



Samuel and Sorell Streets, Brighton
Land Rezoning

Aboriginal Heritage Assessment Report
Final Version 1
Redacted

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Executive Summary

Project Outline

The Brighton Council is considering rezoning a 30ha parcel of land at Sorell/Samuel Streets and Boyer/Cobbs Hill Roads, at Brighton. The zoning is anticipated to be changed from Rural Living (5000sqm) lots to General Residential (minimum 450sqm) lots.

CHMA Pty Ltd and Rocky Sainty (AHO) have been engaged by the Brighton Council to undertake an Aboriginal heritage assessment for the proposed land rezoning (the study area as shown in Figures 1-3), in order to identify any potential Aboriginal heritage constraints.

Registered Aboriginal Sites in the Vicinity of the Study Area

As part of the initial desktop assessment for the Brighton Sorrell Street Rezoning area, CHMA (2023) submitted an Aboriginal Heritage Register (AHR) search request for the study area. The AHR search results identified a total of 56 registered Aboriginal heritage sites that are situated within an approximate 3km radius of the Sorrell Street Rezoning Area (search results provided by Billy Paton-Clarke from AHT on 2 November 2023). The AHR search results show that there are no registered Aboriginal heritage sites that are situated within the study area itself. The closest registered sites are situated around 200m to the east of the study area. The detailed AHR search results are presented in section 4.3 of this report.

Results of the Field Survey Assessment

The field survey assessment for the Sorrell Street Rezoning Area resulted in the recording of one Aboriginal Heritage Site (Site AH14306), which is classified as an isolated find. Table i provides the summary details for the newly recorded Aboriginal heritage site, with Figure i showing the location of the sites in relation to the project area. The detailed site descriptions are provided in Appendix 2 of this report.

Besides AH14306, no other Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified within the Brighton Sorrell Street Rezoning study area. The field survey did not identify any stone material types present within the study area that would be in any way suited for artefact manufacturing. The field survey was able to confirm that there are no large outcrop features present in the study area, with bedrock outcrop only exposed to up to a metre above ground level, which eliminates the possibility of Aboriginal rock shelters being present.

Given some constraints in surface visibility, it can't be stated with absolute certainty that there are no additional undetected Aboriginal heritage sites present in the study area. With this acknowledged, the survey assessment still did achieve effective coverage of 6 490m². This level of effective coverage is deemed to be sufficient for the purposes of generating a reasonable impression as to the extent, nature and distribution of

Aboriginal heritage sites across the study area. The survey results can therefore be taken as a reasonably accurate indication that either there are no other Aboriginal sites located in the study area, or site and artefact densities across the study area are likely to be low to very low, reflecting sporadic activity. The most likely site type to be present would be small artefact scatters or isolated artefacts, or very sparse midden deposits. It should be noted that the study area boundaries do not extend down to the foreshores of the River Derwent Estuary, which is where midden deposits are most likely to be concentrated. As such, the potential for shell midden deposits to be present in the study area is significantly reduced.

The field team did not identify any specific locations within the study area where it was thought that there was the potential for more elevated concentrations of artefacts to be present, representing camp sites or other such focal points of activity. However, if undetected isolated artefacts or low density artefact scatters are present in the study area, they are most likely to be situated within 70m either side of the margins of Ashburton Creek.

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

Table i: Summary details for the Aboriginal sites identified during the field survey assessment of the Sorrell Street Rezoning Area

AH No.	Grid Reference (GDA 94)	Site Type	Site Description
AH14306		Isolated Find	Isolated find consisting of one mudstone flake. The artefact site was identified within an erosion scald on the mid-slope of a discrete rise with a gradient of approximately 10° within a farm paddock. AH14306 is located no more than 60m west of Ashburton Creek, a named watercourse that flows into the Derwent River. Ground surface visibility within the erosion scald was observed to be as much as 90-100%, with 10% ground surface visibility observed in the surrounding area due to dense grass.

Significance Assessment

The Aboriginal site recorded during the current assessment (AH14306) has been assessed and allocated a rating of significance. 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 significance ratings for AH14306. A more detailed explanation for the assessment ratings are presented in section 8. Section 9 of this report presents a statement of social significance provided by Rocky Sainty for the recorded site and the study area more broadly.

Table ii: Summary significance ratings for recorded Aboriginal sites

Site Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH14306	Isolated Find	Low	Low	N/A	Medium-High

Management Recommendations

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

- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region (see sections 3 and 4 of this report).
- The results of the investigation as documented in this report (see section 7)
- Consultation with Aboriginal Heritage Officer Rocky Sainty and the outcomes of the Aboriginal community consultation (see section 9 and Appendix 4)
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (see section 10).

Table iii provides the summary management recommendations for this project. The more detailed recommendations are presented in section 11.

Table iii: Summary management recommendations for the project

Area	Grid Reference (GDA 94)	Management Recommendations
Recommendation 1 AH14306		<p>Site is classified as an Isolated artefact which is located on the mid-slope of a discrete rise, 60m west of Ashburton Creek. The following recommendations apply.</p> <ul style="list-style-type: none"> • The location of the site is to be plotted onto the design plans for the Sorrell Street Rezoning and Development project area. • Prior to any ground disturbing works commencing in this area, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 5m buffer applied. There must be no soil disturbance within the barricaded zone. Barricading is to be removed on completion of the construction works in this area. • Construction contractors should be informed of the location of the site and informed that the site is not to be impacted. • If the site may be impacted, then seek Permit.
Recommendation 2 (Ashburton Creek)		<ul style="list-style-type: none"> • Ashburton Creek runs through the Rezoning study area. It has been assessed that there is a slightly increased potential for undetected Aboriginal sites to occur along the margins of this creek. • The preferred management option would be to conserve the riparian margins of Ashburton Creek in open space (50m either side of the creek channel). Any soil disturbances within this designated open space area should be kept to a minimum. This will reduce the potential for any impacts on undetected Aboriginal heritage values in the study area.
General Recommendations		<ul style="list-style-type: none"> • If previously undetected Aboriginal sites or suspected features are located within these three areas during the works program, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 3). • Copies of this report should be submitted to AHT and the AHC for review and comment.

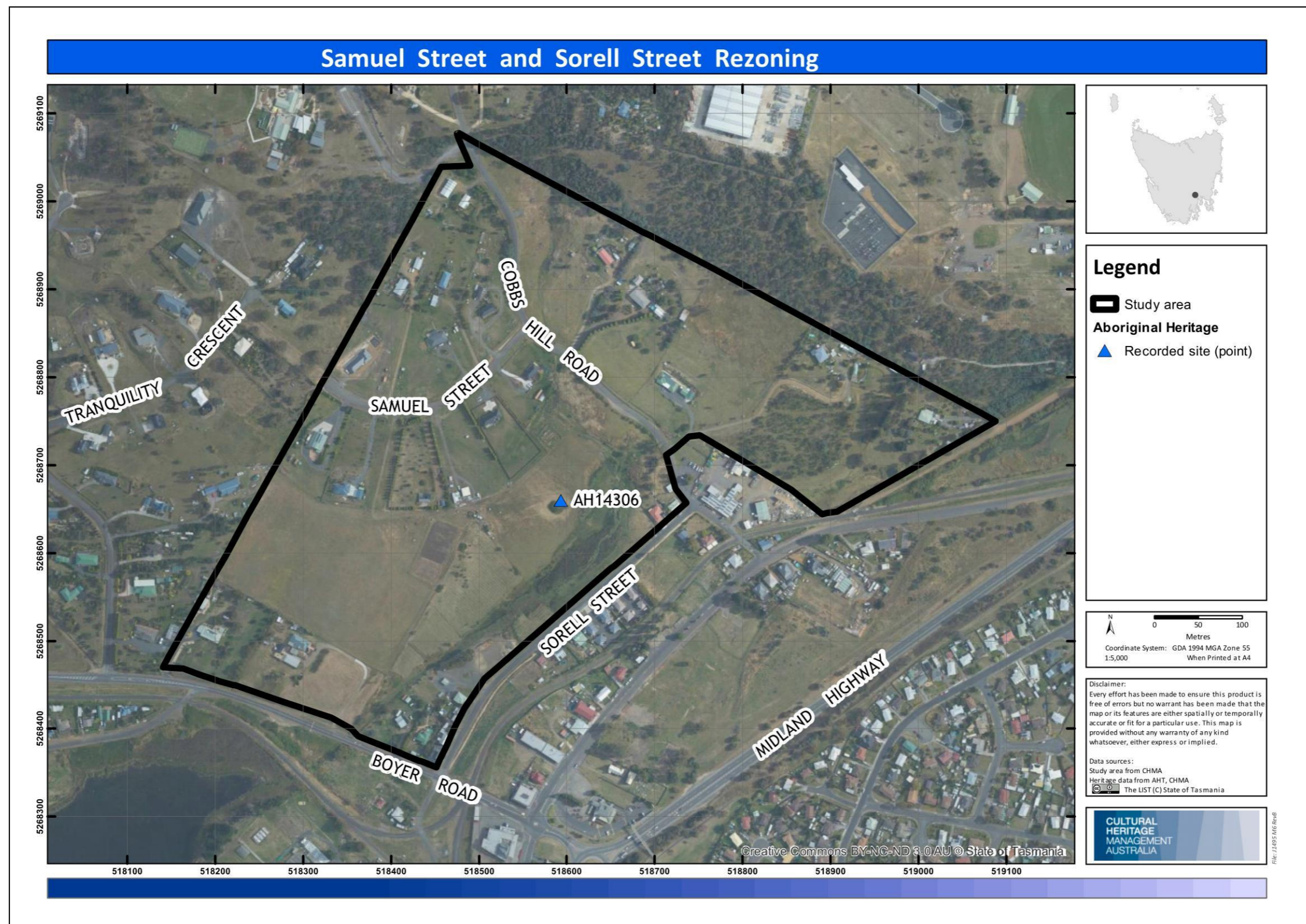


Figure i: Aerial image showing the location and extent of Aboriginal sites in the Brighton Sorrell Street Rezoning and Development project area

1.0 Project Description

1.1 Project Outline

The Brighton Council is considering rezoning a 30ha parcel of land at Sorrell/Samuel Streets and Boyer/Cobbs Hill Roads, at Brighton in the Southern Region of Tasmania (see Figures 1-3). The zoning is anticipated to be changed from Rural Living (5000sqm) lots to General Residential (minimum 450sqm) lots. The project is known as the Sorrell Street Rezoning and Development project area.

CHMA Pty Ltd and Rocky Sainty (AHO) have been engaged by the Brighton Council to undertake an Aboriginal heritage assessment for the proposed land rezoning (the study area), in order to identify any potential Aboriginal heritage constraints. This report presents the findings of the Aboriginal heritage assessment,

1.2 Aims of the Assessment

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

- To undertake an Aboriginal cultural heritage assessment for the Sorrell Street Rezoning area (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 (2023)*.
- Search the Aboriginal Heritage Register (AHR) to identify previously registered Aboriginal heritage sites within and in the general vicinity of the study area.
- Undertake relevant archaeological, environmental and ethno-historical background research to develop and understanding of site patterning within the study area.
- To locate, document and assess any Aboriginal heritage sites located within the study area.
- To assess the archaeological and cultural sensitivity of the study area.
- To assess the scientific and Aboriginal cultural values of any identified Aboriginal cultural heritage sites located within the study area.
- Consult with (or ensure the Aboriginal community representative consults with) Aboriginal organisation(s) and/or people(s) with an interest in the study area to obtain their views regarding the cultural heritage of the area.
- To develop a set of management recommendations aimed at minimising the impact of any future proposed activities within the project area on any identified Aboriginal heritage values.
- Prepare a report which documents the findings of the Aboriginal heritage assessment and meets the requirements of the current *Aboriginal Heritage Standards and Procedures* prepared by AHT.

1.3 Project Methodology

A three stage project methodology was implemented for this assessment.

Stage 1 (Pre-Fieldwork Background Investigations)

Prior to field work being undertaken, the following tasks were completed by CHMA staff.

Consultation with Aboriginal Heritage Tasmania

Aboriginal Heritage Tasmania (AHT) was contacted and informed that CHMA and Rocky Sainty had been engaged to undertake an Aboriginal heritage assessment for the Brighton Sorrell Street Rezoning and Development Area. As part of this initial contact, CHMA submitted an Aboriginal Heritage Register (AHR) search request for the study area (search request submitted on 21 October 2023).

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 and Sarah Klavins (CHMA archaeologists) 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.

The collation of relevant documentation for the Project

The following documentation was collated for this project.

- A review of the Aboriginal Heritage Register (AHR), and the collation of information pertaining to any registered heritage sites located within the general vicinity 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.
- Geotechnical information for the study area, including soil and geology data.

Stage 2 (Field Work)

Stage 2 entailed the field work component of the assessment. The field survey was undertaken over a period of one day (22 November 2023) by Sarah Klavins (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer).

Prior to the fieldwork programme commencing, a fieldwork brief was conducted between CHMA and Rocky Sainty to agree on the purpose, scope, and proposed method of the heritage survey.

As noted in section 1.1 of this report, the focus of this assessment is the 30ha parcel of land at Sorrell/Samuel Streets and Boyer/Cobbs Hill Roads, Brighton. The field team walked an estimated series of 7.78km of survey transects across the study area, with the average width of each transect being between 5-10m. The survey team focused on

areas within the study area that were relatively undisturbed (with the exception of pastoral activities), with smaller blocks of land that have already undergone significant residential development excluded from the survey scope. Section 6 provides further details as to the survey coverage achieved within the study area.

Where any heritage places were identified within the disturbance footprint, the location of these areas were recorded on a Samsung Galaxy Tablet using the GDA 94 datum. Depending on external conditions, these units can provide a spatial accuracy of +/-2m.

Site Recordings

For any Aboriginal sites identified by the field team, the following details were recorded.

- The spatial extent of the site (polygon co-ordinates).
- The nature of Aboriginal heritage deposits and features associated with the site.
- Any intra-site variations that occur.
- The condition of the site, and any notable impacts to the site.
- Photos and site maps.
- Proposed management recommendations (as discussed between the archaeologist and AHOs).

Aboriginal Heritage Register (AHR) forms for all located Aboriginal sites have been completed and submitted as part of the process.

The results of the field investigation were discussed between Rocky Sainty and Sarah Klavins. This included the potential cultural and archaeological sensitivity of each of the three surveyed areas, and possible management options for identified Aboriginal heritage sites.

Stage 3 (Report preparation)

Stage 3 of the project involves the production of a report that includes an analysis of the data obtained from the field survey, an assessment of archaeological sensitivity of the study area and management recommendations. The report was prepared by Sarah Klavins and Stuart Huys (CHMA), in liaison with Rocky Sainty. The report has been structured to be compliant with the *Aboriginal Heritage Standards and Procedures 2023* prepared by AHT.

A draft copy (one electronic copy) of the report has been submitted to Brighton Council and AHT for review. In addition, CHMA has provided AHT with all site spatial data files, and mapping associated with the project (in ESRI shape file format (GDA94)).

The draft report has also been sent out to a range of Tasmanian Aboriginal organisations in Southern Tasmania for review and comment. The outcomes of this consultation are presented in Appendix 4.

1.4 Project Limitations

Most archaeological investigations are subject to limitations that may affect the reliability of the results. The main constraint to the present investigation was restricted surface visibility due primarily to the presence of vegetation cover, and in the instance of graded driveways, imported gravel. Surface visibility within the study area varied between an estimated average of 0% and 60%. Erosion scalds, ploughed fields, animal tracks, and informal vehicle tracks provided locales of improved surface visibility within the study area. The constraints in surface visibility limited the effectiveness of the survey assessment to some degree. This is discussed in more detail in Section 6 of this report.

In addition, the field team did not inspect several of the very highly disturbed smaller land holdings within the study area, which had already been built on and developed.



