13-5-2020) by Stuart Huys (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer).

The Mills Central Precinct Zone encompasses an area of approximately 20ha. The field team walked a total of 3.75km of survey transects across this area, with the average width of each transects being 10m.

In the course of the field assessment, any areas of improved surface visibility, and areas of lesser disturbance were subject to a detailed inspection. Section 6 provides further details as to the survey coverage achieved within the study area.

The results of the field investigation were discussed by Rocky Sainty and Stuart Huys. This included the potential cultural and archaeological sensitivity of the study area, and possible management options for identified Aboriginal sites

Stage 3 (Report Preparation)

Stage three of the project involved the production of a Draft and Final Report which includes an analysis of the data obtained from the field survey and the development of heritage management recommendations. The report was prepared by Stuart Huys (CHMA), in liaison with Rocky Sainty (Aboriginal Heritage Officer). Rocky Sainty has provided draft copies of this report to various Aboriginal stakeholder groups for review and comment. The outcomes of this consultation program is presented in Appendix 3.



Plate 1: Rocky Sainty, the Aboriginal Heritage Officer for this project

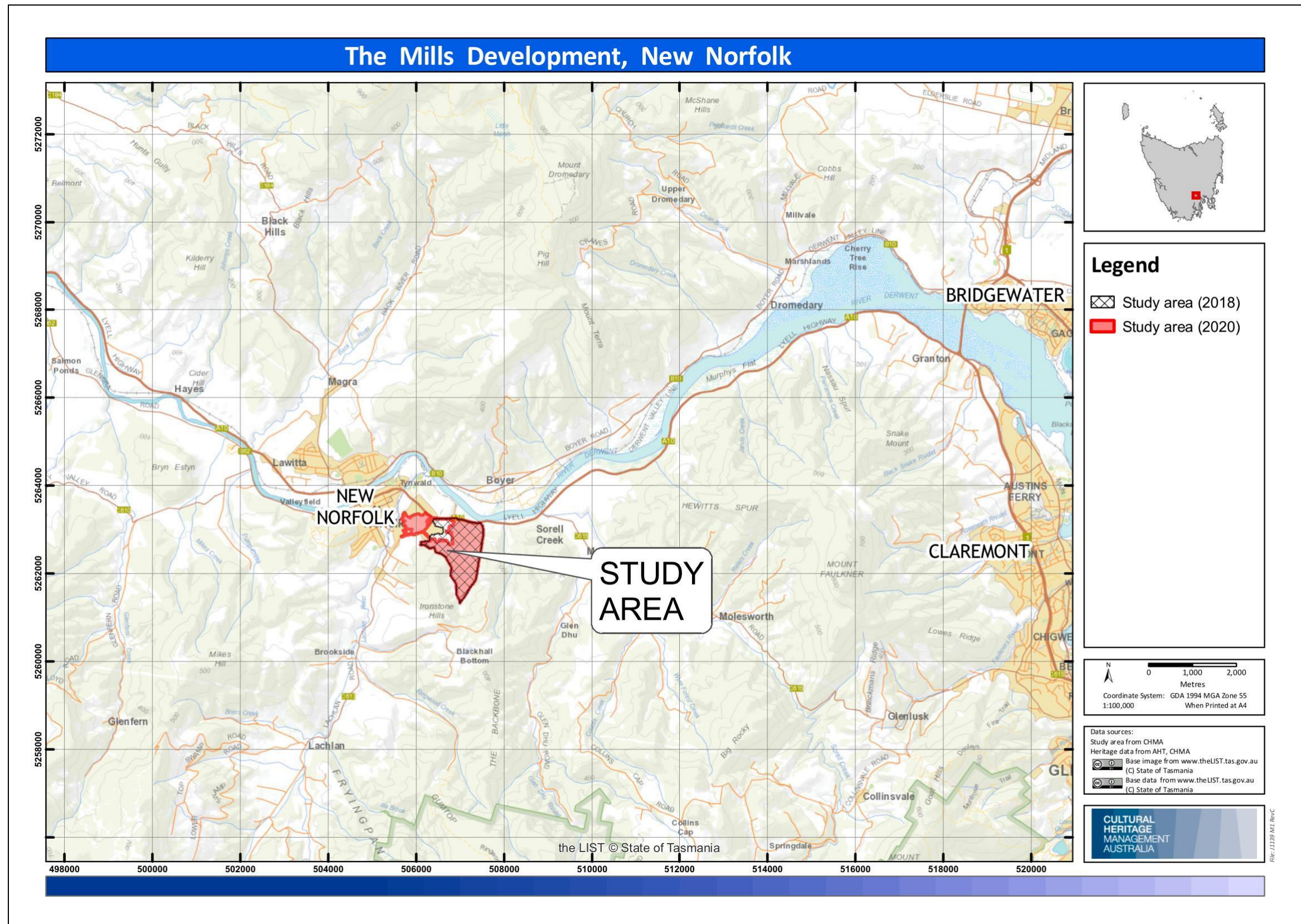


Figure 1: Topographic map showing the location and extent of the proposed Mills Development at New Norfolk

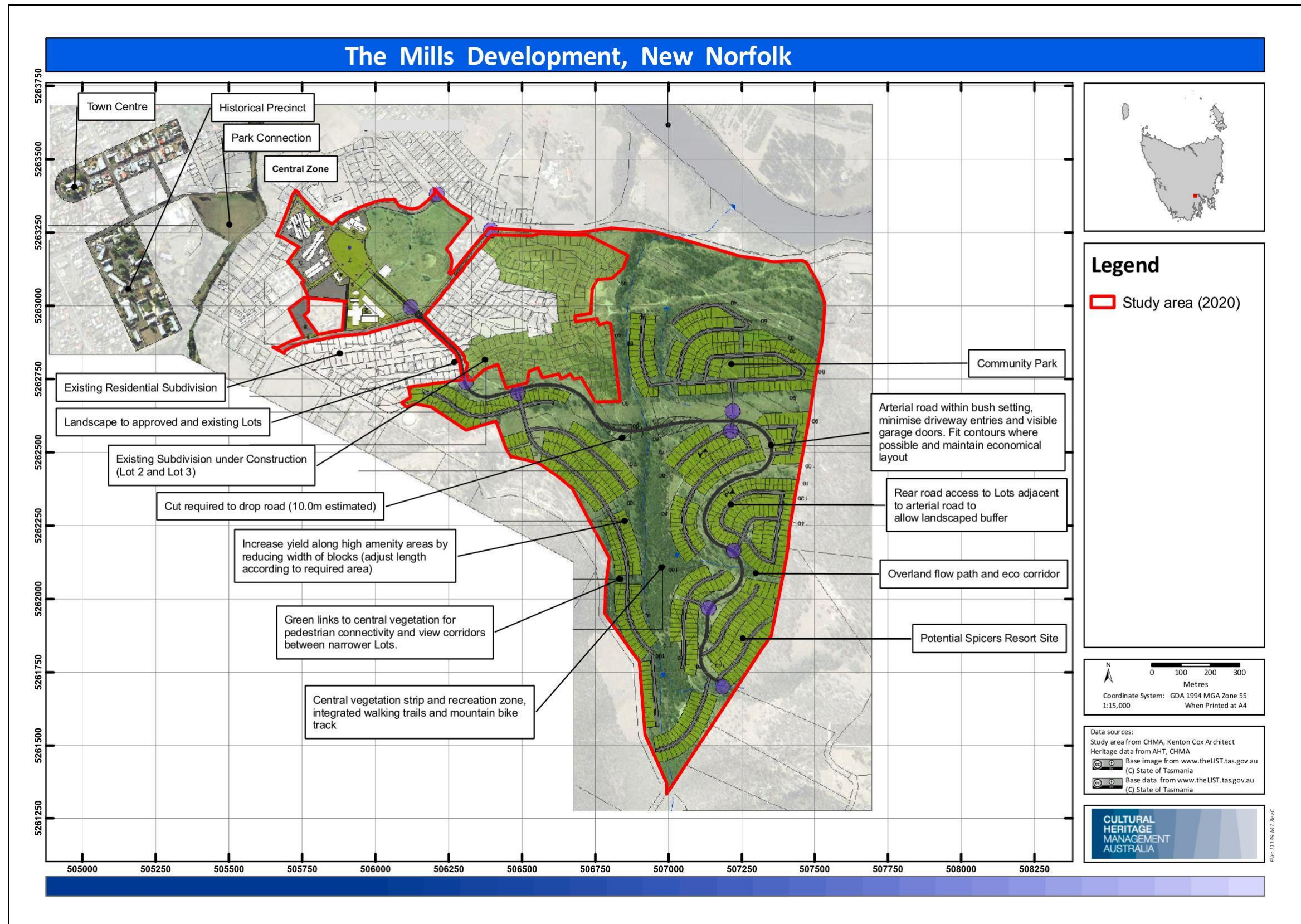


Figure 2: The current proposed Masterplan for The Mills Development at New Norfolk

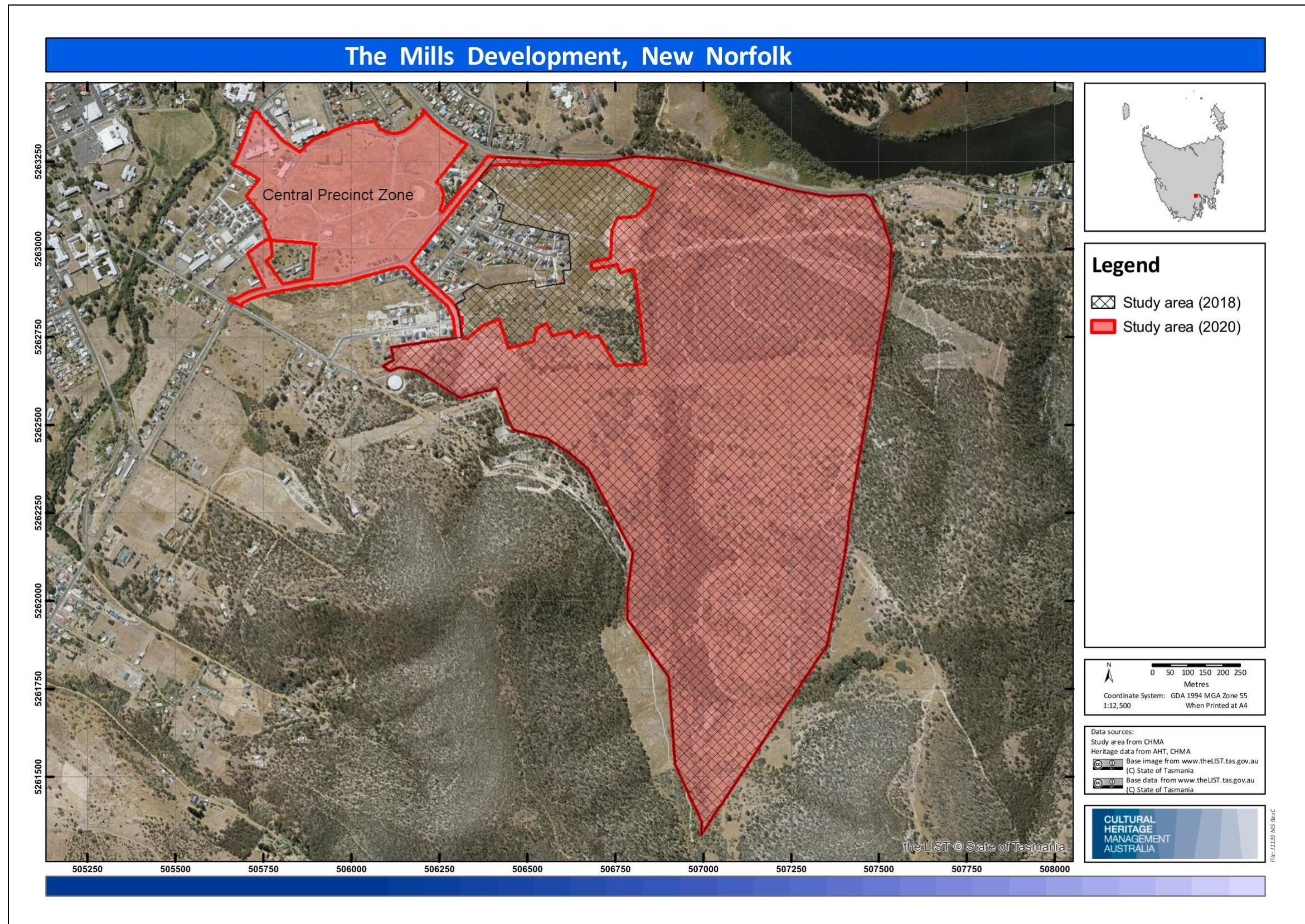


Figure 3: Aerial image showing the area covered by the original CHMA (2018) assessment and the additional Mills Central Precinct Zone

2.0 Environmental Setting

2.1 Introduction

Prior to undertaking archaeological survey of the study area, it is necessary to characterise the landscape. This includes considering environmental factors such as topography, geology, climate, vegetation and past and current landscape use. An assessment of the environmental setting helps to develop an understanding of the nature of Aboriginal occupation and site patterning that might be expected to occur across the study area. In addition, it must be remembered that in Aboriginal society, the landscape extends beyond economic and technological behaviour to incorporate social geography and the embodiment of Ancestral Beings.

The archaeological context is generally only able to record the most basic aspects of Aboriginal behaviour as they relate to artefact manufacture and use and other subsistence related activities undertaken across the landscape such as raw material procurement and resource exploitation. The distribution of these natural resources occurs intermittently across the landscape and as such, Aboriginal occupation and associated archaeological manifestations occur intermittently across space. However, the dependence of Aboriginal populations on specific resources means that an understanding of the environmental resources of an area accordingly provides valuable information for predicting the type and nature of archaeological sites that might be expected to occur within an area.

The primary environmental factors known to affect archaeological patterning include the presence or absence of water, both permanent and ephemeral, animal and plant resources, stone artefact resources and terrain.

Additionally, the effects of post-depositional processes of both natural and human agencies must also be taken into consideration. These processes have a dramatic effect on archaeological site visibility and conservation. Geomorphological processes such as soil deposition and erosion can result in the movement of archaeological sites as well as their burial or exposure. Heavily vegetated areas can restrict or prevent the detection of sites, while areas subject to high levels of disturbance may no longer retain artefacts or stratified deposits.

The following sections provide information regarding the landscape context of the study area including topography, geology, soils and vegetation. Much of this information is derived from The LIST – the Tasmanian Government Land Information System.

2.2 Landscape Setting of the Gateway Estate Study Area

CHMA (2018) has provided a detailed description of the landscape context of the previous Gateway Estate, which is encompassed within the current Mills Residential Subdivision study area. A summary overview is provided below. A separate description of the landscape setting of the Mills Central Precinct Zone is presented in section 2.3.

The study area is located just to the east of the town of New Norfolk, in the South East Region of Tasmania. It is situated immediately to the south of the Lyell Highway, on the lower north side slopes of a series of prominent hills and ranges associated with the Ironstone Hills complex and The Backbone.

The hill slope gradients within the southern and central portions of the study area are typically quite steep, ranging between 10-30°. In the northern portion of the study area, around the lower hill slopes, the gradients decrease significantly, ranging between 2-10°.

The northern hill slopes where the study area is located is drained by a series of ephemeral and semi-permanent creeks. There are no named water courses that are situated within the study area itself. There is an unnamed ephemeral creek that flows in a south to north direction through the central portion of the study area. This creek runs through a narrow, steeply incised valley. Two smaller, ephemeral drainage lines drain low relief hills in the north-west and north-east portions of the study area. All three water courses are tributaries of the River Derwent. The River Derwent is the largest water course in this area, and is located approximately 300m-500m north of the northern boundary of the study area. The River Derwent estuary is a 'ria' or drowned river valley formed by coastal submergence about 6,000 years ago. In the areas around New Norfolk, the River is still subject to tidal influences, and the water is brackish. There are two other smaller named water courses in reasonably close proximity to the study area; these are the Lachlan River which is situated around 1km to the west of the study area, and Sorell Creek which is approximately 1.5km to the east. Both water courses are tributaries of the River Derwent.

A number of geological polygons occur across the study area. The central and eastern portions, as well as a small southern area, lie on generally poorly fossiliferous interbedded glaciomarine fine-to-medium-grained sandstone, fissile and non-fissile siltstone, lonestones and pebble-rich patches, productid bed at top, basal interval commonly with thick beds of coarse-grained sandstone. In the north, basalt as well as older alluvium of river terrace, predominantly dolerite derived, can be found. The south and south-west of the study area is characterised by richly fossiliferous glaciomarine grey bioclastic to argillaceous limestone, calcareous siltstone and rare metabentonite (Berriedale Limestone); lower fossiliferous siltstone and calcareous siltstone (Nassau Formation); and basal pebbly sandstone (Rayner Sandstone). In the south, dolerite and related rocks can also be found.

The study area lies predominantly on podzolic soils on siltstone. They are poor to imperfectly drained grey-brown texture contrast soils developed on Permian siltstone bedrock and colluvium on undulating to rolling (3-32%) land. The soil deposits on the steeper hill side slopes are generally shallow to skeletal. In the north of the study area, undifferentiated soils developed on Quaternary alluvium can be found. These soil deposits are typically more extensive in the northern portion of the study area,.

The existing vegetation across the northern and central portions of the study area, where the terrain is more gently undulating, much of the native vegetation has been cleared as part of past farming practices, and replanted with introduced grasses. This

land is classified as Agricultural. Also, in the north and, to a lesser extent, in the east of the study area, patches of *Eucalyptus tenuiramis* forest and woodland on sediments occur. A long narrow strip of eastern riparian scrub cuts through the agricultural land in the central part and towards the south of the study area.

Apart from the vegetation clearing associated with farming activity, there are a range of other infrastructure that runs through the study area. These include a network of graded vehicle tracks which crisscross the study area, transmission lines which run through the north portion of the study area, and a water pipeline and Telstra Optic Fibre Cable which run east-west through the central portion of the study area. In addition, there is a quarry situated on the northern boundary.

2.3 Landscape Setting of the Mills Central Precinct Zone

The Mills Central Precinct Zone encompasses approximately 20ha and is situated just to the north-west of the main Mills study area. It is situated on the lower northern side slopes of the Ironstone Hills, around 500m to the south of the River Derwent. The slope gradients across the area are typically in the range of between 1° to 5° (see Plates 2 and 3).

The underlying geology across the Mills Central Precinct Zone is dominated by Quaternary Cenozoic cover sequences comprising glacial and peri-glacial sediments. A small patch of Jurassic dolerite intrudes into the north-west corner of the area. Soils across the zone undifferentiated podzol soils.

From an archaeological perspective, the key consideration is the levels of historic land disturbances that have occurred across the Mills Central Precinct Zone. This area was part of a previous residential development. Virtually all the dwellings and buildings that were once present in this area have been demolished. Only a few buildings, including a church, still survive. The native vegetation across the entire area has been cleared, and much of the area has been artificially levelled. There is a network of sealed roads that occur across the area (see Plates 4-6).

This extensive development and subsequent demolition works means that any Aboriginal heritage sites that may once have been present in this area will most likely have been completely destroyed. There is a narrow strip of land within the southern portion of the Mills Central Precinct Zone which has been subject to slightly lower disturbances, where there are still deposits of natural soils present (see Figure 4). This area has been landscaped and replanted with eucalypts and native shrubs. There is the potential for Aboriginal heritage sites to still survive in this area, albeit in a highly disturbed context (see Plate 7).



Plate 2: View south-west across the Mills Central Precinct Zone showing the typical gently undulating terrain across the area



Plate 3: View north across the Mills Central Precinct Zone showing the typical gently undulating terrain across the area



Plate 4: View south-west at one of the few buildings still present in the study area



Plate 5: View north at one of numerous sealed roads through the study area



Plate 6: View west at an area where demolition of previous dwellings has occurred



Plate 7: View west at a narrow strip of lesser disturbed land within the southern portion of the Mills Central Precinct Zone



Figure 4: Aerial image showing the thin strip of land in the southern portion of the Mills Central Precinct Zone which has been subject to slightly lower disturbances

3.0 Ethno-historic Background

3.1 Aboriginal Social Organisation in Tasmania

According to Ryan (2012:11), the Aboriginal population of Tasmania was aligned within a broad framework of nine nations, with each nation comprising between six to fifteen clans (Ryan 2012:14). The mean population of each nation is estimated to have been between 350 and 470 people, with overall population estimates being in the order of between seven to ten thousand people prior to European occupation (Ryan 2012:14).

Ryan (2012:15) presents a map showing the approximate boundaries for the nine Tasmanian Aboriginal Nations. This map shows that the Jordan River, from its mouth through to around St Peters Pass, formed the boundary between two nations, the Oyster Bay Nation and the Big River Nation (see Figure 5). The study area is close to the boundary of these two nations, but probably sits within the land of the Big River Nation.

