



Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment

Sponsor: City of Greater Shepparton (ABN 59 835 329 843)

Date: May 17th 2024

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Registered Aboriginal Party: Yorta Yorta Nations Aboriginal Corporation

Title Page

TITLE	Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment
SIZE OF ACTIVITY AREA:	767.7ha
SPONSOR:	City of Greater Shepparton (ABN 59 835 329 843)
HERITAGE ADVISOR:	Matthew Barker
AUTHOR:	Matthew Barker
DATE OF COMPLETION:	May 17 th , 2024
REGISTERED ABORIGINAL PARTY:	Yorta Yorta Nations Aboriginal Corporation

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Yorta Yorta Nations Aboriginal Corporation:

Wade Morgan
Janarli Bux
Shannon Atkinson
Mackenzie Joachim

The Sponsor

City of Greater Shepparton (ABN 59 835 329 843)

Disclaimer

The information contained in this assessment references information contained in government heritage databases and similar sources and is, to the best knowledge of Benchmark Heritage Management Pty Ltd, true, and correct at the time of report production. While this assessment contains a summary of information it does not provide, nor does it intend to provide, an in-depth summary and assessment of all available research materials in relation to the Study Area. Benchmark Heritage Management Pty Ltd does not accept liability for errors or omissions referenced in primary or secondary sources.

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Abbreviations

ACHP: Aboriginal Cultural Heritage Place
BA: Bachelor of Archaeology
BHM P/L: Benchmark Heritage Management Pty Ltd
CHMP: Cultural Heritage Management Plan
DPGS: Differential Global Positioning System
EVC: Ecological Vegetation Community
GDA: Geocentric Datum of Australia
GRZ: General Residential Zone
LDAD: Low Density Artefact Distribution
OH&S: Occupational Health and Safety
PAD: Potential Archaeological Deposit
PAS: Potential Archaeological Sensitivity
PH: Potential of Hydrogen
RAP: Registered Aboriginal Party
S: Section
VAHR: Victorian Aboriginal Heritage Register
YYNAC: Yorta Yorta Nations Aboriginal Corporation

Executive Summary

Compliance requirements are set out in Part 1 of the Cultural Heritage Management Plan.

Activity, Location and Level of Assessment Undertaken

This report has been prepared for the Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment, City of Greater Shepparton, herein referred to as the Study Area. The Study Area is located in MGA Zone 55. The Study Area is 767.7ha in size and is situated within Tatura, which lies approximately 180km north of the Melbourne CBD (see Maps 2-3). A Glossary of Terms is shown in Appendix 3.

The Desktop Assessment concluded that scarred trees and Low Density Artefact Distributions (LDADs) are the ACHP site types most likely to occur within the Study Area.

Results of Assessment: Survey

The archaeological survey was conducted on the 24th of March 2022 and was undertaken by Mathew Barker (who also supervised the survey) of Benchmark Heritage Management. Mackenzie Joachim and Shannon Atkinson from the YYNAC also part The YYNAC representatives considered it possible that buried former ground surfaces may be present along the prior watercourses that form the areas of cultural heritage sensitivity and required that CHMPs be undertaken in areas of cultural sensitivity as required.

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Part 1 - Cultural Heritage Recommendations

1.0 Recommendations

This section provides a summary of the recommendations made in relation to the Aboriginal values of the study area. For Aboriginal cultural heritage the following recommendations explain whether a Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* will or will not be required (mandatory). Additional recommendations are based on whether a voluntary CHMP should be prepared or at least a site inspection be undertaken by a qualified HA as a risk management measure. Voluntary CHMPs have been recommended for areas of moderate to high likelihood outside areas of CHS. Site inspections have been recommended for areas of low likelihood outside areas of CHS. The results of the survey clearly show that there is potential for Aboriginal cultural heritage to be present within the sections of the study area. The recommendations below are relevant for the current condition of the study area and may be subject to change with future additions to areas of cultural heritage sensitivity.

Recommendation 1: Mandatory Cultural Heritage Management Plans

In properties where areas of CHS (as identified by *Aboriginal Heritage Regulations 2018*) are present (Map 1), and a high impact activity will take place, a mandatory CHMP must be undertaken. The CHMP will include an archaeological survey and subsurface testing program to establish the nature, extent and significance of all Aboriginal cultural heritage in the study area (in accordance with r.60 and r.61 of the *Aboriginal Heritage Regulations 2018*). This must include consultation with the relevant Traditional Owner communities, Sponsor and HA to agree on an appropriate sampling methodology suitable to the subsurface testing of Aboriginal cultural heritage within the study area.

The complex assessment will focus within the areas of cultural heritage sensitivity and Aboriginal archaeological likelihood (Map 1) and the primary aims will be to:

- Establish the presence of any subsurface Aboriginal archaeological deposits;
- Define the nature, extent and significance of any subsurface Aboriginal archaeological deposits;
- Determine the extent of the pre-existing surface site identified as part of this assessment; and
- Determine the nature and condition of the stratigraphy.

The methodology to be used to sample the area of sensitivity will be to excavate a series of representative test pits (e.g. 1 m x 1 m test pits and 50 cm x 50 cm shovel test pits), removing sediments with horizontal control in excavation units (spits) of either 50 mm or 100 mm (or following the natural stratigraphy where present) by using accepted stratigraphic methods and standard hand-held tools. It should also be noted that the YYNAC may request controlled excavation using mechanical equipment (e.g. mechanical excavator and mechanical sieve). If machinery is used for the purposes of uncovering Aboriginal cultural heritage, the disturbance or excavation shall be conducted on a detailed stratigraphic basis. In addition, if the use of machinery results in the finding of occupation deposits or features, the deposits or features shall be uncovered and assessed by controlled non-mechanical excavation.

Any future Aboriginal archaeological subsurface testing involving both hand and mechanical excavation methods will require consultation between the YYNAC, proponent and a HA in order to determine an appropriate sampling methodology.

Recommendation 2: Inspection and Risk Assessment

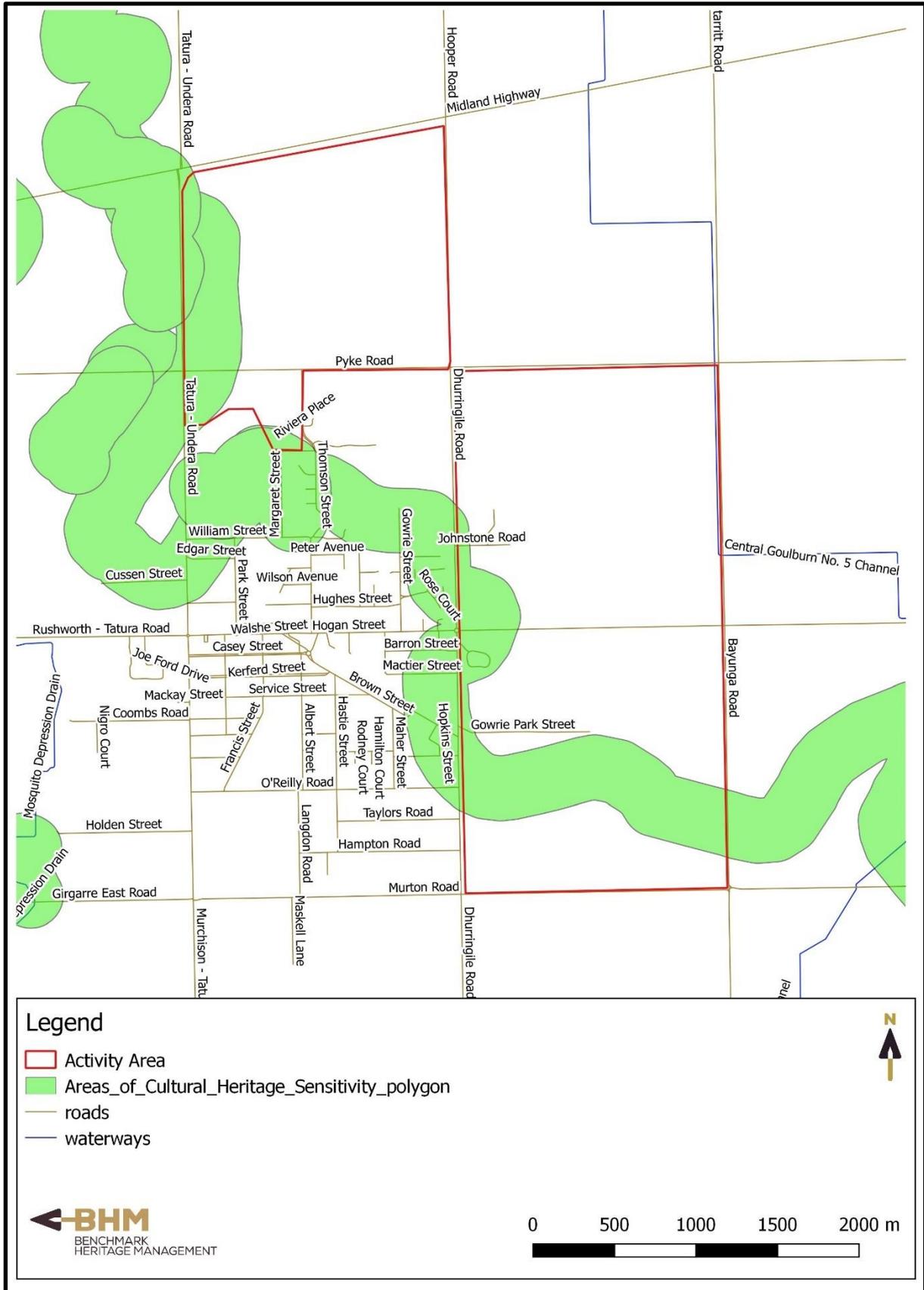
For areas of low likelihood outside of the mandatory CHMP areas, it is recommended that a detailed inspection and risk assessment be undertaken, this may be undertaken in the form of a due diligence assessment or a voluntary CHMP. While these areas do not contain legislative obligations to complete an Aboriginal archaeological investigation, effective risk management should be implemented to avoid any damage to Aboriginal places that may exist in these areas.