Plate 1: Rocky Sainty, the AHO for this project

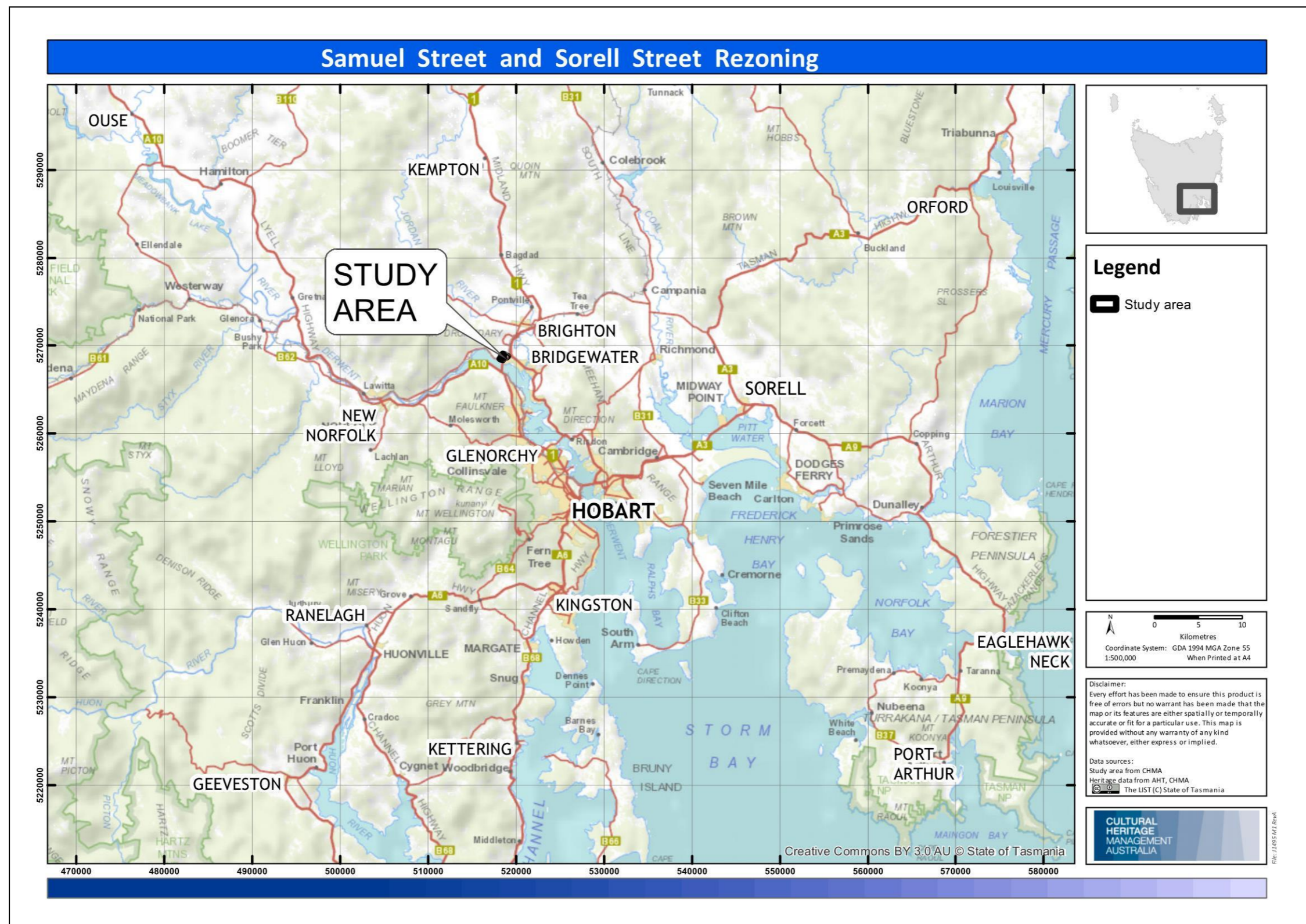


Figure 1: Topographic map showing the general location of the study area at Brighton, in the South East Region of Tasmania

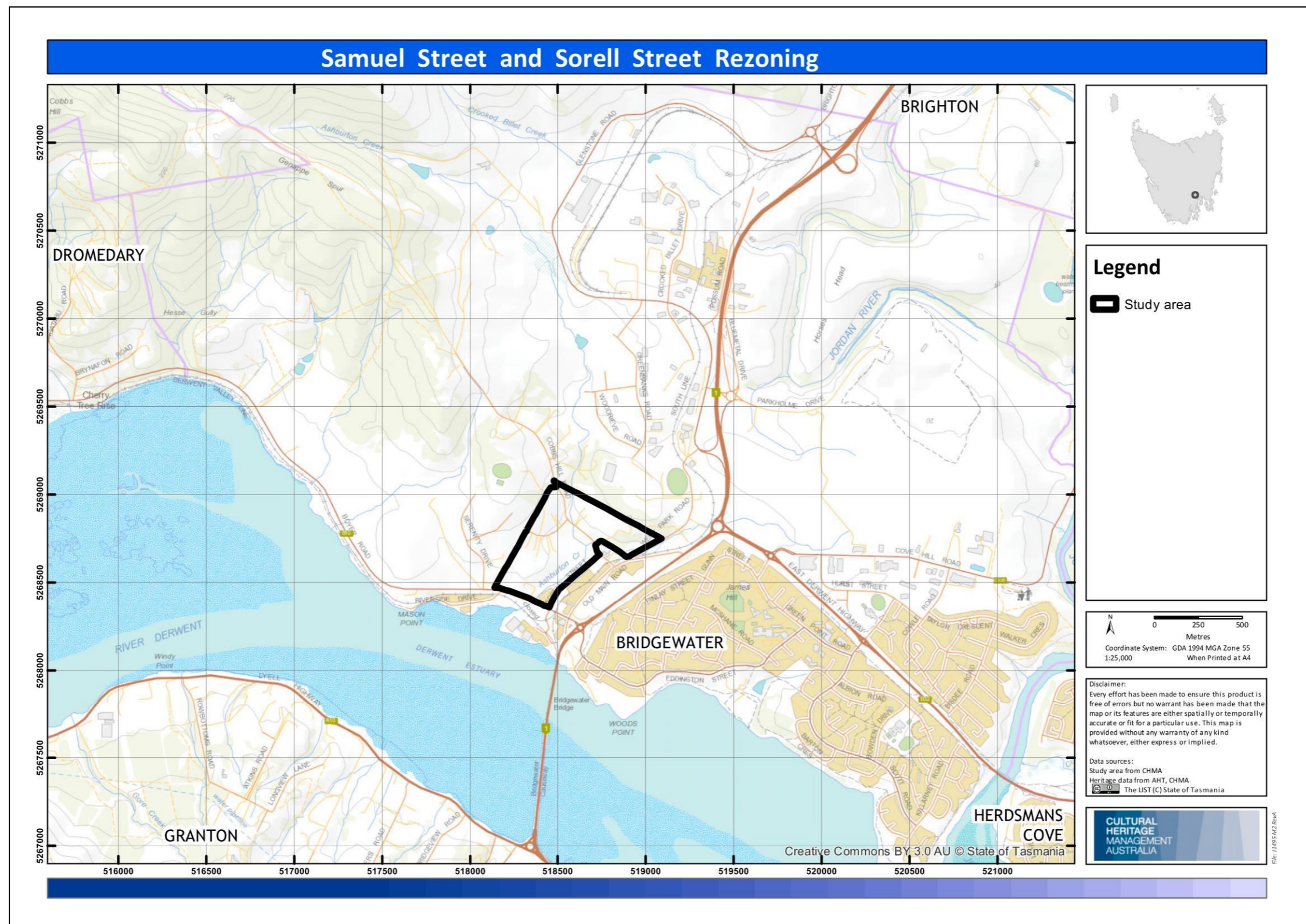


Figure 2: Topographic map showing the landscape setting of the Sorrell Street Rezoning and Development Project Area that was the focus of this assessment

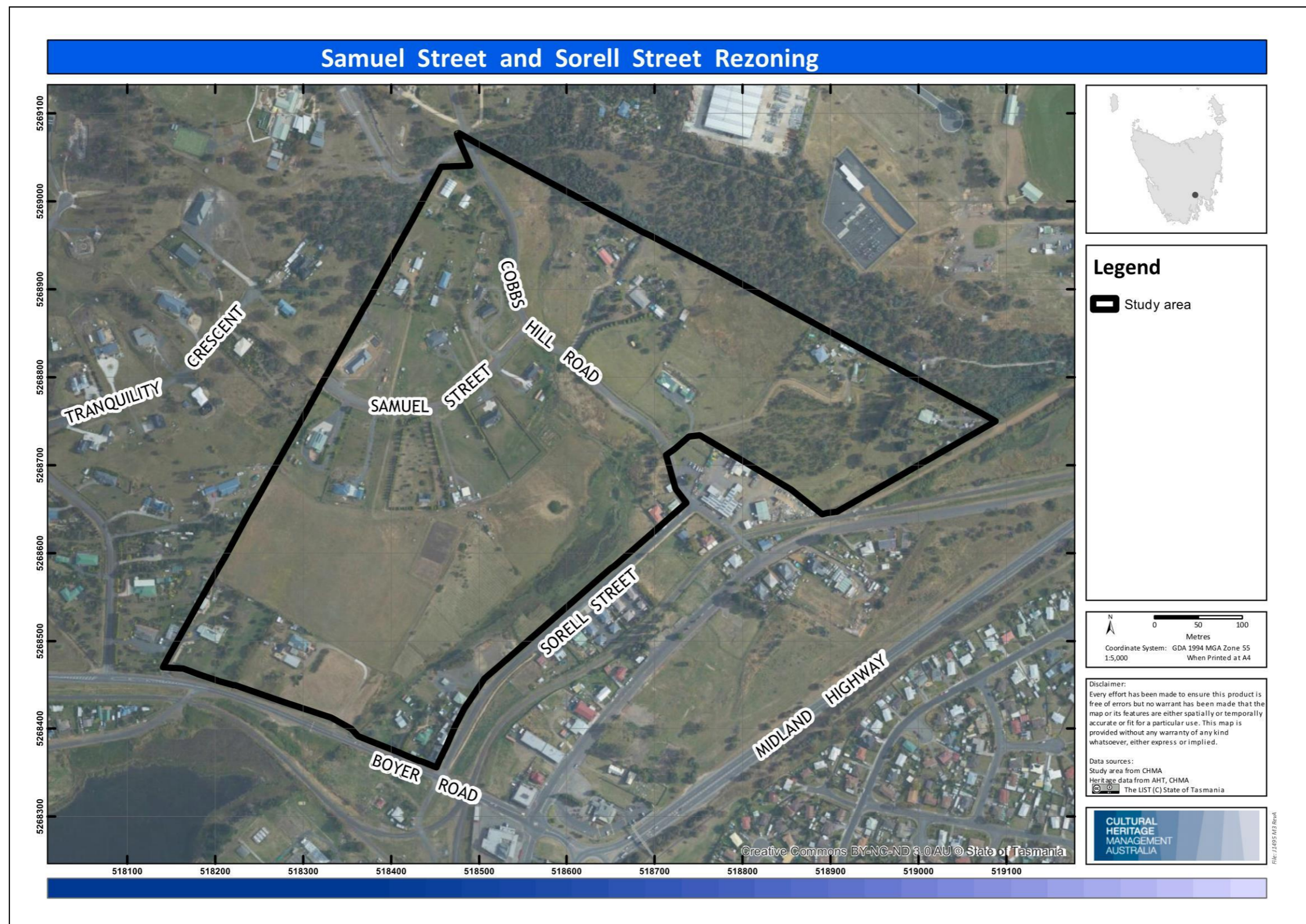


Figure 3: Aerial map showing the landscape setting of the Sorrell Street Rezoning and Development Project Area that was the focus of this assessment

2.0 Environmental Setting of the Study Area

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.

2.2 Landscape Setting of the Study Area

The Brighton Sorrell Street Rezoning and development Project Area is located at Bridgewater in the South East Region of Tasmania. The study area encompasses a total area of no more than 30ha, or 295, 558m². It is situated on the lower to basal south-east slopes of the Genappe Spur, which runs in a north-west to south-east direction off Cobbs Hill. The project area consists of paddocks and residential development that has been cleared of native vegetation, with the terrain characterised by discrete rises and

gently undulating plains. Slope gradients within the project area typically range between 2° and 30° (see Plate 2).

The southern boundary of the study area approaches to within 150m of the River Derwent Estuary. The River Derwent estuary is a 'ria' or drowned river valley formed by coastal submergence about 6,000 years ago. The shoreline of the estuary in the surrounds of Bridgewater is low-energy, with mudflats and shoals exposed at low tide. The River is estuarine at this point, and subject to tidal influences. The other major water course in the vicinity of the study area is the Jordan River. The Jordan River has its' headwaters at Lake Tiberias, around 40km to the north-east of the study area. From here the river flows in a north-west direction through a broad open valley system, cutting across the Midland Highway near Jericho. It then enters more steeply incised hills just south of Melton Mowbray, where the river then loops around to the south-east, eventually emptying into the Derwent River at Herdsmans Cove. The river is also estuarine at this point, and subject to tidal influences.

Ashburton Creek, is the only named fresh water course that is situated within the study area itself (see Plate 3). This is an ephemeral water course that flows in a south-east direction down from Cobbs Hill and along the east edge of the Genappe Spur, through the study area and eventually emptying into the River Derwent just east of Mason Point. Within the study area, the creek channel is quite narrow and moderately incised, being flanked on either side by hill slopes.

The underlying geology across the northern portion of the study area is dominated by Mesozoic dolerite and related rocks, while the southernmost portion of the study area consists of Cenozoic cover sequences of Tholeiite basalt. The westernmost boundary of the study area consists largely of Cenozoic cover sequences of alluvial gravel, sand, and clay, and clay-rich alluvial cobble deposit, clasts dominantly of weathered dolerite with subordinate well-rounded siliceous clasts.

The existing soil landscapes broadly reflect the underlying geology of the area. The majority of the study area consists of moderately well drained black soils developed on Jurassic dolerite bedrock and colluvium on low undulating (3-10%) land, with undifferentiated soils developed on Quaternary alluvium occurring in the southeast of the study area.

From an Aboriginal heritage perspective, neither basalt nor dolerite are well suited to the manufacture of flaked stone tools and were seldom targeted for this purpose. It is therefore very unlikely that evidence of Aboriginal quarrying or stone procurement activity will be present within the study area. The well-drained black soils that occur on the western margins of Ashburton River appear to have reasonable depth. Cultural deposits within these areas may therefore also have some depth to them and the potential to contain in situ Aboriginal cultural heritage deposits. However, this will

depend largely on levels of disturbance within the area, which appears to be impacted significantly by historic pastoral and agricultural activities.

The vegetation within the study area consists primarily of agricultural, urban, and exotic vegetation. The entirety of the study area has been cleared of native vegetation, and replanted with grasses and other exotic species (see Plates 2-4). This was presumably carried out as part of earlier pastoral activities and continued as part of the urban development of the area.

A range of infrastructure is situated within the study area consisting of residential development. The land clearing and installation of residential dwellings within the study area will have resulted in varying levels of impacts to the Aboriginal heritage resources that may be present in these areas. However, there parts of the study area where the paddocks appear to have been used primarily for grazing with moderate disturbance. It is possible that any Aboriginal sites that are present in these areas may be relatively intact.



Plate 2: View west behind depot at 6 Cobb Hill Road showing typical ground surface visibility, vegetation, and slope gradients



Plate 3: View northwest where Ashburton Creek intersects the activity area in the northwest corner.



Plate 4: View west of typical vegetation and ground surface visibility within 6 Cobb Hill Road



Plate 5: View east towards Sorrell Street showing typical ground surface visibility within the remaining paddocks



Plate 6: View south of residential dwellings along Samuel Street.



Plate 7: View south towards the Derwent River



Plate 8: View north of ground surface visibility west of Well Park Road.

3.0 Ethno-historic Background

3.1 Aboriginal Social Organisation in Tasmania

Ryan (2012) explains that the terms 'nation' and 'clan' are the preferred terms used by the Tasmanian Aboriginal community in place of 'tribe' and 'band' respectively. This terminology has been adopted in the following discussion.

According to Jones (1974), the social organisation of Tasmanian Aboriginal society appears to have consisted of three social units, these being the hearth group, the band (clan) and the tribe (nation). The hearth group was the basic family unit and would generally have consisted of a man and woman, their children, aged relatives and sometimes friends and other relatives. The size of hearth groups would generally range from between 2-8 individuals (Jones 1974: Plomley 1983). Plomley (1983) provides a description made by Peron of a hearth group he encountered at Port Cygnet:

There were nine individuals in this family, and clearly they represented a hearth group, because Peron visited their campsite with its single hut. The group comprised an older man and wife, a younger man and wife, and five children, one a daughter (Oure-Oure) of the older man and wife, and the other four the children of the younger man and wife. (Plomley 1983:168).

The clan appears to have been the basic social unit and was comprised of a number of hearth groups (Jones 1974). Jones (1974:324-325) suggests that the clan owned a territory and that the boundaries of this territory would coincide with well-marked geographic features such as rivers and lagoons. Whilst the clan often resided within its territory, it also foraged widely within the territories of other clans. Brown (1986:21) states that the band was led by a man, usually older than the others and who had a reputation as a formidable hunter and fighter. Brown also suggests that the clan (as well as the hearth group) was ideally exogamous, with the wife usually moving to her husband's band and hearth group.