The Oyster Bay Nation occupied the area to the east of the Jordan River, with their territory encompassing around 7800 square km. The Nation consisted of ten bands with an estimated total population of between 700-800 people, making it the largest Nation in Tasmania (Ryan 2012:17). Of the ten clans that comprised the Oyster Bay Nation, it is the Moomairremener that probably occupied the land in the vicinity of Bridgewater.

The area to the west of the Jordan River was believed to have been the Territory of the Big River Nation (Ryan 2012:15 and 26). The territory of the Big River Nation is described by Ryan as extending from around New Norfolk on the Derwent River, south-west through to the rugged Mountains beyond the source of the Derwent River, north to Surrey Hills, then east through the mountains to Quamby Bluff (encompassing all the lake country) and finally south along the Western Tiers and the Jordan River (Ryan 2012:26). The Big River Nation are estimated to have numbered between four and five hundred people at the time of contact with European settlers (Ryan 2012:26).

The Big River Nation is believed to have comprised five clans; the Leenowwenne people who lived near New Norfolk, the Pangerninghe who lived on the west bank of the River Derwent just opposite the meeting of the Derwent and Clyde Rivers, the Braylwunyer people who lived on the hilly plains between the Ouse and Dee Rivers, the Larmairrenener people lived in the high country west of the Dee River and the Luggermairrernerpairner people who lived north of the Great Lake (Ryan 2012:16). The Mills study area would have been part of the land occupied by the Leenowwenne people.

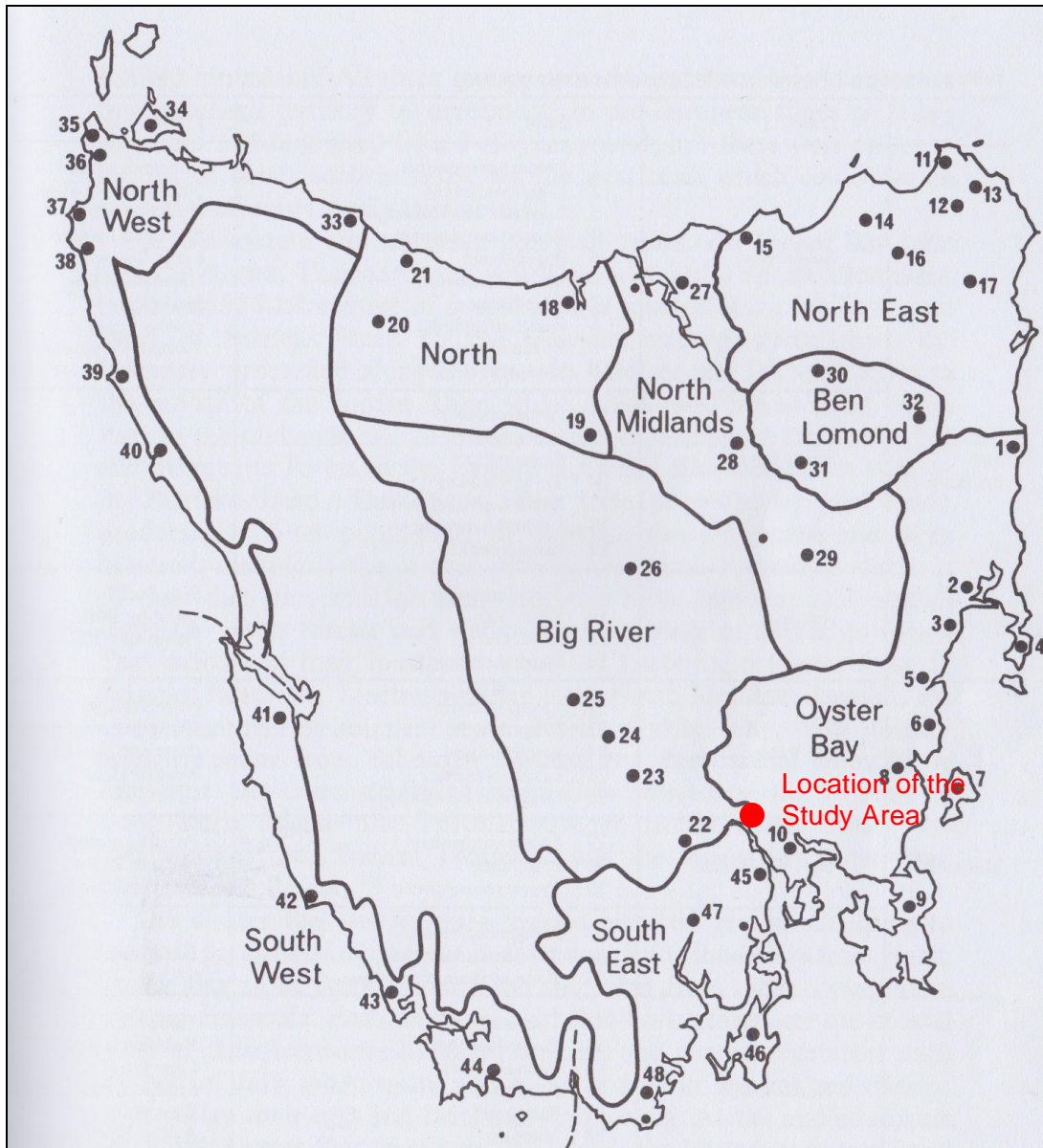


Figure 5: The location of the study area in relation to Aboriginal Nations of Tasmania (based on map from Ryan 2012:15)

The Big River people were the only Tasmanian nation without access to a coastal strip. However, this was compensated by the highland lake system, control over Great Lake, and visiting arrangements with the neighbouring North and Oyster Bay Nations (Ryan 2012:25). Through these relationships the Big River people had seasonal access to the east, north and west coasts, and to the ochre sources in the mountains to the north (Ryan 2012:28). The Big River Nation interacted with a greater number of diverse nations and clans than any other Tasmanian nation (Ryan 2012:27). This suggests an active and dynamic social unit continually exposed to varying cultures and ideas through this high level of interaction outside the nation.

In return, neighbouring nations were granted access to the resources of the highlands in the territory of the Big River Nation. Oyster Bay people are known to have travelled up the Clyde and Ouse River valleys during the summer months to hunt, and to harvest the *eucalyptus gurii* forests, a tree confined to the highlands that produces an intoxicating gum (Ryan 2012:26).

Travel across the Big River Nation's lands was via well maintained and regularly used travelling routes. Ryan (2012: 26-7) describes the Big River Nation as having two routes running north out of their country (see Figure 6). One route ran along their western boundary "from near Lake St Clair, past Cradle Mountain and Lake Dove, to south of Black Bluff". The second route, being the one "they most commonly used went past the Great Lake and through a pass in the Great Western Tiers near Quamby Bluff where the present-day Lake Highway makes its descent."

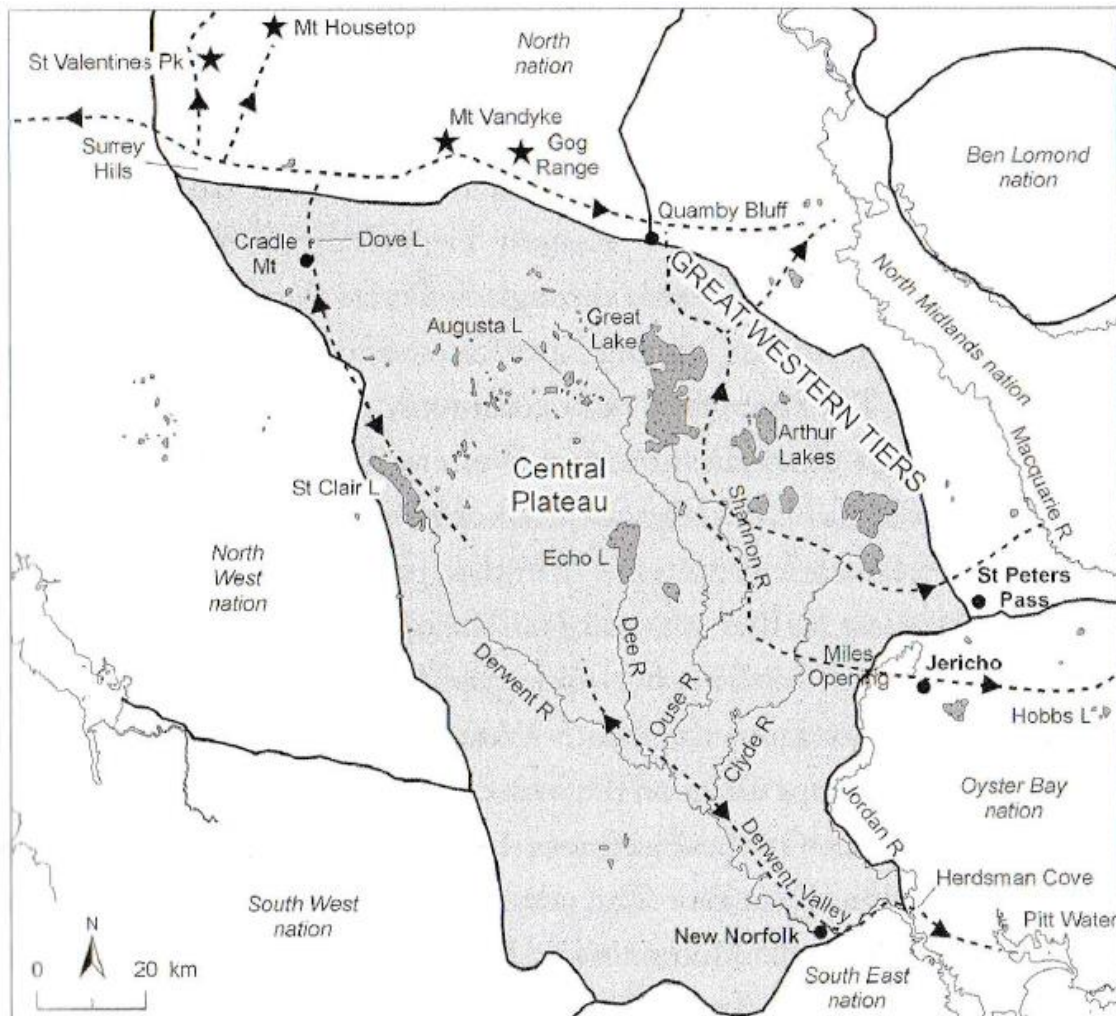


Figure 6: Trade routes and seasonal movements of the Big River Nation (Ryan 2012: 27)

Ethnographic Accounts of the Big River Nation

Several early explorers and ethnographers have left accounts of their observations of the Big River Nation that provide an insight into the economy, material culture and social customs of the people prior to European settlement. Primary among the ethnographic sources are the diaries of George Augustus Robinson, appointed as government Protector of Aborigines who followed a policy of conciliation with the ultimate aim of removing Aboriginal people to offshore islands (Plomley 2008:515).

Around the Lake Echo area, Robinson records Aboriginal hut sites along the margins of the marshy lagoons that intercept the rugged hills (Plomley 2008:543-44). There are often large numbers of huts that Robinson describes as 'villages' (Plomley 2008:548). When Robinson approached the huts they were empty but showed signs of having recently been occupied. He repeatedly described the abundance of 'kangaroo' (Bennett's wallaby), 'native bread' (a tuber, *Polyporus myllitae*) and duck and bird life that abounded in: 'the place of resort ... and their hunting grounds' (Plomley 2008:542). There is also reference to a plant with a red berry that the Larmairrenener people call *Murerleener* (Plomley 2008:543). The plant was unknown to those Aboriginal people from the south that were with Robinson.

The valleys of the Big River Nation that Robinson travelled through had been burnt to facilitate access and attract game. Robinson records the evidence of this as he travels through the area around modern day Bronte Lagoon (Plomley 2008:545). Robinson also recorded the petrified wood artefacts that he found across the southern plateau country (Plomley 2008:548). There were worn paths through the country that Robinson in some cases followed. One ran along the Dee River valley, and it seems that this was a major seasonal travel route for the Big River people (Plomley 2008:549).

There is evidence that the Big River people put ochre in their hair. In a wonderful example of culture contact, Robinson recorded that when his party passed through Campbell Town some of the Big River people pound a brick to a fine powder and mixed it with animal grease to apply a thick coat to their hair (Plomley 2008:535).

3.2 European Settlement of the Big River Nation

European exploration into the central highlands occurred early in the settlement phase of the colony. Robert Brown led a reconnaissance of the River Derwent in 1803. Brown followed the course of the river for about fifty miles upstream, sighting the Clyde and Ouse Rivers in the process. This was followed four years later by an excursion into the Western Tiers and central highlands by Laycock and his party in 1807, seeking an overland route between Port Dalrymple and Hobart in order to obtain supplies. Following Laycock's expedition there was a hiatus of almost ten years until John Beaumont and his exploration party were dispatched to examine the land around the Great Lake (Jetson 1989:xiii). Beaumont is reported to have penetrated west to the highlands north of Lake St Claire.

The first Europeans to venture into the highlands with any sense of permanency were kangaroo hunters, stockkeepers and bushrangers (Jetson 1989:12). One hunter called Toombs is reported to have advanced as far as the Great Lake by 1815 (Kostoglou 1998). The notorious bushranger Michael Howe made the highlands his home, living off the bush and wearing skins until his violent death at the hands of a past accomplice near Bothwell in 1818 (Jetson 1989:16). Robinson gives a sense of the violence of these people, who were more than ready to attack the Aboriginal inhabitants of the highlands. Robinson described numerous attacks by the settlers and gives a revealing description of a typical stockkeepers hut that he observed near Lake Echo:

A formidable construction ... made by piling large rolled logs horizontally upon each other, halved together at the ends, with portholes to fire out of. The roof is barked and covered with turf so as not to ignite. (Plomley 2008:541)

For the first two decades of European settlement in Van Diemen's Land the highlands provided something of a refuge for members of the Big River Nation as the plains below became settled. Robinson claimed in 1831 that in this country '[the Big River Nation] had remained undisturbed by their white enemies' (Plomley 2008:548). However, all this was about to change.

From the early 1820s European settlement of the central highlands began to have a devastating impact on the Big River Nation. Within one year from 1822 to 1823 the European population of the highlands multiplied tenfold; from a population of less than ten men and a few thousand sheep to over sixty settlers with their families and upwards of sixty thousand sheep (Ryan 2012:115). The Big River Nation responded to this rapid colonisation with the onset of guerrilla war.

Initial contact between the Big River Nation and European settlers had aspects of an exchange dialogue. Ryan (2012:115) records that in the autumn of 1822 Big River people visited the east coast, and on their return to their territory encountered the new wave of settlers. Ryan notes that Big River women were traded to the settlers in exchange for food (2012:115). This suggests either a very rapid adaptation to European dietary staples, or the rapid devastation of traditional hunting grounds and resources.

The 1820s through to the mid 1830s saw an increased number of surveying and exploration parties entering the central highlands. These included Scott (1821-23), Helder (1825), Sharland (1832) and Frankland (1835). The increasing shortage of food supplies in the colonies led to the dispatch of kangaroo hunters into the un-settled parts of the colonies. These hunting parties were soon roaming areas well beyond the borders of the colonised areas.

Pastoralists soon followed the hunting parties, with shepherds penetrating into the eastern fringes of the Lakes District by 1818. By the early 1820s larger flocks of sheep were grazing as far west as the Great Lake (Kostoglou 1998). Wild cattle were sighted in these areas in the early 1820s. Grazing operations in the central highlands during this

early period were generally small scale operations run by a single shepherd or small groups of men, with the herds rarely being contained by fences. By the latter part of the 18th century, many of the small scale pastoral holdings had been abandoned or bought out by large sheep stations that had begun to operate in the district (Kostoglou 1998).

From 1824 violence and guerrilla attacks came to characterise the highlands. In January 1824 a European stockman was killed at Abyssinia when he attempted to abduct a Big River woman (Ryan 2012:115). This led to a skirmish in which the stockman was speared and his hut burnt (Ryan 2012:115). Attacks continued from both the Big River people and the Europeans throughout the 1820s.

In 1827 Luggemairrernerpairner people robbed five huts along the Ouse and Shannon Rivers, creating panic among the European settlers (Ryan 2012:118). By the end of the year the Luggemairrernerpairner had moved west into more rugged country, although they continued to attack and raid settler's huts. Firearms were sometimes taken during these raids, and Ryan suggests that these were useful trade items (2012:118).

Ryan argues that firearms were quickly absorbed into the material culture of the Big River people and were exchange items rather than valued weapons (1996:118). However, Robinson claims that his companions saw the firearms as weapons, to use against the Europeans but also in fights with antagonistic neighbouring tribes, such as the North Tribe (Plomley 2008:547). In his 1830 expedition through the highlands Robinson expresses surprise at the sheer number of weapons caches that his companions reveal to him (Plomley 2008:547). This demonstrates the volatile situation in the highlands, and the rapidity with which violence could erupt.

By 1828 the two surviving Big River clans, the Luggemairrernerpairner and the Larmairrenener, had moved to the Lagoon of Islands and Regents Plains areas (Ryan 2012:118). This congregation of people was seen as a threat by the Europeans and prompted the settlers to appeal to Hobart for protection (Ryan 2012:118). Military parties were dispatched to disperse the Aboriginal people, but the bands were not located. Ryan suggests that the Big River people had travelled to the north coast for the winter (2012:118). However, by October the surviving members of the Big River Nation returned to the highlands, and guerrilla warfare intensified (Ryan 2012:118). The Larmairrenener people travelling with Robinson told him how during the cold winter of 1830, the people stayed in the highlands rather than follow seasonal migration patterns to Oyster Bay (Jetson 1989:32). This demonstrates the danger on the midlands to Aboriginal people by the early 1830s.

In September 1830 the 'Black Line' moved through the central highlands; a military operation aimed at forcibly removing Aboriginal people from pastoral districts across Tasmania. Ryan (2012:120) argues that the Big River people once again moved to the high country to the west in order to avoid the armed parties. The Black Line was largely ineffective in the highlands; Robinson relates how his companions showed him how

people avoided the line in the steep terrain and thick bush (Plomley 2008:547). He writes that 'the people here had avoided the strictest search' (Plomley 2008:547).

Robinson met the surviving Big River people on December 1831 just north of Lake Echo (Ryan 2012:120). At this point the group numbered only 26 people, and were led by Montpeillater of the Big River Tribe and Tongerlongton from the Oyster Bay Nation (Ryan 2012:121). The group agreed to accompany Robinson to Hobart in order to claim compensation for the loss of their land and the lives of many of their people (Ryan 2012:122). This compensation never eventuated and the people were eventually resettled on offshore islands.

The Big River Nation was dispossessed of their country by the killing of an estimated two hundred and forty people, while around sixty Europeans were also killed in frontier violence on the highlands (Ryan 2012:122). In addition, the trade and abduction of Big River women by male European stockmen and settlers contributed to the decimation of the Big River people.

4.0 Background Archaeology

4.1 Regional Studies

The study area is within the South East Region of Tasmania. There have been a number of Aboriginal archaeological studies undertaken within the South East Region over the past three decades. The majority of these have been in the form of survey assessments associated with proposed development activities, and have focused on discreet areas (these are summarised in section 4.2) However, there has also been some broader research based investigations undertaken in the region. Probably the most comprehensive of these and the one most pertinent to the present investigations are that of Officer (1980) and Brown (1986).

Officer (1980)

Iain Officer (1980) carried out an extensive survey of the Derwent Estuary region, as part of his thesis works. The areas covered by the survey investigations extended from Blinking Billy Point (west bank of River) and Trywork (east bank of River), upstream to New Norfolk. The survey assessment in this area involved walking a series of survey transects along the shoreline of the River, with transects in some areas extending up to 1km inland from the River.

In the course of his investigations, Officer recorded a total of 416 midden sites. Of these, 298 were located on the east bank of the River and 118 on the west bank (Officer 1980).

The shell midden sites identified by Officer were predominantly comprised of mussel (*Mytilus planulatus*, *Xenostrobus securus* or *Brachidontes rostratus*) and oyster (*Ostrea angasi*). A wide range of other shell fish species were represented in low numbers at a number of these sites (Officer 1980).

Stone artefacts were observed at 33 of the recorded midden sites (28 artefacts on the east bank and 5 artefacts on the west bank). A wide range of stone material types were represented in these artefact assemblages, including cherty hornfels, silicified breccia, siltstone, chalcedony, quartz, basalt and dolerite (Officer 1980).

Bone material was observed at only four midden site locations, indicating that for whatever reason, bone material in middens on the Derwent River is a rare occurrence (Officer 1980).

One of the areas intensively surveyed by Officer (1980) was Bedlam Walls, which lies on the east side of the Derwent River, between Geilston Bay and Risdon Cove and extends up to 1.2km inland from the shore of the River. Officer (1980) recorded a total of 74 sites in this area (sites TASI 1184-1257). The vast majority of sites are classified as middens, however, three stone quarries and one rock shelter was also identified. A large number of the midden sites (28%) are described as being extensive, covering in excess of 1000m², with the largest site being over 8000m² (Officer 1980). The midden sites range

from being located immediately on the shore line through to up to 530m inland from the shore. The dominant shell material represented in these midden sites was the black mussel (*Mytilus planulatus*) and oyster (*Ostrea angasi*).