Recommendation 3: Open Spaces and Parkland

Additional allowance for open spaces and parklands in areas of high likelihood is also recommended. These areas include areas where mandatory and voluntary CHMPs have been recommended. These areas are likely to contain further Aboriginal cultural heritage and therefore all attempts should be made to avoid impacts to these areas.

Recommendation 4: Contingency for Aboriginal Heritage

There are no other known Aboriginal cultural heritage issues in regard to the proposed development. If any Aboriginal cultural heritage issues are encountered during the course of construction then works should cease within 10 m of the area and a qualified Heritage Advisor as well as the YYNAC should be contacted to investigate the nature of the cultural heritage.



Map 1: Areas of Cultural Heritage Sensitivity

Part 2 - Assessment

2.0 Introduction

This report has been prepared for the Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment, Tatura; herein referred to as the Study Area (see Maps 2-4).

2.1 Background to the Study

The Greater Shepparton Housing Strategy 2011 (GSHS) was prepared to guide the long term identification and provision of residential land within the City of Greater Shepparton. The GSHS was implemented into the Greater Shepparton Planning Scheme (Planning Scheme) in 2012 via Amendment C93 and included a framework plan for the township of Tatura. Council recently prepared the Greater Shepparton Township Framework Plan Review 2020 (Review) to examine nine of the ten township Framework Plans including Tatura. The Review made a number of changes to the Framework Plan for Tatura. Amendment C212 implements the Township Framework Plan Review and was gazetted by the Minister for Planning in June 2020. Council has recently received multiple rezoning requests from land owners within Tatura that wish to have their land rezoned for residential purposes. Rather than proceed with each rezoning request individually, Council is preparing a high-level structure plan, which will incorporate the recommendations of the Framework Plan, provide information on appropriate densities for future residential development, identify all appropriate regional infrastructure required to support residential development and outline the cost of this infrastructure. To date Council has commissioned multiple background reports to inform the preparation of the structure plan, including the Traffic Impact Assessment, Integrated Water Management Plan, Native Vegetation Assessment, and a Structure Plan Layout.

2.2 Notice of Intent (NOI) to Carry out an Archaeological Survey

A Notice of Intent (NOI) to Carry out an Archaeological Survey was submitted to the Secretary, First Peoples – State Relations (FP-SR) on the 24th of March 2022. A copy of the NOI is attached as Appendix 1. FP-SR replied to the NOI on the 24th of March 2022 and allocated this project with the survey number 141.

The RAP with responsibility for the Study Area is the Yorta Yorta Nations Aboriginal Corporation (YYNAC).

2.3 Location of the Study Area and the Current Landowner

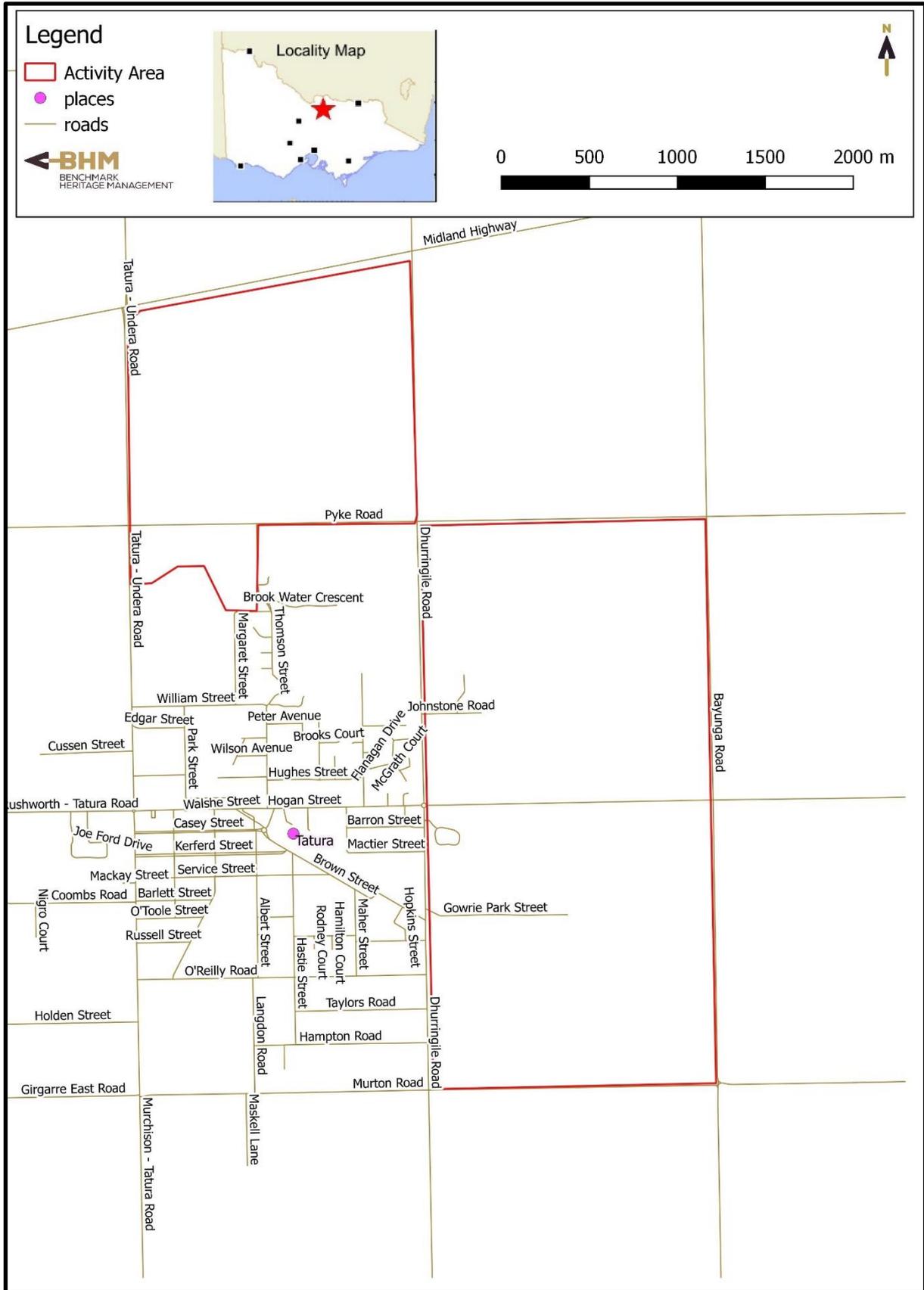
This has been prepared for the Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment, Tatura, City of Greater Shepparton, herein referred to as the Study Area. The Study Area is located in MGA Zone 55. The Study Area is 2.06ha in size and is situated within Tatura, which lies approximately 180km north of the Melbourne CBD.