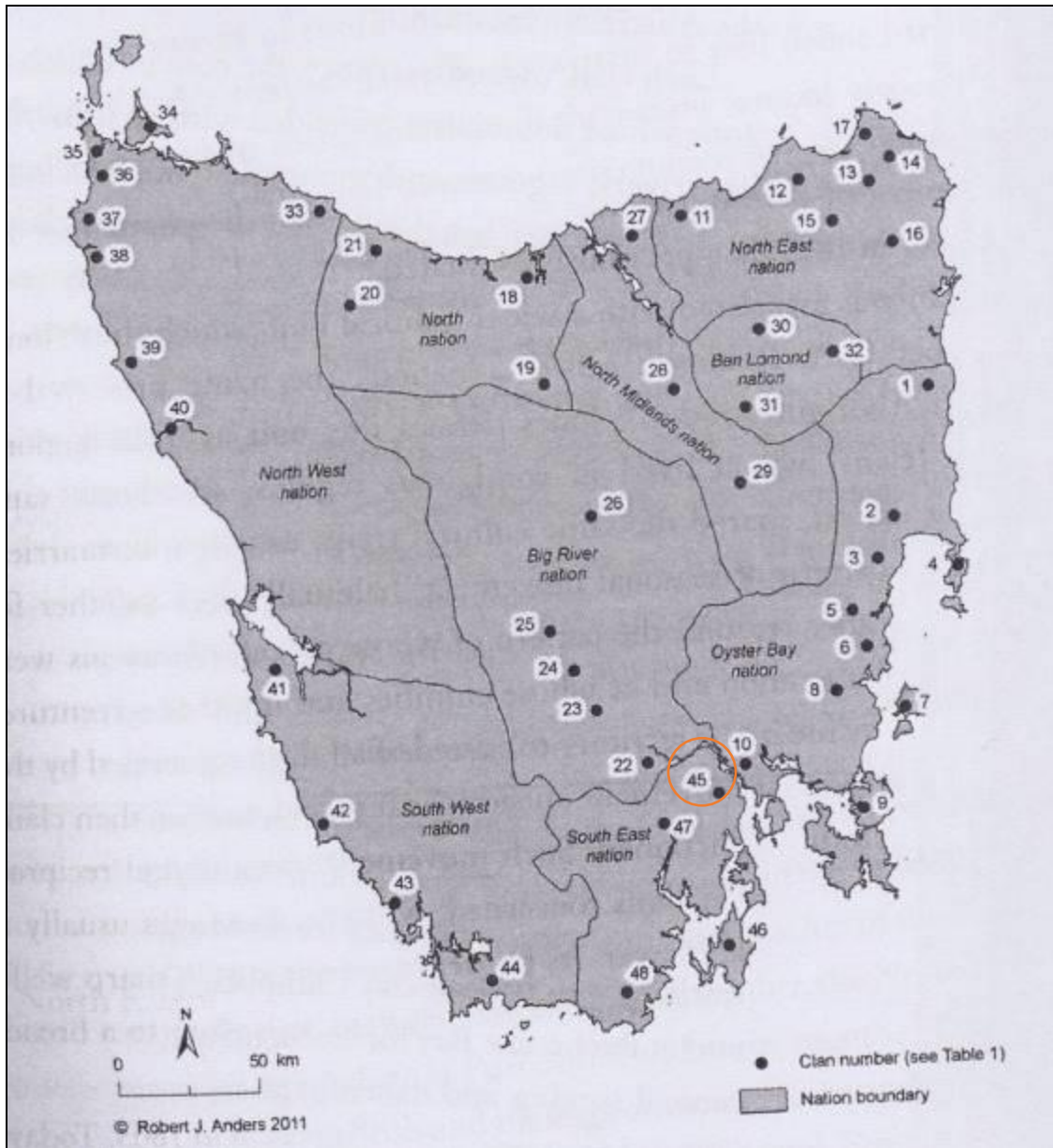
Each clan was associated with a wider political unit, the nation. Jones (1974:328-329) defines the tribe (or nation) as being:

...that agglomeration of bands (clans) which lived in contiguous regions, spoke the same language or dialect, shared the same cultural traits, usually intermarried, had a similar pattern of seasonal movement, habitually met together for economic and other reasons, the pattern of whose peaceful relations were within the agglomeration and of whose enmities and military adventures were directed outside it. Such a tribe had a territory, consisting of the sum of the land owned by its constituent bands...The borders of a territory ranged from a sharp well defined line associated with a prominent geographic feature to a broad transition zone.
Jones (1974:328-329)

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 (2012:13) presents a map showing the approximate boundaries for the nine Tasmanian Aboriginal Nations. This map shows that the study area is situated around the confluence of the boundaries of three Aboriginal Nations, these being the South East Nation, The Oyster Bay Nation and the Big River Nation (see Figure 4).



**Figure 4: The Aboriginal Nations of Tasmania in relation to the study area
(after Ryan 2012:13)**

The South East Nation

The South East Nation was essentially a maritime people with their territory encompassing 555km of coastline, and their economy being based primarily on coastal resources. The boundaries of their territory extended from the west bank of the Derwent River, around present day New Norfolk down to South Cape, an inland through to the Huon Valley, and included all the D'Entrecasteaux Channel and Bruny Islands. In total, the territory of the South East Tribe encompassed 3100km² (Ryan 2012).

It is believed that prior to European contact the South East Nation probably consisted of seven individual bands. However, only four clans (bands) have been definitively recorded by the early European settlers. The southern margins of the River Derwent, around Bridgewater falls within the range of the Mouheneenner Band who occupied the land around present day Hobart.

The South East Nation is believed to have spent the vast majority of the year exploiting the resources along the coastline, and the immediate hinterland areas. Their seasonal movement took place up and down the coastline. In winter they were primarily focused along the coastline gathering shellfish. In November they are reported to have gathered on North Bruny Island to exploit the mutton-bird colonies. By mid-summer the people had moved down to Recherche Bay to hunt seals. The South East People are known to have built sturdy bark catamarans, which were used to access the various Islands D'Entrecasteaux Channel and Bruny Islands. More extensive voyages were also undertaken across Storm Bay to the Tasman Peninsula (Ryan 2012). Figure 5 illustrates the proposed movements of the South East Nation.

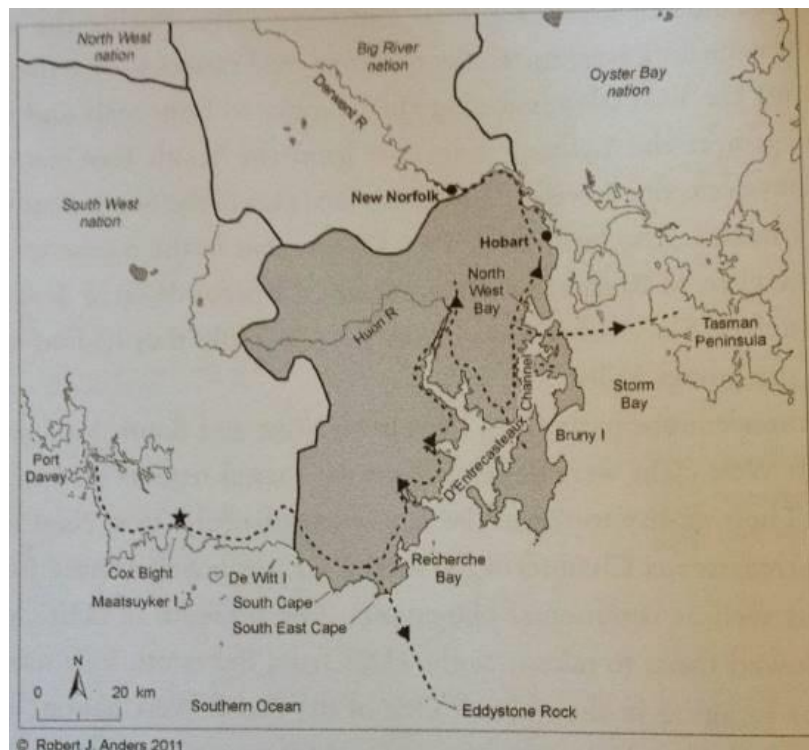


Figure 5: Seasonal movement of the South East Nations (after Ryan 2012:40)

The Oyster Bay Nation

The Oyster Bay Nation occupied the area to the east of the Jordan River, on the north side of the River Derwent, 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 movement of the Oyster Bay Nation through the landscape is thought to have been largely based on the seasonal availability of food resources. In this sense, the Oyster Bay Nation could be divided into two distinct groups: the northern group (from North Oyster Bay through to St Patricks Head) and the southern group (from Little Swanport through to the Tasman Peninsula) (Ryan 2012:18).

The southern Oyster Bay people started to move inland in early spring to hunt and fish. The Moomairremener generally commenced moving inland around September/October, travelling up the Derwent River towards New Norfolk, and across to Abysinia, and from there they would travel along the Clyde and Ouse Rivers. Travel was along well-defined routes, generally along the edges of the Band's territory. The two big attractions of the Big River country were the kangaroo hunting grounds around Great Lake and the Clyde and Ouse Rivers, and the availability of a potentially intoxicating gum procured from the *Eucalyptus gunii* tree. The Moomairremener would begin moving back through the Midlands in late February, early March, eventually returning to the coastal areas around June (Ryan 2012:17-20). These routes are shown in Figure 6 below.

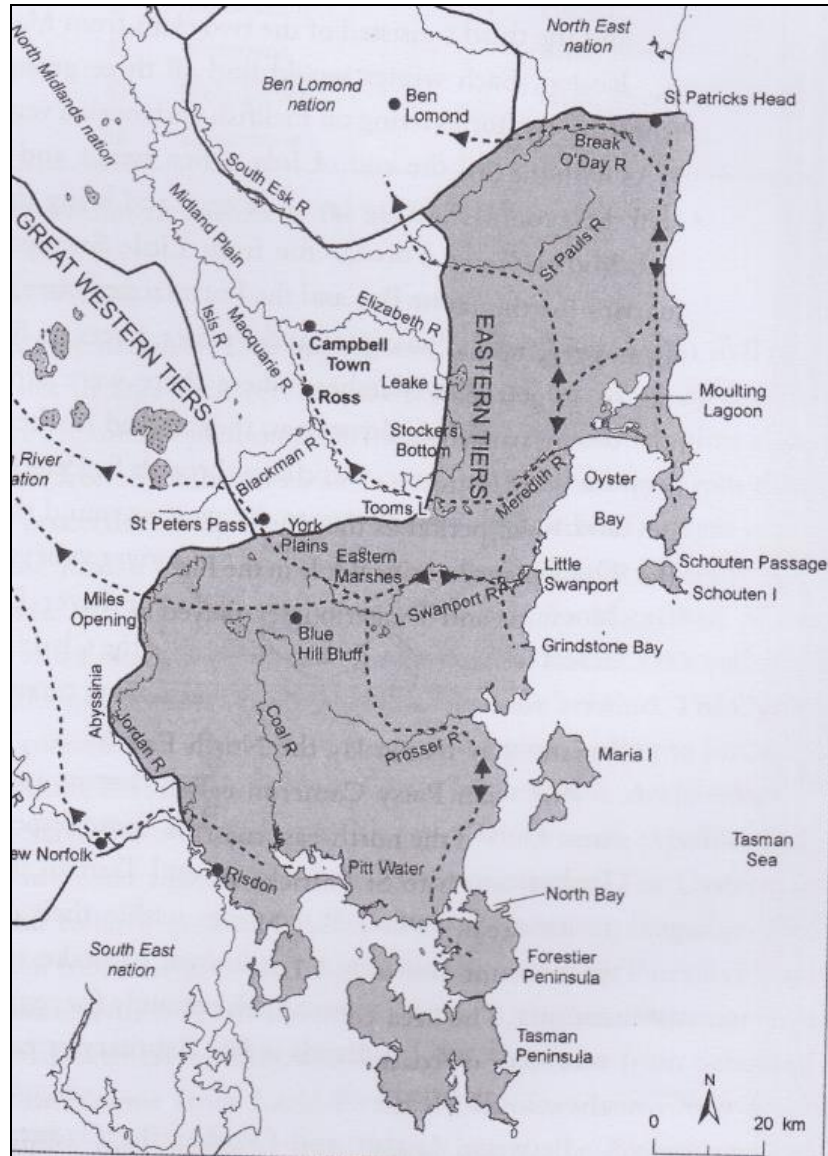


Figure 6: Seasonal movement of the Oyster Bay Nation clans (Ryan 2012:19)

The Big River Nation

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).

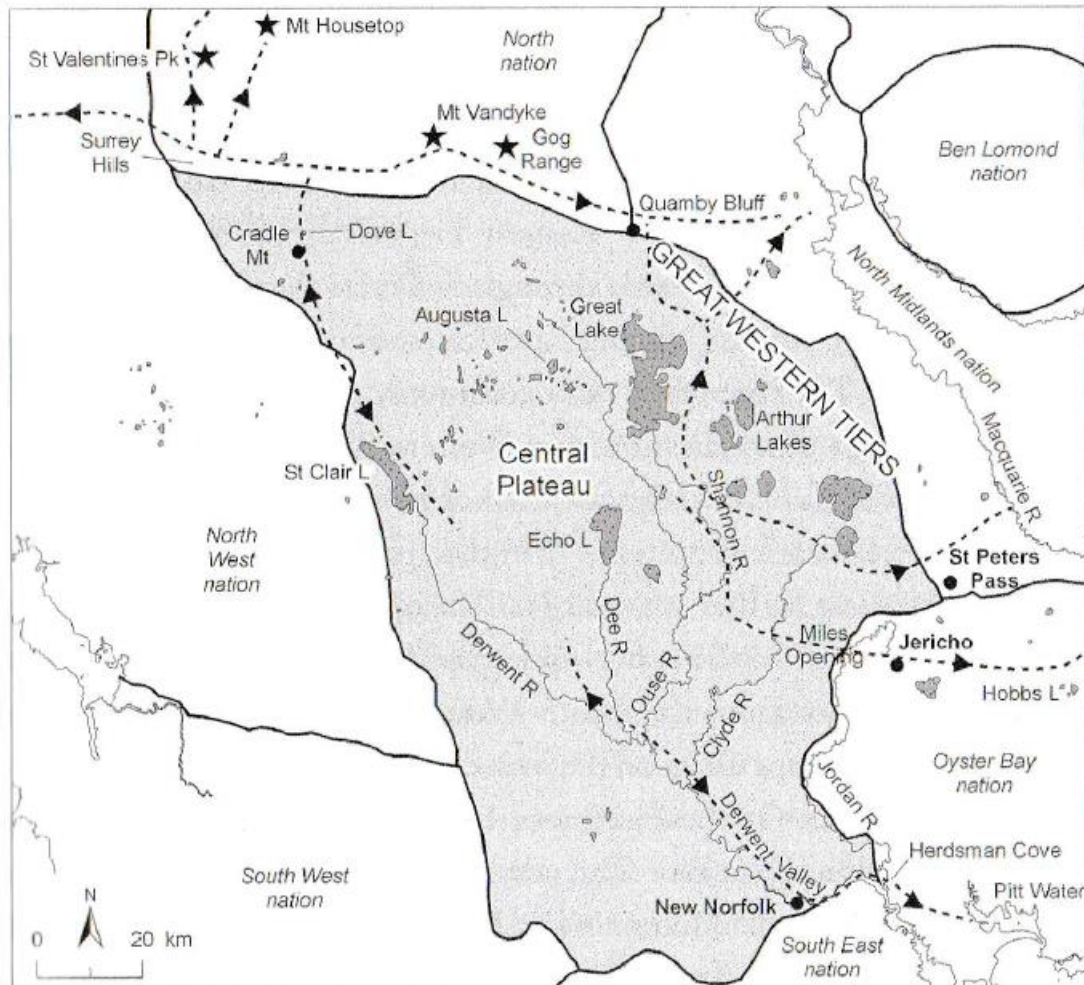
The Big River Nation is believed to have comprised five clans; the Leenowwenne people who lived near New Norfolk, the Pangerninghe who lived on the west bank of the River

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 north-west portion of the study area would have been part of the land occupied by the Leenowwenne people.

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 7). 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 7: Trade routes and seasonal movements of the Big River Nation
(Ryan 2012: 27)**

3.2 Material Culture, Social Customs and Ethnographic Sources

The ethnographic observations of early European explorers provide a valuable snapshot into aspects of the material cultural and social customs of the Aboriginal Nations inhabiting southeastern Tasmania. 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). These observations are especially valuable where they describe to those items and practices that do not survive in the archaeological record.