Officer (1980) notes that a local resident (Dr Jacklyn) also recorded a large number of Aboriginal sites in the Bedlam Walls area, in the period between 1965-1973. The sites recorded by Officer (1980) included those site identified by Dr Jacklyn. Officer identified an additional 19 midden sites to those identified by Jacklyn. As part of his recording efforts, Dr Jacklyn carried out an extensive salvage of stone artefacts in the Bedlam Walls area. Jennings (1983) subsequently undertook an analysis of this collection. Jennings (1983) reports that of the 1016 pieces of stone material collected by Dr Jacklyn, 991 pieces are determined as being stone artefacts, giving an average artefact density for the area of 381 artefacts/km². The majority of artefacts were collected from the shoreline area between Shag Bay and Geilston Bay (641 artefacts). Of the 991 artefacts, 633 were un-worked and 358 are worked. Stone material types represented in the assemblage include hornfels, quartzites, chalcedony and sub-basaltic hornfels (Jennings 1983).

Brown (1986)

Steve Brown (1986) was engaged to carry out the South East Tasmanian Archaeology Project. This was one of nine regional overview studies, funded through National Estate grants, which were directed at examining the Aboriginal archaeological resources of Tasmania. The aims or duty statement for the South East Tasmanian Archaeology Project was to define the prehistory of the region and to define present and potential future impacts on the Aboriginal heritage resources in the region.

As part of his research design, Brown (1986:49-50) divided the landscape of the south-east region into landform unit types. Five major landform unit divisions were identified. These were;

- small offshore islands,
- Bruny Island,
- coastal and estuarine environments (consisting of coastal margins, coastal plains, river estuaries, lagoons and swamps),
- inland hills, plains and river valleys, and
- inland mountains (alpine plateau).

Brown (1986:49-50) then collated available archaeological data for these landscape units, including the range of site types present, the site components and the distribution and frequency of sites. The data was generated from previous archaeological investigations undertaken in the region, as well as the findings from the field work carried out by Brown.

The field survey investigations implemented by Brown (1986:50-52) involved a selective sampling procedure, where block surveys were undertaken at three designated areas,

these being Bruny Island, the Coal River, and Bothwell. In addition, more general survey assessments were carried out at a variety of locations.

Of the five landscape units identified by Brown (1986), the most pertinent to the present investigations are the coastal and estuarine environments and the Inland Hills, Plains and River Valleys zone. The following provides an overview of the findings, as presented by Brown (1986) for these two landform units.

Inland Hills, Plains and River Valleys

This landscape unit was the largest of the five unit divisions established by Brown (1986) for the South-east Tasmanian region. It is also the most pertinent landscape unit in relation to the present investigation, as the study area lies within a River valley system.

Brown (1986:93-97) reports that open artefact scatters are the most common site type identified in the Inland Hills, Plains and River Valley zone. The greatest number of these sites is reported as occurring on the valley and creek floors and the foot slopes adjoining these areas. It appears that site and artefact densities appear to be comparatively much lower on mid and upper hill slopes and on ridges and crests. The largest artefact scatters (those comprising over 50 artefacts) have a number of site location factors in common. They are all situated on well drained sandy soils. They are in slightly elevated positions above river and creek floodplains. They usually have a northerly aspect, and finally the sites are generally situated in close proximity to a fresh water source. For medium and small sized artefact scatters there appears to be no distinct pattern of distribution (Brown 1986:93-97).

The range of stone artefacts identified at sites in this zone includes the debris of stone artefact manufacturing and maintenance (fragments, flakes, flake fragments, flaked pieces and cores). Retouched stone artefacts include a large variety of scrapers. Unmodified cobbles have also been identified at a range of sites. The reduction of stone material appears to have occurred mainly at the source location. Backed artefacts appear to be absent from the site assemblages in this zone, and in South-east Tasmania in general, and pebble choppers appear to be rare (Brown 1986:94).

Numerous stone quarry/procurement sites have been identified in the Inland Hills and Plains zone. These sites range in size from areas where a few boulders of cobbles have been flaked through to extensive sites such as the Oyster Cover quarry site. The quarried stone material types include silcrete, quartzites, cherty hornfels, chalcedony and silicified breccia (Brown 1986:95).

Sandstone rock shelters and overhangs are common in the Inland hills and Plains zone. In the majority of instances artefacts are not found on the shelter floor surfaces. Brown (1985:94) postulates that this may be due to accelerated depositional rates in sandstone shelters. Paintings have been recorded at two sandstone rock shelters, with both occurring near Ellendale in the upper Derwent Valley (Brown 1985:97).

Interestingly, Brown (1986:96) reported that no ochre sources, ochre quarries, or stone arrangements had been identified in this zone.

Coastal and Estuarine Regions

The Coastal and Estuarine Regions consists of coastal margins, coastal plains, river estuaries, lagoons and swamps. It encompasses the Derwent River.

Brown (1986:79) notes that shell middens are by far the most common site type occurring within the coastal and estuarine environmental zone. A number of trends were observed in relation to the distribution of this site type within the coastal and estuarine environmental zone, and the composition of materials at these sites. These are summarised as follows.

- Middens are generally not present in areas with steep shore profiles.
- The greatest number of middens was identified on coast lines which contain a mixture of rocky headlands and short sandy beaches (mixed coast areas).
- On long sandy beaches the volume of midden material was found to decline with distance from a rocky coast.
- Middens are essentially comprised of two types; rocky coastal and bay estuarine, reflecting different landscape settings. However, middens with shell species common to both these types occur in intermediate zones such as estuary and lagoon mouths.
- The largest rocky coastal shell middens occur on rocky headlands and points, with associated rock platforms, where abalone, turbo, mussels and limpets occur.
- The bay estuarine type middens are generally composed predominantly of mussel and oyster shellfish species. The largest middens are found immediately adjacent to the shoreline, near to the shell fish resources. A few sizeable middens have been noted up to 500m inland, with smaller middens having been identified up to 1km inland.
- Shell middens in South-east Tasmania are comprised almost entirely of shell, and rarely contain large numbers of stone artefacts or faunal remains (Brown 1986:79-82).

Overview for the South-East Tasmanian Region

In summary, Brown (1986:99-102) has identified the following broad patterns of site type distribution in South-East Tasmania.

- Aboriginal archaeological sites occur in all parts of the landscape.
- The coastal margins (including off shore islands), coastal plains and river estuaries are very rich in archaeological resources and contain a high density of sites with large quantities of archaeological remains. The Derwent Estuary in particular was an area of rich archaeological resources.
- Inland sites are dominated by open artefact scatters and isolated artefacts. Artefact densities are highest along the river, rivulet and creek valley floors and adjacent to lower hill slopes, particularly where the hill slopes are gently inclined, with a north aspect, and have sandy well drained soils.

- Shell middens most frequently occur in close proximity to shellfish resources, particularly on cliff tops or headlands where there is easy access to these resources.
- Stone artefact quarries most frequently occur where there is a surface expression of geological contact zones, in particular between Jurassic dolerite and Triassic or Permian strata.

As a general statement, Brown (1986:102) summarises that site numbers and densities in South-east Tasmania are greatest within 300m of the present coastline and in the immediate vicinity of coastal lagoons.

In terms of environmental factors determining site location, Brown (1986:103) is of the opinion that topography is perhaps the most consistent and important factor. Sites in general, but particularly the larger ones (in terms of artefact numbers) are very seldom found on steep gradient slopes. In terms of duration of Aboriginal occupation, Brown (1986:99-100) believes that the South-eastern Tasmanian region has probably been occupied by Aboriginal people for the past 20 000 years. However, he acknowledges that there are no conclusive dates for sites beyond 6000 years old for the region. Pleistocene dates have however been obtained for sites in close proximity to the region (Beginners Luck Cave and a cave on the Weld River).

4.2 The CHMA (2018) Gateway Estate Assessment

CHMA (2018) were engaged by Treelight Pty Ltd to undertake an Aboriginal heritage assessment for the proposed Gateway Estate Residential Development, which encompassed approximately 50ha. As noted in section 1.1, the Gateway Estate area now forms the main component of the current Mills Residential development footprint.

As part of the CHMA (2018) assessment process, a search was undertaken of the Aboriginal Heritage Register (AHR) to determine the presence of any registered Aboriginal heritage sites are located within or in the general vicinity of the Gateway Estate study area. Based on information generated from the AHR, it was confirmed that there were three registered Aboriginal sites appear to be situated within or in the immediate vicinity of the study area boundaries (sites AH7174, AH8744 and AH8745). Sites AH7174 and AH8744 were both moderate density artefact scatters, with site AH8745 being an isolated artefact.

The field survey assessment undertaken by CHMA (2018) resulted in the identification of 10 Aboriginal heritage sites. Two of the recorded sites correlated with previously registered Aboriginal sites that had been recorded within the study area as part of previous investigations (sites AH7174 and AH8744). The remaining eight sites were all new recordings.

Five of the sites recorded by CHMA (2018) were classified as Artefact scatters (sites AH7174, AH8744, AH13574, AH13582 and AH13583). Two of these artefact scatters (AH13582 and AH13583) comprised moderate to high densities of stone artefacts (50-

100+ artefacts). Two sites (AH7174, and AH13574) comprised low-moderate densities of artefacts (10-20 artefacts). The remaining site (AH8744) was originally recorded as a moderate density artefact scatter comprising 30 stone artefacts. However, only a single artefact could be relocated during the CHMA (2018) assessment. All five artefact scatters were assessed by CHMA (2018) as having the potential to comprise additional sub-surface artefact deposits.

Another four of the sites recorded by CHMA (2018) were classified as Isolated artefacts. It was assessed that there was a low potential for addition undetected surface or sub-surface artefacts to be associated with these sites.

The remaining site (AH13584) was classified as an Aboriginal stone quarry/procurement site. This site was situated on the northern boundary of the study area, around the geological contact zone, where tertiary basalts interface with sandstones, siltstones and limestones. The targeted stone materials appear to be discrete patches of silcrete and metamorphosed siltstones. The site comprised several hundred stone artefacts, as well as numerous nodules and outcrops of silcrete material displaying evidence of Aboriginal procurement activity. The site was situated immediately to the south of a modern European quarry, and appears to have been partially destroyed by this contemporary European quarrying activity.

Table 1 provides the summary details for the 10 sites recorded by CHMA (2018), with Figure 7 showing the location of these sites in relation to the current study area for the Mills Development.

There was one registered Aboriginal site that was reported to be situated in the study area, that was not relocated by CHMA (2018). This was site AH8745, which was classified as an Isolated artefact. The site was originally recorded by AHS (2000), as part of the survey assessment of the Lachlan River Estate development. The summary details for this site is also provided in Table 1, with the location of the site (as per the grid reference provided on the AHR), shown in Figure 7.

Besides the sites described above, no other Aboriginal sites or areas of elevated archaeological sensitivity were identified by CHMA (2018). Despite some limitations in surface visibility, these findings were assessed as being a reasonably accurate representation of the extent and distribution of Aboriginal sites across the study area.

4.3 Results of the Aboriginal Heritage Register Search

As part of the current assessment for the Mills Residential development project, a search was undertaken of the Aboriginal Heritage Register (AHR) in order to determine the current extent of registered Aboriginal heritage sites that are located within or in the immediate surrounds of the study area.

The search results show that in addition to the 11 Aboriginal heritage sites previously confirmed by CHMA (2018) as being present within or in the immediate vicinity of the Mills study area (as summarised in section 4.2), there is one additional registered Aboriginal heritage site recorded in this area (site AH13802). The site is classified as an Isolated artefact, and was recorded by AHT staff in March 2020. The site was reported to be situated in cleared agricultural land, with subdivisions occurring to the north and west of the site. The site area and surrounds were reported to be highly disturbed, with all vegetation having been removed and a gravelly ground surface. The artefact was described as a retouched hornfel flake. AHT reports that despite good conditions of surface visibility, no other artefacts were identified in this area (AHR search results provided by Kate Moody from AHT on the 23/4/2020).

The summary details for site AH13802 are provided in Table 1, with the location of the site (as per the grid reference provided on the AHR), shown in Figure 7.

The AHR search results show that there are no registered Aboriginal heritage sites that are situated within the Mills Central Precinct Zone which was not covered by the CHMA (2018) assessment.

Table 1: Summary details for Aboriginal heritage sites previously recorded within and in the immediate surrounds of the Mills Development study area

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH7174	Artefact scatter	E506972 N5262993 E506992 N5262996 E507001 N5263025 E506958 N5263041 E506911 N5263063 E506928 N5262995	A low-moderate density scatter (comprising 19 stone artefacts) was identified across an area measuring approximately 60m x 60m. The artefacts were exposed across a series of large erosion scalds and along the vehicle tracks that run across the saddle area.
AH8744	Artefact scatter	E506795 N5262967	Site originally recorded as an artefact scatter. However only one artefact relocated by CHMA (2018). The artefact is situated on the lower north side slopes of the Ironstone Hills, with the slope gradient being in the range of between 3-7°. An ephemeral creek is situated 100m to the east of the site. The artefact was identified on a 4m wide graded vehicle track that runs in a north-south direction down the hill side slopes.
AH8745	Isolated artefact	E506647 N5262931	Site not relocated during the CHMA (2018) survey assessment.
AH13574	Artefact scatter	E506767 N5263078 E506794 N5263065 E506770 N5263108 E506810 N5263097	. A low-moderate density scatter (comprising 16 stone artefacts) identified across an area measuring approximately 40m x 30m. The artefacts were exposed across a series of large erosion scalds on the spine of the spur.
AH13578	Isolated artefact	E507263 N5261916	The artefact was identified on a 2m x 1m erosion scald.

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH13579	Isolated artefact	E507014 N5261664	The artefact was identified on a large 30m x 25m erosion scald that occurs along the creek margins.
AH13580	Isolated artefact	E506936 N5262908	The artefact was identified on a 4m wide graded vehicle track that runs along the spine of the spur.
AH13581	Isolated artefact	E507462 N5263040	The artefact was identified on a 4m wide graded vehicle track that runs in an east-west direction across the hill slopes.
AH13582	Artefact Scatter	E507139 N5263127 E507138 N5263171 E507165 N5263167 E507189 N5263153 E507189 N5263136 E507160 N5263122	A moderate to high density scatter (comprising 100+ stone artefacts) was identified across an area measuring approximately 50m x 30m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the spine of the spur.
AH13583	Artefact Scatter	E507146 N5263090 E507164 N5263096 E507192 N5263095 E507210 N5263084 E507195 N5263067 E507181 N5263071 E507163 N5263075	A moderate density scatter (comprising 50+ stone artefacts) was identified across an area measuring approximately 60m x 25m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the lower hill slopes.
AH13584	Stone Quarry	E507354 N5263114 E507356 N5263105 E507347 N5263093 E507300 N5263086 E507285 N5263091 E507277 N5263118 E507288 N5263126 E507302 N5263103 E507321 N5263104 Silcrete core E507315 N5263122	A high density scatter (comprising 500+ stone artefacts) was identified across an area measuring approximately 80m x 20m. The artefacts are predominantly concentrated within 20m of the edge of the cliff line. The artefact assemblage is mostly comprised of silcrete and metamorphosed indurated siltstone flakes, primary flakes anddebitage. A large silcrete nodule was also recorded at the base of the cliff line, within the modern day quarry area.
AH13802	Isolated Artefact	E506598 N5263108	Site was recorded by AHT staff in March 2020. The site was reported to be situated in cleared agricultural land, with subdivisions occurring to the north and west of the site. The site area and surrounds was reported to be highly disturbed, with all vegetation having been removed and a gravelly ground surface. The artefact was described as a retouched hornfel flake.

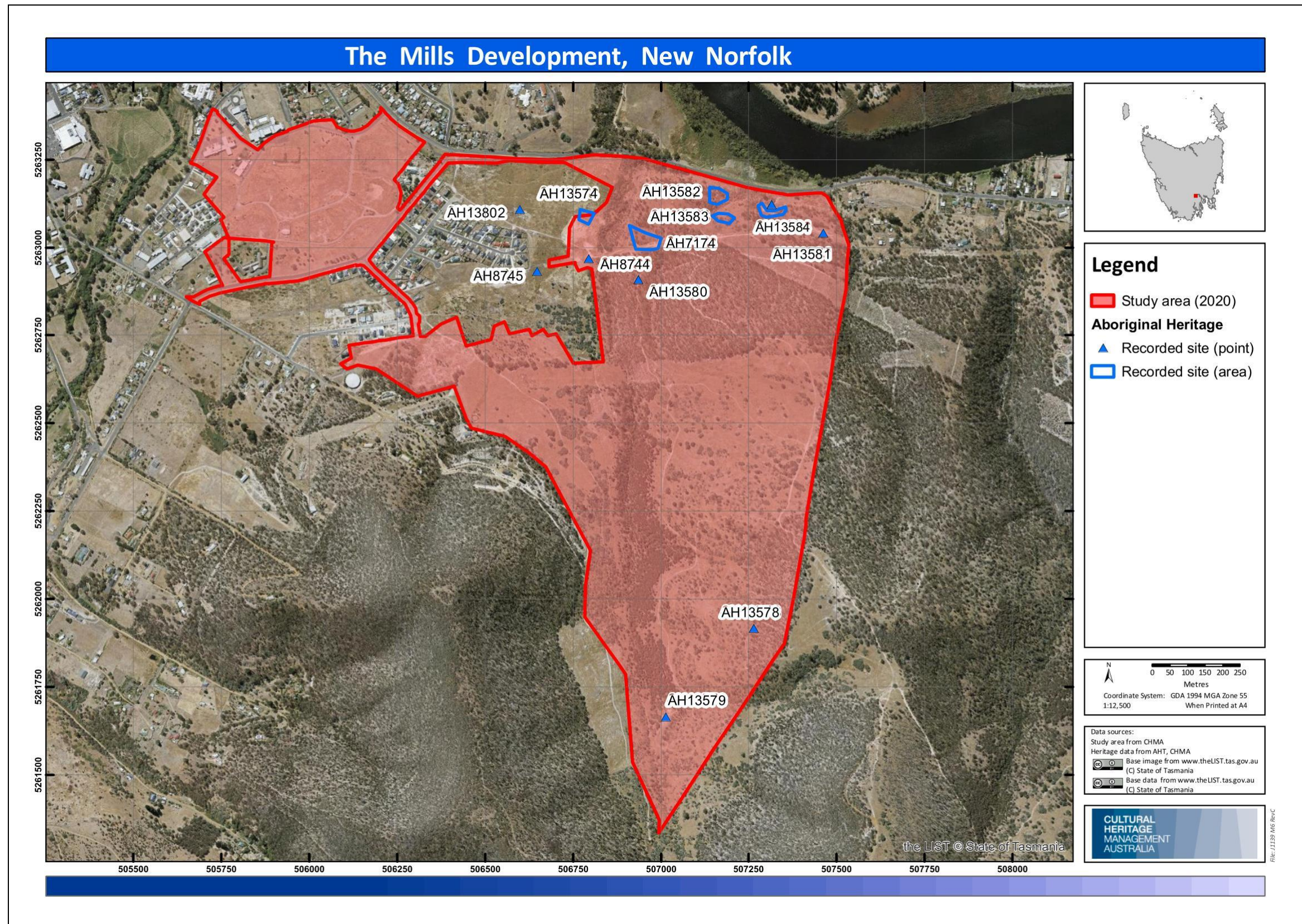


Figure 7: Aerial map showing the location of known Aboriginal heritage sites within and in the immediate vicinity of the current Mills Development study area (as determined by the CHMA 2018 assessment and AHR search results)

5.0 Predictive Modelling

5.1 Introduction to Predictive Modelling

Predictive modelling, in an archaeological context, is a fairly straightforward concept and has been utilised by archaeologists in Australia for a number of years as a tool for undertaking research into Aboriginal heritage sites. In summary, predictive modelling involves the collation of information generated from previous archaeological research in a given region, and using this information to establish patterns of Aboriginal site distributions within the landscape of that particular region. On the basis of perceived patterns of site distribution, archaeologists can then make predictive statements regarding the potential for various Aboriginal site types to occur within certain landscape settings, and can make preliminary assessments regarding the potential archaeological sensitivity of landscape types within a given region.

5.2 Predictive Models; Strengths and Weaknesses

It should be acknowledged that most, if not all predictive models have a number of potential inherent weaknesses, which may serve to limit their value. These include, but may not be limited to the following:

- 1) The accuracy of a predictive model is directly influenced by the quality and quantity of available site data and information for a given region. The more data available and the greater the quality of that data, the more likely it is that an accurate predictive model can be developed.
- 2) Predictive modelling works very well for certain types, most particularly isolated artefacts and artefact scatters, and to a lesser extent scarred trees. For other site types it is far more difficult to accurately establish distribution patterns and therefore make predictive modelling statements. Unfortunately, these site types are generally the rarer site types (in terms of frequency of occurrence) and are therefore generally the most significant sites.
- 3) Predictive modelling (unless it is very sophisticated and detailed) will generally not take into account micro-landscape features within a given area. These micro features may include (but is certainly not limited to) slight elevations in the landscape (such as small terraces) or small soaks or drainage depressions that may have held water. These micro features have been previously demonstrated to occasionally be focal points for Aboriginal activity.
- 4) Predictive modelling to a large extent is often predicated on the presence of watercourses. However, in some instances the alignment of these watercourses has changed considerably over time. As a consequence the present alignment of a given watercourse may be substantially different to its alignment in the past. The consequence of this for predictive modelling (if these ancient water courses are not taken into account) is that predicted patterns of site distributions may be greatly skewed.