2.4 Name, Qualifications and Experience of the Heritage Advisor

The Heritage Advisor (HA) who has undertaken this report is Matthew Barker. Matthew (supervisor) has a Bachelor of Archaeology (2004) with Honours (2005) in Archaeology from La Trobe University and has been working in the field of Aboriginal archaeology for seventeen years.

2.5 Registered Aboriginal Party (RAP) with Responsibility for the Study Area

The RAP with responsibility for the Study Area is the YYNAC.



Map 2: Study Area Location: Regional View

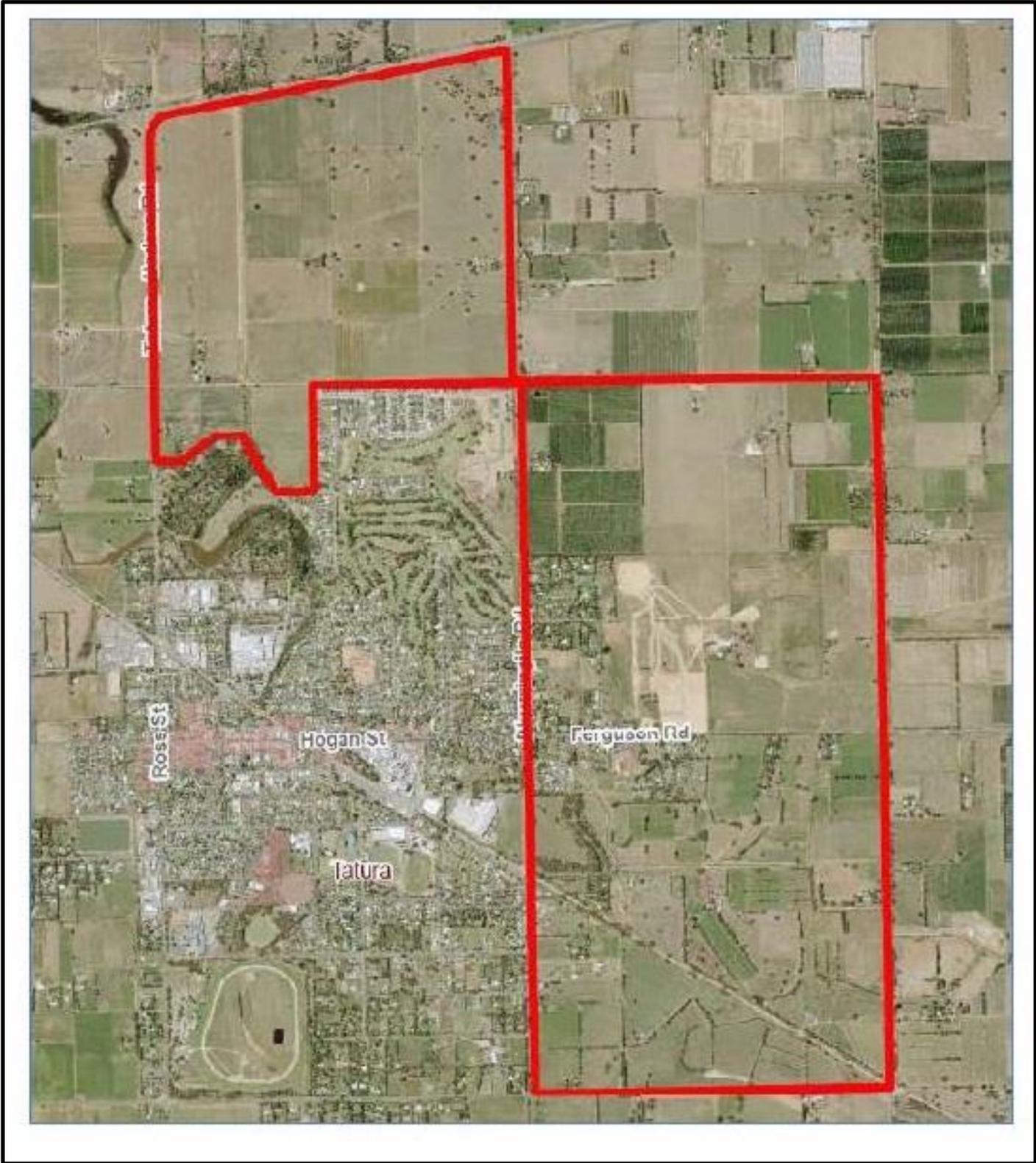


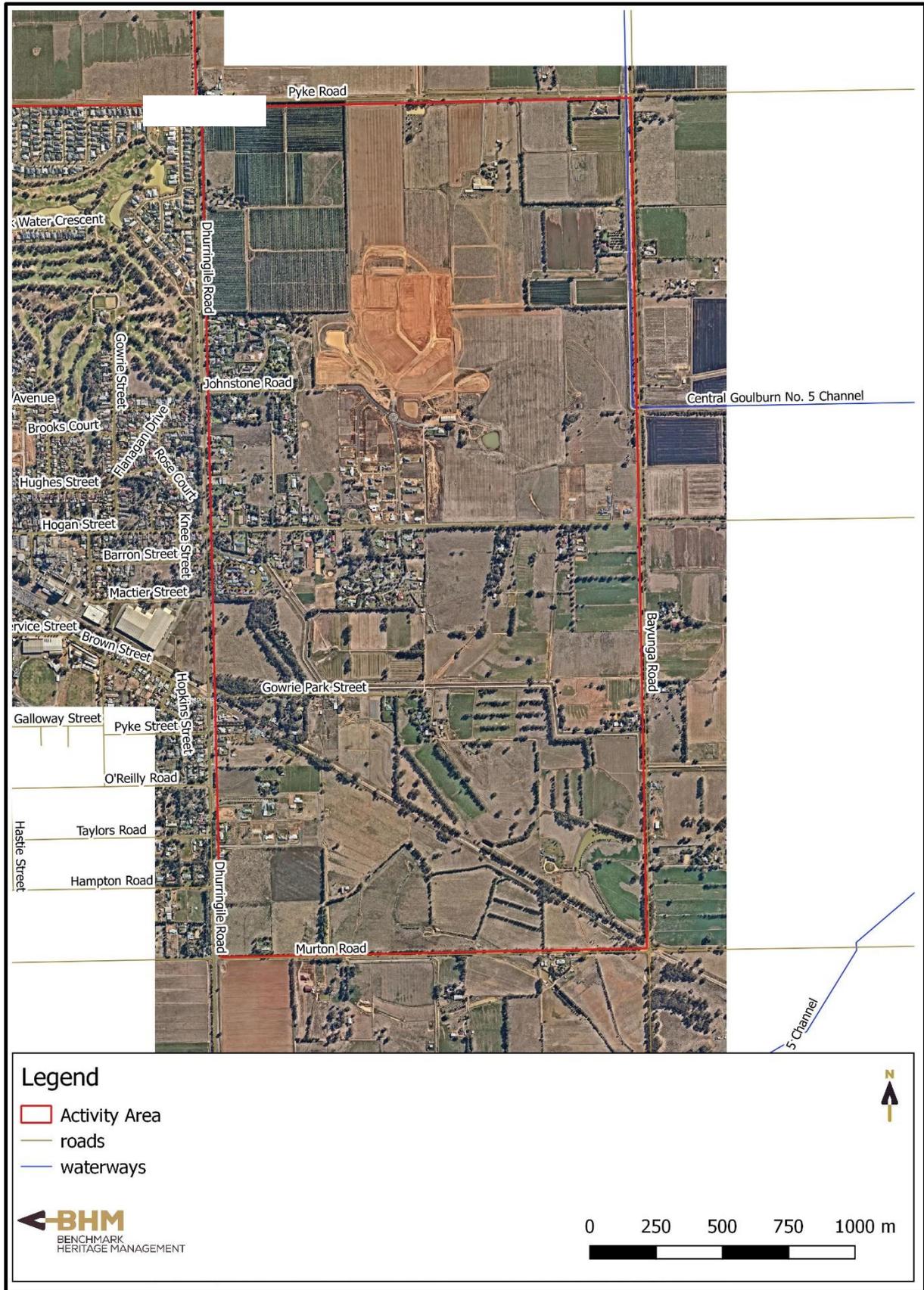
Figure 1: Tatura Structure Plan Area

3.0 Extent of the Study Area Covered by the Cultural Heritage Management Plan

This REPORT has been prepared for the proposed Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment, Tatura, herein referred to as the Study Area. The Study Area is located in MGA Zone 55. The Study Area is 767.7ha in size and is situated within Tatura, which lies approximately 180km north of the Melbourne CBD.