The Subsistence Economy

Information gleaned from the variety of ethnographic and historical sources for South East Tasmania provides some illustration of the subsistence economy in this region. There are a number of ethno-historic accounts that comment on the prevalence of shellfish and crustaceans in the diet of the local inhabitants (see Plomley 1966 and

1983). The archaeological evidence (in the form of midden sites) provides testimony to this.

In contrast, archaeological evidence for the consumption of fish is comparatively very sparse. This has led to some suggestions that fish was not a component of the diet of the Tasmanian Aborigines (see Jones 1974). At Adventure Bay in 1777 Cook reported how Aboriginal people refused a gift of fish (AT 2010:10). Robinson also recorded an instance of trying to convince his Aboriginal companions to eat fish, and the strong reluctance which they demonstrated (Plomley 2008:59).

Ethnographic accounts also indicate that terrestrial fauna was an important component of the Aboriginal diet. This is particularly the case with kangaroos and wallabies, which appear to have been hunted *en masse* at certain times of the year. McGowan (1985:92), for example reports that in May 1804 a large group of Aborigines, variously estimated to be up to 500 individuals, including men women and children were observed hunting kangaroo near the first European settlement at Risdon Cove. Robinson provides an account of the 'chief' Mannalargennana of the Oyster Bay tribe cooking wallaby:

...The animal is first thrown on the fire whole as is their custom with all animals, and when the hair is singed they take the carcase off the fire and rub off the scorched hair with their hands. This practice is tenaciously observed with all animals except the possum; the fur of this animal is first pulled off previous to its being placed on the fire. After the chief has rubbed the hair off the wallaby, he broke the fore leg by twisting it with his hands...He then cut the hind legs, after which he made a hole in the belly with his fingers and pulled out the entrails and then thrust in some hot ashes, the animal being previously roasted outside.
(Plomley 1966:548-549).

Possum also seems to have been frequently hunted. Plomley (1966:533) describes possums being knocked down out of trees with waddies, or people climbed trees to reach possum holes. Women again are recorded as hunting possum. Robinson records how foot and hand holes were cut in trees to assist climbing and the women used fibre ropes to pull themselves up the trunk (Plomley 1966:533).

Unfortunately, there are very few accounts available for the hunting of other terrestrial fauna. It is likely that a much wider range of species were targeted, including echidna and smaller marsupials.

In the Midlands region, birds and eggs appear to have also formed a major component of the diet of the local inhabitants, with swans, ducks and red bills being some of the main species targeted (Plomley 1966: 217). However, there are very few historical accounts available for South East Tasmanian regarding the hunting of birds and gathering of eggs. Nonetheless, it is reasonable to assume that this also was carried out at certain times of the year.

Only a few plant foods are documented in the ethnohistoric accounts as having been eaten. This includes a bulbous plant known as 'native bread' and a plant that has the appearance of asparagus which was found by the roots of peppermint trees (Plomley 1966). It is very likely that many more plant foods were eaten by the local Aboriginal population. Jones (1971:91-95) for example lists 70 edible plant species that are available in Tasmania, and are likely to have been consumed at times of seasonal availability. This would include tree ferns, fern roots, pig face and a variety of sea weeds.

Material Culture

The ethnographic observations of early European explorers provide a valuable snapshot into aspects of the material cultural and social customs of the Aboriginal people of South East Tasmania. These observations are especially valuable where they describe to those items and practices that do not survive in the archaeological record. Clothing, shelter, weapons and hunting tools are all aspects of material culture described in ethnographic sources.

While the early European explorers generally recorded the people of South East Tasmania as being mostly naked, there are references to kangaroo skin being used for capes, slings and binding for wounds. Both William Anderson (Cook's surgeon in 1777 when he anchored briefly in Adventure Bay) and Labillardiere (the 1793 expedition anchored in Recherche Bay) recorded seeing kangaroo skin used to bind injured feet (Dyer 2005:25). This was very effective it would seem as the people were able to keep up with their companions (Dyer 2005:26). Cook also recorded women using kangaroo skin slings to carry children, and there are several illustrations of this in the paintings by Petit and Lasueur from the Baudin expedition (Bonnemains *et al* 1988). Baudin's diaries suggest that women wore kangaroo skins slung across their shoulders, which provided both warmth and a means of carrying children and other items (Cornell 1974:329).

Ethnographic sources document a range of shelters used in Tasmania. The most common in the South East were simple windbreaks of thick strips of bark woven together and supported on vertical wooden poles, as seen in the artwork from the Baudin expedition (Bonnemains *et al* 1988). These shelters were often built facing west, offering protection against the cold winds off the Channel to the east (AT 2010:16). The other major type of shelter in South Eastern Tasmania was a durable, weatherproof structure made from bending leafy branches together to form a 'beehive' looking hut (AT 2010:15).

Robinson reported seeing huts that were decorated with symbols he recognised as similar to those observed in rock engraving sites at Cape Grim (Plomley 2008:17). In June 1804 Lieutenant Governor Collins made contact with Aboriginal people living on the Huon River (Plomley 2008:18). He recorded an 'Aboriginal village' with about twenty families congregated at the site. Labilliare similarly documented seeing a group of 5-6

huts made of 'leafy branches' and surrounded by a single fire, suggesting communal cooking, and piles of shellfish (AT 2010:16).

Plomley (1983:185-194) provides a comprehensive account of the weapons and hunting implements used by the Tasmanian Aborigines, based on the ethnographic accounts. It appears that the two main weapons used by the local inhabitants were the spear and the club. The spear was a simple flexible rod with a point at one end, the length of which appears to have varied significantly from between 6-12 feet. Spears in South East Tasmania do not seem to have been hafted with points, nor were they barbed (AT 2010:17). The waddie or club is described as a piece of wood about 60cm long, 2.5cm in diameter and slightly tapered toward the gripping end. This item is reported to have been used as a throwing stick as well as a club. In addition, Labillardiere records women at Recherche Bay collecting shellfish using a small chisel like wooden implement to prise the shellfish from the rocks (Plomley 1983:22).

In many of the early ethnographic accounts for the South East region, there is reference to the baskets carried by the Aboriginal people. The ethnographic sources indicate at least four different types of basket making in South East Tasmania. There are a number of reports of water vessels constructed from the fronds of giant kelp which could hold up to five to ten litres of water (see Labillardiere 1800:190). Other types include braided baskets made from bark and dried seaweed, woven rush baskets and grass baskets made from a grass called an iris that grew on Bruny Island (AT 2010:17). One of the more detailed descriptions of basket manufacture comes from Robinson while he was on Bruny Island:

The native basket is made of rushes of a species of grass called iris. In preparing them for use they place the same on a slow fire which gives them a tenacity that enables the manufacturer to twist them into threads. These are plaited together and then formed into a basket which in shape is somewhat semiglobular.
(Plomley 1966:58)

There are numerous ethnographic accounts for the South East region describing the watercraft used by the local inhabitants. From these accounts it appears that the South East people were active in their travels between the mainland and the numerous offshore islands.

One of the most detailed descriptions of these watercraft comes from Louis Freycinet, an officer on the *Naturalist* in 1802:

We have seen them and have measured several. They had the same dimensions and were constructed in exactly the same way. Three roles of the bark of the eucalypt made up its whole structure... These bundles when taken separately, resemble in a way the yard of a vessel, were joined at their ends, and this caused them to stick up in a point and make up the whole of the canoe. The

assemblage was made quite firm with a sort of grass or sedge. In this state, the craft had the following dimensions-

- *Length inside 2.95m*
- *Breadth outside 0.89m*
- *Total height 0.65m*
- *Depth inside 0.22m*
- *Size at the ends 0.27m*

They can put five or six peoples in these canoes; but more commonly only three or four are taken at a time. Their paddles are plain pieces of wood... Usually they sit down to manoeuvre their canoes; in that case they place bundles of grass to serve as seats. At other times they stand up. We have seen them cross the Channel only in fine weather. One can imagine that such a fragile and imperfect craft would never be able to make their way, let alone keep afloat, in a rough sea... It is to be noted that they always put a fire at one end of their canoes, and to prevent the fire from spreading they place under it a bed of earth or ashes of sufficient thickness. (Plomley 1983:119-120).

Interestingly, although stone artefacts dominate the archaeological record for Tasmania (and Australia generally), there are few ethnographic accounts in Tasmania documenting their use. Those observations that are made, primarily relate to the finding of stone implements at camp sites. Frustratingly, there are virtually no accounts regarding the form of the implements, how they were made and used. Robinson reports that he:

Obtained a stone from one of the Bruny natives with which they sharpen their waddies...It has the resemblance of flint and is found at the Isthmus of Brune [sic] (Plomley 1966:113)

One of the very few descriptions of Aboriginal people carrying out quarrying activity comes from Raynor who recounted that his father had come across about 20-30 Aborigines, men, women and children, at a quarry near Plenty on the southern side of the middle Derwent Valley:

Noisily chatting, they were breaking the stone into fragments, either by dashing them on the rocks or by striking them with other stones, and picking up the sharp edged ones for use... (Raynor in Roth 1899:151)

This quarry was subsequently visited by Rhys Jones, who noted that the quarried material was an indurated cherty hornfel and that the quarry extended over an area of about 2 ½ hectares (Jones 1971:456).

Aboriginal people of South East Tasmania are described as frequently bearing tattoos and cicatrices. The ethnographers generally describe these as decorative, although it is likely that they held a range of other meanings as well. Robinson described the process

of cutting the skin with a sharp stone and rubbing the wound with charcoal or red ochre mixed with animal fat (Plomley 2008:137). The scarring was observed on both men and women and typically was either in the form of a series of short lines, or straight, concentric or circular lines across the chest (AT 2010:25). At Rocky Bay Labilliere noted that people rubbed their bodies with powdered charcoal and records one man whose cropped hair was 'plastered with ochre' (AT 2010:25).

Burial Practices

Burial customs were also observed by the ethnographers. Cremation was the usual form of disposing of a deceased person (Plomley 2008:17). The cremated remains were observed by Robinson to sometimes be wrapped in kangaroo skins and carried as an amulet by members of the deceased person's clan (AT 2010:21). Robinson reports on a funeral pyre built by both men and women of branches and twigs. The body was placed on the pyre with bound arms and legs. This was left to burn for a day, with the relatives returning the following day. The remains were collected and burnt a second time, after which the ash was scattered through the grass (Plomley 2008:17).

Other burial practices in the South East region include internment and burial in hollow trees. Illustrations from the Baudin expedition show 'tombs' at Maria Island (Bonnemains *et al* 1988:131). These were bark tepee-like constructions built over remains that have been covered in fibres or leaves weighted down by rocks (Bonnemains *et al* 1988:131). The practice of placing remains in hollow trees in the South East region is reported by Robinson (Plomley 2008; AT 2010:21). Hollow tree burials are perhaps associated with violent deaths, as occurred in the Central Highlands (AT 2010:20).

Land Management

Aboriginal people across South Eastern Tasmania appear to have actively managed their environment. Historical sources provide numerous references to burning vegetation. AT (2010:9) suggest that this had a range of applications, including modifying the environment, attracting terrestrial game, encouraging edible plant regrowth and maintaining pathways used to travel across the country. Robinson recorded that Aboriginal people in the South East would travel along 'well beaten paths' and leave abalone shells at drinking places along rivers (Plomley 2008:59). Aboriginal pathways were also utilised by the first European settlers to the area.

The Aboriginal people of the South East greatly valued fire and there are several first-hand accounts of fire being transported by means of burning torches or 'fire brands'. In 1777 Bligh recorded seeing a basket of white 'flint like stones' at Adventure Bay (AT 2010:12). These are likely to have been fire brands.

Baudin in 1802 reported seeing a 'multiplicity of fires' burning in 'on all sides' from where his ship was anchored in North West Bay (AT 2010:12). Captain Hamlin reported to Baudin watching two Aboriginal men pull up their canoe at North West Bay and walk into the scrub, setting fire to the undergrowth as they walked (AT 2010:12).

3.3 Contact History

It appears that outside the initial settlements at Risdon and Sullivan's Cove, there was a brief period of amicable relations between Aboriginal people and the European settlers. For the most part, the Mouheneener would not visit British camp at Sullivan's Cove, and were friendly to small groups of Europeans met in the bush.

In 1804, Colonial chaplain Robert Knopwood records observing 'a great many native huts and fires they made' on the western shore of the Derwent, north of Hobart (Nicholls 1986). He also recorded that Aboriginal people were around the camp at Sullivans Cove but could not be persuaded to enter (Nicholls 1986). By 1805, Aboriginal people were visiting outlying huts in areas near now Kingston, Taroona and New Town, with trades systems established in which Aboriginal people would exchange kelp and crayfish in return for bread and potatoes (AT 2013:8).

However, these friendly relations were relatively short-lived. Conflicts over food resources triggered a deterioration in these relationships as European settlers sought to augment their meagre resources with freshly caught game. Hobart the surrounding areas became vital hunting grounds supplying kangaroo meat to the struggling colony on the brink of starvation (Alexander 2006:5).

The economic importance of the kangaroo hunters to the success of the colony cannot be over emphasised. Without the supply of kangaroo meat, the government would have been unable to meet the rations and maintain the settlement (Boyce 2009:52). The European consumption of kangaroo was so great that by late 1808 they had been largely exhausted from the immediate surrounds of Hobart – causing hunting parties to venture further afield. The reliance of the colonisers on kangaroo brought them into direct conflict with the Aboriginal people.

At first, the Europeans were at an advantage as they had hunting dogs that greatly increased the numbers of kangaroo that a hunter could kill (Boyce 2009:52). But, Aboriginal people quickly adapted to the use of dogs, an example of rapid cultural and economic adaptation. This brought the two groups onto a more even par (Boyce 2009:66). This period of parity only lasted while the European population was small; as early as 1806 the kangaroo populations around Hobart had been decimated and the hunters were being forced to move further north, towards the Brighton district (Boyce 2009:54). The British settlement was literally starving, and there was a strong economic imperative for hunters to extend to the north in search of fresh sources of game. As the settlement continued to expand, both the colonists need for a meat supply, and their transformation of the hunting grounds into cleared, pastoral farms set the scene for an escalation in conflict (Boyce 2009).

As the population of Van Diemen's Land increased, farms gradually spread out along the shores of the Derwent, the agricultural economy grew and land grants increased in number. Isolated relationships between Aboriginal people and European settlers have

been recorded during this time. For example, Knopwood, who was granted land at Battery Point, records having a 17 year old Aboriginal girl come to his home seeking fire (1806), and several years later a group of seven Aboriginal people coming to his home and camping in the garden to gather oysters and mussels from the nearby shore (now Salamanca Place) (Nicholls 1986).

Of William Collins, a settler at Macquarie Point, Knopwood records 'He see many of the natives and was conducted to the town by some of them. Where there were about 20 families, he stayed all night with them; they were very friendly. He see 3 of their cattermerans or small boats made of bark that will hold about 6 of them' (Nicholls 1986 cited in AT 2013).

A more prolonged relationship existed between Edward Lord and an Aboriginal man named 'Musquito' whom Lord employed as a stock keeper. In 1816, Musquito accompanied Lord on a cattle-buying mission to Mauritius (AT 2013).

Visits by groups of Aboriginal people to Hobart Town continued into the early 1820s; Robinson records Aboriginal people visiting the Town in both 1824 and 1825. Between 1804-1824 interactions between Aboriginal and Europeans have been classified as 'uneasy co-existence', however things became much more hostile following 1824. By the 1820s the European population of the town had exploded, resulting in a corresponding increase in the issuing of land grants over the most valuable grass plains. This in-turn caused issues relating to access to native game, hunting grounds and the connection of Aboriginal people with their traditional tribal lands (AT 2013). Attempts to forcibly remove Aboriginal people from the areas settled by Europeans failed and unprecedented violence ensued.

Clashes with Aboriginal communities became more frequent and more violent as European settlement expanded. Lieutenant Governor George Arthur proclaimed Martial Law in November 1828, leading to the active pursuit, capture and death of many Aboriginal people. A bounty was introduced in February 1830 of five pounds for every adult captured and two pounds for each child. In the two years between November 1828 and November 1830 some twenty Aboriginal people were captured and a further sixty lost their lives (Ryan 1996:102).

This violence culminated in the declaration in November 1828 of Martial Law against the Aboriginal people in the 'settled areas' (Ryan 1996:101). A series of six 'roving parties' were established for the purposes hunting and capturing the remaining Aboriginal occupants of the settled areas. This military action resulted in a general increase in the scale of violent conflict between Europeans and Aboriginals, and by 1830 it was decided that a full scale military offensive was required in order to quell the Aboriginal uprising.