5.3 A Predictive Model of Site Type Distribution for the Mills Central Precinct Zone

The findings of previous archaeological investigations undertaken in the general vicinity of the Mills Central Precinct Zone indicates that the most likely site types that will be encountered within this area (see Section 4 of this report for details) will be artefact scatters and isolated artefacts.

The archaeological investigations undertaken by CHMA (2018) also resulted in the identification of an Aboriginal stone procurement/quarry site, and it is therefore possible that this site type may also be encountered. The following provides a definition of these site types and a general predictive statement for their distribution within the Mills Central Precinct Zone.

Artefact Scatters and Isolated artefacts

Definition

Isolated artefacts are defined as single stone artefacts. Where isolated finds are closer than 50 linear metres to each other they should generally be recorded as an Artefact Scatter. Artefact scatters are usually identified as a scatter of stone artefacts lying on the ground surface. For the purposes of this project, artefact scatters are defined as at least 2 artefacts within 50 linear metres of each other. Artefacts spread beyond this can be best defined as isolated finds. It is recognised that this definition, while useful in most instances, should not be strictly prescriptive. On some large landscape features for example, sites may be defined more broadly. In other instances, only a single artefact may be visible, but there is a strong indication that others may be present in the nearby sediments. In such cases it is best to define the site as an Isolated Find/Potential Archaeological Deposit (PAD).

Artefact scatters can vary in size from two artefacts to several thousand, and may be representative of a range of activities, from sporadic foraging through to intensive camping activity. In rare instances, camp sites which were used over a long period of time may contain stratified deposits, where several layers of occupation are buried one on top of another.

Predictive Statement:

Previous archaeological research in the region has identified the following pattern of distribution for this site type.

- Stone artefact scatters are numerous within the larger river valley systems.
- The largest open artefact scatters tend to be situated on well drained sandy soils, in slightly elevated positions above river and creek floodplains, with a north aspect.
- Site and artefact densities on the lower lying flood plains of water courses tend to be comparatively lower. This may be reflective of the fact these low lying areas were less favoured as camp locations, due to such factors as rising damp and vulnerability to flooding; and
- Site and artefact densities also tend to be comparatively lower in areas away from water courses, and on moderate to steeply sloping terrain.

The Mills Central Precinct Zone is situated on the lower northern side slopes of the Ironstone Hills, and the terrain across the area is typically flat to gently sloping, with slope gradients in the range of between 1° to 5°. There are no water courses within this area. However, the northern boundaries are within 500m of the River Derwent.

Applying the broad pattern of site distribution noted above to the Mills Central Precinct Zone, it would be anticipated that the density of sites (artefact scatters), and the density of artefacts associated with these sites would generally be low. There may be a slight increase in site densities within the northern portion of the area, closer to the River Derwent margins.

As noted in section 2 of this report, the extensive levels of disturbances that have occurred across the Mills Central Precinct Zone means that any Aboriginal heritage sites that may once have been present in this area will most likely have been completely destroyed or at least very heavily disturbed.

Stone Procurement/Quarry Sites

Definition

A stone procurement site is a place where stone materials were obtained by Aboriginal people for the purpose of manufacturing stone artefacts. Quarry sites on the other hand have some evidence of the stone being actively extracted using knapping and/or digging. Stone procurement sites are often pebble beds in water courses (where there may be little or no evidence of human activity) or naturally occurring lag deposits exposed on the surface. Quarry sites are usually stone outcrops, with evidence of knapping and pits dug to expose the rock. Concentrations of hammer stones and a thick layer of knapping debris are often present.

Predictive Statement

Previous archaeological research in the South East Tasmanian region has shown that the most common source of raw materials for making stone artefacts are outcrops of stone materials such as silcrete, cherty hornfels, quartzites, quartz, and fined grained volcanics. These tend to occur along prominent landscape features, such as the spines of ridges or on hills.

As noted in section 2.3 of this report, the underlying geology across the Mills Central Precinct Zone is dominated by Quaternary Cenozoic cover sequences comprising glacial and peri-glacial sediments. A small patch of Jurassic dolerite intrudes into the north-west corner of the area. These stone material types are typically not suited for artefact manufacturing, and it is therefore very unlikely that Aboriginal stone quarry sites or evidence for stone procurement will be present in the study area.

6.0 Survey Coverage of the Study Area

Survey Coverage

Survey coverage refers to the estimated portion of a study area that has actually been visually inspected during a field survey.

The Mills Central Precinct Zone encompasses approximately 20ha. The field team walked a total of 3.75km of survey transects across this area, with the average width of each transects being 10m. This equates to a field survey coverage of 37 500m². The transects were aligned to cover all parts of the study area. Figure 9 shows the alignment of survey transects that were walked within the study area boundaries.

Surface Visibility

Surface Visibility refers to the extent to which the actual soils of the ground surface are available for inspection. There are a number of factors that can affect surface visibility, including vegetation cover, surface water, built structures and the presence introduced gravels or materials.

The constraints in visibility within the Mills Central Precinct Zone was due primarily to vegetation (grass) cover and the presence of introduced gravels and built surfaces. Throughout the area there are a network of sealed roads, cement slabs, and demolition rubble. Thick grass covers much of the site (see Plates 8-10). There are only a few discrete areas where the natural soils are available for inspection. This were mainly within the southern portion of the study area (see Plates 11 and 12). In order to increase the effective survey coverage within the study area, all areas where there were improved conditions of visibility were inspected.

Overall, the surface visibility across the Mills Central Precinct Zone was restricted to an estimated average of 5%. This is in the low range (see Figure 8 for visibility guidelines).

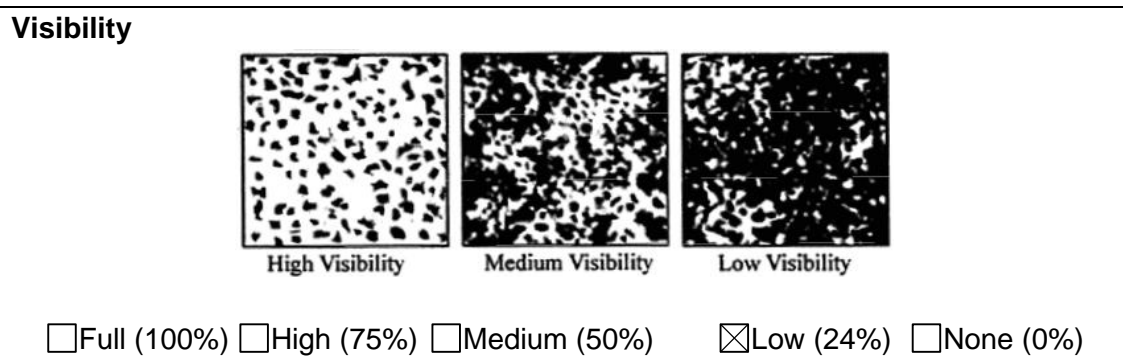


Figure 8: Guidelines for the estimation of surface visibility

Effective coverage

Variations in both survey coverage and surface visibility have a direct bearing on the ability of a field team to detect Aboriginal heritage sites, particularly site types such as isolated artefacts and artefact scatters, which are the site types most likely to be

encountered in the study area. The combination of survey coverage and surface visibility is referred to as effective survey coverage. Table 2 presents the estimated effective survey coverage achieved during the course of the survey assessment of the Mills Central Precinct Zone. The table shows that while the team covered an area of 37 500m², the effective coverage was reduced to 1 875m².

Table 2: Effective Survey Coverage achieved within the Mills Central Precinct Zone

Total Area Surveyed	Estimated Surface Visibility	Effective Survey Coverage
3 750m x 10m = 37 500m ²	5%	1 875m ²



Plate 8: View south-west at one of several sealed roads within the study area, obscuring the natural soils



Plate 9: View west across the central portion of the Mills Central Precinct Zone showing building rubble obscuring the natural soils



Plate 10: View west across the northern portion of the Mills Central Precinct Zone showing thick grass cover reducing surface visibility



Plate 11: View east along the southern portion of the Mills Central Precinct Zone, where there were some natural soils available for inspection



Plate 12: An erosion scald in the southern portion of the Mills Central Precinct Zone providing a locale of improved surface visibility

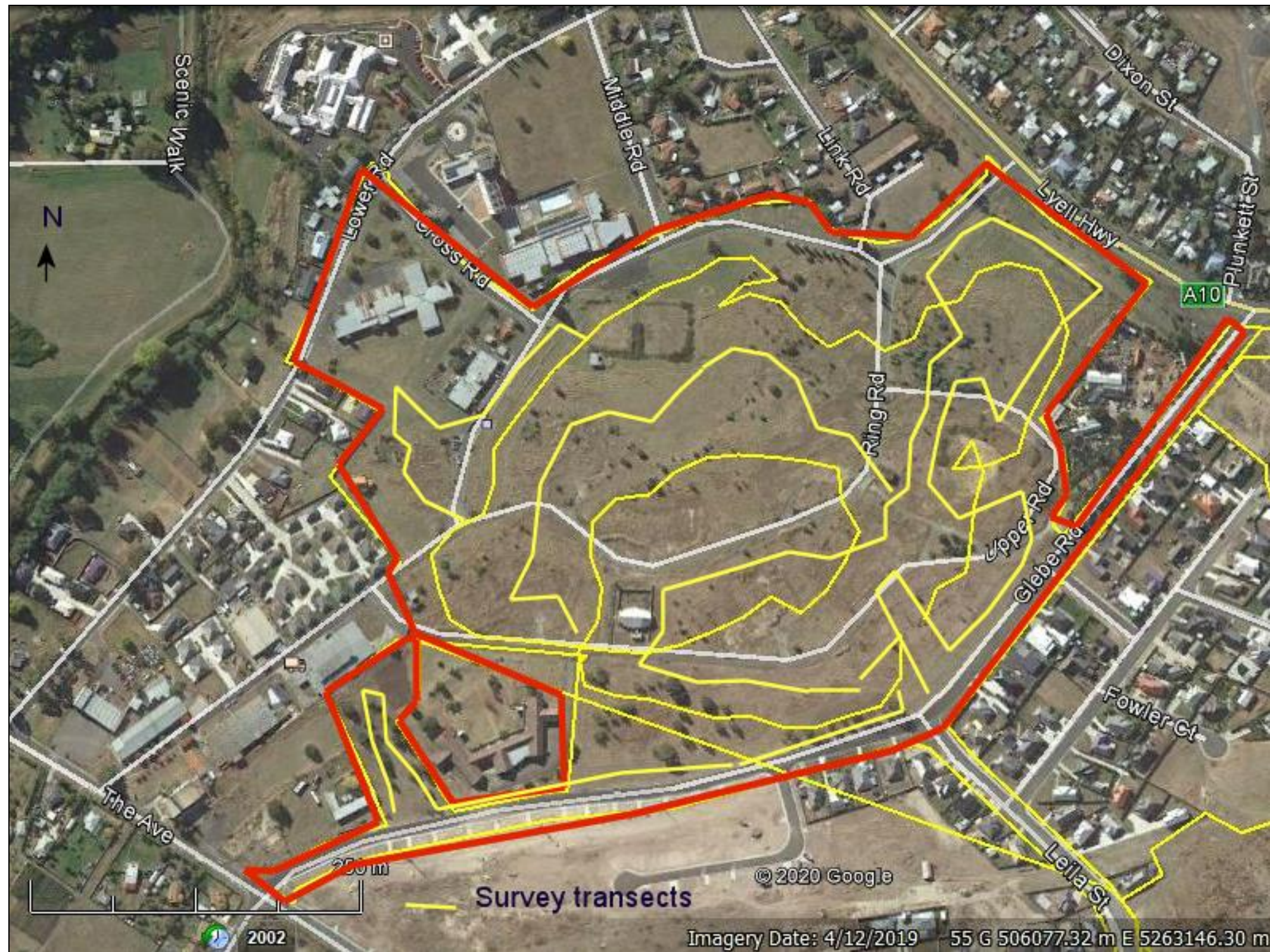


Figure 9: Survey transects walked by the field team within the Mills Central Precinct Zone

7.0 Survey Results and Discussion for the Mills Central Precinct Zone

No Aboriginal heritage sites, suspected features, or specific areas of elevated archaeological potential was identified during the field survey assessment of the Mills Central Precinct Zone. The AHR search results have confirmed that there are no registered Aboriginal sites present within this area. On this basis it is confirmed that there are no known Aboriginal sites present within the Mills Central Precinct Zone,

As noted in section 6 of this report, surface visibility across this survey area was severely restricted due to grass cover, built surfaces and rubble material, averaging just 5%. There is no doubt that these constraints in surface visibility hampered the ability of the field team to assess the presence or absence of Aboriginal sites that may be present within the Mills Central Precinct Zone. However, in this instance, the major point of consideration is the level of historic disturbances that has occurred across the Mills Central Precinct Zone. This area was part of a previous residential development. Virtually all the dwellings and buildings that were once present in this area have been demolished. The native vegetation across the entire area has been cleared, and much of the area has been artificially levelled. This development and subsequent demolition work means that any Aboriginal heritage sites that may once have been present in these heavily disturbed areas will most likely have been completely destroyed.

The only part of the study area which has been subject to lesser disturbances is a narrow strip of land within the southern portion of the Mills Central Precinct Zone, where there are still deposits of natural soils present. Surface visibility in this part of the study area was reasonable (averaging 40%), and the field team achieved effective survey coverage of 1 875m² in this area. The negative survey results in this part of the study area can be taken as a reasonably accurate indication that Aboriginal site and artefacts are either absent, or present in very low densities. This area has been cleared of native vegetation, landscaped, and replanted with eucalypts and native shrubs. Any undetected sites that may be present, will therefore have been moderately to heavily disturbed.

The field survey assessment was able to confirm that there are no stone materials present within the study area that would be suited for stone artefact manufacturing, and as such, there is little to no potential for Aboriginal stone quarry/procurement sites to be present. There are also no rock outcrops present within the Mills Central Precinct Zone, and there is therefore no possibility of Aboriginal rock shelters being present.

Based on the negative survey results, the observed levels of prior land disturbances, and the absence of previously registered sites, the Mills Central Precinct Zone has been assessed as being of very low archaeological sensitivity.

8.0 Overview of Aboriginal Sites Present Within the Mills Development Study Area

Previous archaeological investigations have resulted in the identification of 12 Aboriginal heritage sites that are situated either within, or in the immediate vicinity of the Mills Development study area. Six of these sites are classified as isolated artefacts, five sites are classified as artefact scatters, and there is one Aboriginal stone quarry site. Table 3 provides the summary details for these 12 sites, with Figure 10 showing the location of these sites in relation to the Mills Development study area. The detailed site descriptions for those sites recorded by CHMA (2018) as part of the original Gateway Estate assessment are provided in Appendix 1.

Two of these sites (AH8745 and AH13802) are situated outside (to the west) of the Mills Development study area, within an adjoining residential subdivision development. Both sites are classified as Isolated artefacts. Site AH8745 was originally recorded by AHS (2000), as part of the survey assessment of the Lachlan River Estate development but could not be relocated by CHMA (2018) during the survey assessment of the Gateway Estate area. Site AH13802 was recently recorded by AHT staff. A third site (AH13574) is situated partially within this adjoining residential subdivision development, and partially within the Mills development. This site is classified as an artefact scatter, which was recorded by CHMA (2018). It is understood that this adjoining land is being developed by a separate proponent, however, in the future this land will be purchased by Noble Ventures, and will be included within the Mills development area.

The remaining nine Aboriginal site are all situated within the Mills Development study area, and were recorded by CHMA (2018) the survey assessment of the Gateway Estate area. There are no recorded Aboriginal sites that are situated within the Mills Central Precinct Zone.

Table 3: Summary details for Aboriginal heritage sites previously recorded within and in the immediate surrounds of the Mills Development study area

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH7174	Artefact scatter	E506972 N5262993 E506992 N5262996 E507001 N5263025 E506958 N5263041 E506911 N5263063 E506928 N5262995	The site is positioned on the broad, gently sloping saddle that sits between two low relief hills. A low-moderate density scatter (comprising 19 stone artefacts) was identified across an area measuring approximately 60m x 60m. The artefacts were exposed across a series of large erosion scalds and along the vehicle tracks that run across the saddle area.
AH8744	Artefact scatter	E506795 N5262967	Site originally recorded as an artefact scatter. However only one artefact relocated during the CHMA (2018) survey. The artefact is situated on the lower north side slopes of the Ironstone Hills. An ephemeral creek is situated 100m to the east of the site. The artefact was identified on a 4m wide graded vehicle track that runs in a north-south direction down the hill side slopes.

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH8745	Isolated artefact	E506647 N5262931	Site not relocated during the CHMA (2018) survey assessment. Site is situated within the boundaries of an adjacent property subdivision.
AH13574	Artefact scatter	E506767 N5263078 E506794 N5263065 E506770 N5263108 E506810 N5263097	The site is positioned on the broad, gently sloping spine of a prominent south-west to the north-east trending spur line. An unnamed ephemeral creek line runs along the eastern edge of the spur. A low-moderate density scatter (comprising 16 stone artefacts) was identified across an area measuring approximately 40m x 30m. The artefacts were exposed across a series of large erosion scalds on the spine of the spur. Site is partially within the boundaries of an adjacent property subdivision, and partially within the Mills study area.
AH13578	Isolated artefact	E507263 N5261916	The artefact is situated on the mid west side slopes of a low relief hill.. These slopes run down to an ephemeral creek, which is situated 300m to the west of the site. The artefact was identified on a 2m x 1m erosion scald.
AH13579	Isolated artefact	E507014 N5261664	The artefact is situated on the gentle basal west side slopes of a low relief hill. These slopes run down to an ephemeral creek, which is situated 30m to the west of the site. The artefact was identified on a large 30m x 25m erosion scald that occurs along the creek margins.
AH13580	Isolated artefact	E506936 N5262908	The site is situated on the narrow spine of a small, north-south orientated spur line. On both the west and east side of the spur are unnamed ephemeral creek lines. The artefact was identified on a 4m wide graded vehicle track that runs along the spine of the spur.
AH13581	Isolated artefact	E507462 N5263040	The site is situated on the lower northern side slopes of a low relief hill. An unnamed ephemeral creek is situated around 80m to the east of the site. The artefact was identified on a 4m wide graded vehicle track that runs in an east-west direction across the hill slopes.
AH13582	Artefact Scatter	E507139 N5263127 E507138 N5263171 E507165 N5263167 E507189 N5263153 E507189 N5263136 E507160 N5263122	The site is positioned on the gently sloping spine of a small east-west trending spur line. An unnamed ephemeral creek line runs along the south-east edge of the spur. A moderate to high density scatter (comprising 100+ stone artefacts) was identified across an area measuring approximately 50m x 30m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the spine of the spur.

Site Name	Site Type	Grid References (GDA 94)	Site Description
AH13583	Artefact Scatter	E507146 N5263090 E507164 N5263096 E507192 N5263095 E507210 N5263084 E507195 N5263067 E507181 N5263071 E507163 N5263075	The site is positioned on the gentle lower northern side slopes of a low relief hill. An unnamed ephemeral creek line runs along the north-west edge of the basal hill slopes, around 30m to the north-west of the site. A moderate density scatter (comprising 50+ stone artefacts) was identified across an area measuring approximately 60m x 25m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the lower hill slopes.
AH13584	Stone Quarry	E507354 N5263114 E507356 N5263105 E507347 N5263093 E507300 N5263086 E507285 N5263091 E507277 N5263118 E507288 N5263126 E507302 N5263103 E507321 N5263104 Silcrete core E507315 N5263122	The site is positioned on the gentle basal northern side slopes of a low relief hill. At the base of this cliff is a modern-day quarry area, which is located immediately to the south of the Lyell Highway. A high density scatter (comprising 500+ stone artefacts) was identified across an area measuring approximately 80m x 20m. The artefacts are predominantly concentrated within 20m of the edge of the cliff line. The artefact assemblage is mostly comprised of silcrete and metamorphosed indurated siltstone flakes, primary flakes and debitage. A large silcrete nodule was also recorded at the base of the cliff line, within the modern-day quarry area.
AH13802	Isolated Artefact	E506598 N5263108	Site was recorded by AHT staff in March 2020. The site was reported to be situated in cleared agricultural land, with subdivisions occurring to the north and west of the site. The site area and surrounds was reported to be highly disturbed, with all vegetation having been removed and a gravelly ground surface. The artefact was described as a retouched hornfel flake. Site is situated within the boundaries of an adjacent property subdivision.