The existing conditions of the Study Area are shown in Maps 3-4.





Map 4: Study Area Location: Aerial South Section

4.0 Documentation of Consultation

This section outlines the consultation which was undertaken in relation to this report and includes references to all relevant documentation submitted for this project.

Documentation of consultation is shown in Table 1.

Table 1: Documentation of Consultation

Name and Organisation	Participants	Date	Type of Communication	Discussion
BHM P/L / YYNAC	Matthew Barker: BHM P/L Michael MacDonagh: City of Greater Shepparton	20 th of January 2022	Meeting	Inception meeting
FP-SR	n/a	24 th of March 2022	Email	Notice of Intent to Carry out an Archaeological Survey
BHM P/L and YYNAC	Matthew Barker: BHM P/L YYNAC field representatives Janarli Bux and Shannon Atkinson	24 th of March 2022	Archaeological survey and onsite discussion	The results of the survey were first discussed.

4.1 Consultation in Relation to the Assessment

1. Project Inception Meeting

A project inception meeting was held for this assessment on the 20th of January 2022. The meeting was attended by Matthew Barker (BHM P/L) and Michael MacDonagh (City of Greater Shepparton)

2. Survey

The archaeological survey was conducted on the 24th of March 2022 and undertaken by Matthew Barker of BHM P/L, who also supervised the archaeological survey and with YYNAC field representatives MacKenzie Joachim and Shannon Atkinson. Alex Smith from the City of Greater Shepparton also attended. No Aboriginal cultural heritage places (ACHPs) were located during survey.

5.0 Aboriginal Cultural Heritage Assessment

5.1 Desktop Assessment

The aim of the Desktop Assessment was to produce an ACHP prediction model, which would assist in the design of the fieldwork, the interpretation of the fieldwork results, the assessment of cultural significance and the design of the Management Conditions. The Desktop Assessment involved a review of:

- Standard ethnographic sources to identify the likely traditional owners and a review of any written and oral local history regarding Aboriginal people in the geographic area;
- Environmental resources available to Aboriginal people within the region of the Study Area;
- Previous archaeological studies, to identify any previously registered ACHPs either within or surrounding the Study Area and the results of previous archaeological assessments;
- The land-use history of the Study Area, particularly evidence for the extent and nature of past land disturbance; and
- The landforms or geomorphology of the Study Area and identification and determination of the geographic region of which the Study Area forms a part that is relevant to the Aboriginal cultural heritage that may be present in the Study Area.

This information was used to produce an ACHP prediction model (Section 5.1.9). The site prediction model assists in determining the type of ACHPs which may potentially occur within the Study Area, the possible contents of these sites, the possible past use of the landscape by Aboriginal people and the likely extent of ground disturbance to ACHPs. The information provided by the site prediction model is used constructively in designing the survey strategy, by, for example, allowing the field team to target areas which have a high probability of containing ACHPs. No obstacles were encountered during the preparation of this Desktop Assessment.

5.2 Historical and Ethno-historical Accounts of the Geographic Region

No specific oral history has been provided in relation to the Study Area from the YYNAC.

The Desktop Assessment must include a review of historical and ethnohistorical accounts of Aboriginal occupation in the geographic region (*r.61 (1) (d)*). Therefore, a review of the historical and ethnohistorical accounts of Aboriginal occupation within the geographic region has been undertaken.

This section provides a review of documentation relevant too Aboriginal historical and ethno-historical accounts related to the Study Area and surrounding region. An examination of lifeways provides an additional tool in the prediction of locating Aboriginal cultural heritage in specific regions. This is achieved through a broad analysis of the ways in which Aboriginal people utilised landscapes and resources (such as watercourses, flora, fauna, and stone). The following is intended as a basic review of resources and should be treated cautiously as the information is based primarily on accounts written just after the point of contact with Europeans (Coutts, Witter & Parsons 1977).

No specific references to Aboriginal use of the Study Area have been found in published sources. A brief review of Aboriginal history in the region of the Study Area is set out below.

According to Clarke, the Yorta Yorta were a language group who occupied the area around Cobram to Echuca and south towards Shepparton. According to Tindale (1974) the Jodajoda were located in the broad valley of the lower Goulburn west to the Murray River, east and west of Shepparton; at Wangaratta, Benalla, and Kyabram; south to Toolamba and Violet Town (Tindale 1974, 207 in Clark 1990, 399, Albrecht 2012). The present day Aboriginal descendants refer to the Joti Jota (or Jodajoda) as Yorta Yorta rather than using the anthropological spelling Atkinson and Berryman (1983).

Bossence (1979) in his history publication of Numurkah highlights the fact that there is confusion between the historic accounts given of Aboriginal tribal groups. Tindale, for example (in his 1974 publication) claims that a large area comprising the present-day sites of Cobram, Nathalia, Numurkah, and Tocumwal belonged to a tribe known as the Kwat Kwat. However, as (Clark 2003) points out, Kwat Kwat is a tribal label only used by one early ethno-researcher Robinson in his 1843 journal (Clark 1988), which has then been repeatedly quoted by subsequent researchers. In addition, the presence of a supposed Kwat Kwat tribe in this region is difficult to substantiate given the fact that Robinson does not provide locational information for this tribal group (Clark 2003). The word Kwat Kwat is identified by Yorta Yorta through oral history as being associated with their language (Sutherland 2010).

Bossence also states that Curr (in his 1887 publication) claims that the part of the shire north of the Nine Mile Creek were shared between the Angootheriban, the Toolenyagan and the Towrooban tribes, which he claimed were all of the Bangarang clan. However, according to (Clark 1990) and Dixon (working papers, cited by Clark 1990), from analysis of the available data, it is clear that there was a group of contiguous clans that were called 'Bangarang' and that their language was called Jodajoda. In other words, Bangarang and Jodajoda refer to the same people. According to Clark, Tindale made a similar mistake, setting up two separate tribes, which has misled many subsequent researchers (Clark 1990).

Aboriginal groups within the Murray River region such as the jodajoda groups followed a semi-sedentary hunter-gatherer lifestyle. Resource rich watercourses and swamps, containing a diversity of fish, shellfish, birds and other plant or animal foods formed a particular focus for regular Aboriginal occupation.

The activity area falls within the clan boundaries of the Jodajoda, also known as 'Bangarang'. The Jodajoda language is a fairly isolated language, with some similarities to its northeastern neighbour, Jabulajabula. It is distinctly different to the Kulin languages of the south. The meaning of the Jodajoda language name is 'the no-noes'. The Jodajoda language was spoken by several small tribes on the Murray River, from Cohuna to Chiltern, extending south past Shepparton in Victoria, to Deniliquin in New South Wales. Unfortunately, most of the available ethnographic information for the Jodajoda does not provide much locational information.