This operation, termed the 'Black Line', involved the assembly of 2000 men in October 1830. They formed a human chain that swept through the settled districts over a period

of three weeks, with the aim of driving the remnant Aboriginal populations from these areas. The Black Line was Governor Arthur's response to repeated insistence from settlers that Aboriginal people should be removed from the midlands (Alexander 2006:15). This reflects the level which conflict had reached by 1830. Martial Law was finally revoked in 1832 (Ryan 2012:112-113).

The Black Line itself proved to be a dismal failure, with the total capture of two Aborigines and death of another three. However, it was sufficiently distressing to the general Aboriginal community that more than two hundred people subsequently allowed themselves to be persuaded by George Augustus Robinson (the 'Protector of Aborigines') to relocate to Flinders Island in exchange for food, shelter and safety (Lines 1991:47). They were further promised that they would be returned to their former homes on the Tasmanian mainland as soon as possible.

By 1835 the majority of the 220 Aborigines who arrived with Robinson at the Wybalenna Aboriginal establishment on Flinders Island had died from inadequate shelter, insufficient provisions and introduced disease. Birth rates were extremely low and few children survived infancy. In 1847 six Aborigines at Wybalenna made a petition to Queen Victoria asking that the promises made to them be honoured. In October 1847, the surviving 47 Aborigines were transferred to an ex convict probation station at Oyster Cove. Only forty four people survived the trip (Lines 1991:47).

Conditions at Oyster Cove were only marginally better than at Wybalenna and the Aboriginal population continued to experience high mortality rates. However, throughout the 1850s and 1860s the European settlers recorded numerous anecdotes of Aboriginal people at Oyster Cove maintaining elements of their pre-contact lifestyle (AT 2010:26). They hunted, performed ceremonies and continued making traditional cultural items. The best known example is Fanny Cochrane who married ex-convict William Sawyer. She is reputed to have practiced traditional shellfish gathering, basket making, medicine and religious practices (AT 2010:27).

The Oyster Cove station closed in 1862. For most of the next 100 years, parts of the former station land were sold, while some remained as Crown land. In 1981, the majority of the former station area was proclaimed as a Historic Site. Despite strong opposition, the Aboriginal community reoccupied the site on 16 January 1984. Each year since occupying the putalina site, the Tasmanian Aboriginal Corporation has held an annual music and cultural festival (AHT fact sheet accessed 2021).

In 1995, the State Government formally handed the title of Oyster Cove putalina to the Aboriginal Land Council of Tasmania. The site continues to be managed by the Tasmanian Aboriginal Corporation. Today, the putalina festival attracts hundreds of people each January to enjoy local and interstate musicians, cultural activities and interactions with extended family and community (AHT fact sheet accessed 2021).

4.0 Background Archaeology

4.1 Regional Studies

The study area is situated 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 two 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 seures* 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, mudstone, 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 AH 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.

Of the five landscape units identified by Brown (1986), the most pertinent to the present investigations are the coastal and estuarine environments. The following provides an overview of the findings, as presented by Brown (1986) for this landform unit.

Coastal and Estuarine Regions

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

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 acknowledged that there are no conclusive dates for sites beyond 6000 years old for the region. Notable at the time was the absence of Pleistocene and early Holocene sites in this portion of Tasmania. This may be due in part to rising sea levels at 7,000BP causing the inundation coastal sites, and to geomorphological changes in sand dunes with the re-deposition of sand sheet and dunes approximately 6,000 years ago. However, Brown (1986) believed that the systematic occupation of the area did not begin until 6,000 years ago when those populations occupying the Derwent Estuary area moved into the southern part of the region. Further research in the region was deemed to be necessary before any of these hypotheses could be confirmed.

4.2 Previous Aboriginal Heritage Assessments Undertaken in the Vicinity of the Study Area

There have been a large number of Aboriginal heritage assessments undertaken within the general vicinity of Bridgewater and Brighton. Most have these have been undertaken as part of the planning processes for specific infrastructure projects, such as the Bridgewater Bridge upgrade, the Brighton Bypass and Brighton Transport Hub projects. The following provides a summary review for those assessments that are most relevant and in closest proximity to the study area.

4.2.1 Bridgewater Bridge Studies

Austral Archaeology (1997) and Stanton (1997)

David Parham (Austral Archaeology 1997) and Stephen Stanton (1997) carried out a joint field survey assessment as part of the Bridgewater Bridge Planning Study. In the course of the field investigations three Aboriginal sites were identified (AH 7774, 7775

and 7776). All three sites were situated on the northern foreshores of the Derwent River (Bridgewater side). Site AH 7774 is located approximately 300m west of the Bridge and is described as a thin scatter of shell midden, which has been partially exposed through the construction of a glass house. Austral Archaeology (1997) suggested that the AH 7774 shell exposure was part of a larger, subsurface midden obscured beneath the soil surface. The site appears to correlate with the location of AH 1384 which was previously recorded by Officer (1980). The site is situated outside the bounds of the study area.

Site AH7775 was described as an extensive scatter of shell fragments extending along the northern Derwent River foreshore, approximately 175m east of the Bridge. The site consisted of fragments of oyster shell which have been exposed by the growth of the large pine trees in the area. The dimensions of the site are reported to be 90 metres in length by up to 12 metres in width. The site is reported to have been disturbed by the establishment of the gravel access road to the property, with fragments of shell visible in the paddock on the other (northern) side of the road, away from the main concentration of shell (Stanton (1997). Site 7775 is situated within the immediate vicinity of site AH 1383 recorded by Officer (1980), and given their spatial proximity were considered likely to be part of the one site complex.

AH 7776 was located further to the east at Woods Point, also on the northern Derwent foreshore. This site is reported as comprising two stone artefacts. One is a retouched flake struck from grey banded chert and the other a flaked piece of quartzite.

In addition to these three sites, Stanton (1997) and Austral Archaeology (1997) also identified a 'potentially sensitive landform' on the Granton side of the Derwent foreshore, opposite Black Snake Lane. The landform is described by Stanton (1997) as a partially disturbed, small hummock covered by dense vegetation. According to Austral Archaeology (1997), the landform is 'a remnant section of higher, hard ground on the shore that has not been either reclaimed or otherwise intensively developed.

Stone (2009)

Tim Stone (2009) was engaged to implement a preliminary Aboriginal cultural heritage assessment for the proposed Bridgewater Bridge Replacement Planning Study. The assessment essentially constituted a desk top assessment and review of previous studies. Stone (2009) identifies that two previously recorded Aboriginal sites are located within the bounds of the then identified study area (sites AH 1383 and 7775). Stone also noted that these two sites were likely to be part of the one site complex. Stone (2009) identified the fact there was a possibility that these two sites (or 1 site complex) may be larger in extent than what has been previously recorded, and that the site(s) may be impacted by proposed bridge construction work.

Stone (2009) recommended that a qualified archaeologist and Aboriginal Heritage Officer should be engaged to conduct a surface survey of the Bridgewater Bridge planning study area, with the aim of locating all Aboriginal cultural heritage sites and

areas of archaeological potential in the study area. Stone (2009) also recommended that a staged approach be adopted for heritage investigations, which allows time for archaeological subsurface investigation of AH 1383/7775 midden site, if this site cannot be avoided by the bridge design.

Hydro Consulting (2009) and Maynard (2009)

Aboriginal Heritage Officer Leigh Maynard and Hydro Tasmania Consulting trainee Jessie Digney were commissioned by DIER to undertake Aboriginal community consultation work for the Bridgewater Bridge Replacement Planning Study. The primary aim of this consultation was so the views, concerns and beliefs of the Aboriginal community regarding the Aboriginal heritage in the area can be considered, and incorporated into any required permit applications (under the *Aboriginal Relics Act 1975*). Hydro (2009) reports that the outcomes of the consultation was that the wider Aboriginal community were strongly opposed to any development that negatively impacts Aboriginal heritage or other values. Maynard (2009) reports that determining the size and extent of AH site 7775, and thus the potential impacts to this site through the proposed Bridge construction became one of the major issues discussed during the course of the community consultation. Maynard (2009) reports that some community members supported augering techniques to determine the extent of the site, others were in favour of test pitting, while some members were of the view that the bridge alignment should be moved altogether in order avoid any potential impacts to the site.

CHMA (2011)

CHMA (2011) was commissioned by GHD (on behalf of DIER) to undertake further Aboriginal heritage assessment work for the proposed Bridgewater Bridge replacement project. This is around 2km to the west of the current study area. In the course of the field survey assessment two Aboriginal heritage sites were identified and recorded (Sites AH1383/7775 and AH11190).

Site AH1383/7775, was situated on the northern foreshore of the Derwent River, within 200m east of the existing Bridge. The site had been previously identified by both Officer (1980) and Stanton (1997). The site was described by CHMA (2011) as an extensive thin veneer of broken shell material that was observed to extend over an area measuring approximately 100m (east-west) x 10m (north-south). The shell material was exposed along a series of small erosion patches that occur primarily around the bases of a row of mature pine trees that extend along this section of the foreshore. The shell had been heavily fragmented, and much of the material had been burnt. Despite the heavily fragmented nature of the shell material, two types of shell fish could be identified as being definitively represented in the midden, these being black mussel (*Mytilus planulatus*) and oyster (*Ostrea angasi*). A small number of stone artefacts were also observed to be in association with this shell.

Site AH11190 was classified as an isolated artefact which was situated approximately 100m south of the southern foreshores of the Derwent River, and 300m down-stream

(east) of the existing Bridge. The artefact was located on a graded vehicle track that runs in an east-west direction across the lower slopes of a hill. These slopes run from south-west to north-east down towards the southern margins of the Derwent River. The gradient of these lower slopes, in the vicinity of where the artefact was identified is between 2-4°. Besides the two Aboriginal sites described above, no additional Aboriginal sites or areas of potential archaeological sensitivity were identified within the bounds of the proposed Bridgewater Bridge Replacement corridor.

CHMA (2020a)

CHMA (2020a) were engaged by State Growth to undertake an updated Aboriginal heritage assessment for the broader Bridgewater Bridge route corridor. The field survey program resulted in the identification of five Aboriginal sites. Four of these sites were re-recordings of registered Aboriginal sites (AH1382, AH1382/AH7775, AH7776, 11873), with the fifth site being a new recording (AH13833). Sites AH1382, AH1382/AH7775 and AH7776 were all shell midden deposits that were located on the northern margins of the River Derwent Estuary, downstream (east of the Bridgewater Bridge). Site AH11873 was an isolated artefact that is located within a rural farm paddock, approximately 40m north of the East Derwent Highway. Site AH13833 was an isolated artefact that is located 220m to the south of the southern margins of the River Derwent, and 600m downstream (south-east) of Bridgewater Bridge. In addition to these five sites, three Potential Archaeological Deposits (PADs) were identified within the study area corridor. PADs 1 and 2 were situated on the northern margins of the River Derwent, with PAD 3 being situated on the east margins of the Black Snake Rivulet, on the south side of the River Derwent. The PAD1 area incorporated site AH1383/AH7775.

CHMA (2021)

CHMA (2021) were subsequently engaged by State Growth to undertake a program of sub-surface investigations within the PAD1 and PAD3 areas. The purpose of the sub-surface investigations is to determine the extent and nature of Aboriginal heritage values within these two PAD areas, and based on the findings of the investigations, to develop appropriate management/mitigation options.

A total of 14 stone artefacts were recovered from the test pitting program at PAD1. In addition, low densities of shell midden material were recovered from five of the test pits. No lenses or stratified deposits of midden material was identified in any of these pits. Instead, fragments of shell material was scattered throughout the soil deposits. Based on the observations made during the test pitting program, and the previous recording of this site undertaken by Stanton (1997) and CHMA (2011 and 2018), it appeared that the artefact deposits associated with this site is confined to an area measuring approximately 70m in length (south-east to north-west) x 20m wide. The site may once have been larger in spatial extent. However, the area to the north and west of the site has been very heavily impacted by development activity and any artefact deposits that may once have been present in these areas appears to have been destroyed. The density and nature of the artefact deposits present at site

AH1383/AH7775 was assessed as being consistent with the area having been utilised as an interim seasonal camp site positioned on the northern margins of the River Derwent (CHMA 2021).

A total of eight stone artefacts were recovered from the test pitting program at PAD3. These deposits were confined to the central and southern portions of the PAD, across an area measuring approximately 75m (north-south) x 50m. These artefact deposits were classified as a newly recorded Aboriginal site (AH13880). The artefact densities identified at site AH13880 were interpreted as being consistent with more sporadic levels of activity. It was considered likely that these margins on the east side of Black Snake Rivulet were occasionally utilised as an interim camp site. Black Snake Rivulet would have provided a reasonably reliable source of fresh water, and the area is situated less than 1km from the resource rich River Derwent estuary (CHMA 2021).

CHMA (2022)

During the course of undertaking historic investigations at the Former Black Snake Inn historic site located at 650 Main Road Granton, a number of suspected Aboriginal stone artefacts were uncovered by Southern Archaeology (SA). The Unanticipated Discovery Plan (UDP) process for Aboriginal heritage was followed and Aboriginal Heritage Tasmania (AHT) was informed of the discoveries. The Aboriginal artefacts identified by SA were registered on the Aboriginal Heritage Register (AHR) as being an extension of site AH11190, which was originally recorded by CHMA (2011).

CHMA (2022) were engaged to undertake a program of sub-surface investigations in order to better understand the nature and extent of Aboriginal heritage site AH11190. The investigations involved the excavation of 85 test pits. A total of four stone artefacts were recovered from these 85 test pits. Only two of the test pits were artefact bearing (pits 33 and 35), with two artefacts recovered from each test pit. Test pits 33 and 35 are situated within 15m of each other, in the western portion of the study area, on the lower northern slopes of the hill. Slope gradients in this area are around 2-3°. This is the general area where the majority of Aboriginal artefacts associated with AH11190 were identified by Southern Archaeology during the course of the historic investigations. The artefacts recovered through the test pitting program were all situated in a highly disturbed context, being within imported fill material.

Subsequent to the completion of the test pitting program, SA identified a further six Aboriginal stone artefacts during historic investigations. All six artefacts are situated in heavily disturbed contexts, in the immediate vicinity of the previously identified boundaries of site AH11190. The boundaries of site AH11190 were amended to incorporate these six artefacts.

4.2.2 Other Investigations in the Vicinity of the Study Area

The Brighton Transport Hub (Stanton 2008b and 2008c; CHMA 2008b)

A series of archaeological investigations were recently undertaken at the Brighton Transport Hub, located immediately to the west of the southern section of the proposed Brighton Bypass route (on the west side of the Midlands Highway).

Three Aboriginal sites (AH10648, AH10649 and AH10650) were identified Stanton (2008b and 2008c). A total of 103 artefacts were identified at AH10648, concentrated around the northern basal slopes of a prominent hill. A scatter of 29 artefacts were identified at site 10650 located along the southern portion of a broad flat spur line, on the northern side of Ashburton Creek, while site AH10649 comprised 3 artefacts with sub-surface potential near the Creek.

Following subsurface investigations at these sites by CHMA (2008b) site 10648 was found to comprise a range of cultural features including moderate-high densities of surface and sub-surface artefacts, stone procurement sites and an early European occupation site. Spatial and temporal links indicate the area is a single site complex including both AH10648 and AH10650.

A silcrete procurement site was found at AH10650 comprising a discreet concentration of silcrete/quartzite nodules (varying in size from a soccer ball to a medicine ball), which are located on the basal southern side slopes of a hill, on the northern margins of Ashburton Creek (grid reference E518633 N5269971). This WAS just to the south of the southern boundary of the Hub site. These nodules have been the focus of extensive procurement activity, with several thousand artefacts (mainly primary flakes anddebitage) noted within a 50m radius of the nodules. Given the dominance of silcrete stone artefacts at site AH10650, and the close spatial association of the site with the silcrete procurement source, it appears that this site is representative of sporadic activity associated with the procurement of stone from this source.

Primary areas of Aboriginal occupation were the elevated terraces on the southern and northern margins of Crooked Billet Creek with activity radiating out from the area. The terraces occur on a sheltered part of the small valley associated with Crooked Billet Creek at a point where the creek flattens to form a small swamp area. It is likely that these elevated terraces were regularly utilised as interim camp locations by Aboriginal people in the area. Foraging activity (including the procurement of stone materials) would have occurred in the broader valley area, with people returning to these terrace areas to process their harvests. The occupation of this area appears to have extended through to the 'Post Contact' period as evidenced by the presence of flaked bottle glass. There was some evidence to suggest that Aboriginal activity in this area during the 'Post Contact' period may have shifted from the terraces either side of the Creek, slightly to the east to the lower northern slopes of a nearby prominent hill. Why this is the case was uncertain (CHMA 2008b).