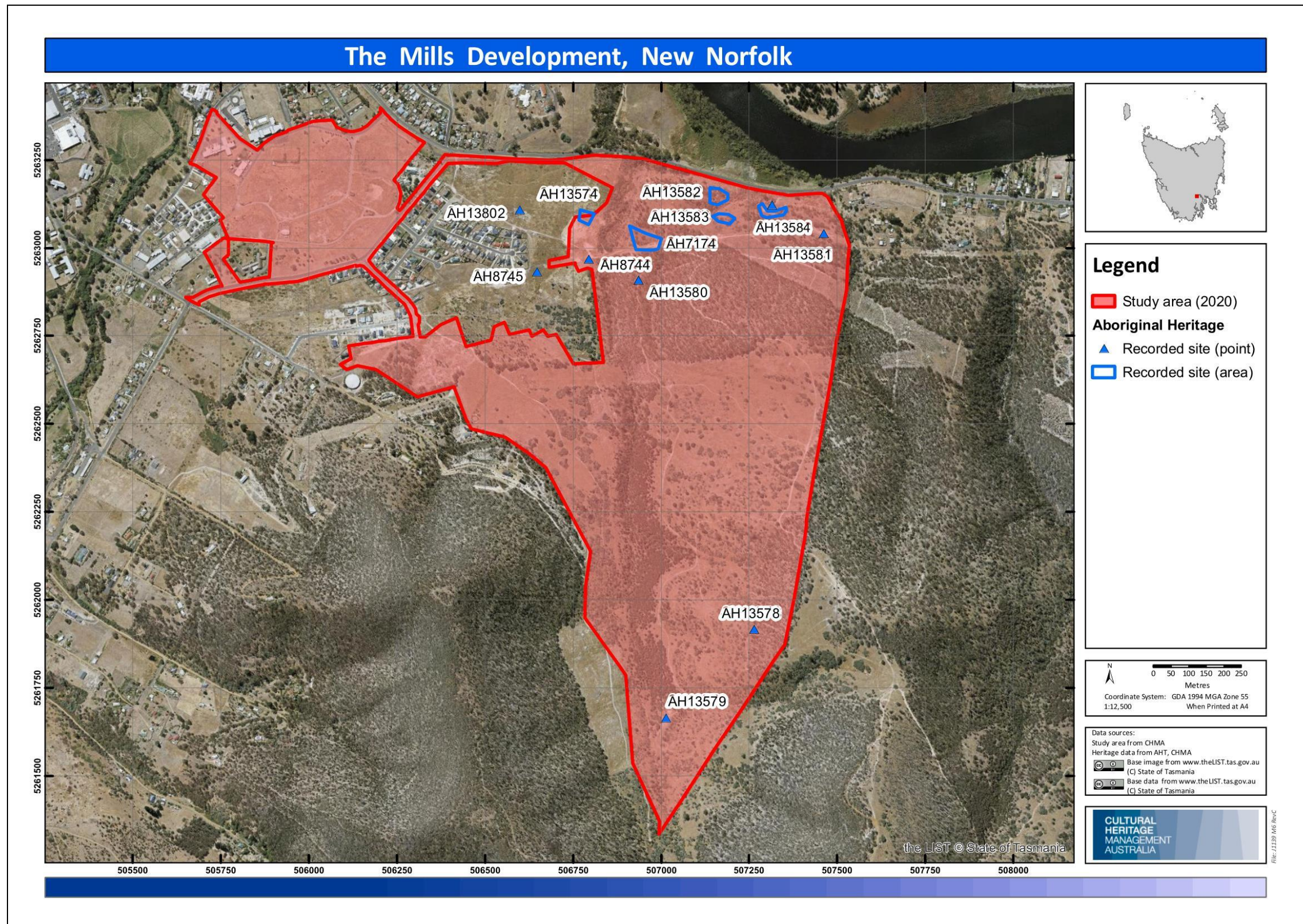


Figure 10: Aerial map showing the location of known Aboriginal heritage sites within and in the immediate vicinity of the current Mills Development study area

9.0 Site Significance Assessments

The following provides an outline of the processes used to assess the significance of any cultural heritage sites that were identified during the course of the assessment.

9.1 Assessment Guidelines

There are several different ways of defining types of significance, and many practitioners have developed their own system of significance assessment. However, as Sullivan and Pearson (1995) point out, there seems to be a general advantage in using a set of criteria which is already widely accepted. In Australia cultural significance is usually assessed against the Burra Charter guidelines and the Australian Heritage Commission guidelines (ICOMOS 1988, 1999).

9.2 The Burra Charter

Under the guidelines of the Burra Charter 'cultural significance' refers to the 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations' of a 'place' (ICOMOS 1999:2). The guidelines to the Burra Charter comment:

"Although there are a variety of adjectives used in definitions of cultural significance in Australia, the adjectives 'aesthetic', 'historic', 'scientific' and 'social' ... can encompass all other values".

The following provides the descriptions given for each of these terms.

Aesthetic Value

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and materials of the fabric; the smells and sounds associated with the place and its use (Marquis-Kyle & Walker 1992).

Historic Value

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Marquis-Kyle & Walker 1992).

Scientific Value

The scientific or research value of a place will depend upon the importance of the data involved or its rarity, quality or representativeness and on the degree to which the place may contribute further substantial information.

A site or a resource is said to be scientifically significant when its further study may be expected to help current research questions. That is, scientific significance is defined as research potential (Marquis-Kyle & Walker 1992).

Social Value

The social value of a place is perhaps the most difficult value for heritage professionals to substantiate (Johnston 1994). However, social value is broadly defined as ‘the qualities for which a place has become a focus of spiritual, political, natural or other cultural sentimental to a majority or minority group’ (ICOMOS 1988:30). In What is Social Value, Johnston (1994) has provided a clear definition of social value:

“Social value is about collective attachment to places that embody meaning important to a community, these places are usually community owned or publicly accessible or in some other way ‘appropriated’ into people’s daily lives. Such meanings are in addition to other values, such as the evidence of valued aspects of history or beauty, and these meanings may not be apparent in the fabric of the place, and may not be apparent to the disinterested observer”. (Johnston 1994:10)

Although encompassed within the criterion of social value, the spiritual value of a place is a new addition to the Burra Charter (ICOMOS 1999:1). Spiritual value is predominantly used to assess places of cultural significance to Indigenous Australians.

The degree to which a place is significant can vary. As Johnston (1994:3) has stated when trying to understand significance a ‘variety of concepts [are] used from a geographical comparison (‘national’, ‘state’, ‘local’) to terms such as ‘early’, ‘rare’, or ‘seminal’. Indeed, the Burra Charter clearly states that when assessing historic significance, one should note that for:

“any given place the significance will be greater where evidence of the association or event survives in situ, or where the setting are substantially intact, than where it has been changed or evidence does not survive”. (ICOMOS 1988:29)

9.3 Significance Criteria Relevant to Indigenous Sites

Indigenous heritage sites and places may have educational, tourism and other values to groups in society. However, their two principal values are likely to be in terms of their cultural / social significance to Aboriginal people and their scientific / archaeological significance. These are the two criteria that are commonly used in establishing the significance of Aboriginal sites. The following provides an explanation of these criteria.

1) Aboriginal Cultural / Social Significance

This relates to the value placed upon a site or suite of sites by the local or regional Aboriginal community. The identification and assessment of those sites that are significant to Aboriginal people is a matter for Aboriginal people. This assessment can only be made by the appropriate Aboriginal representatives of the relevant communities.

2) Scientific (Archaeological) Significance

Archaeological significance values (or scientific values) generally are assessed on the potential of a site or place to generate knowledge through archaeological research or knowledge. Bowdler (1984) states that the scientific significance should

be assessed according to timely and specific research questions (research potential) and site representativeness.

Research potential entails the potential of a site or suite of sites for scientific research and excavation. This is measured in terms of a site's ability to provide information on aspects of Aboriginal culture. In this respect, the contents of a site and their state of preservation are important considerations.

Representativeness takes account of how common a site type is (Bowdler 1984). That is, it allows sites to be evaluated with reference to the known archaeological record within the given region. The primary goal of cultural resource management is to afford the greatest protection to a representative sample of sites throughout a region. The corollary of a representative site is the notion of a rare or unique site. These sites may help to understand the patterning of more common sites in the surrounding area, and are therefore often considered of archaeological significance. The concept of a rarity cannot be easily separated from that of representativeness. If a site is determined to be rare, then it will by definition be included as part of the representative sample of that site type.

The concepts of both research potential and representativeness are ever changing variables. As research interests shift and archaeological methods and techniques change, then the criteria for assessing site significance are also re-evaluated. As a consequence, the sample of site types which are used to assess site significance must be large enough to account for the change in these variables.

9.4 Summary Significance Ratings for the Recorded Aboriginal Sites

A total of 12 Aboriginal sites are confirmed as being present within the Mills Development study area and the adjoining property subdivision. These 12 sites have been assessed and allocated a rating of significance, based on the criteria presented in section 9.2. The significance assessment is based primarily on the previous significance ratings provided by CHMA (2018), as part of the previous assessment of the Gateway Estate. For sites AH8745 and AH13802, which were not recorded by CHMA (2018), the significance ratings have been based on available site information.

A five tiered rating system has been adopted for the significance assessment; low, low-medium, medium, medium-high and high. Table 4 provides the summary details for the significance ratings allocated to the 12 Aboriginal sites. A more detailed explanation for the assessment ratings are presented in sections 9.5 to 9.8. Section 10 of this report deals with the Cultural/Social significance of these sites and the study area as a whole.

Table 4: Summary significance ratings for the 12 Aboriginal sites recorded within and in the immediate vicinity of the Mills Development study area

Site Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH7174	Artefact scatter	Low-Medium	Medium	N/A	Medium-High
AH8744	Artefact scatter	Low-Medium	Medium	N/A	Medium-High
AH13574	Artefact scatter	Low-Medium	Medium	N/A	Medium-High
AH13578	Isolated artefact	Low	Medium	N/A	Medium
AH13579	Isolated artefact	Low	Medium	N/A	Medium
AH13580	Isolated artefact	Low	Medium	N/A	Medium
AH13581	Isolated artefact	Low	Medium	N/A	Medium
AH13582	Artefact Scatter	Medium	Medium	N/A	High
AH13583	Artefact Scatter	Medium	Medium	N/A	High
AH13584	Stone Quarry	Medium-High	Medium	N/A	High
AH8745	Isolated artefact	Low	Medium	N/A	Medium
AH13802	Isolated artefact	Low	Medium	N/A	Medium

9.5 Scientific Significance for the Recorded Aboriginal Sites

Site AH13584

Site AH13584 is classified as an Aboriginal stone quarry. Aboriginal stone quarry/procurement sites are a comparatively uncommon site type in Tasmania, and because of this comparative rarity the scientific significance of this site type is automatically elevated.

The available evidence indicates that this was an intensively used Aboriginal quarry site, which displays evidence of both the quarrying of the outcropping bedrock as well the procurement of the nodules that occur in the soil matrix. The main knapping and artefact manufacturing activity appears to be undertaken on-site in the immediate area the stone material is located. The presence of stone artefacts manufactured from this stone material at other recorded sites in the study area, indicates that this material was also being transported back to nearby camp sites. It is apparent that the Aboriginal quarry has been heavily impacted by the modern day quarrying activity, and that the northern portion of the site has been destroyed. It appears that the Aboriginal quarry was probably significantly larger than the current recorded extent. These impacts do limit the research potential of this site to some extent. Nonetheless, the remaining portion of the quarry has the potential to provide a much better understanding as to the quarrying and procurement techniques being utilised at this site, and potentially allows for a broader comparative analysis of quarrying/procurement techniques at various locations within South East Tasmania more broadly.

Based on the comparative rarity of this site type, and the research potential, the scientific significance of site AH13584 is assessed as being medium-high.

The Remaining Sites in the Study Area

The other eleven recorded sites in the study area are all classified as artefact scatters or isolated artefacts.

Artefact scatters and Isolated artefacts are very common site types in the Southern Tasmanian region (as evidenced by the AHR search results for the project). The scientific values attributed to these sites therefore primarily relate to the information that can be generated from the sites regarding Aboriginal settlement patterns in the region (research potential), as opposed to site rarity. The exception is where rare artefact types are encountered.

When assessing the research potential of a site, the contents of a site and their state of preservation are important considerations. As a general guideline, the larger the site (in terms of spatial extent), the higher the concentration of artefacts, and the more intact the site is, the higher the research potential and associated significance that is attributed to the site. The sites rated the highest significance are those that display all these qualities, and also has evidence of stratified deposit, which could in future inform researchers as to changes in occupation patterns at the site over time.

Sites AH13582 and AH13583 comprise moderate to high densities of stone artefacts (50-100+ artefacts). The sites have been subject to some impacts through prior vegetation clearing activity. However, they appear to be reasonably intact, and are assessed as having the potential to comprise additional sub-surface artefact deposits. On this basis, these two sites are assessed as being of Medium scientific significance.

Sites AH7174, and AH13574 comprise low-moderate densities of artefacts (10-20 artefacts). Both sites have been moderately to heavily impacted by vegetation clearing activity, and the installation of infrastructure such as water pipelines, Telstra OFC lines and graded tracks. These disturbances reduce the research potential of these two sites. However, there is the potential for lesser disturbed artefact deposits to be associated with both sites. The scientific significance of the two sites is assessed as Low-medium.

Site AH8744 was originally recorded as a moderate density artefact scatter comprising 30 stone artefacts. However, only a single artefact could be relocated during the current survey. The current assessment indicates that the site has been heavily impacted by past land-use activity. This reduces the research potential of the site. The scientific significance of the site is assessed as Low-medium.

The remaining six sites (AH13578, AH13579, AH13580, AH13581, AH8745 and AH13802) are all classified as Isolated stone artefacts. The tool types and stone material types represented at these six sites are commonly represented at other similar site types in the region. In addition, the sites have been impacted to varying degrees by past land disturbance activities and are assessed as having limited potential to comprise additional undetected artefact deposits. On this basis, these six sites are assessed as being of low scientific significance.

9.6 Aesthetic Significance for the Recorded Aboriginal Sites

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and materials of the fabric; the smells and sounds associated with the place and its use (Marquis-Kyle & Walker 1992).

The 12 Aboriginal sites recorded in the study area and immediate surrounds are all situated within a somewhat modified landscape, being situated on a rural property where the native vegetation has largely been cleared. The modification of the landscape has to some extent diminished the aesthetic significance of the sites. However, the sites do fringe the picturesque margins of the River Derwent Valley which elevates the aesthetic values of the sites to Medium.

9.7 Historic Significance for the Recorded Aboriginal Sites

A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Marquis-Kyle & Walker 1992).

Historic significance is not an attribute often considered when assessing the significance of Aboriginal sites, unless there is direct evidence for some form of European/Aboriginal contact activity. No such evidence currently exists for the 12 recorded sites, and as such the concept of historic significance is not applicable to these sites.

9.8 Significance Under the Aboriginal Heritage Act 1975

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. Under Part 1, Section 2(8) of the *Aboriginal Heritage Act 1975*, Aboriginal tradition and significance is defined as follows.

Aboriginal tradition means –

- (a) the body of traditions, knowledge, observances, customs and beliefs of Aboriginal people generally or of a particular community or group of Aboriginal people; and
- (b) any such tradition, knowledge, observance, custom or belief relating to particular persons, areas, objects or relationships;

significance, of a relic, means significance in accordance with –

- (a) the archaeological or scientific history of Aboriginal people; or
- (b) the anthropological history of Aboriginal people; or
- (c) the contemporary history of Aboriginal people; or
- (d) Aboriginal tradition.

In accordance with the *Aboriginal Heritage Standards and Procedures 2018*, Aboriginal heritage assessments in Tasmania have addressed the issue of

significance as per the Burra Charter 2013. This approach has been adopted for this assessment (see sections 9.1 to 9.7 above). However, AHT have now advised that in order to ensure compliance with the *Aboriginal Heritage Act 1975* (the Act), assessments are now also to also consider significance and Aboriginal tradition as defined in the Act.

The Act came into effect in 1975, which is several decades before the Burra Charter Guidelines and protocols for determining significance were developed. To a large extent, the definitions of Aboriginal tradition and significance, as defined under Section 2(8) of the Act are covered by the Burra Charter, and have been addressed in this report.

The archaeological or scientific history of Aboriginal people (a) is covered under the concept of Scientific significance. This component of significance, as it relates to sites dealt with under this current assessment, have been addressed in detail in sections 9.2, 9.3 and 9.5 of this report.

Aboriginal cultural, social and spiritual significance under the Burra Charter relates to the value placed upon a site or suite of sites by the local or regional Aboriginal community (see sections 9.2 and 9.3 of this report). The definition of Aboriginal tradition, as provided in the Act, is broadly covered under this section of the Burra Charter. As is the anthropological history of Aboriginal people (b), the contemporary history of Aboriginal people (c) and Aboriginal tradition (d).

The notion of Aboriginal cultural, social and spiritual significance, and the assessment of these values is a matter for Aboriginal people, and can only be made by the appropriate Aboriginal representatives of the relevant communities. Section 10 of this report presents a statement of cultural/social significance provided by Rocky Sainty for the sites recorded within the study area and immediate surrounds, and for the study area as a whole. Rocky Sainty is an experienced Aboriginal Heritage Officer, and a respected member of the Tasmanian Aboriginal community. In addition, the report has been sent out to a range of Aboriginal communities for review and comment. The results of the consultation program are presented in Appendix 3.

As described in section 3 of this report, the available ethnographic information indicates that the study area is within land traditionally occupied by the The Mills study area would have been part of the land occupied by the Leenowwenne people of the Big River Nation.

10.0 Consultation with Aboriginal Communities and Statement of Aboriginal Significance

The designated Aboriginal Heritage Officer (AHO) for this project is Rocky Sainty. One of the primary roles of the Aboriginal Heritage Officer is to consult with Aboriginal community groups. The main purpose of this consultation process is:

- to advise Aboriginal community groups of the details of the project,
- to convey the findings of the Aboriginal heritage assessment,
- to document the Aboriginal social values attributed to Aboriginal heritage resources in the study area,
- to discuss potential management strategies for Aboriginal heritage sites, and
- to document the views and concerns expressed by the Aboriginal community representatives.

Aboriginal Heritage Tasmania (AHT) has advised that there have been some changes to the accepted approach to Aboriginal community consultation, based on recommendations made by the AHC on 28 April 2017. These changes relate to cases where the AHC consider it may be sufficient for a Consulting Archaeologist (CA) or Aboriginal Heritage Officer (AHO) to consult only with the Aboriginal Heritage Council.

The Council recommended that consultation with an Aboriginal community organisation is not required for a proposed project when:

There are less than 10 isolated artefacts that are not associated with any other nearby heritage; or

The impact of the project on Aboriginal heritage:

- is not significant; or
- will not destroy the heritage; or
- affects only part of the outer approximately 20% of a buffer around a registered site

The CA and AHO will need to demonstrate in Aboriginal heritage reports including map outputs:

- that the proposed impact on the Aboriginal heritage within the project area is not significant and why;
- that the project activity will not destroy the heritage;
- that the proposed impact to the site buffer is not adjacent to a significant component of the registered site polygon.

Previously, the report prepared by CHMA (2018) for the Gateway Estate was sent out for Aboriginal community consultation. The outcomes of the consultation process was included in the CHMA (2018) report.

The findings of the current assessment have confirmed the presence of 12 registered Aboriginal sites that are situated either within or in the immediate vicinity of the Mills

development study area. Although the findings have changed little from the original CHMA (2018) assessment, the decision has been made to send out this current report for consultation.

Rocky Sainty has undertaken the Aboriginal community consultation component for this project. As part of this process, Rocky Sainty has provided a range of Aboriginal groups with a copy of this report for review and comment. Rocky Sainty has prepared a separate document which presents the outcomes of the Aboriginal community consultation program. This is presented in Appendix 3.

Rocky Sainty has provided a statement of the Aboriginal cultural values attributed to the recorded Aboriginal sites, as well as a statement of significance for the cultural values encompassed within the study area as a whole. This statement is an amended version of the statement provided in the CHMA (2018) report for the Gateway Estate.

Statement of Cultural/Social Significance by Rocky Sainty

Aboriginal heritage provides a direct link to the past, however, is not limited to the physical evidence of the past. It includes both tangible and intangible aspects of culture. Physical and spiritual connection to land and all things within the landscape has been, and continues to be, an important feature of cultural expression for Aboriginal people since creation.

Physical evidence of past occupation of a specific place may include artefacts, living places (middens), rock shelters, markings in rock or on the walls of caves and/or rock shelters, burials and ceremonial places. Non-physical aspects of culture may include the knowledge (i.e. stories, song, dance, weather patterns, animal, plant and marine resources for food, medicines and technology) connected to the people and the place.

While so much of the cultural landscape that was **lutruwita** (Tasmania) before invasion and subsequent colonization either no longer exists, or has been heavily impacted on, these values continue to be important to the Tasmanian Aboriginal community, and are relevant to the region of the project proposal.