Like other Victorian Aboriginal groups, northeastern Victorian Aboriginal people suffered significant population decline after the arrival of European people. This is thought to be mainly due to the spread of diseases such as smallpox and influenza. Conflict with European settlers was not uncommon. From an estimated 1628 people in the 1840's, only 37 Aboriginal people were recorded in the northeast of Victoria in 1877 (Wesson 2000: 59).

In July 1841, Edward Curr settled on the Tongala Station (Albrecht 2012), southeast of the present township of Echuca (Curr 1883, 83). During his time in the area, Curr met with and observed the local Aboriginal people, including people from the Bangerang Aboriginal group. He called his station Tongala, which he said was the Bangerang name for the River Murray (Curr 1883, 83, Albrecht 2012). Curr also mentions the Moira area as being a favourite place of the Bangerang Aboriginal people, and

was very resource rich (Albrecht 2012). Curr's brother, Richard, made the following observations of this area:

"In a flying visit made to it some short time previous, he had found that, under water for several months of the winter and spring, it abounded in summer in excellent sheep feed, in the shape of couch grass, young reeds...and was usually as green as an emerald from November till march, when other pastures were withered and dry...it abounded beyond all belief in unusually fat fish, swarmed with leeches and snakes, and the ducks were so numerous that I cannot tell now how many he bowled over at one shot. As we learned afterwards, its extensive reed-beds were the great stronghold of the Bangerang Blacks... "(Curr 1883, 166).

Curr made the following observations of local Aboriginal burial practices:

"The dead were rolled up in their opossum-rugs, the knees being drawn up to the neck with strings, when the corpse was interred in a sitting posture, or on its side, generally in a sandhill, in which a grave about four feet deep had been excavated. A sheet of bark was then placed over the corpse, the sand filled in, and a pile of logs about seven feet long and two feet high was raised overall. Round about the tomb it was usual to make a path, and not unfrequently a spear, surmounted by a plume of emu feathers, stuck at the head of the mound, marked the spot where rested the remains of the departed. Women were interred with less ceremony" (Curr 1883, 286).

After the mid-1850s, large townships such as Echuca and Cobram became established within the Murray River region. When he first settled in the region. Curr (Albrecht 2012) observed how the local Aboriginal people began to die from diseases that had been brought to the area by the European settlers:

...a large and steady decrease took place in their numbers, so that at the end of ten years, I doubt whether as many as eighty of the original two hundred were left. This falling off I attribute to diseases – which had originated with the whites, and been passed on from tribe to tribe – having made their appearance amongst the Bangerang a year or two prior to my squatting in their country...There was, however, no doubt, a tendency to disease consequent on the partial abandonment of their traditional ways of life for others less healthy, for, after my settlement in their country, the Bangerang gave up in great measure their wholesome and exhilarating practices of hunting and fishing, and took to hanging about our huts in a miserable objectless frame of mind and underfed condition, begging and doing trifling services of any sort. To this course they were mainly led by their desire to obtain from the newcomers' various commodities, such as iron tomahawks, tobacco, and especially flour, mutton, sugar, and other articles of food..." (Curr 1883, 235).

In addition, the loss of traditional lands led to the breakdown of social units and food resource areas. As a result, the Goulburn Aboriginal Protectorate started a centre for the protection of local Aborigines in Murchison 1839, which operated to approximately 1850, when the system of protection was abolished (Massola 1969). Similar centres opened in NSW with David Mathews establishing a mission in 1874 at his Maloga property on the banks of the Murray, where many Aboriginal people from the surrounding regions resettled. In 1883 the NSW government established the Cummerajunga Protectorate, adjacent to Maloga mission and in 1889 the majority of the Maloga residents moved into the new Protectorate. Here they enjoyed comparative freedom and there was a great deal of movement between Cummerajunga, as people visited relatives or established new homes. However, this independence was significantly curtailed in 1909/1915 when NSW enacted legislation virtually identical to earlier amendments to the Victorian Aboriginal Act – which brought into effect a new policy of assimilation, particularly of those considered of mixed blood or half castes. During this period

150 people were dismissed from the mission, with most of them moving south into the Barmah region and eventually dispersing through a number of Victorian towns. (Massola 1969).

In 1939 following a period of organised protest against the antagonistic management and plans to lease mission land to white farmers there was a mass migration away from Cummerajunga back across the border mostly into Mooroopna, Shepparton, Echuca, and other smaller centres. Many of the people who moved into Mooroopna lived in tin sheds on a bend of the Goulburn River known as the Flats; this part of the river regularly flooded often forcing the residents to move to high ground (LCC 1983 following Sutherland 2010). It was not until 1957 that the Victorian Welfare Board established a housing estate at Rumbalara near Mooroopna (Newby & Muir 1999, following Sutherland 2010).

The majority of the members of the current Rumbalara Aboriginal Co-operative at Mooroopna are Yorta Yorta people, descendants of the people who walked off Cummerajunga mission Station in 1939 to live on the River Flats (Du Cros & Associates 1998 following Sutherland 2010). The YYNAC was incorporated under the Commonwealth Aboriginal Councils and Associations Act 1976 on 27 November 1998. The organisation was created to represent all Yorta Yorta Family Groups including those representing the, Kailtheban, Wollithiga, Moira, Ulupna, Kwat Kwat, Yalaba Yalaba, Nguaria-illiam-wurrung and Pangerang clans (Seidel & Hetey 2004).

Descendants of the Jodajoda tribe now live throughout the Murray River region and are represented by the Registered Aboriginal Party; the Yorta Yorta Nation Aboriginal Corporation. The Yorta Yorta Nation identified the entire area along the Murray River as of cultural significance, as it is part of creation for the Yorta Yorta Aboriginal people (Sutherland 2010).

5.3 The Landforms and Geomorphology of the Study Area

Shepparton is located on the physiographic feature known as the Riverine Plain (DEDJTR 2020a-b). This elevated alluvial plain is a geological feature consisting of an extensive series of low relief floodplains and associated rivers, tributaries, lake systems, ephemeral channels, palaeochannels and prior streams (Pels 1971). The Goulburn River has cut into the Riverine plain and its meandering course

The following paragraphs have been reproduced from Sutherland (2010) and contains a highly detailed description of the underlying geology of the region. The Shepparton region comprises riverine plains, comprising the active flood plains of the Goulburn River and Broken River. Also encompassed in the region are extensive alluvial plains which contain numerous prior and ancestral stream channels. The sediments that comprise the plains were deposited by an older river system ('prior stream' system) as alluvium in the Quaternary period; from approximately 1.6 million years ago to recent geological times (Cochrane et al 1995:77, Sutherland 2011). Aeolian deposits (i.e., windblown deposits) are also found within the Shepparton Formation and comprise fine calcareous soil materials which spread over much of Northern Victoria during drier climatic periods. The Shepparton Formation deposits vary from about 50 to 125 metres in depth across much of the Northern Victorian plains and cover the older alluvial (Tertiary) and marine (Ordovician) sediments (DPI 2010). The alluvial plain through which the Goulburn River flows is a geological feature of incised or terraced alluvium deposited by prior river courses, and comprises an extensive series of low relief floodplains, associated rivers, tributaries, lake systems, ephemeral channels, palaeo-channels, and prior streams (Pels 1971). The extremely low gradients within these river systems have created the Lower Goulburn's meandering course, extensive floodplain and complex of surrounding wetlands, billabongs, and flood paths (Sinclair Knight Merz 1998; Bowler 1978).

The Goulburn River encompasses a 2km wide floodplain which corresponds generally to the meander belt of an ancestral course of the Goulburn River, having occupied its present course only for the past

10,000 – 15,000 years (Craigie & Brizga 1998). The modern Goulburn River is reworking sediments left behind by its ancestral streams carrying predominately silt and clay, and is tightly sinuous, although with occasional straight reaches (Bowler 1978 & Sinclair, Knight Merz 1998). The near channel floodplain is generally forested. Beyond this are broader floodplains and terraces which have generally been cleared and developed for agriculture (Craigie & Brizga 1998). Soils on the Riverine Plain are red, weakly developed calcareous and red-brown earths. Closer to the river these soils grade into red-brown and grey clays (Bowler 1986).