The likely scenario was that Aboriginal people were carrying out initial procurement and reduction activities at the procurement site itself, and then secondary reduction processing at other locations (including site 10650). The results of the test pitting undertaken at site AH10650 indicate that the movement of the silcrete material from the stone procurement site was generally north toward Crooked Billet Creek and site AH10648. Secondary reduction processing appears to have been mainly carried out at site AH10648, and along the western edge of the hill summit between sites AH10648 and AH10650 (CHMA 2008b).

Maynard and McConnell 2003

Anne McConnell and Leigh Maynard were engaged to undertake an Aboriginal heritage assessment for a proposed natural gas pipeline development in the Greater Hobart region. The assessment focused on an off take station which was located approximately 2km north of Bridgewater, and the distribution pipeline which extended south to the centre of Hobart, via a section of this pipeline ran from Bridgewater to Old Beach, following the alignment of the East Derwent Highway. This is the closest section to the present study area. The survey assessment did not identify any Aboriginal heritage sites or areas of cultural heritage value either on or in the immediate vicinity of the investigated areas. Apart from the Hobart City Centre, there were no areas where there was considered to be an elevated potential for sub-surface Aboriginal heritage deposits to be present Maynard and McConnell (2003:11).

Sainty 2007

Rocky Sainty was engaged by the Brighton Council to carry out an Aboriginal heritage assessment for a proposed walking track between Old Beach and Bridgewater. The survey resulted in the identification of two Aboriginal sites (1372 and 1335), with sites having been previously recorded and registered. Site 1372 is classified as a shell midden deposit, which was located at the Green Point Nature Reserve. This is around 500m to the west of the current study area, on the west side of Herdsmans Cove. Site 1335 was also classified as a shell midden, and is located within the coastal reserve at Swan Park, Gagebrook, on the eastern side of Herdsmans Cove (Sainty 2007:3).

CHMA (2017)

CHMA (2017) was engaged by MONA to undertake an Aboriginal heritage assessment for a 16ha parcel of land which was part of a Derwent Foreshore Masterplan proposal. CHMA (2017:54) recorded two Aboriginal heritage sites during the field survey (AH1379 and AH1380). These two sites were both originally recorded by Officer (1980) as part of his survey of the Derwent Estuary. The two sites were both classified as shell middens, and were both located on the northern foreshore margins of the River Derwent, immediately to the east of the Sewage Treatment Plant. Both sites comprised sparse scatters of shell midden material. The midden material at the two sites appeared to be primarily confined to the soil surface and very upper soil horizon. No shell midden lenses were noted at either site. The two site areas had been subject to moderate to high levels of disturbance through prior land clearing, at the cutting of artificial embankments across

the site area. There was also evidence of fill material having been placed across the foreshore area (CHMA 2017:54).

CHMA (2020b)

CHMA (2020b) was engaged by Brighton Council to undertake an Aboriginal heritage assessment for the proposed Bridgewater Reserve Playground, which is situated around 1km to the east of the current study area. No Aboriginal heritage sites or specific area of elevated archaeological potential were identified during the field survey assessment. CHMA (2020b) noted that the search of the AHR undertaken for this project showed that there are no registered Aboriginal sites that were located within or in the immediate vicinity of the study area boundaries. The negative survey results were interpreted as being a reasonably accurate indication that either there were no Aboriginal sites located in the study area, or that site and artefact densities across the study area are likely very low, reflecting sporadic activity. The most likely site type to be present would be small artefact scatters or isolated artefacts, or very sparse midden deposits (CHMA 2020b:48-49).

4.3 Registered Aboriginal Sites in the Vicinity of the Study Area

As part of Stage 1 of the present assessment a search was carried out of Aboriginal Heritage Register (AHR) to determine the extent of registered Aboriginal heritage sites within and in the general vicinity of the Bridgewater, Herdsmans Cove and Old Beach study areas.

The search results show that there are 56 registered Aboriginal heritage sites that are located within an approximate 3km radius of the study area (search results provided by Billy Payton-Clarke from AHT on the 2 November 2023).

A total of 20 of these sites are classified as Artefact Scatter sites (AH10238; AH10601; AH10602; AH10648; AH10649; AH10650; AH10667; AH10802; AH10803; AH10804; AH10805; AH10902; AH10904; AH10905; AH11870; AH11872; AH7776; AH8815; AH14123; AH14124), with two sites (AH1383; AH7775) classified as an Artefact Scatter and Shell Midden. A further 19 sites are classified as Isolated Artefact Sites (AH10651; AH10713; AH10754; AH10801; AH10900; AH10901; AH10903; AH10906; AH11483; AH11869; AH11871; AH11873; AH11874; AH11875; AH6599; AH13691; AH14015; AH14016; AH14017). A total of 15 registered sites located within the 3km radius of the study area are classified as Shell Midden sites (AH191; AH11484; AH11485; AH11520; AH1378; AH1379; AH1380; AH1381; AH1382; AH1384; AH1385; AH1386; AH1387; AH1388; AH7774). The majority of these sites are located on the northern margin of the Derwent River.

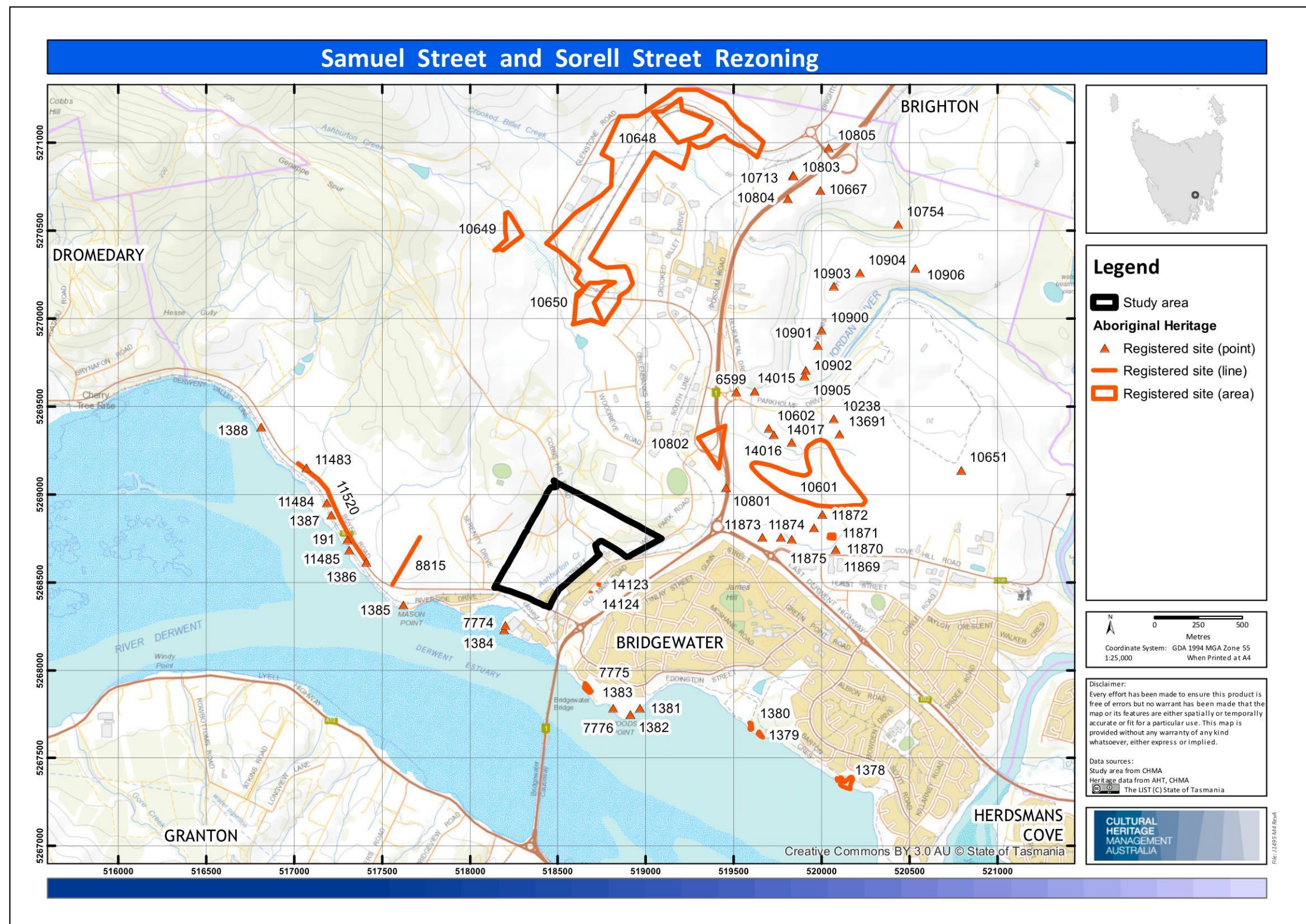
Table 1 provides the summary details for these registered sites; Figure 8 shows the location of these registered Aboriginal sites in relation to the study area.

None of these registered sites are situated within or in the immediate vicinity of the study area. The closest two registered sites are AH14123 and AH14124, both of which are situated around 200m to the east of the eastern boundary of the study area (see Figure 9). These two sites were recorded by Southern Archaeology (SA), during the course of undertaking historic investigations. Both sites were reported to have been low density artefact scatters (each comprising two artefacts). Both sites are located on the embankment, between the Bridgewater Bridge construction compound complex and Old Main Road, at 26-40 Old Main Road, Bridgewater. The artefacts were noted to be in a massively disturbed context, with the embankment being comprised entirely of fill material. Based on information provided by MCD it appears that this fill material has originated from the general surrounds of the Compound Complex.

Table 1: Summary details for registered Aboriginal sites located within and in the immediate vicinity of the study area (Based on the AHR search results dated 2.11.2023)

AH Number	Site Type	Locality	Grid Reference Easting (GDA 94)	No Grid Reference Northing (GDA 94)
191	Shell Midden			
10238	Artefact Scatter	Bridgewater		
10601	Artefact Scatter			
10602	Artefact Scatter	Bridgewater		
10648	Artefact Scatter			
10649	Artefact Scatter			
10650	Artefact Scatter			
10651	Isolated Artefact	Bridgewater		
10667	Artefact Scatter	Bridgewater		
10713	Isolated Artefact	Bridgewater		
10754	Isolated Artefact	Bridgewater		
10801	Isolated Artefact	Bridgewater		
10802	Artefact Scatter	Bridgewater		
10803	Artefact Scatter	Bridgewater		
10804	Artefact Scatter	Bridgewater		
10805	Artefact Scatter	Bridgewater		
10900	Isolated Artefact	Bridgewater		
10901	Isolated Artefact	Bridgewater		
10902	Artefact Scatter	Bridgewater		
10903	Isolated Artefact	Bridgewater		
10904	Artefact Scatter	Bridgewater		
10905	Artefact Scatter	Bridgewater		
10906	Isolated Artefact	Bridgewater		
11483	Isolated Artefact	Bridgewater		
11484	Shell Midden	Bridgewater		
11485	Shell Midden	Bridgewater		
11520	Shell Midden	Bridgewater		

AH Number	Site Type	Locality	Grid Reference Easting (GDA 94)	No Grid Reference Northing (GDA 94)
11869	Isolated Artefact	Bridgewater		
11870	Artefact Scatter	Bridgewater		
11871	Isolated Artefact	Bridgewater		
11872	Artefact Scatter	Bridgewater		
11873	Isolated Artefact	Bridgewater		
11874	Isolated Artefact	Bridgewater		
11875	Isolated Artefact	Bridgewater		
1378	Shell Midden			
1379	Shell Midden	Bridgewater		
1380	Shell Midden	Bridgewater		
1381	Shell Midden	Bridgewater		
1382	Shell Midden	Bridgewater		
1383	Artefact Scatter, Shell Midden			
1384	Shell Midden	Bridgewater		
1385	Shell Midden	Bridgewater		
1386	Shell Midden	Bridgewater		
1387	Shell Midden	Bridgewater		
1388	Shell Midden	Bridgewater		
6599	Isolated Artefact	Bridgewater		
7774	Shell Midden	Bridgewater		
7775	Shell Midden, Artefact Scatter			
7776	Artefact Scatter	Bridgewater		
8815	Artefact Scatter	Bridgewater		
13691	Isolated Artefact	Bridgewater		
14015	Isolated Artefact	Bridgewater		
14016	Isolated Artefact	Bridgewater		
14017	Isolated Artefact	Bridgewater		
14123	Artefact Scatter			
14124	Artefact Scatter			



**Figure 8: Topographic map showing the location of registered Aboriginal sites located within a 3km radius of the study area
(Based on the AHR search results dated 2 November 2023)**

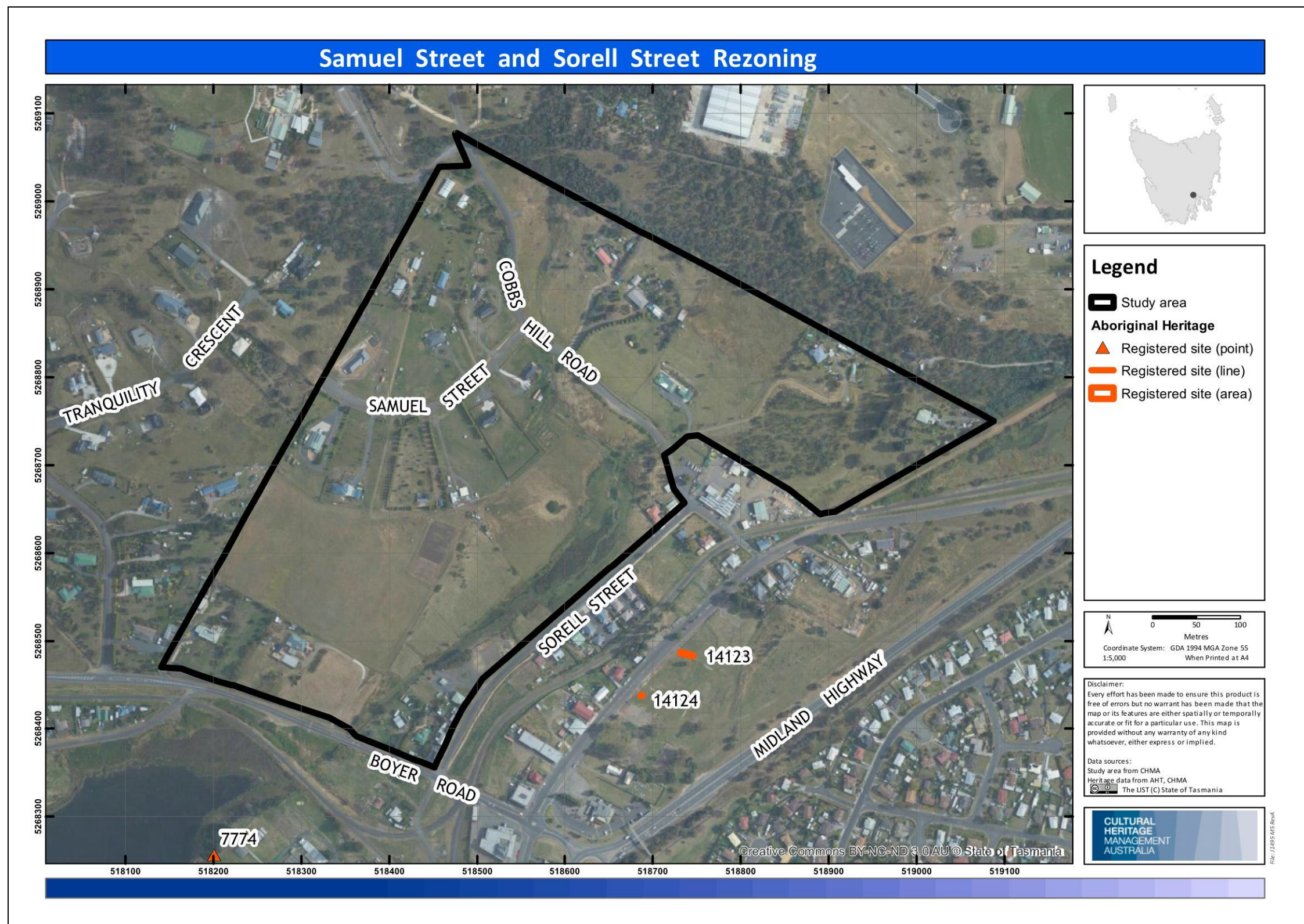


Figure 9: Aerial map showing the location of registered Aboriginal sites located within a 1km radius of the study area
(Based on the AHR search results dated 2.11.2023)

5.0 Predictive Modelling

5.1 Introduction to Predictive Modelling

Predictive modelling, in an archaeological context, is a fairly straight forward 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 water courses. However, in some instances the alignment of these water courses has changed considerably over time. As a consequence, the present alignment of a given water course 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 Study Area

The findings of previous archaeological investigations undertaken in the surrounds of Bridgewater and Brighton indicate that the most likely site types that will be encountered within the study area will be artefact scatters/isolated artefacts and to a lesser extent shell midden deposits (due to the location of the study area 150m north of the Derwent River). It is also possible, although less likely, that Aboriginal stone quarry or procurement sites will be present. The following provides a definition of these site types and a general predictive statement for their distribution within the study area.