A total of 12 Aboriginal sites have been confirmed as being situated either within the bounds of the Mills development, or within adjoining land that will eventually be incorporated into the development. Ten of these Aboriginal sites were identified by myself and Stuart Huys during the field survey of the Gateway Estate study area (see CHMA 2018). The other two recorded sites are both isolated artefacts that were recorded as part of other assessments (AH8745 and AH13802).

The recorded sites have all been partially disturbed by past land uses. However, the sites are still considered to be important to our people. They provide tangible evidence that the study area was a focal point of activity of our people, where they camped, and manufactured stone tools. With increasing development along the Derwent Foreshore and surrounds, sites like these are a rapidly diminishing resource. All efforts should be made to conserve the sites, or at least minimise the

potential impacts on the sites. To this end, I support the recommendations in this report that are aimed at protecting the identified sites. If protection and conservation are not possible, then I would support undertaking further investigations at these sites to ensure that they are properly documented and understood before any decision is made to impact them.

As part of this current assessment for the Mills development, we carried out a survey assessment of a parcel of land known as the Mills Central Precinct Zone. We did not identify any Aboriginal sites in this area, and our observations are that the area has been very heavily disturbed and there is little to no potential for undetected Aboriginal sites to be present. Development in this area is highly unlikely to impact on Aboriginal heritage values.

In a broader setting, the study area is located on the edge of the Derwent River Valley which was a great source of food resources for my people, particularly in terms of wallaby and kangaroo, shellfish and birds. A search of the AHR shows that there are large number of sites located along the Derwent River in the around New Norfolk through to Bridgewater. This shows that this general area was an area where our ancestors gathered to camp and collect shellfish and other resources from the River.

11.0 Statutory Controls and Legislative Requirements

The following provides an overview of the relevant State and Federal legislation that applies for Aboriginal heritage within the state of Tasmania.

11.1 State Legislation

In Tasmania, the *Aboriginal Heritage Act 1975* (the Act) is the primary Act for the treatment of Aboriginal cultural heritage. The Act is administered by the Minister for Environment, Parks and Heritage through Aboriginal Heritage Tasmania (AHT) in the Department of Primary Industries, Parks, Water and the Environment (DPIPWE). AHT is the regulating body for Aboriginal heritage in Tasmania and '[n]o fees apply for any application to AHT for advice, guidance, lodgement or permit application'.

The Act applies to 'relics' which are any object, place and/or site that is of significance to the Aboriginal people of Tasmania (as defined in section 2(3) of the Act). The Act defines what legally constitutes unacceptable impacts on relics and a process to approve impacts when there is no better option. Aboriginal relics are protected under the Act and it is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. It is illegal to sell or offer for sale a relic, or to cause or permit a relic to be taken out of Tasmania without a permit (section 2(4) qualifies and excludes 'objects made, or likely to have been made, for purposes of sale').

Section 10 of the Act sets out the duties and obligations for persons owning of finding an Aboriginal relic. Under section 10(3) of the Act, a person shall, as soon as practicable after finding a relic, inform the Director or an authorised officer of the find.

It should be noted that with regard to the discovery of suspected human skeletal remains, the *Coroners Act 1995* takes precedence. The *Coroners Act 1995* comes into effect initially upon the discovery of human remains, however once determined to be Aboriginal the *Aboriginal Relics Act* overrides the *Coroners Act*.

In August 2017, the Act was substantively amended and the title changed from the *Aboriginal Relics Act 1975*. As a result, the AHT *Guidelines to the Aboriginal Heritage Assessment Process* were replaced by the *Aboriginal Heritage Standards and Procedures*. The Standards and Procedures are named in the statutory *Guidelines* of the Act issued by the Minister under section 21A of the Act. Other amendments include:

- An obligation to fully review the Act within three years.
- Increases in maximum penalties for unlawful interference or damage to an Aboriginal relic. For example, maximum penalties (for deliberate acts) are 10,000 penalty units (currently \$1.57 million) for bodies corporate other than small business entities and 5,000 penalty units (currently \$785,000) for individuals or small business entities; for reckless or negligent offences, the maximum penalties are 2,000 and 1,000 penalty units respectively (currently \$314,000 and \$157,000). Lesser offences are also defined in sections 10, 12, 17 and 18.

- Prosecution timeframes have been extended from six months to two years.
- The establishment of a statutory Aboriginal Heritage Council to advise the Minister.

Section 21(1) specifies the relevant defence as follows: “It is a defence to a prosecution for an offence under section 9 or 14 if, in relation to the section of the Act which the defendant is alleged to have contravened, it is proved ... that, in so far as is practicable ... the defendant complied with the guidelines”.

11.2 Commonwealth Legislation

There are also a number of Federal Legislative Acts that pertain to cultural heritage. The main Acts being; *The Australian Heritage Council Act 2003*, *The Aboriginal and Torres Strait Islander Heritage Protection Act 1987* and the *Environment Protection and Biodiversity Conservation Act 1999*

Australian Heritage Council Act 2003 (Comm)

The *Australian Heritage Council Act 2003* defines the heritage advisory boards and relevant lists, with the Act's Consequential and Transitional Provisions repealing the Australian Heritage Commission Act 1975. The Australian Heritage Council Act, like the Australian Heritage Commission Act, does not provide legislative protection regarding the conservation of heritage items in Australia, but has compiled a list of items recognised as possessing heritage significance to the Australian community. The Register of the National Estate, managed by the Australian Heritage Council, applies no legal constraints on heritage items included on this list.

The Aboriginal and Torres Strait Islander Heritage Protection Act 1987.

This Federal Act is administered by the Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC) with the Commonwealth having jurisdiction. The Act was passed to provide protection for the Aboriginal heritage, in circumstances where it could be demonstrated that such protection was not available at a state level. In certain instances, the Act overrides relevant state and territory provisions.

The major purpose of the Act is to preserve and protect from injury and desecration, areas and objects of significance to Aborigines and Islanders. The Act enables immediate and direct action for protection of threatened areas and objects by a declaration from the Commonwealth minister or authorised officers. The Act must be invoked by, or on behalf of an Aboriginal or Torres Strait Islander or organisation.

Any Aboriginal or Torres Strait Islander person or organization may apply to the Commonwealth Minister for a temporary or permanent 'Stop Order' for protection of threatened areas or objects of significant indigenous cultural heritage.

The Commonwealth Act 'overrides' State legislation if the Commonwealth Minister is of the opinion that the State legislation (or undertaken process) is insufficient to protect the threatened areas or objects. Thus, in the event that an application is made to the Commonwealth Minister for a Stop Order, the Commonwealth Minister will, as a matter of course, contact the relevant State Agency to ascertain what

protection is being imposed by the State and/or what mitigation procedures have been proposed by the landuser/developer.

In addition to the threat of a 'Stop Order' being imposed, the Act also provides for the following:

- If the Federal Court, on application from the Commonwealth Minister, is satisfied that a person has engaged or is proposing to engage in conduct that breaches the 'Stop Order', it may grant an injunction preventing or stopping such a breach (s.26). Penalties for breach of a Court Order can be substantial and may include a term of imprisonment;
- If a person contravenes a declaration in relation to a significant Aboriginal area, penalties for an individual are a fine up to \$10,000.00 and/or 5 years gaol and for a Corporation a fine up to \$50,000.00 (s.22);
- If the contravention is in relation to a significant Aboriginal object, the penalties are \$5,000.00 and/or 2 years gaol and \$25,000.00 respectively (s.22);
- In addition, offences under s.22 are considered 'indictable' offences that also attract an individual fine of \$2,000 and/or 12 months gaol or, for a Corporation, a fine of \$10,000.00 (s.23). Section 23 also includes attempts, inciting, urging and/or being an accessory after the fact within the definition of 'indictable' offences in this regard.

The Commonwealth Act is presently under review by Parliament and it is generally accepted that any new Commonwealth Act will be even more restrictive than the current legislation.

Environment Protection and Biodiversity Conservation Act 1999 (Comm)

This Act was amended, through the Environment and Heritage Legislation Amendment Act (No1) 2003 to provide protection for cultural heritage sites, in addition to the existing aim of protecting environmental areas and sites of national significance. The Act also promotes the ecologically sustainable use of natural resources, biodiversity and the incorporation of community consultation and knowledge.

The 2003 amendments to the *Environment Protection and Biodiversity Conservation Act 1999* have resulted in the inclusion of indigenous and non-Indigenous heritage sites and areas. These heritage items are defined as:

'indigenous heritage value of a place means a heritage value of the place that is of significance to indigenous persons in accordance with their practices, observances, customs, traditions, beliefs or history;

Items identified under this legislation are given the same penalty as actions taken against environmentally sensitive sites. Specific to cultural heritage sites are §324A-324ZB.

Environment and Heritage Legislation Amendment Act (No1) 2003 (Comm)

In addition to the above amendments to the *Environment Protection and Biodiversity Conservation Act 1999* to include provisions for the protection and conservation of heritage, the Act also enables the identification and subsequent listing of items for

the Commonwealth and National Heritage Lists. The Act establishes the *National Heritage List*, which enables the inclusion of all heritage, natural, Indigenous and non-Indigenous, and the *Commonwealth Heritage List*, which enables listing of sites nationally and internationally that are significant and governed by Australia.

In addition to the *Aboriginal and Torres Strait Islander Heritage Protection Act 1987*, amendments made to the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* enables the identification and subsequent listing of indigenous heritage values on the Commonwealth and/or National Heritage Lists (ss. 341D & 324D respectively). Substantial penalties (and, in some instances, gaol sentences) can be imposed on any person who damages items on the National or Commonwealth Heritage Lists (ss. 495 & 497) or provides false or misleading information in relation to certain matters under the Act (ss.488-490). In addition, the wrongdoer may be required to make good any loss or damage suffered due to their actions or omissions (s.500).

12.0 Aboriginal Cultural Heritage Management Plan

12.1 Summary Management Recommendations

Heritage management options and recommendations provided in this report are made on the basis of the following criteria:

- Consultation with Rocky Sainty (Aboriginal Heritage Officer);
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (The Act);
- The results of the investigation as documented in this report; and
- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region.

The recommendations are aimed at minimising the impact of the proposed Mills Development Project on the Aboriginal heritage sites identified in this area. Table 5 provides the summary management recommendations developed for this project, with Figure 11 showing the location of the Aboriginal sites discussed in the management recommendations. Figure 12 shows the location of the Aboriginal sites overlaid on the current proposed Masterplan for the Mills development. The more detailed recommendations are presented in sections 12.2, 12.3 and 12.4.

Table 5: Summary Management Recommendations for the Mills Development Project

Site Name	Site Type	Management Recommendations
Sites AH13802 and AH8745	Isolated Artefacts	Sites are situated outside (to the west) of the Mills Development study area, within an adjoining residential subdivision development. Seek advice from AHT whether there are any existing Permits or conservation agreements for these two sites.
Site AH13574	Low-moderate density Artefact scatter	<p>West portion of the site is situated within the adjoining residential subdivision development described above. Seek advice from AHT whether there are any existing Permits or conservation agreements for this portion of the site.</p> <p>The east portion of the site is within the Mills Development. Preferred management option is to conserve this portion of the site in open space, and put measures in place to protect site during construction (see detailed recommendations).</p> <p>If site cannot be conserved and protected, then implement a program of sub-surface investigations to inform future mitigation/management requirements. Permit required.</p>
AH7174, AH8744, AH13582, AH13583	Moderate to high density Artefact scatters	<p>These four sites are confirmed as being situated within the Mills Development study area. Preferred management option is to conserve these four sites in open space, and put measures in place to protect sites during construction (see detailed recommendations).</p> <p>If any or all of these sites cannot be conserved and protected, then implement a program of sub-surface investigations to inform future mitigation/management requirements. Permit required.</p>

Site Name	Site Type	Management Recommendations
AH13584	Aboriginal Stone Quarry	Site is confirmed as being situated within the Mills Development study area. Site is to be conserved in open space, and measures put in place to protect site during construction (see detailed recommendations).
AH13578, AH13579, AH13580 AH13581	Isolated Artefacts	<p>These four sites are confirmed as being situated within the Mills Development study area. Preferred management option is to conserve these four sites in open space, and put measures in place to protect sites during construction (see detailed recommendations).</p> <p>If any or all of these sites cannot be conserved and protected, then seek Permit to impact prior to construction works proceeding.</p>
The Mills Central Precinct Zone		It is confirmed that there are no known Aboriginal sites present within the Mills Central Precinct Zone. It is assessed that there is a very low potential for undetected Aboriginal heritage sites to be present in this area. It is advised that there are no Aboriginal heritage constraints to development proceeding in this area.
General Recommendations		<ul style="list-style-type: none"> - If, during the course of proposed residential development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 2). A copy of the Unanticipated Discovery Plan should be kept on site during all ground disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the <i>Aboriginal Heritage Act 1975</i> (the Act). - Consideration should be given to providing construction workers with a site specific cultural heritage induction presentation, which informs them of the Aboriginal cultural heritage values within the study area, and the importance of protecting these values. - Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) and the Aboriginal Heritage Council (AHC) for review and comment.

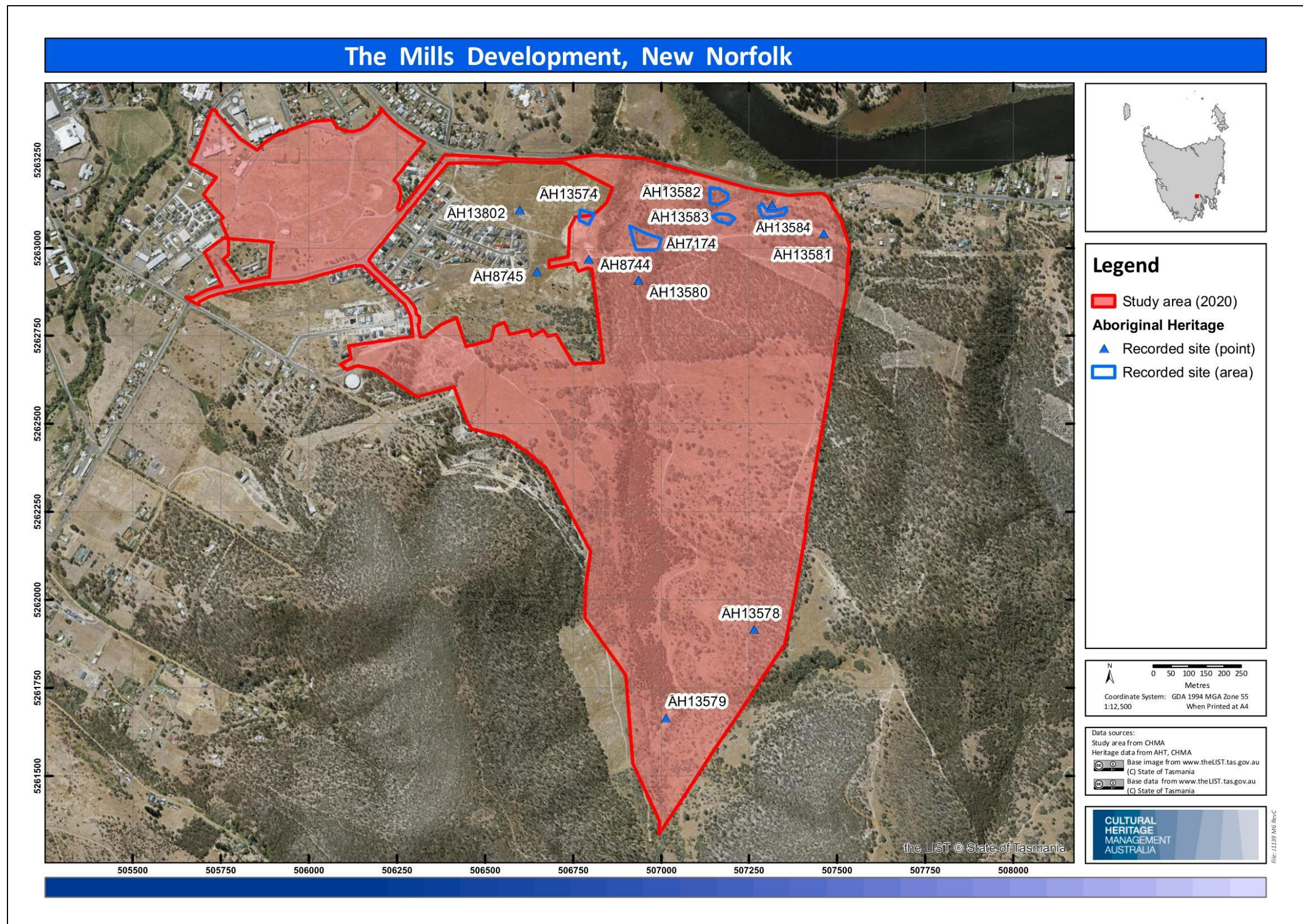


Figure 11: Aerial map showing the location of known Aboriginal heritage sites within and in the immediate vicinity of the current Mills Development study area

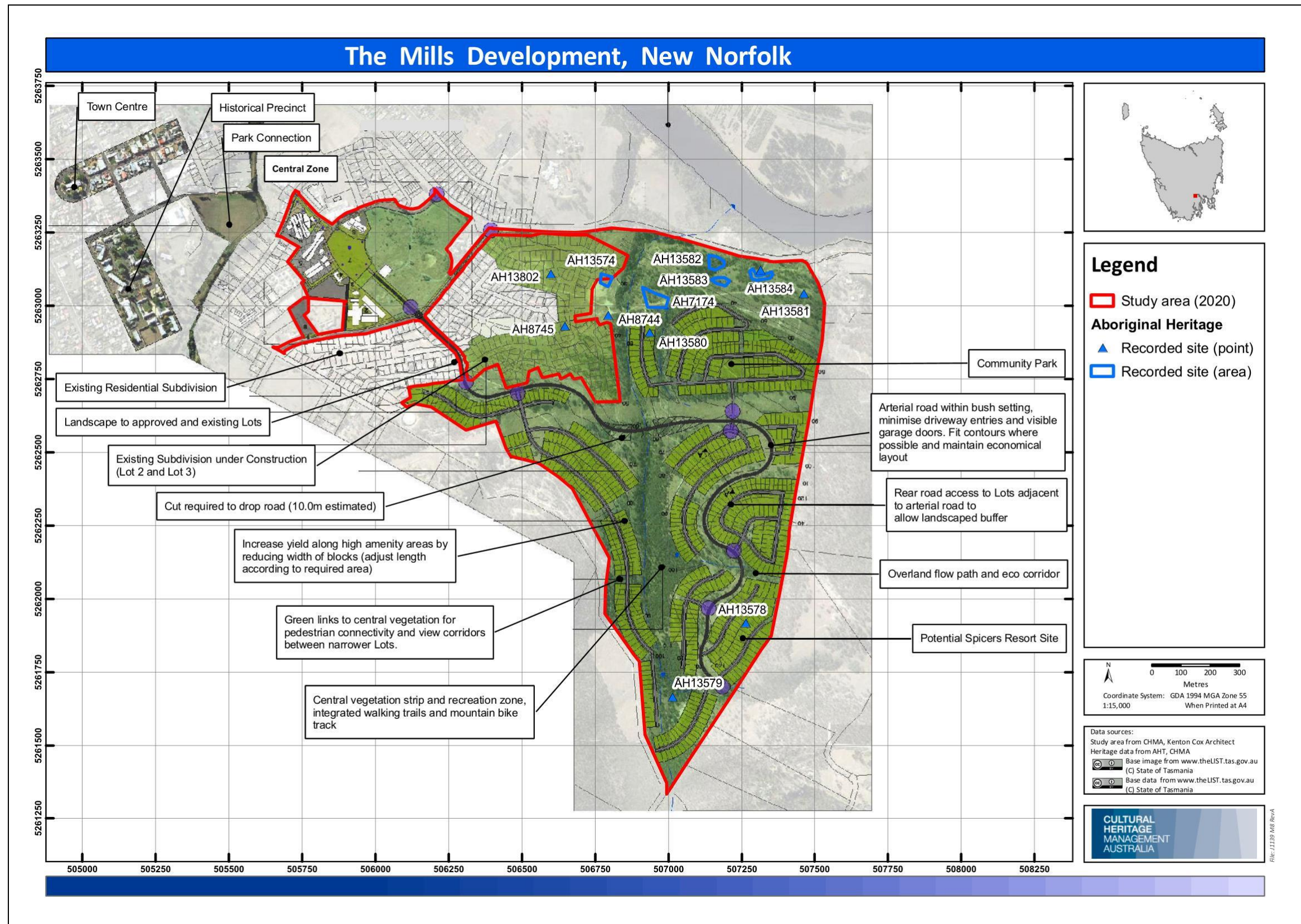


Figure 12: The location of known Aboriginal heritage sites within and in the immediate vicinity of the current Mills Development study area, overlaid on the current Mills Development Masterplan

12.2 Detailed Site Specific Management Recommendations

Sites AH13802 and AH8745

These two sites are both classified as Isolated artefacts. The two sites are situated outside (to the west) of the Mills Development study area, within an adjoining residential subdivision development (see Figures 11 and 12). It is understood that this adjoining land is being developed by a separate proponent, however, in the future it is intended that this land will be purchased by Noble Ventures and included within the Mills development.