5.4 The Environmental Determinants of the Study Area

The Desktop Assessment included a review of the physical context and natural resources present within the geographic region. These environmental variables can determine how people used the landscape in the past. This information is used to gain an understanding of past human behaviours and provides an indication of where ACHPs and heritage places may be located within the landscape. These environmental factors are summarised below.

- **Climate**

Temperature averages at Tatura indicate a cold to hot maximum average of 6.8°C in July to 22.9°C in February. Minimum average temperatures throughout the year range from 6.8°C in July to 13.9°C in February. The annual average rainfall for the area is 687mm. These climate conditions would have placed no restrictions on Indigenous or European occupation of the area (LCC 1991).

- **Water Sources**

The general area has no obvious permanent water sources, however the Waranga Basin to the south was originally Waranga Swamp. A channel feeding the basin from the southeast may have formerly been a natural stream (Stuart Murray Canal). Prior streams are found near the area, and pre – European wetlands are found at the margins of the property. There is a shallow on-farm irrigation drain along the eastern boundary of the paddock in which the activity area is located although the activity area itself contains no water source.

- **Description of Existing and Pre-Contact Vegetation**

Approximately 91 plant species (DELWP 2020) have been identified in the region, 30 - 40% of which are introduced species. Typical wetland vegetation consists of Giant rush (*Juncus ingest*), cumbungi and dead River Red Gum trees. The wetland is surrounded predominantly by healthy overstorey of River Red Gum (*Eucalyptus camaldulensis*), with Grey Box (*E. microcarpa*) and Yellow Box (*E. melliodora*) on the sandy rises. There is a sparse shrub layer of predominantly silver wattle (*Acacia dealbata*) and isolated patches of Golden wattle (*Acacia pycnantha*) and Grey parrot pea (*Dillwynia cinerascens*). Ground layer vegetation consists of native grasses such as Tussock Grass (*Poa labillardieri*), Common Wheat-grass (*Elymus scaber*) and sedge (*Carex* spp).

- **Information on Fauna and Flora Within the Region of the Study Area**

The Study Area would have contained a large number and great variety of fauna, many of which would have congregated within the dense vegetation along the Goulburn River and the adjacent swamps and within the drainage lines. Prior to post-settlement activities of clearing and drainage works, the streams within the Study Area are unlikely to have had a clearly defined course other than in times of peak flows. The drainage lines were most likely part of an extensive wetland that expanded and contracted with runoff/water level conditions. The abundance of fauna along creeks and around

wetlands in the region would have been seasonal, with the greatest concentrations occurring during the summer periods.

Fauna native to the region would have provided Indigenous inhabitants with a potential source for food and clothing, among other things. It is generally accepted that the Goulburn River and the extensive former swamps would be the focus of Aboriginal exploitation within the region. Within this ecological zone, there would have been variation in staple species diversity and abundance, and this would have in turn influenced site location. Seasonal congregations would have provided the highest food potential, such as eels, nesting birds and their eggs within wetland areas with larger mammals such as kangaroos would have frequented the drier lands.

- **Stone Resources**

No stone resources and outcrops suitable for the manufacture of stone tools are found within the Study Area. Sources of greenstone and chert are known to have quarried at Dookie located 28km east.

Two stone quarry sites adjacent to Mt. Camel; one is on the southeast slopes (Mt. Camel north), the other is about 1.5 km further south (Mt. Camel south). Mt Camel north comprises about thirty quarrying pits and troughs on a low knoll. Mt Camel south has pits on a hilltop and quarry waste below greenstone boulders on a hill slope. Flaking floors also occur.

The Mount Camel area includes extensive prehistoric quarries from which Aborigines obtained greenstone for manufacturing ground edge axes. Scientific analysis has established that axes from this quarry were traded throughout Victoria, in excess of 100 km from the source. This evidence establishes the considerable economic significance of this source of stone.

5.5 Land Use History Relevant to the Study Area

The Desktop Assessment must include a review of the history of the use of the Study Area (r.61(1) (f)). Therefore, a review of the history of the use of the Study Area was undertaken.

Major Thomas Mitchell was the first European to travel through the area in 1835. Mitchell recommended it as a site for Joseph Hawdon and Charles Bonney to camp at the Goulburn River en route from Albury, New South Wales to Adelaide, South Australia.

The first permanent settlement in the area was by squatter Edward Khull at Tallygaroopna which a man named Sherbourne Sheppard was to take over two years later. Sheppard's holding developed into a village adjacent to the Goulburn River known as "Sheppardton". During the 1850s, the nearby village was a popular river crossing point for miners travelling from the Bendigo goldfields to the new finds in the Beechworth area. As there was no bridge to link either side of the Goulburn River, entrepreneur Patrick Macguire set up a punt service in 1850 and the settlement became known as "Sheppardton or Macguire's Punt". A Post Office opened on 1 February 1854 and closed in July of that year.

Following on from early explorers passing through the region, the first European occupation of the geographic region occurred through a period of squatting from 1839 until the late 1860's.

Tatura is a rural township in northern Victoria, 17 km south-east of Shepparton in the western Goulburn Valley. The name is thought to be derived from an Aboriginal word meaning a lagoon with rushes.

Tatura township was surveyed in 1873 on the site of the principal watering place in the district, known as The Whim (a whim being a horse drawn device for raising water from a shaft in the ground). The

survey coincided with the subdivision of pastoral runs for farm selections. A school was opened in 1873. The town grew fairly rapidly, particularly when the railway was extended to it in 1880 from Shepparton and on to Echuca seven years later. In 1886 the Tatura region was severed from the Waranga shire and named Rodney shire, and Tatura became the new shire's administrative centre. By then Tatura had six hotels, Catholic and Presbyterian churches, a mechanics' institute and library, a flour mill, the school, and an agricultural society (1880).

A waterworks trust was formed in 1889 for town water. Several societies and clubs began in the 1890s and the agricultural society formed a regional Tatura Wheat Export Movement, a pioneering wheat pooling scheme. In 1903 the *Australian handbook* described Tatura:

TATURA (36° 25' S. lat., 145° 19' E. long.), a post town, with money-order office, savings bank, telegraph, and railway station, 110 miles NE. of Melbourne; fares, 19s. 8d. and 13s. 2d. It is also connected by rail with Echuca, 34 miles distant. It is situated on the Goulburn river, in shire, county and electorate of Rodney, 377 feet above sea-level, and surrounded by fine agricultural country. (The principal hotels are Victoria, Criterion, and Commercial. There are Anglican, Presbyterian, Roman Catholic, Baptist, and Free Methodist churches, I.O.O.F., A.N.A. and I.O.R. societies, a State school (No. 1,441), a courthouse, and a Mechanics' Institute (1,621 volumes) in the town, as well as numerous stores. Industries : drying raisins and currants, also wine-making on a very large scale, steam flour mill, steam chaff and corn crushing works. Branches of the Commercial and Victoria Banks are here. Lighted with kerosene. Much attention is paid to the planting of lucerne, fruit trees and vines. The meetings of the Rodney Shire Council and Rodney Irrigation and Water Supply Trust are held in Tatura. Area of shire 408 sq. miles, with 1,000 dwellings, 1,200 ratepayers, 1s. rate, and net annual value of ratable property £53,399, acres under cultivation 81,810, of which 46,697 are in wheat, 1,153 wheaten and 453 other hay, and 6,702 in oats. An urban water trust is also constituted for the town. One of the most important agricultural societies in the Goulburn Valley is established here, with extensive show yards and handsome grand stand, also public gardens and racecourse. Population, 600; of shire, 5,500. Newspapers : *Free Press, Herald and Guardian.*

Electricity was introduced by a plant which supplied power to a butter factory and reticulated for town use. The Victoria Hall (a memorial to World War I) was opened in 1926 and the Tatura Progress Association secured the opening of a fruit cannery which functioned for a few years until it closed because of persistent complaints about its smell.

During World War II the Tatura internment camps were conducted near the Waranga basin for German internees and Australians with Axis Powers' sympathies. The camps were garrisoned by 250 soldiers. One internee of Nordic origin, operated a clandestine radio receiver. A German war cemetery for deceased internees of both wars was opened in 1958 as an adjunct to the Tatura general cemetery.