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, campsites 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 watercourses 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 watercourses, and on moderate to steeply sloping terrain.

Applying this broad pattern of site distribution to the study area, it would be anticipated that the highest densities of artefact deposits would most likely to be encountered on elevated and level landscape features such as the spines of spurs or the crest of hills or knolls. Increased artefact densities could also be expected to occur around any elevated and level and well drained landscape features that may be present around the margins of Low to very low densities of artefact deposits could be expected to occur across the remainder of the study area.

Midden Sites

Definition

Middens range in thickness from thin scatters to stratified deposits of shell and sediment up to 2m thick. In addition to shell which has accumulated as food refuse, shell middens usually contain other food remains such as bone from fish, birds and terrestrial animals and humus from the decay of plant and animal remains. They also commonly contain charcoal and artefacts made from stone, shell and bone.

Predictive Statement

In the South-East Tasmanian region, 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 shellfish resources, and are on elevated, generally gently sloping or level terrain. A few sizeable middens have been noted up to 500m inland, with smaller middens having been identified up to 1km inland. These shell middens are comprised almost entirely of shell, and rarely contain large numbers of stone artefacts or faunal remains.

Shell midden deposits are most likely to be encountered within 100m of the foreshore margins of the Derwent Estuary. The shell middens are likely to be comprised primarily of mussel and oyster species, and stone artefacts are unlikely to be in association, or present in low numbers. The middens are most likely to be sited in discrete areas where the hill slope gradients are low.

As noted previously, the southern boundary of the study area is located around 150m of the River Derwent estuary. If midden sites are present in the study area, they are therefore likely to be situated around this southern boundary area. There is a very low probability that middens will be encountered elsewhere throughout the study area.

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 of this report, the bedrock geology of the study area is dominated by, while the southernmost portion of the study area consists of Cenozoic cover sequences of Tholeiite basalt.

Neither basalt nor dolerite are suited to the manufacture of flaked stone tools, and as such there is a very low potential for any surface outcrops of these materials to have been utilised as raw material sources for stone artefact manufacturing. It is noted from the geological mapping that in the westernmost boundary of the study area there are Cenozoic cover sequences of alluvial gravel, sand, and clay, and clay-rich alluvial cobble deposit, clasts dominantly of weathered dolerite with subordinate well-rounded siliceous clasts. The siliceous clasts (if of a suitable quality) may have been targeted for stone artefact manufacturing.

6.0 Survey Coverage of the Study Area

Survey Coverage and Surface Visibility

Survey coverage refers to the estimated portion of a study area that has actually been visually inspected during a field survey. 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 and the presence introduced gravels or materials. Figure 10 provides a useful guide for estimating ground surface visibility.

The field survey was undertaken over a period of one day (22 November 2023) by Sarah Klavins (CHMA archaeologist) and Rocky Sainty (Aboriginal Heritage Officer). The field team walked a series of 7.78km of survey transects throughout the survey area, with the average width of each transect being 5m. This equates to a survey coverage of 38 900m². Figures 11 shows the survey transects walked across the study areas. In order to maximise effective coverage, the field team targeted existing informal walking tracks, erosion scalds and ploughed paddocks throughout the study areas, which provided transects of improved surface visibility. Away from these areas, surface visibility was reduced to between 0-20% due to vegetation cover (see Plate 9-12).

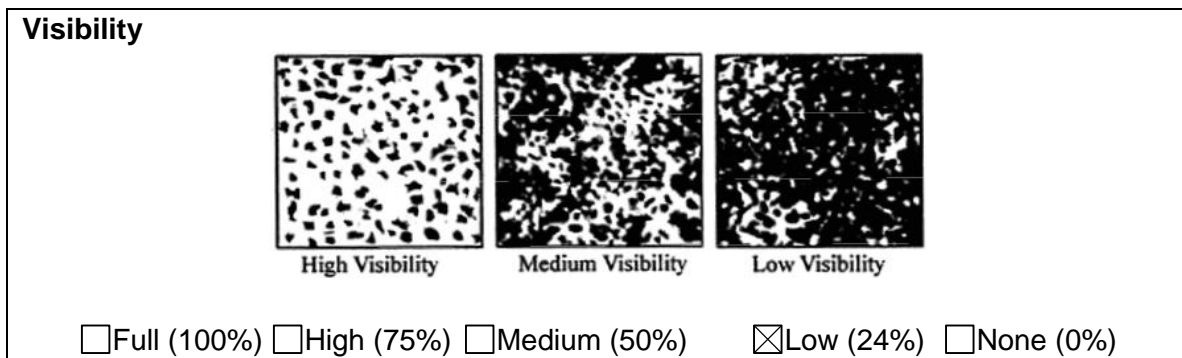


Figure 10: Guidelines for the estimation of surface visibility

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. The combination of survey coverage and surface visibility is referred to as effective survey coverage. Table 2 presents the effective survey coverage achieved during the course of the survey assessment of the three study areas. The effective coverage achieved across the surveyed areas is deemed to be sufficient for generating an understanding as to the likely extent and nature of Aboriginal heritage values present in these areas.

Table 2: Effective survey coverage during the survey assessment of the Brighton Sorrell Street Rezoning and Development project area

Area	Total Area Surveyed	Estimated Surface Visibility	Effective Survey Coverage
	6 480 x 5m = 32 400m ²	10%	3 240m ²
Zones of improved visibility	1 300 x 5m = 6 500m ²	50%	3 250m ²
TOTAL	38 900 m ²		6 490m ²



Plate 9: View east showing typical surface visibility in the northern portion of the study area



Plate 10: View northeast at a freshly ploughed paddock within the central portion of the study area where agricultural and pastoral activities were underway



Plate 11: View west of typical vegetation cover at 12 Cobb Hill Road



Plate 12: View south within southernmost quadrant of the activity area approximately 150m north of the Derwent River.



Figure 11: Aerial image showing survey transects walked by the field team during the assessment of the study area.

7.0 Survey Results and Discussion

The field survey assessment for the Brighton Sorrell Street Rezoning and Development project area resulted in the recording of one Aboriginal heritage site (AH14306), which is classified as an Isolated artefact. The site is located on the mid-slope of a discrete rise approximately 470m north of the Derwent River, and 60m west of Ashburton Creek. The artefact was identified on an erosion scald measuring around 20m x 8m. Surface visibility across the erosion scald was high (80%). Away from the erosion scald, visibility was reduced to around 10-20% due to vegetation cover. Given some constraints in surface visibility in the surrounds of the site, it is possible that additional undetected artefacts are present in this area. However, the indications are that artefact densities are likely to be low. Soils in the surrounds of the site are quite shallow, which means that there is a reduced potential for sub-surface artefact deposits to be present. Table 3 provides the summary details for the recorded Aboriginal heritage site, with Figures 12 and 13 showing the location of the site in relation to the study area. The detailed site description is provided in Appendix 2 of this report.

Besides AH14306, no other Aboriginal heritage sites, suspected features or specific areas of elevated archaeological potential were identified within the Brighton Sorrell Street Rezoning study area. The field survey did not identify any stone material types present within the study area that would be in any way suited for artefact manufacturing. The field survey was able to confirm that there are no large outcrop features present in the study area, with bedrock outcrop only exposed to up to a metre above ground level, which eliminates the possibility of Aboriginal rock shelters being present. As described in section 4.3, a search of the AHR shows that there are no registered Aboriginal heritage sites within the project area, with the closest registered sites being situated around 200m to the east.

As noted in section 6 of this report, there were some constraints in surface visibility throughout much of the study area. Given these constraints, it can't be stated with absolute certainty that there are no additional undetected Aboriginal heritage sites present in the study area. With this acknowledged, the survey assessment still did achieve effective coverage of 6 490m². This level of effective coverage is deemed to be sufficient for the purposes of generating a reasonable impression as to the extent, nature and distribution of Aboriginal heritage sites across the study area. The survey results can therefore be taken as a reasonably accurate indication that either there are no other Aboriginal sites located in the study area, or site and artefact densities across the study area are likely to be low to very low, reflecting sporadic activity. The most likely site type to be present would be small artefact scatters or isolated artefacts, or very sparse midden deposits. It should be noted that the study area boundaries do not extend down to the foreshores of the River Derwent Estuary, which is where midden deposits are most likely to be concentrated. As such, the potential for shell midden deposits to be present in the study area is significantly reduced.

The field team did not identify any specific locations within the study area where it was thought that there was the potential for more elevated concentrations of artefacts to be present, representing camp sites or other such focal points of activity. However, if undetected isolated artefacts or low density artefact scatters are present in the study area, they are most likely to be situated within 70m either side of the margins of Ashburton Creek.

As noted in section 2.2 of this report, the entirety of the study area has been cleared of native vegetation and replanted with grasses and other exotic species. A range of infrastructure is situated within the study area consisting of residential development. Any sites located within this disturbed context will have been adversely impacted, unavoidably compromising the integrity of any cultural deposits present. There is very little potential for in situ sites to occur within the study area.

The findings of this assessment and the interpretation of these findings are reasonably consistent with the results of other investigations undertaken around Bridgewater and Brighton. These investigations have shown that shell midden sites are predominantly confined to within 50m-100m of the margins of the River Derwent. Higher concentrations of sites and artefacts are noted to occur on elevated well drained and level landscape features, in close proximity to reliable fresh water sources, with aeolian (wind blown) sand deposits being major focal points for Aboriginal camp sites. The terrain across the study area is typically gently to moderately undulating, with no aeolian sand deposits present and no elevated, level terrace features bordering Ashburton Creek. Site densities in this type of landscape setting is characteristically low.

Table 3: Summary details for the Aboriginal sites identified during the field survey assessment of the Sorrell Street Rezoning Area

AH No.	Grid Reference (GDA 94)	Site Type	Site Description
AH14306		Isolated Find	Isolated find consisting of one mudstone flake. The artefact site was identified within an erosion scald on the mid-slope of a discrete rise with a gradient of approximately 10° within a farm paddock. AH14306 is located no more than 60m west of Ashburton Creek, a named watercourse that flows into the Derwent River. Ground surface visibility within the erosion scald was observed to be as much as 90-100%, with 10% ground surface visibility observed in the surrounding area due to dense grass.

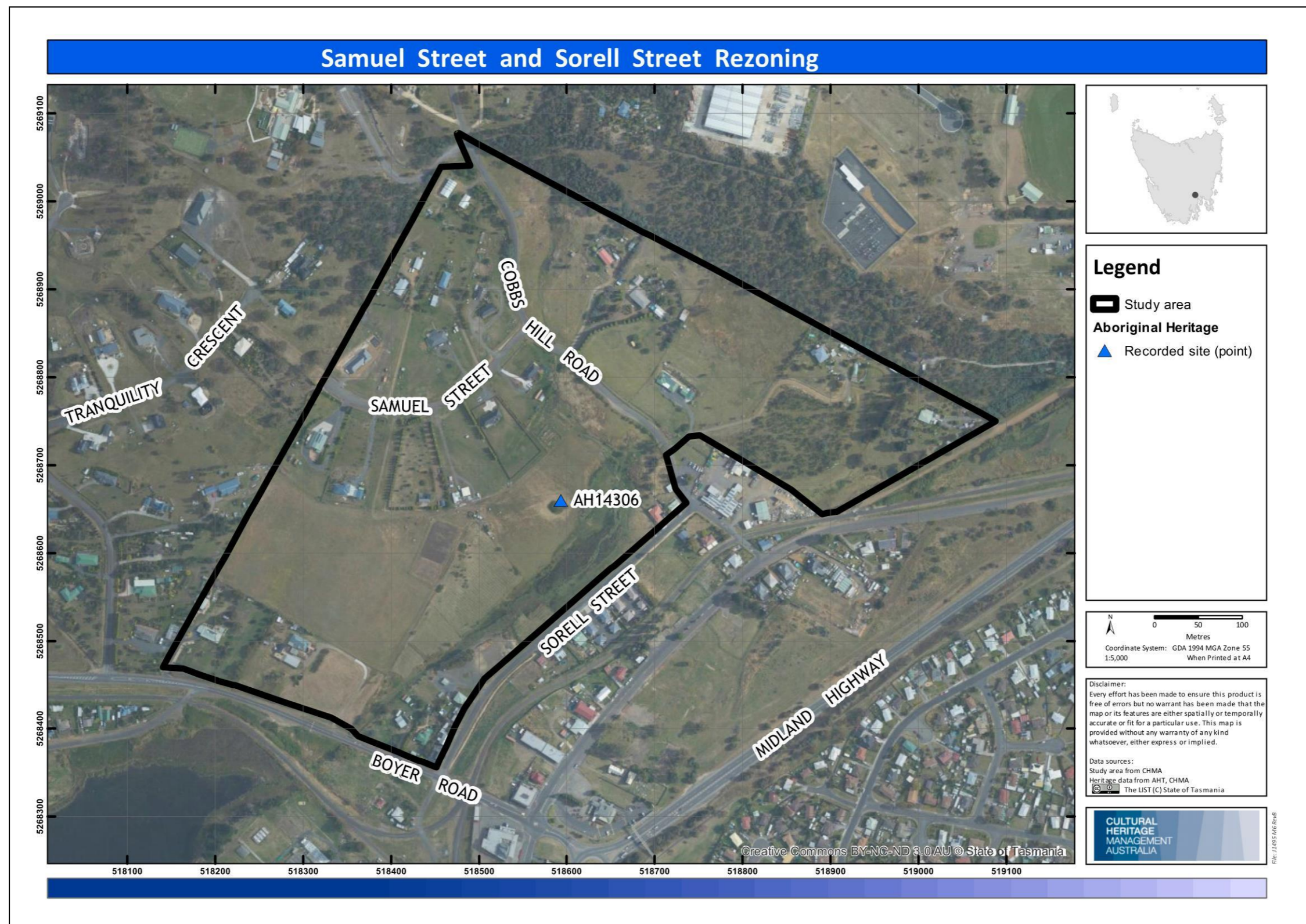


Figure 12: Aerial image showing the location of recorded site AH14306

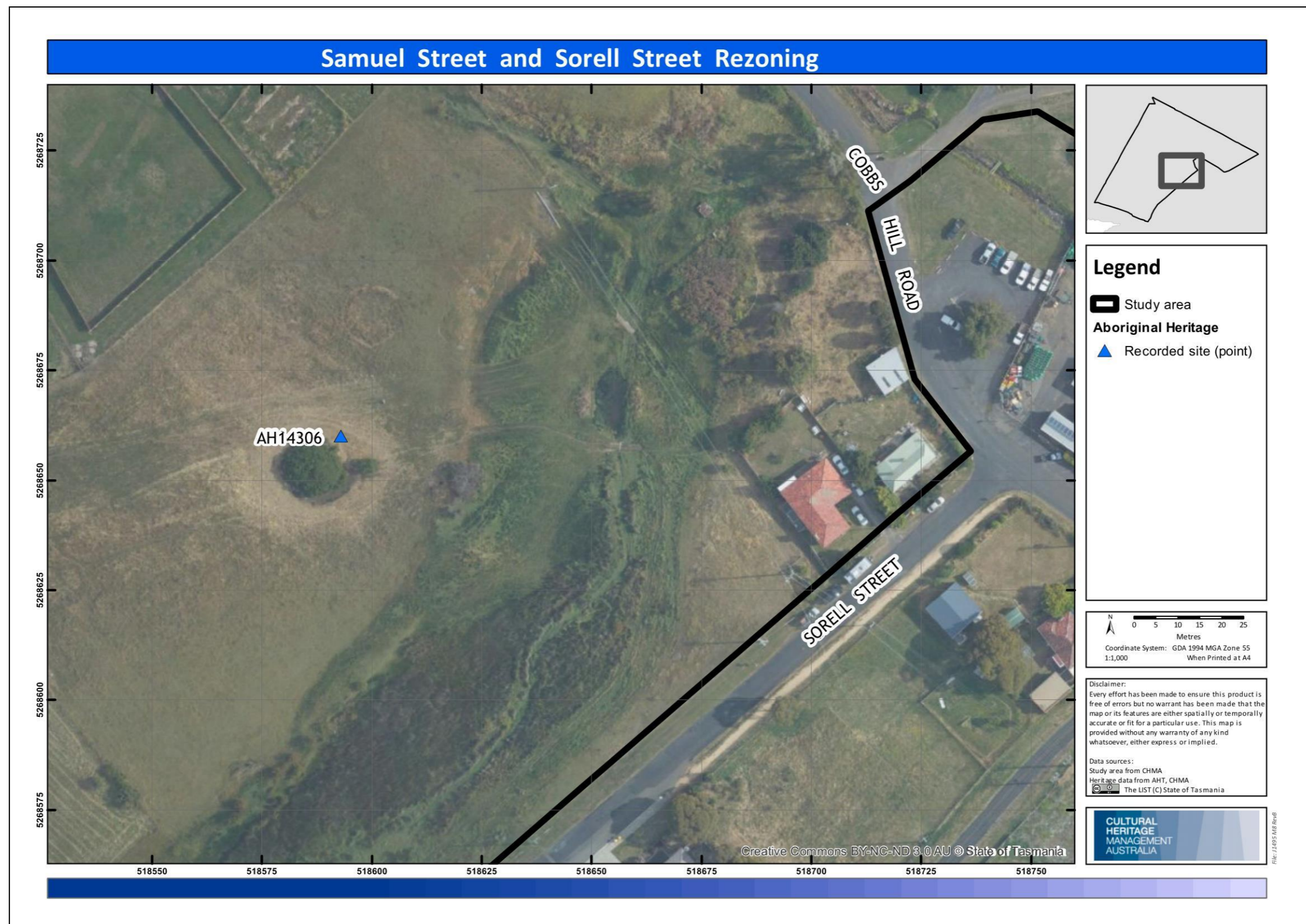


Figure 13: Zoomed in aerial image showing the location of site AH14306

8.0 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.