It is not clear at this point whether the proponent for this neighbouring subdivision has obtained any permits to impact these two sites, or whether there is an agreed mitigation process for conserving these two sites in-situ, that has been endorsed by AHT. This will need to be clarified with AHT.

Site AH13574

Site AH13574 is situated right on the western edge of the Mills development study area. The west portion of the site appears to be situated within the adjoining residential subdivision development described above. The east portion of the site appears to be within the Mills Development (see Figures 11 and 12).

The site is classified as a low-moderate density artefact scatter. CHMA (2018) assessed that the site was likely to be spatially larger in extent than the current recorded spatial boundaries and recommended that a program of sub-surface test pitting should be undertaken at the site. The purpose of the sub-surface investigations would be to more accurately define the spatial boundaries of the site, and to clarify the nature and density of artefact deposits associated with the site. A Permit to implement the test pitting program would need to be obtained. The findings of the sub-surface investigations would be used as the basis for determining appropriate management/mitigation strategies for the site.

It is unclear whether the proponent of the adjoining subdivision has engaged a consultant to carry out the prescribed sub-surface investigations, or has obtained any permits to impact this site, or whether there is an agreed mitigation process for conserving the site in-situ, that has been endorsed by AHT. This will need to be clarified with AHT.

For the east portion of the site that is located within the Mills Development footprint, it is recommended that this portion of the site be retained within open space, and conserved in-situ. A buffer of 5m should be applied around the recorded spatial extent of the site. A separate Conservation Management Plan should be developed for this portion of the site, which addresses medium and long term management requirements for the site area.

To ensure that the site is adequately protected during construction, the following measures should be implemented.

- The location of the site should be plotted onto the development Masterplan, and it noted that the site is not to be impacted.

- Construction workers to be made aware of the site location and informed that the site is not to be impacted.
- Prior to development works commencing, durable, high visibility temporary barricading should be erected around the identified boundaries of the site, with a 5m buffer applied. The barricading should be installed under the direction of a qualified archaeologist and an AHO. This is to ensure that each site has been adequately protected. The barricading should be removed once all development works have been completed.

If it is not possible to conserve this east portion of the site in open space (in the manner described above), and there is the potential for this site to be impacted by development activity, then a program of sub-surface investigations should be implemented. The purpose of the sub-surface investigations is to attempt to more accurately define the spatial boundary of this portion of the site, and to clarify the nature and density of artefact deposits associated with the site. The outcomes of the test pitting program would be used as the basis for determining further mitigation and/or management requirements.

The test pitting program should be undertaken under the direction of a qualified archaeologist and AHO. The methodology to be implemented for the test pitting program should be ratified with AHT. A Permit to implement the test pitting program will need to be obtained, prior to investigations commencing.

Sites AH7174, AH8744, AH13582 and AH13583

These four sites are classified as moderate to high density artefact scatters, that are confirmed as being situated within the Mills Development study area (see Figures 11 and 12). CHMA (2018) assessed that the sites were likely to be spatially larger in extent than the current recorded spatial boundaries and have the potential to comprise additional sub-surface artefact deposits. CHMA (2018) recommended that a program of sub-surface test pitting should be undertaken at each site.

It is recommended that these four sites should be retained within open space, and conserved in-situ. The open space conservation area should include a buffer of 5m around the recorded spatial extent of the sites. A separate Conservation Management Plan should be developed for these four sites, which addresses medium and long term management requirements for the site areas.

To ensure that each site is adequately protected during construction, the following measures should be implemented.

- The location of the sites should be plotted onto the development Masterplan, and it noted that the sites are not to be impacted.
- Construction workers to be made aware of the site locations and informed that the sites are not to be impacted.
- Prior to development works commencing, durable, high visibility temporary barricading should be erected around the identified boundaries of each site, with a 5m buffer applied. The barricading should be installed under the direction of a qualified archaeologist and an AHO. This is to ensure that each site has been

adequately protected. The barricading should be removed once all development works have been completed.

If it is not possible to conserve any or all of these four sites in open space (in the manner described above), and there is the potential for any of all of these sites to be impacted by development activity, then a program of sub-surface investigations should be implemented. The purpose of the sub-surface investigations is to attempt to more accurately define the spatial boundaries of these sites, and to clarify the nature and density of artefact deposits associated with the sites. The outcomes of the test pitting program would be used as the basis for determining further mitigation and/or management requirements.

The test pitting program should be undertaken under the direction of a qualified archaeologist and AHO. The methodology to be implemented for the test pitting program should be ratified with AHT. A Permit to implement the test pitting program will need to be obtained, prior to investigations commencing.

Site AH13584

Site AH13584 is classified as an Aboriginal stone quarry, which has been assessed as being of Medium-High significance. The site is confirmed as being situated within the Mills Development study area (see Figures 11 and 12).

It is recommended that the site should be conserved in situ, within open space, and should not be impacted by the proposed residential development. The open space conservation area should include a buffer of 10m around the recorded spatial extent of the site. A separate Conservation Management Plan should be developed for this site, which addresses medium and long term management requirements for the site area.

To ensure that the site is adequately protected during construction, the following measures should be implemented.

- The location of the site should be plotted onto the development Masterplan, and it noted that the site is not to be impacted.
- Construction workers to be made aware of the site location and informed that the site is not to be impacted.
- Prior to development works commencing, durable, high visibility temporary barricading should be erected around the identified boundaries of the site, with a 10m buffer applied. The barricading should be installed under the direction of a qualified archaeologist and an AHO. This is to ensure that each site has been adequately protected. The barricading should be removed once all development works have been completed.
- The large silcrete core which appears to have rolled off the cliff, into the contemporary quarry (currently at grid reference E507315 N5263122) should be salvage collected and relocated to within the bounds of the barricaded zone for site AH13584. A Permit will be required in order to undertake the relocation.

Sites AH13578, AH13579, AH13580 and AH13581

Sites AH13578, AH13579, AH13580 and AH13581 are classified as Isolated artefacts that are confirmed as being situated within the Mills Development study area (see Figures 11 and 12).

Each site has been impacted to some degree, and it is assessed that there is a low potential for additional sub-surface artefacts to be associated with each site.

If possible, these sites should be conserved in situ, within open space, and should not be impacted by the proposed residential development. A separate Conservation Management Plan should be developed for these four sites, which addresses medium and long term management requirements for the site areas

To ensure that each site is adequately protected during construction, the following measures should be implemented.

- The location of the sites should be plotted onto the development Masterplan, and it noted that the sites are not to be impacted.
- Construction workers to be made aware of the site locations and informed that the sites are not to be impacted.
- Prior to development works commencing, durable, high visibility temporary barricading should be erected around the identified boundaries of each site, with a 1m buffer applied. The barricading should be installed under the direction of a qualified archaeologist and an AHO. This is to ensure that each site has been adequately protected. The barricading should be removed once all development works have been completed.

All Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (The Act). It is illegal to destroy, damage, deface, conceal or otherwise interfere with a relic, unless in accordance with the terms of a permit granted by the Minister. Therefore, if it appears that any of these four sites may be impacted by the proposed development, then the proponent will need to apply for and obtain a Permit to impact the site(s), prior to construction works commencing.

12.3 Management Recommendations for the Mills Central Precinct Zone

No Aboriginal heritage sites, suspected features, or specific areas of elevated archaeological potential was identified during the field survey assessment of the Mills Central Precinct Zone. The AHR search results have confirmed that there are no registered Aboriginal sites present within this area. On this basis it is confirmed that there are no known Aboriginal sites present within the Mills Central Precinct Zone. It is assessed that there is a very low potential for undetected Aboriginal heritage sites to be present in this area. On the basis of the above, it is advised that there are no Aboriginal heritage constraints to development proceeding in this area.

12.4 General Recommendations

- If, during the course of proposed residential development works, previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 2). A copy of the Unanticipated Discovery Plan should be kept on site during all ground

disturbance and construction work. All construction personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).

- Consideration should be given to providing construction workers with a site specific cultural heritage induction presentation, which informs them of the Aboriginal cultural heritage values within the study area, and the importance of protecting these values.
- Copies of this report should be submitted to Aboriginal Heritage Tasmania (AHT) and the Aboriginal Heritage Council (AHC) for review and comment.

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Glossary of Terms

Aboriginal Archaeological Site

A site is defined as any evidence (archaeological features and/or artefacts) indicating past Aboriginal activity, and occurring within a context or place relating to that activity. The criteria for formally identifying a site in Australia vary between States and Territories.

Artefact

A portable object that has been humanly made or modified (see also stone artefact).

Assemblage (lithic)

A collection of complete and fragmentary stone artefacts and manuports obtained from an archaeological site, either by collecting artefacts scattered on the ground surface, or by controlled excavation.

Broken Flake

A flake with two or more breakages, but retaining its area of break initiation.

Chert

A highly siliceous rock type that is formed biogenically from the compaction and precipitation of the silica skeletons of diatoms. Normally there is a high percentage of cryptocrystalline quartz. Like chalcedony, chert was valued by Aboriginal people as a stone material for manufacturing stone tools. The rock type often breaks by conchoidal (shell like) fracture, providing flakes that have hard, durable edges.

Cobble

Water worn stones that have a diameter greater than 64mm (about the size of a tennis ball) and less than 256mm (size of a basketball).

Core

A piece of stone, often a pebble or cobble, but also quarried stone, from which flakes have been struck for the purpose of making stone tools.

Core Fragments

A piece of core, without obvious evidence of being a chunky primary flake.

Cortex

The surface of a piece of stone that has been weathered by chemical and/or physical means.

Debitage

The commonly used term referring to the stone refuse discarded from knapping. The manufacturing of a single implement may result in the generation of a large number of pieces ofdebitage in an archaeological deposit.

Flake (general definition)

A piece of stone detached from a nucleus such as a core. A complete or substantially complete flake of lithic material usually shows evidence of hard indenter initiation, or occasional bending initiation. The most common type of flake is the 'conchoidal flake'. The flake's primary fracture surface (the ventral or inside surface) exhibits features such as fracture initiation, bulb of force, and undulations and lances that indicate the direction of the fracture front.

Flake fragment

An artefact that does not have areas of fracture initiation, but which displays sufficient fracture surface attributes to allow identification as a stone artefact fragment.

Flake portion (broken flake)

The proximal portion of a flake retaining the area of flake initiation, or a distal portion of a flake that retains the flake termination point.

Flake scraper

A flake with retouch along at least one margin. The character of the retouch strongly suggests shaping or rejuvenation of a cutting edge.

Nodules

Regular or irregular cemented masses or nodules within the soil. Also referred to as concretions and buckshot gravel. Cementing agents may be iron and/or manganese oxides, calcium carbonate, gypsum etc. Normally formed in situ and commonly indicative of seasonal waterlogging or a fluctuating chemical environment in the soil such as; oxidation and reduction, or saturation and evaporation. Nodules can be redistributed by erosion. (See also 'concretion').

Pebble

By geological definition, a waterworn stone less than 64 mm in diameter (about the size of a tennis ball). Archaeologists often refer to waterworn stones larger than this as pebbles though technically they are cobbles.

Quartz

A mineral composed of crystalline silica. Quartz is a very stable mineral that does not alter chemically during weathering or metamorphism. Quartz is abundantly common and was used by Aboriginal people throughout Australia to make light-duty cutting tools. Despite the often unpredictable nature of fracture in quartz, the flakes often have sharp cutting edges.

Quartzite

A hard silica rich stone formed in sandstone that has been recrystallised by heat (metaquartzite) or strengthened by slow infilling of silica in the voids between the sand grains (Orthoquartzite).

Retouch (on stone tools)

An area of flake scars on an artefact resulting from intentional shaping, resharpening, or rejuvenation after breakage or blunting of a cutting edge. In resharpening a cutting edge the retouch is invariably found only on one side (see also 'indeterminate retouched piece', retouch flake' etc).

Scraper

A general group of stone artefacts, usually flakes but also cores, with one or more retouched edges thought to have been used in a range of different cutting and scraping activities. A flake scraper is a flake with retouch along at least one margin, but not qualifying for attribution to a more specific implement category. Flake scrapers sometimes also exhibit use-wear on the retouched or another edge.

Silcrete

A hard, fine grained siliceous stone with flaking properties similar to quartzite and chert. It is formed by the cementing and/or replacement of bedrock, weathering deposits, unconsolidated sediments, soil or other material, by a low temperature physico-chemical process. Silcrete is essentially composed of quartz grains cemented by microcrystalline silica. The clasts in silcrete are most often quartz grains but may be chert or chalcedony or some other hard mineral particle. The mechanical properties and texture of silcrete are equivalent to the range exhibited by chert at the fine-grained end of the scale and with quartzite at the coarse-grained end of the scale. Silcrete was used by Aboriginal people throughout Australia for making stone tools.

Site Integrity

The degree to which post-depositional disturbance of cultural material has occurred at a site.

Stone Artefact

A piece (or fragment) of stone showing evidence of intentional human modification.

Stone procurement site

A place where stone materials is obtained by Aboriginal people for the purpose of manufacturing stone artefacts. In Australia, stone procurement sites range on a continuum from pebble beds in water courses (where there may be little or no evidence of human activity) to extensively quarried stone outcrops, with evidence of pits and concentrations of hammerstones and a thick layer of knapping debris.

Stone tool

A piece of flaked or ground stone used in an activity, or fashioned for use as a tool. A synonym of stone tool is 'implement'. This term is often used by archaeologists to describe a flake tool fashioned by delicate flaking (retouch).

Use wear

Macroscopic and microscopic damage to the surfaces of stone tools, resulting from its use. Major use-wear forms are edge fractures, use-polish and smoothing, abrasion, and edge rounding bevelling.

Appendix 1

Detailed Site Descriptions Taken from the CHMA (2018) Report for the Gateway Estate

Site Name: AH7174

Site Type: Artefact scatter

Grid Reference:

E506972 N5262993

E506992 N5262996

E507001 N5263025

E506958 N5263041

E506911 N5263063

E506928 N5262995

Description

Site AH7174 is classified as an Artefact scatter, which is located around 2km to the east of the town of New Norfolk, and 300m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site was originally recorded by Paton (1995) as part of the survey of the Bridgewater to New Norfolk Optic Fibre Cable Route.

The site is positioned on the broad, gently sloping saddle that sits between two low relief hills. The flat portion of the saddle area measures around 50m (north-south) x 30m. The slope gradient across the spine of the saddle is in the range of 1-3°. The western side slopes of the saddle are more steeply inclined, with a gradient of between 10°-20°. An unnamed ephemeral creek line runs along the western edge of the saddle. This creek is a tributary of the River Derwent, and joins with the River around 700m to the north of the site. The eastern side slopes of the saddle are more gently inclined (5-10°).

The native vegetation across the saddle, and general surrounds has been virtually entirely cleared as part of past farming practices, and has been replanted with grasses. There is also a series of vehicle tracks that run north-south and east-west across the saddle, as well as a water pipeline and optic fibre line that runs east-west across the saddle.

A low-moderate density scatter (comprising 19 stone artefacts) was identified across an area measuring approximately 60m x 60m. The artefacts were exposed across a series of large erosion scalds and along the vehicle tracks that run across the saddle area. The majority of artefacts were concentrated on the flat spine of the saddle. However, lower densities were also recorded on the west side slopes of the saddle, leading down to the creek margins.

Surface visibility across these erosion scald areas and vehicle tracks was generally good (60-80%). Away from these areas of improved visibility, surface visibility was reduced to around 10-30%, due to thick grass cover. Given these constraints in visibility it is likely that the site extends beyond the current recorded spatial boundaries. It is probable that artefacts will be predominantly confined to the flat spine of the saddle.

Soil deposits across the saddle comprise gravelly clay loams, which appear to have some depth. These soils have the potential to comprise sub-surface artefact deposits. Given the vegetation clearing and other disturbances that has occurred across the site area and surrounds, any sub-surface artefact deposits will be moderately to heavily disturbed. The disturbance will be predominantly confined to the upper 40cm of the soil horizon.

Artefact details

- Grey silcrete flake 54mm x 52mm x 11m
- Grey silcrete flake 62mm x 51mm x 17m
- Grey silcrete flake 41mm x 46mm x 21m
- Grey silcrete flake 31mm x 20mm x 4m
- Pink quartzite flake 41mm x 42mm x 5m
- Grey silcrete flake 32mm x 21mm x 4m
- Grey silcrete flake 44mm x 30mm x 7m
- Grey silcrete flake 28mm x 22mm x 6m
- Grey silcrete flake 37mm x 32mm x 5m
- Grey indurated siltstone flake 44mm x 30mm x 5mm
- Grey silcrete flake 21mm x 18mm x 3m
- Grey silcrete flake 24mm x 20mm x 4m
- Grey silcrete flake 20mm x 17mm x 3m
- Grey silcrete flake 29mm x 22mm x 5m
- Grey silcrete flake 28mm x 18mm x 4m
- Grey silcrete flake 35mm x 27mm x 7m
- Grey silcrete flake 39mm x 28mm x 8m
- Grey silcrete flake 42mm x 31mm x 7m
- Grey silcrete flake 30mm x 22mm x 3m



Plate 1: View west at the location of site AH7174



Plate 2: View north at the location of site AH7174



Plate 3: Stone artefacts from site AH7174



Plate 4: Stone artefacts from site AH7174



Plate 5: Stone artefacts from site AH7174



Plate 6: Stone artefacts from site AH7174

Site Name: AH8744

Site Type: Artefact scatter (Isolated Artefact recorded during present survey)

Grid Reference: E506795 N5262967

Description

Site AH8744 is classified as an Isolated artefact, which is located around 2km to the south-east of the town of New Norfolk, and 500m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The artefact is situated on the lower north side slopes of the Ironstone Hills, with the slope gradient being in the range of between 3-7°. An ephemeral creek is situated 100m to the east of the site. This creek drains a small valley system, and is a tributary of the River Derwent.

The vegetation on the hill side slopes in the general vicinity of the site is open Eucalypt woodland, which has partially cleared as part of past farming practices.

The artefact was identified on a 4m wide graded vehicle track that runs in a north-south direction down the hill side slopes. Surface visibility on the vehicle track was very good (80%). Away from the scald, visibility was in the range of 20-40%, with vegetation cover being the main impediment to visibility. Given some surface visibility constraints, it is possible that additional undetected artefacts are associated with the site. However, based on the observed surface expression, densities are likely to be low. Soils in this area are gravel clay loams with some depth. These soils have the potential to comprise sub-surface artefact deposits. However, for the reasons detailed above, densities are likely to be low.

Artefact details

- Grey silcrete core scraper (1 platform and 5 facets with retouch around base)
95mm x 72mm x 48mm



Plate 1: Artefact from site AH8744



Plate 2: View north at the location of site AH8744

Site Name: AH13574

Site Type: Artefact scatter

Grid Reference:

E506767 N5263078

E506794 N5263065

E506770 N5263108

E506810 N5263097

Description

Site AH13574 is classified as an Artefact scatter, which is located around 1.5km to the east of the town of New Norfolk, and 500m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site is positioned on the broad, gently sloping spine of a prominent south-west to the north-east trending spur line. This spur runs off the basal northern side slopes of the Ironstone Hills. The slope gradient across the spine of the spur is in the range of 1-3°. The eastern and western side slopes of the spur are more steeply inclined, with a gradient of between 5°-15°. An unnamed ephemeral creek line runs along the eastern edge of the spur. This creek is a tributary of the River Derwent, and joins with the River around 600m to the north of the site.

The native vegetation across the spur, and general surrounds has been virtually entirely cleared as part of past farming practices, and has been replanted with grasses. There is a sparse remnant strip of native vegetation situated along the edge of the creek line on the eastern basal slopes of the spur.

A low-moderate density scatter (comprising 16 stone artefacts) was identified across an area measuring approximately 40m x 30m. The artefacts were exposed across a series of large erosion scalds on the spine of the spur. Surface visibility across these erosion scald areas was generally good (60-80%). To the north of the erosion scalds, surface visibility was reduced to around 0-10%, due to thick grass cover. Given these constraints in visibility it is very likely that the site extends beyond the current recorded spatial boundaries. It is probable that artefacts will be predominantly confined to the flat spine of the spur, with deposits likely to extend through to the northern termination point of the spur, where there is a set of transmission line towers, around grid reference E506860 N5263220. This is a distance of around 120m.

Soil deposits across the spine of the spur comprise quite loosely consolidated sandy loams, which appear to have reasonable depth. These soils have the potential to comprise sub-surface artefact deposits. Given the vegetation clearing that has occurred across the site area and surrounds, any sub-surface artefact deposits will be moderately to heavily disturbed. The disturbance will be predominantly confined to the upper 40cm of the soil horizon.