In 1946 Tatura, the headquarters of the Rodney Shire, was described in the *Australian handbook*:

Tatura, the Shire township, is the hub of a thriving rural district which produces dairy-ing products, fat stock, fruit and general agricultural produce. There is water supply and electricity, three hotels, a case factory, canneries and cordial and butter factories, and municipal saleyards where weekly sales are held. Sporting facilities are adequate, including a swimming baths, and a number of progressive rural societies are located in the town. It is 110 miles north of Melbourne by rail.

Agricultural research (1937) produced tomato varieties suited to local conditions, and Tatura tomatoes were supplied to the Rosella sauce and tomato products factory (1949). The factory became part of Unifoods. Cleckheaton textiles opened a factory in Tatura in 1958. Tatura's butter factory had its centenary in 2007, when it was merged with Bega cheese.

5.6 Conclusions from the Desktop Assessment

The conclusions from the Desktop Assessment and the basis for the Aboriginal Cultural Heritage Place prediction model are as follows:

- Low Density Artefact Distribution and Artefact Scatters are the most likely ACHP types to be located with the Study Area;
- The distribution ACHPs in the geographic region is also associated with proximity to rivers and creeks;
- There still exists a potential for sub-surface archaeological deposits in areas that have experienced minimal disturbance;
- There would have been a range of plant, animal, and mineral resources available for Aboriginal people living in, or in the region; and

The following ACHP prediction model has been developed based on the available information:

- Stone artefact deposits (Artefact Scatters or Low Density Artefact Distributions are the most likely ACHP types to be present;
- Stone artefact deposits are most likely to be in a sub-surface context, within a depth range of 0-400mm in silty loam deposits;
- Scarred trees will not be present due to land clearance and the absence of remnant vegetation in the modern urban environment; and
- The impact of land clearance, construction of houses, shedding, roads, access tracks, and services is likely to have a severe impact on the topsoils and any Aboriginal cultural heritage; reducing the potential archaeological sensitivity of the Study Area.

6.0 Site Inspection

6.1 Survey Notification

A Notice of Intent (NOI) to Carry out an Archaeological Survey was submitted to the Secretary, First Peoples – State Relations (FP-SR) on the 24th of March 2022. A copy of the NOI is attached as Appendix 1. FP-SR replied to the NOI on the 24th of March 2022 and allocated this project with the survey number 141.

6.2 Aims of Archaeological Survey

The aims of the archaeological survey were to:

- Attempt to identify Aboriginal cultural heritage;
- Undertake consultation with representative(s) of the YYNAC;
- Identify any areas of potential archaeological sensitivity deposit (that may require future assessment, and;
- Document the extent of significant ground disturbance in the Study Area.

6.3 Survey Methodology

The survey was undertaken by Matthew Barker of Benchmark Heritage Management P/L with MacKenzie Joachim and Shannon Atkinson from the YYNAC on the 24th of March 2022.

The initial field assessment involved a field inspection of rural properties where access had been (Maps 5-6) granted within the study area to identify any areas of Aboriginal archaeological likelihood. Due to the nature of the assessment and the size and extent of the study area, an appropriate methodology for the rapid field assessment had to be developed.

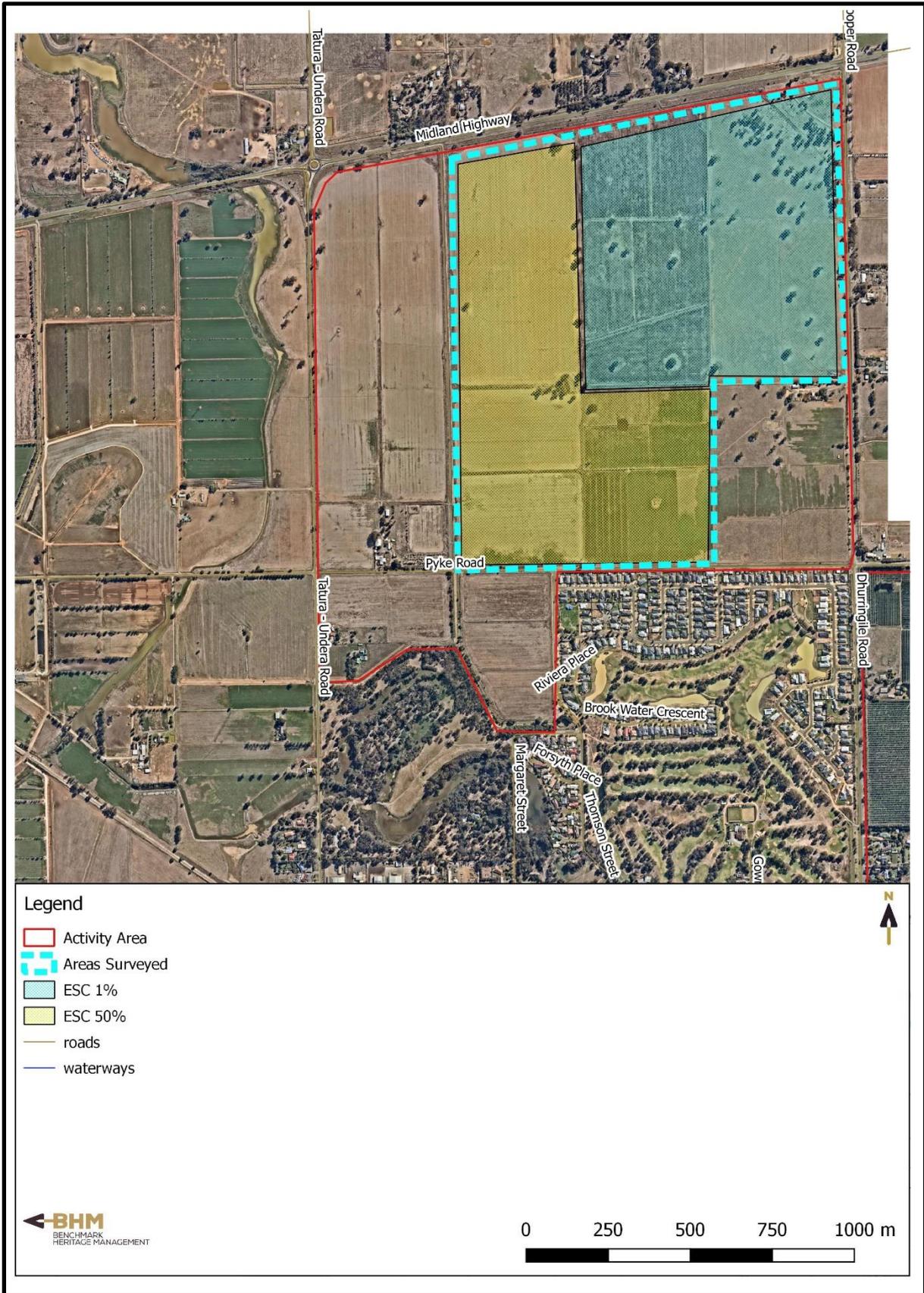
An archaeological survey methodology was developed in line with the requirements of this assessment and in consultation with the representatives of the Aboriginal communities who participated in the field assessment.