8.1 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).

8.2 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 relatively 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)

8.3 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.

8.4 Summary Significance Ratings for Recorded Sites

Site AH14306 (recorded during the current assessment) has been assessed and allocated a rating of significance, based on the criteria presented in section 8.2. As discussed in section 8.2, Aboriginal sites are usually assessed in terms of their scientific and social significance. The concepts of Aesthetic significance and Historic significance are rarely applied in the assessment of Aboriginal sites unless there is direct evidence for European/Aboriginal contact activity at the site, or the site has specific and outstanding aesthetic values. However, based on advice received from AHT, aesthetic and historic significance values have also been taken into consideration as part of the assessment of this site.

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 significance ratings for AH14306. A more detailed explanation for the assessment ratings are presented in sections 8.5 to 8.7. Section 8.8 provides an assessment of

significance in relation to the *Aboriginal Heritage Act 1975* (the Act). Section 9 of this report presents a statement of social significance provided by Rocky Sainty for site AH14306 and the study area more broadly.

Table 4: Summary significance ratings for AH14306

Site Number	Site Type	Scientific Significance	Aesthetic Significance	Historic Significance	Social Significance
AH14306	Isolated Find	Low	Low	N/A	Medium-High

8.5 Scientific Significance for Recorded Sites

Archaeological (or scientific) significance 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).

Site AH14306 is classified as an isolated find comprising of one stone artefact. Isolated artefacts and artefact scatters are two of the most common site types recorded in the Southeast Region, and more broadly, the State of Tasmania (as demonstrated through the AHR search results for this project). As such, the scientific significance of artefact scatters and isolated artefacts usually relates primarily to their research potential as opposed to the rarity of the site type. The potential exception to this is where comparatively rare artefact types (either tool or stone material types) are represented in assemblages.

In this instance, AH14306 is assessed as low scientific significance. The rationale for this assessment is as follows.

- 1) Artefact Scatters and Isolated Finds are a common site type in the region and as such rarity is not a consideration.
- 2) The artefact assemblage associated with the site consists of a stone material type (mudstone) and stone tool types (retouched flakes) that are commonly represented in artefact assemblages across the region. As such, rarity is again not a consideration.
- 3) AH14306 is assessed as having the potential to comprise additional undetected surface and sub-surface artefact deposits. However, this site is situated in moderate to heavily disturbed contexts. This means that there is very little potential for intact artefact deposits to be present, which reduces the research potential of the site.

8.6 Aesthetic Significance of Recorded 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 recorded Aboriginal site is located close to the western margin of Ashburton Creek in areas that have been subject to past land disturbances associated with farming activities. As detailed in section 2 of this report, the study area has also been modified through land clearing and urban development. The Aesthetic significance of this site has therefore been assessed as Low.

8.7 Historic Significance of Recorded 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. In this instance no such specific evidence exists for site AH14306.

8.8 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 2023*, 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

8.1 to 8.7 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 the site identified during this current assessment, have been addressed in detail in sections 8.2, 8.3 and 8.5 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 8.2 and 8.3 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 9 of this report presents a statement of cultural/social significance provided by Rocky Sainty for the Aboriginal site recorded during the current assessment and the broader area. Rocky Sainty is an experienced Aboriginal Heritage Officer, and a respected member of the Tasmanian Aboriginal community. He is appropriately skilled and experienced to make these cultural values statements. The report has also been distributed to a select range of Tasmanian Aboriginal organisations for review, comment and feedback. The outcome of this consultation is presented in Appendix 4.

As described in section 3 of this report, the available ethnographic information indicates that the study area is situated around the confluence of the boundaries of three Aboriginal Nations, these being the South East Nation, The Oyster Bay Nation and the Big River Nation. The River Derwent estuary was likely to have been an important major resource zone for all three Aboriginal Nations. This site provides tangible evidence for the occupation of this area by the South East Nation, The Oyster Bay Nation and the Big River Nation people, and therefore retains a level of significance and importance to the present-day Tasmanian Aboriginal community (see section 9).

9.0 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.

One Aboriginal heritage site was recorded during the survey assessment of the Brighton Sorrell Street Rezoning and Development Area. Management strategies have been developed to ensure this Aboriginal site remains protected. However, given the important Aboriginal heritage values in the surrounding area, the decision has been made to distribute this report for Aboriginal community consultation. The outcomes of this consultation process is presented in Appendix 4 of this report.

Rocky Sainty has provided a statement of the Aboriginal cultural values attributed to the Aboriginal heritage values identified as part of this assessment, and the broader study area. This statement is presented below.

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.*

Our survey assessment identified one Aboriginal heritage site within the survey area. I would strongly advocate that this site is conserved and protected in its present location. This has been reflected in the management recommendations presented in this report. If there is a risk that this site may be impacted in the future, then I would support salvage collecting this artefact and relocating it to an area close by, where it will not be further impacted. Such an area may be the immediate margins of Ashburton Creek.

Even if the site of the project proposal contains no evidence of Aboriginal heritage there is always the cultural resources (flora, fauna, aquaculture or any other resource values that the earth may offer) and the living landscape, which highlight the high significance to the Aboriginal cultural heritage values to the country. The vast majority of the study area incorporates land that has been subject to high levels of landscape modification from land clearing, farming and urban development. Through this, much of the traditional resources of the area are now gone. With this said, the River Derwent has always been an important resource zone for our people, and this is still rich in resources important to our people.

10.0 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.

10.1 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 Aboriginal Affairs, through Aboriginal Heritage Tasmania (AHT). 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 or 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 Heritage 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”.

10.2 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 1984* 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 1984.

This Federal 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).

11.0 Aboriginal Cultural Heritage Management Plan

11.1 Summary Management Recommendations

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

- Background research into the extant archaeological and ethno-historic record for the study area and the surrounding region (see sections 3 and 4 of this report).
- The results of the investigation as documented in this report (see section 7)
- Consultation with Aboriginal Heritage Officer Rocky Sainty and the outcomes of the Aboriginal community consultation (see section 9 and Appendix 4)
- The legal and procedural requirements as specified in the *Aboriginal Heritage Act 1975* (see section 10).

Table 5 provides the summary management recommendations for this project. The more detailed recommendations are presented in section 11.2.

Table 5: Summary management recommendations for the project

Area	Grid Reference (GDA 94)	Management Recommendations
Recommendation 1 AH14306	Site is classified as an Isolated artefact which is located on the mid-slope of a discrete rise, 60m west of Ashburton Creek. The following recommendations apply. <ul style="list-style-type: none"> • The location of the site is to be plotted onto the design plans for the Sorrell Street Rezoning and Development project area. • Prior to any ground disturbing works commencing in this area, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 5m buffer applied. There must be no soil disturbance within the barricaded zone. Barricading is to be removed on completion of the construction works in this area. • Construction contractors should be informed of the location of the site and informed that the site is not to be impacted. • If the site may be impacted, then seek Permit. 	
Recommendation 2 (Ashburton Creek)	<ul style="list-style-type: none"> • Ashburton Creek runs through the Rezoning study area. It has been assessed that there is a slightly increased potential for undetected Aboriginal sites to occur along the margins of this creek. • The preferred management option would be to conserve the riparian margins of Ashburton Creek in open space (50m either side of the creek channel). Any soil disturbances within this designated open space area should be kept to a minimum. This will reduce the potential for any impacts on undetected Aboriginal heritage values in the study area. 	
General Recommendations	<ul style="list-style-type: none"> • If previously undetected Aboriginal sites or suspected features are located within these three areas during the works program, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 3). • Copies of this report should be submitted to AHT and the AHC for review and comment. 	

11.2 Detailed Management Recommendations

Recommendation 1 (AH14306)

Site is classified as an Isolated artefact. The site is located on the mid-slope of a discrete rise, 60m west of Ashburton Creek and approximately 470m northeast of the Derwent River (grid reference). The preferred management option is to conserve this site in-situ and to protect the site from any impacts associated with future proposed rezoning and development works. To this end, the following management strategies should be implemented.

- The location of the site is to be plotted onto the design plans for the Sorrell Street Rezoning and Development project area.
- Prior to any ground disturbing works commencing in this area, temporary high visibility protective barricading is to be erected around the identified boundaries of the site with a 5m buffer applied. There must be no soil disturbance within the barricaded zone. Barricading is to be removed on completion of the construction works in this area.
- Construction contractors should be informed of the location of the site and informed that the site is not to be impacted.

All Aboriginal relics are protected under the *Aboriginal Heritage Act 1975* (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. If there is a risk that site AH14306 may be impacted, then the Proponent will need to apply for and obtain a Permit to impact either or both sites before development works can commence within the site boundaries. It is recommended that a condition of the Permit should be that the artefact associated with site AH14306 will be salvage collected and relocated to a safe location outside the development footprint, but in the same general landscape setting. The salvage program is to be implemented by an archaeologist and an AHO. A brief summary report should be prepared, documenting the outcome of the salvage program. The summary report will include details regarding the relocation point for the artefacts. Please note, the recommendation to salvage and relocate the artefact was discussed and agreed to with Rocky Sainty. The draft report, including this recommendation has also been sent out for Aboriginal community consultation.

Recommendation 2 (Ashburton Creek)

Ashburton Creek runs through the Rezoning study area. It has been assessed that there is a slightly increased potential for undetected Aboriginal sites to occur along the margins of this creek. The preferred management option would be to conserve the riparian margins of Ashburton Creek in open space (50m either side of the creek channel). Any soil disturbances within this designated open space area should be kept to a minimum. This will reduce the potential for any impacts on undetected Aboriginal heritage values in the study area.

Recommendation 3 (General Recommendations)

- If previously undetected Aboriginal heritage sites, objects or suspected features are located within the study area, the processes outlined in the Unanticipated Discovery Plan should be followed (see Appendix 3). A copy of the Unanticipated Discovery Plan (UDP) should be retained by Council. All personnel should be made aware of the Unanticipated Discovery Plan and their obligations under the *Aboriginal Heritage Act 1975* (the Act).
- 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 varies 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 Fragment

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.

Middens

Middens range in thickness from thin scatters to stratified deposits of shell and sediment up to 2m thick. In addition to shell which has accumulated as food refuse, shell middens usually contain other food remains such as bone from fish, birds and terrestrial animals and humus from the decay of plant and animal remains. They also commonly contain charcoal and artefacts made from stone, shell and bone.

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 a 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, that 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 quarry/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 it's use. Major use-wear forms are edge fractures, use-polish and smoothing, abrasion, and edge rounding bevelling.

Appendix 1

Gazetteer of Recorded Sites

AH No.	Grid Reference (GDA 94)	Site Type	Site Description
AH14306		Isolated Find	<p>Isolated find consisting of one mudstone flake with bifacial retouch along the left lateral margin (distal-ventral), and the right lateral margin (ventral-distal) measuring 6.1cm (length), 3.6cm (width), 0.5cm (thickness). The artefact site was identified within an erosion scald on the mid-slope of a discrete rise with a gradient of approximately 10° within a farm paddock. AH14306 is located no more than 60m west of Ashburton Creek, a named watercourse that flows into the Derwent River (located no more than 470m southwest of the artefact site). Ground surface visibility within the erosion scald was observed to be as much as 90-100%, with 0% ground surface visibility observed in the surrounding area due to dense grass.</p> <p>Artefact details</p> <ul style="list-style-type: none"> - Yellowish-brown mudstone flake 61mm (length) x 36mm (width) x 5mm (thickness)

Appendix 2

Detailed Site Descriptions

Site Name: AH14306

Site Type: Isolated Artefact

Site Boundaries (GDA94) 55G

Site Description:

Site AH14306 is classified as an Isolated Find, comprising of one light yellowish-brown flake with bifacial retouch along the left lateral margin (distal-ventral), and the right lateral margin (ventral-distal) measuring 61mm (length), 36mm (width), 5mm (thickness). The site is located within Brighton in the Southeast Region of Tasmania.

The site is located within an erosion scald measuring around 20m x 8m, on the mid-slope of a discrete rise approximately 470m north of the Derwent River, and 60m west of Ashburton Creek. The surrounding area is relatively flat to gently undulating terrain (with slope gradients within the range of 5° and 10°) that is drained by Ashburton Creek. The site is located within a paddock that has been cleared of native vegetation, with evidence of intensive agricultural use (livestock, grazing, ploughing). Within the surrounding area, the terrain has been subject to intensive land clearing to facilitate recent residential development.

The underlying geology in the general surrounds of the site consists primarily of Mesozoic dolerite and related rocks in the northwest, while the southernmost portion of the study area consists of Cenozoic cover sequences of Tholeiite basalt. The westernmost boundary of the study area consists largely of Cenozoic cover sequences of alluvial gravel, sand, and clay, and clay-rich alluvial cobble deposit, clasts dominantly of weathered dolerite with subordinate well-rounded siliceous clasts.

The existing soil landscapes broadly reflect the underlying geology of the area. The majority of the study area consists of moderately well drained black soils developed on Jurassic dolerite bedrock and colluvium on low undulating (3-10%) land, with undifferentiated soils developed on Quaternary alluvium occurring in the southeast of the study area. The site was identified within an exposure where soils were observed to consist of greyish-brown loam which appear to have a reasonable depth.

The closest watercourse to AH14306 is the Ashburton Creek, a northwest-southeast oriented semi-permanent watercourse that intersects the Brighton Sorrell Street Rezoning and Development Area no more than 60m east of the artefact site. This watercourse empties into the Derwent River, a major, permanent east-west oriented watercourse located no more than 600m south of the artefact site. The surrounding area of the artefact site has been largely cleared of native vegetation, with remnant dry Eucalypt woodlands located to the north and west of the study area.

Surface visibility within the erosion scald where the artefact was identified was observed to be as much as 90-100% Ground Surface Visibility. In the surrounding paddock, Ground Surface Visibility reduces to approximately 0-5% due to vegetation cover

consisting primarily of dense grass. Given the poor conditions of surface visibility within the study area, it is possible that the site extends beyond the existing identified site boundary. Soils across the paddock appear to have a reasonable depth. The reasonable soil depths across the area means that there is the potential for sub-surface artefact deposits to be present in this area. Because of the existing levels of historic land disturbances across the project area, artefact deposits that are present will be in a moderately disturbed context.

Artefact details

- Yellowish-brown mudstone flake 61mm (length) x 36mm (width) x 5mm (thickness)



Plate 1: View east at the location site AH14306



Plate 2: View west at the location AH14306



Plate 3: Artefact recorded at AH14306 (dorsal)



Plate 4: Artefact recorded at AH14306 (ventral)



Plate 5: Artefact recorded at AH14306 (retouch along right lateral margin)



Plate 6: Artefact recorded at AH14306 (retouch along left lateral margin)

Appendix 3

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

aboriginalheritage@dpac.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
Community Partnerships and Priorities
Department of Premier and Cabinet
GPO Box 123 Hobart TAS 7001

Telephone: **1300 487 045**

Email: **aboriginalheritage@dpac.tas.gov.au**

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

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Appendix 4

Aboriginal Community Consultation Outcomes