Artefact details

- Brown quartzite flake (retouch on both lateral margins) 88mm x 32mm x 39mm
- Light grey indurated siltstone flake 41mm x 59mm x 18mm

- Light grey indurated siltstone flake 31mm x 17mm x 3mm
- Light grey indurated siltstone flake 38mm x 21mm x 4mm
- Light grey indurated siltstone flake 42mm x 40mm x 8mm
- Light grey indurated siltstone primary flake 97mm x 84mm x 21mm
- Light grey indurated siltstone flake 69mm x 39mm x 15mm
- Light grey indurated siltstone flake 74mm x 48mm x 23mm
- Pink Quartzite flake 36mm x 38mm x 15mm
- Light grey indurated siltstone flake 30mm x 24mm x 3mm
- Light grey indurated siltstone flake 33mm x 30mm x 5mm
- Grey silcrete flake 21mm x 22mm x 4mm
- Light grey indurated siltstone flake 43mm x 62mm x 9mm
- Pink Quartzite flake 39mm x 17mm x 3mm
- Yellow Quartzite flake (retouch on distal margin) 41mm x 37mm x 4mm
- Grey indurated siltstone flake 42mm x 38mm x 4mm



Plate 1: View north-east at the large erosion scald area on the spine of the spur line, where the artefacts associated with site AH13574 were identified



Plate 2: View north at the northern end of site AH13574, where increased grass cover obscured surface visibility



Plate 3: Brown quartzite flake (retouch on both lateral margins) from site AH13574



Plate 4: Sample range of stone artefacts from site AH13574



Plate 5: Sample range of stone artefacts from site AH13574

Site Name: AH13578

Site Type: Isolated Artefact

Grid Reference: E507263 N5261916

Description

Site AH13578 is classified as an Isolated artefact, which is located around 2km to the south-east of the town of New Norfolk, and 1.4km to the south of the Lyell Highway, in the Southern Region of Tasmania.

The artefact is situated on the mid west side slopes of a low relief hill, with the slope gradient being in the range of between 10-15°. These slopes run down to an ephemeral creek, which is situated 300m to the west of the site. This creek drains a small valley system, and is a tributary of the River Derwent.

The vegetation on the hill side slopes in the general vicinity of the site is open Eucalypt woodland, which has partially cleared as part of past farming practices.

The artefact was identified on a 2m x 1m erosion scald. Surface visibility in the general surrounds of the site, away from the erosion scald was in the range of 20-40%, with vegetation cover being the main impediment to visibility. Given some surface visibility constraints, it is possible that additional undetected artefacts are associated with the site. However, based on the observed surface expression, densities are likely to be low. Soils in this area are skeletal gravels, which do not have any potential to comprise sub-surface artefacts.

Artefact details

- Pink quartzite core scraper (2 platforms and 3 facets with retouch around base)
124mm x 93mm x 72mm



Plate 1: The quartzite core scraper from site AH13578



Plate 2: View north-west at the location of site AH13578

Site Name: AH13579

Site Type: Isolated Artefact

Grid Reference: E507014 N5261664

Description

Site AH13579 is classified as an Isolated artefact, which is located around 2km to the south-east of the town of New Norfolk, and 1.5km to the south of the Lyell Highway, in the Southern Region of Tasmania.

The artefact is situated on the gentle basal west side slopes of a low relief hill, with the slope gradient being in the range of between 1°-3°. These slopes run down to an ephemeral creek, which is situated 30m to the west of the site. This creek drains a small valley system, and is a tributary of the River Derwent. The site is positioned around the upper headwaters of the creek

The native vegetation along the creek margins, in the area where the site is located has been cleared as part of past farming practices. In the broader surrounds the vegetation comprises patches of Casuarinas, intermixing with open Eucalypt woodland.

The artefact was identified on a large 30m x 25m erosion scald that occurs along the creek margins. This erosion scald appears to be partially resulting from vehicle activity, with vehicle tracks through the site area. Surface visibility on the erosion scald was very good (80%). Away from the scald, visibility was in the range of 20-40%, with vegetation cover being the main impediment to visibility. Given some surface visibility constraints, it is possible that additional undetected artefacts are associated with the site. However, based on the observed surface expression, densities are likely to be low. Soils in this area are gravel clay loams with some depth. These soils have the potential to comprise sub-surface artefact deposits. However, for the reasons detailed above, densities are likely to be low.

Artefact details

- Grey quartzite flake piece (distal piece) 19mm x 17mm x 8mm



Plate 1: Stone artefact from site AH13579



Plate 2: View north-west at the location of site AH13579

Site Name: AH13580

Site Type: Isolated Artefact

Grid Reference: E506936 N5262908

Description

Site AH13580 is classified as an Isolated artefact, which is located around 2km to the south-east of the town of New Norfolk, and 400m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site is situated on the narrow spine of a small, north-south orientated spur line. The slope gradient on the spine of the spur is quite gentle, varying from between 3-7°. The eastern and western side slopes of the spur are more steeply inclined, with a gradient of between 10°-25°. On both the west and east side of the spur are unnamed ephemeral creek lines. These creeks are both tributaries of the River Derwent, and joins with the River around 700m to the north of the site.

The artefact was identified on a 4m wide graded vehicle track that runs along the spine of the spur. Surface visibility on the vehicle track was very good (80%). Away from the scald, visibility was in the range of 20-40%, with vegetation cover being the main impediment to visibility. Given some surface visibility constraints, it is possible that additional undetected artefacts are associated with the site. However, based on the observed surface expression, densities are likely to be low. Soils in this area are skeletal gravels, which do not have any potential to comprise sub-surface artefacts.

The native vegetation in the area where the site comprises patches of Casuarinas, intermixing with open Eucalypt woodland.

Artefact details

- Grey silcrete flake (retouch on distal margin) 24mm x 26mm x 13mm



Plate 1: Artefact from site AH13580



Plate 2: view north at the location of site AH13580

Site Name: AH13581

Site Type: Isolated Artefact

Grid Reference: E507462 N5263040

Description

Site AH13581 is classified as an Isolated artefact, which is located around 2km to the south-east of the town of New Norfolk, and 120m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site is situated on the lower northern side slopes of a low relief hill. The slope gradient on these lower slopes is quite gentle, varying from between 3-7°. An unnamed ephemeral creek is situated around 80m to the east of the site. This creek is a tributary of the River Derwent, and joins with the River around 250m to the north of the site.

The artefact was identified on a 4m wide graded vehicle track that runs in an east-west direction across the hill slopes. Surface visibility on the vehicle track was very good (80%). Away from the scald, visibility was in the range of 20-40%, with vegetation cover being the main impediment to visibility. Given some surface visibility constraints, it is possible that additional undetected artefacts are associated with the site. However, based on the observed surface expression, densities are likely to be low. Soils in this area are skeletal gravels, which do not have any potential to comprise sub-surface artefacts.

The native vegetation in the area where the site comprises patches of Casuarinas, intermixing with open Eucalypt woodland.

Artefact details

- Grey silcrete flake (usewear on 1 lateral margin) 23mm x 21mm x 4mm



Plate 1: Stone artefact associated with site AH13581



Plate 2; View east at the location of site AH13581

Site Name: AH13582

Site Type: Artefact scatter

Grid Reference:

E507139 N5263127

E507138 N5263171

E507165 N5263167

E507189 N5263153

E507189 N5263136

E507160 N5263122

Description

Site AH13582 is classified as an Artefact scatter, which is located around 2km to the east of the town of New Norfolk, and 80m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site is positioned on the gently sloping spine of a small east-west trending spur line. This spur runs off the eastern side slopes of a low relief hill. The slope gradient across the spine of the spur is in the range of 1-7°. The northern and southern side slopes of the spur are more steeply inclined, with a gradient of between 10°-30°. An unnamed ephemeral creek line runs along the south-east edge of the spur. This creek is a tributary of the River Derwent, and joins with the River around 200m to the north-east of the site. The site overlooks the River Derwent valley system, and is elevated around 20m above the river floodplain.

The native vegetation across the spur, and general surrounds has been mostly cleared as part of past farming practices, and has been replanted with grasses. There are patches of wattle regrowth and Eucalypts scattered along the spur.

A moderate to high density scatter (comprising 100+ stone artefacts) was identified across an area measuring approximately 50m x 30m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the spine of the spur. Surface visibility across the site area and surrounds, on the spur was estimated to range between 20-40%, with vegetation cover being the main impediment to visibility. Given these constraints in visibility it is very likely that the site extends beyond the current recorded spatial boundaries. It is probable that artefacts will be predominantly confined to the flat spine of the spur.

Soil deposits across the spine of the spur comprise quite loosely consolidated sandy loams, which appear to have reasonable depth. These soils have the potential to comprise sub-surface artefact deposits. Given the vegetation clearing that has occurred across the site area and surrounds, any sub-surface artefact deposits will be moderately to heavily disturbed. The disturbance will be predominantly confined to the upper 40cm of the soil horizon.

Sample range of Artefacts

- Light grey indurated siltstone flake 56mm x 38mm x 11mm
- Light grey indurated siltstone flake 64mm x 41mm x 13mm
- Light grey indurated siltstone flake 40mm x 23mm x 8mm
- Light grey indurated siltstone primary flake 88mm x 70mm x 23mm
- Light grey indurated siltstone flake 34mm x 52mm x 9mm
- Light grey indurated siltstone flake 27mm x 39mm x 7mm
- Light grey indurated siltstone flake 56mm x 38mm x 6mm
- Light grey indurated siltstone flake 30mm x 22mm x 4mm
- Light grey indurated siltstone flake 41mm x 32mm x 6mm
- Light grey indurated siltstone flake 26mm x 19mm x 3mm
- Light grey indurated siltstone flake 55mm x 37mm x 11mm
- Light grey indurated siltstone flake 39mm x 30mm x 7mm
- Light grey indurated siltstone core (2 platforms and 4 facets) 39mm x 30mm x 7mm



Plate 1: View north-east at the location of site AH13582



Plate 2: view west at the location of site AH13582



Plate 3: A sample range of artefacts from site AH13582

Site Name: AH13583

Site Type: Artefact scatter

Grid Reference:

E507146 N5263090

E507164 N5263096

E507192 N5263095

E507210 N5263084

E507195 N5263067

E507181 N5263071

E507163 N5263075

Description

Site AH13583 is classified as an Artefact scatter, which is located around 2km to the east of the town of New Norfolk, and 100m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site is positioned on the gentle lower northern side slopes of a low relief hill. The slope gradient across these lower slopes is in the range of 1-7°. Further to the south of the site, the hill slope gradient increases to above 10°. An unnamed ephemeral creek line runs along the north-west edge of the basal hill slopes, around 30m to the north-west of the site. This creek is a tributary of the River Derwent, and joins with the River around 200m to the north-east of the site. The site overlooks the River Derwent valley system, and is elevated around 20m above the river floodplain.

The native vegetation across the lower hill slopes, and general surrounds has been mostly cleared as part of past farming practices, and has been replanted with grasses. There are patches of wattle regrowth and Eucalypts scattered along the slopes.

A moderate density scatter (comprising 50+ stone artefacts) was identified across an area measuring approximately 60m x 25m. Virtually the entire artefact assemblage in this area is manufactured from the same stone material type, this being a light grey metamorphosed siltstone. The artefacts were exposed across a series of small erosion scalds on the lower hill slopes. The artefacts were all confined to the break of slope area, where the slope gradient decreases to below 7°.

Surface visibility across the site area and surrounds, was estimated to range between 30-50%, with vegetation cover being the main impediment to visibility. Given these constraints in visibility it is very likely that the site extends beyond the current recorded spatial boundaries. It is probable that artefacts will be predominantly confined to the lower benched slope area, close to the creek.

Soil deposits across the site area comprise quite loosely consolidated sandy loams, which appear to have reasonable depth. These soils have the potential to comprise sub-surface artefact deposits. Given the vegetation clearing that has occurred across the site area and surrounds, any sub-surface artefact deposits will be moderately to heavily disturbed. The disturbance will be predominantly confined to the upper 40cm of the soil horizon.

Sample range of Artefacts

- Light grey indurated siltstone flake (retouch along 1 lateral margin 83mm x 67mm x 18mm
- Light grey indurated siltstone flake 44mm x 41mm x 12mm
- Light grey indurated siltstone flake 47mm x 31mm x 9mm
- Light grey indurated siltstone flake 52mm x 41mm x 13mm
- Light grey indurated siltstone primary flake 122mm x 87mm x 31mm
- Light grey indurated siltstone flake 33mm x 25mm x 7mm
- Light grey indurated siltstone flake 39mm x 30mm x 5mm
- Light grey indurated siltstone flake 61mm x 40mm x 7mm
- Light grey indurated siltstone flake 56mm x 43mm x 8mm
- Light grey indurated siltstone flake 71mm x 50mm x 12mm
- Light grey indurated siltstone flake 51mm x 36mm x 8mm
- Light grey indurated siltstone flake 37mm x 30mm x 6mm



Plate 1: View west at the location of site AH13583



Plate 2: View east at the location of site AH13583



Plate 3: A sample range of stone artefacts from site AH13583



Plate 4: A sample range of stone artefacts from site AH13583

Site Name: AH13584

Site Type: Aboriginal Stone Quarry

Grid Reference:

E507354 N5263114

E507356 N5263105

E507347 N5263093

E507300 N5263086

E507285 N5263091

E507277 N5263118

E507288 N5263126

E507302 N5263103

E507321 N5263104

Silcrete core

E507315 N5263122

Description

Site AH13584 is classified as an Aboriginal stone quarry site, which is located around 2km to the east of the town of New Norfolk, and 50m to the south of the Lyell Highway, in the Southern Region of Tasmania.

The site is positioned on the gentle basal northern side slopes of a low relief hill. The slope gradient across these lower slopes is in the range of 1-7°. Further to the south of the site, the hill slope gradient increases to above 10°. Immediately to the north of the site is a sheer cliff line. At the base of this cliff is a modern day quarry area, which is located immediately to the south of the Lyell Highway.

An unnamed ephemeral creek line is situated around 120m to the west of the site. This creek is a tributary of the River Derwent, and joins with the River around 200m to the north-east of the site. The site overlooks the River Derwent valley system, and is elevated around 20m above the river floodplain.

The native vegetation across the lower hill slopes, and general surrounds has been mostly cleared as part of past farming practices, and has been replanted with grasses. There are patches of wattle regrowth and Eucalypts scattered along the slopes.

A high density scatter (comprising 500+ stone artefacts) was identified across an area measuring approximately 80m x 20m. The artefacts are predominantly concentrated within 20m of the edge of the cliff line. The artefact assemblage is mostly comprised of silcrete and metamorphosed indurated siltstone flakes, primary flakes and debitage. One brown quartzite hammerstone was also recorded in this area. In amongst the artefact scatter are large nodules, and small outcrops of silcrete and metamorphosed indurated siltstone bedrock. An inspection of these nodules and outcrops revealed a number of definitive negative flake scars, which are the product of Aboriginal knapping activity. A large silcrete nodule was also recorded at the base of the cliff line, within the modern day quarry area, which also displayed a number of

negative flake scars (at grid reference E507315 N5263122). It appears that the silcrete core has rolled down slope from the top of the cliff.

Surface visibility across the site area and surrounds, was estimated to range between 40-80%, with vegetation cover being the main impediment to visibility. Given some constraints in visibility it is likely that the site extends beyond the current recorded spatial boundaries. It is probable that artefacts will be predominantly confined to the lower benched slope area, close to the edge of the cliff line.

Soil deposits across the site area comprise quite loosely consolidated sandy loams, which appear to have reasonable depth. These soils have the potential to comprise sub-surface artefact deposits. Given the vegetation clearing that has occurred across the site area and surrounds, any sub-surface artefact deposits will be moderately to heavily disturbed. The disturbance will be predominantly confined to the upper 40cm of the soil horizon. It is also apparent that the Aboriginal quarry has been heavily impacted by the modern day quarrying activity, and that the northern portion of the site has been destroyed.



Plate 1: View east across the Aboriginal quarry site, on the edge of the cliff, overlooking the modern day quarry



Plate 2: View north-west across the Aboriginal quarry site, on the edge of the cliff, overlooking the modern day quarry



Plate 3: View south-west from the base of the cliff, in the modern quarry, looking up towards the Aboriginal quarry at the top of the cliff



Plate 4: View north-east from site AH13584, across the River Derwent valley



Plate 5: Large silcrete primary flakes and a quartzite hammerstone, from site AH13584



Plate 6: Large silcrete primary flake from site AH13584



Plate 7: Silcrete bedrock outcrop with negative flake scars from site AH13584



Plate 8: Sample range of stone artefacts from site AH13584



Plate 9: Large silcrete core located in the modern day quarry, at the base of the cliff

Appendix 2

Unanticipated Discovery Plan

Unanticipated Discovery Plan

Procedure for the management of unanticipated discoveries of Aboriginal relics in Tasmania

For the management of unanticipated discoveries of Aboriginal relics in accordance with the *Aboriginal Heritage Act 1975* and the *Coroners Act 1995*. The Unanticipated Discovery Plan is in two sections.

Discovery of Aboriginal Relics other than Skeletal Material

Step 1:

Any person who believes they have uncovered Aboriginal relics should notify all employees or contractors working in the immediate area that all earth disturbance works must cease immediately.

Step 2:

A temporary 'no-go' or buffer zone of at least 10m x 10m should be implemented to protect the suspected Aboriginal relics, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected Aboriginal relics have been assessed by a consulting archaeologist, Aboriginal Heritage Officer or Aboriginal Heritage Tasmania staff member.

Step 3:

Contact Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible and inform them of the discovery. Documentation of the find should be emailed to **aboriginal@heritage.tas.gov.au** as soon as possible. Aboriginal Heritage Tasmania will then provide further advice in accordance with the *Aboriginal Heritage Act 1975*.

Discovery of Skeletal Material

Step 1:

Call the Police immediately. Under no circumstances should the suspected skeletal material be touched or disturbed. The area should be managed as a crime scene. It is a criminal offence to interfere with a crime scene.

Step 2:

Any person who believes they have uncovered skeletal material should notify all employees or contractors working in the immediate area that all earth disturbance works cease immediately.

Step 3:

A temporary 'no-go' or buffer zone of at least 50m x 50m should be implemented to protect the suspected skeletal material, where practicable. No unauthorised entry or works will be allowed within this 'no-go' zone until the suspected skeletal remains have been assessed by the Police and/or Coroner.

Step 4:

If it is suspected that the skeletal material is Aboriginal, Aboriginal Heritage Tasmania should be notified.

Step 5:

Should the skeletal material be determined to be Aboriginal, the Coroner will contact the Aboriginal organisation approved by the Attorney-General, as per the *Coroners Act 1995*.

Guide to Aboriginal site types

Stone Artefact Scatters

A stone artefact is any stone or rock fractured or modified by Aboriginal people to produce cutting, scraping or grinding implements. Stone artefacts are indicative of past Aboriginal living spaces, trade and movement throughout Tasmania. Aboriginal people used hornfels, chalcedony, spongelite, quartzite, chert and silcrete depending on stone quality and availability. Stone artefacts are typically recorded as being 'isolated' (single stone artefact) or as an 'artefact scatter' (multiple stone artefacts).

Shell Middens

Middens are distinct concentrations of discarded shell that have accumulated as a result of past Aboriginal camping and food processing activities. These sites are usually found near waterways and coastal areas, and range in size from large mounds to small scatters. Tasmanian Aboriginal middens commonly contain fragments of mature edible shellfish such as abalone, oyster, mussel, warrener and limpet, however they can also contain stone tools, animal bone and charcoal.

Rockshelters

An occupied rockshelter is a cave or overhang that contains evidence of past Aboriginal use and occupation, such as stone tools, middens and hearths, and in some cases, rock markings. Rockshelters are usually found in geological formations that are naturally prone to weathering, such as limestone, dolerite and sandstone.

Quarries

An Aboriginal quarry is a place where stone or ochre has been extracted from a natural source by Aboriginal people. Quarries can be recognised by evidence of human manipulation such as battering of an outcrop, stone fracturing debris or ochre pits left behind from processing the raw material. Stone and ochre quarries can vary in terms of size, quality and the frequency of use.

Rock Marking

Rock marking is the term used in Tasmania to define markings on rocks which are the result of Aboriginal practices. Rock markings come in two forms; engraving and painting. Engravings are made by removing the surface of a rock through pecking, abrading or grinding, whilst paintings are made by adding pigment or ochre to the surface of a rock.

Burials

Aboriginal burial sites are highly sensitive and may be found in a variety of places, including sand dunes, shell middens and rock shelters. Despite few records of pre-contact practices, cremation appears to have been more common than burial. Family members carried bones or ashes of recently deceased relatives. The Aboriginal community has fought long campaigns for the return of the remains of ancestral Aboriginal people.

Further information on Aboriginal Heritage is available from:

Aboriginal Heritage Tasmania
Natural and Cultural Heritage Division
Department of Primary Industries, Parks, Water and Environment
GPO Box 44 Hobart TAS 7001

Telephone: **1 300 487 045**

Email: **aboriginal@heritage.tas.gov.au**

Web: **www.aboriginalheritage.tas.gov.au**

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Appendix 3

Aboriginal Community Consultation Record