The proposed methodology for the initial field assessment of the study area was as follows: • Inspect and assess previously recorded Aboriginal archaeological places;

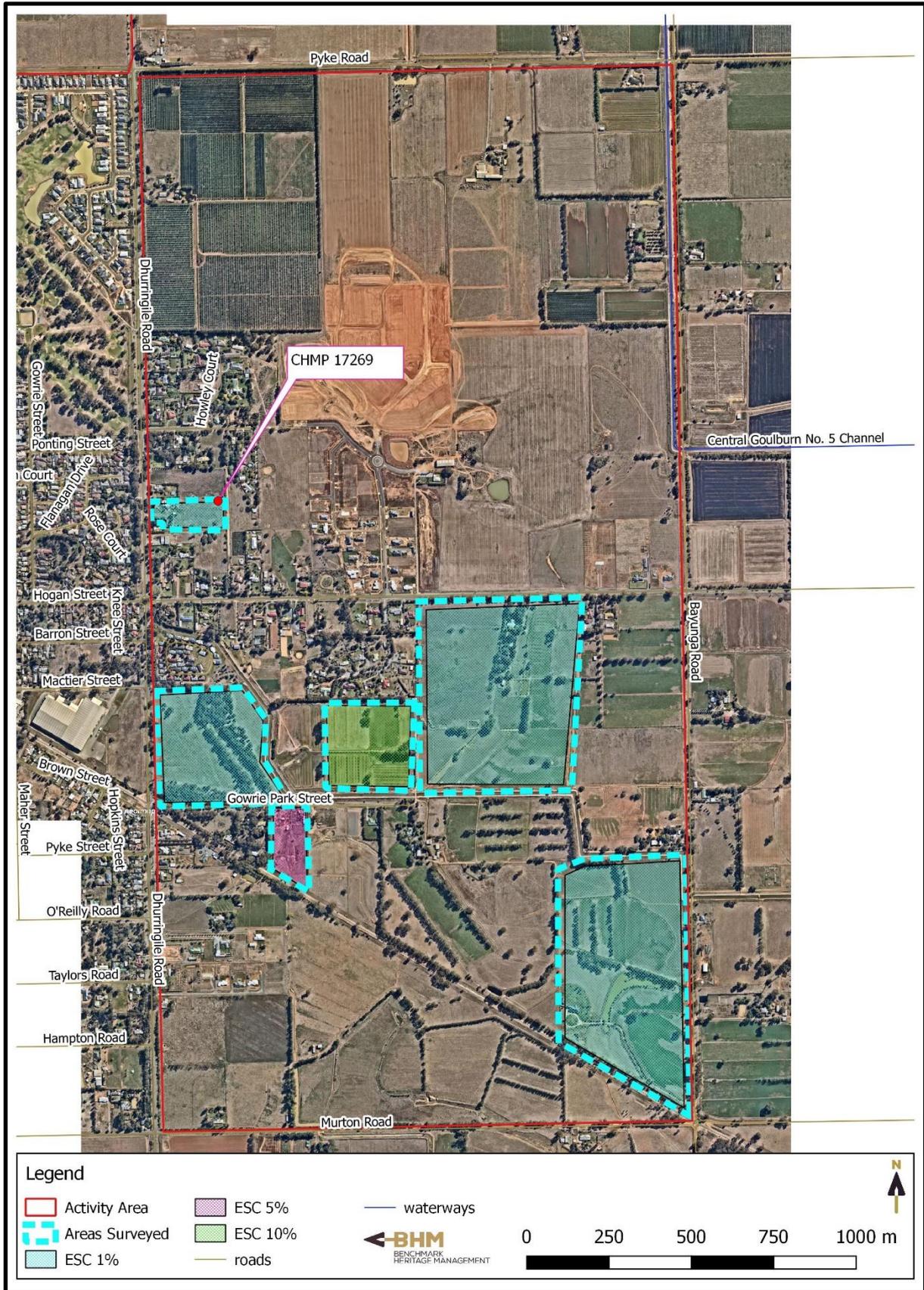
- Inspect and assess any mature gum trees and remnant native vegetation areas;
- Inspect and assess the prior waterways; and
- Other significant landforms (e.g. high rises, terraces and ridgelines).

The initial field assessment took the form of a combined vehicular and pedestrian survey in which the participants inspected and identified landforms and areas of Aboriginal archaeological likelihood.

Focus was concentrated on areas of high ground surface visibility. All mature trees were inspected to determine if they were culturally scarred. Areas of potential archaeological sensitivity/deposits (PAS and PAD) and significant ground disturbance were recorded near to the structures. Ground surface visibility and surface exposure was recorded in order to determine the effective ground survey coverage. A measure with 20cm increments was included in all photographs (Plates 1-10).



Map 5: Survey Map North



Map 6: Survey Map South

6.4 Results

The results are displayed in Table 3.

6.5 Constraints

Significant constraints were encountered during the Standard Assessment comprising:

- The Study Area was almost entirely covered by grass and vegetation, resulting in an average ground surface visibility of less than 1%. The grass and vegetation prevented effective archaeological assessment.

6.6 Ground Surface Visibility and Effective Survey Coverage

Effective coverage is quantified to account for ground surface visibility and exposure limitations to survey coverage and gives a good estimate of the actual proportion of the Study Area investigated.

Ground surface visibility is a measure of factors which may obscure archaeological materials and can be defined as how much of the surface is visible and what other factors (such as vegetation, gravels, or leaf litter) may limit the detection of archaeological materials (Burke and Smith 2004). The higher the level of ground surface visibility, the more likely it is that Aboriginal cultural material can be identified; therefore, a good level of ground surface visibility enables a better representation of places than areas where the ground surface is obscured (Ellender and Weaver 1991).

Ellender and Weaver (1994) attempted to quantify ground surface visibility for a 1m² area:

- 0-5%: Unable to see soil;
- 5-10%: Occasional glimpse of soil;
- 10-20%: Occasional patch of bare ground;
- 20-50%: Frequent patches of bare ground;
- 50-70%: About half the ground bare; and
- 75-100%: More than half the bare ground; ploughed fields.

Table 2: Survey Areas Detail

Property ID	Property Address	Visibility / Exposure	Landform and Property Description	Aboriginal Sites / Areas of Likelihood	Photographs
Lot 2 LP212539	6130 Midland Highway	1%	Plain with large stand of eucalypts	Low	 <p>Plate 1: Photo by M. Barker (24/3/22) facing north</p>
Lot 1 LP212539	6090 Midland Highway	50%	Ploughed paddocks with scattered eucalypts	Very low	 <p>Plate 2: Photo by M. Barker (24/3/22) facing northwest</p>

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Lot 1 LP77038	50 Bayunga Road	50%	Ploughed paddocks with scattered eucalypts	Very low	
Lot 1 LP128275	860 Pyke Road	50%	Ploughed paddocks with scattered eucalypts	Very low	

Plate 3: Photo by M. Barker (24/3/22) facing southwest

Plate 4: Photo by M. Barker (24/3/22) facing southeast

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<p>Lots 1-2 TP665903</p>	<p>280 Ferguson Road</p>	<p>1/%</p>	<p>Plain with depression (former waterway) in the southeast. Ploughed paddocks with scattered eucalypts</p>	<p>Potential for sub-surface artefacts on the edge of the depression</p>	
<p>Lot 1 TP99757</p>	<p>20 Gowrie Park Road</p>	<p>5%</p>	<p>Plain with gentle slope</p>	<p>Very low</p>	

Plate 5: Photo by M. Barker (24/3/22) facing north

Plate 6: Photo by M. Barker (24/3/22) facing south

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Lot 22 LP9290 Lot 2 PS640065 Lot 23 LP9290 Lot 3 PS640065 Lot 24 LP9290 Lot 4 PS640065 Lot 1 PS640065	255 Dhurringle Road	1%	Plain with depression (former waterway) in the west. Scattered eucalypts and exotic trees	Potential for sub-surface artefacts on the edge of the depression
Lot 2 PS328862 Lot 5 PS640065	280 Ferguson Road	1%	Plain	Low



Plate 7: Depression in Centre of Property. Photo by M. Barker (24/3/22) facing south



Plate 8: Flat Plain Photo by M. Barker (24/3/22) facing southwest

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Lot 3 PS516142	534 Craven Road	1%	Plain with depression (former waterway) in the centre. Ploughed paddocks with scattered eucalypts	Potential for sub-surface artefacts on the edge of the depression
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Plate 9: Flat Plain with depression to the north Photo by M. Barker (24/3/22) facing north

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<p>289 Dhurringile Road Tatura, City of Greater Shepparton, being Lot 2 on LP120681</p>	<p>289 Dhurringile Road Tatura, City of Greater Shepparton, being Lot 2 on LP120681</p>	<p>1%</p>	<p>Plain with depression (former waterway) in the centre. Ploughed paddocks with scattered eucalypts</p>	<p>Potential for sub-surface artefacts on the edge of the depression</p>
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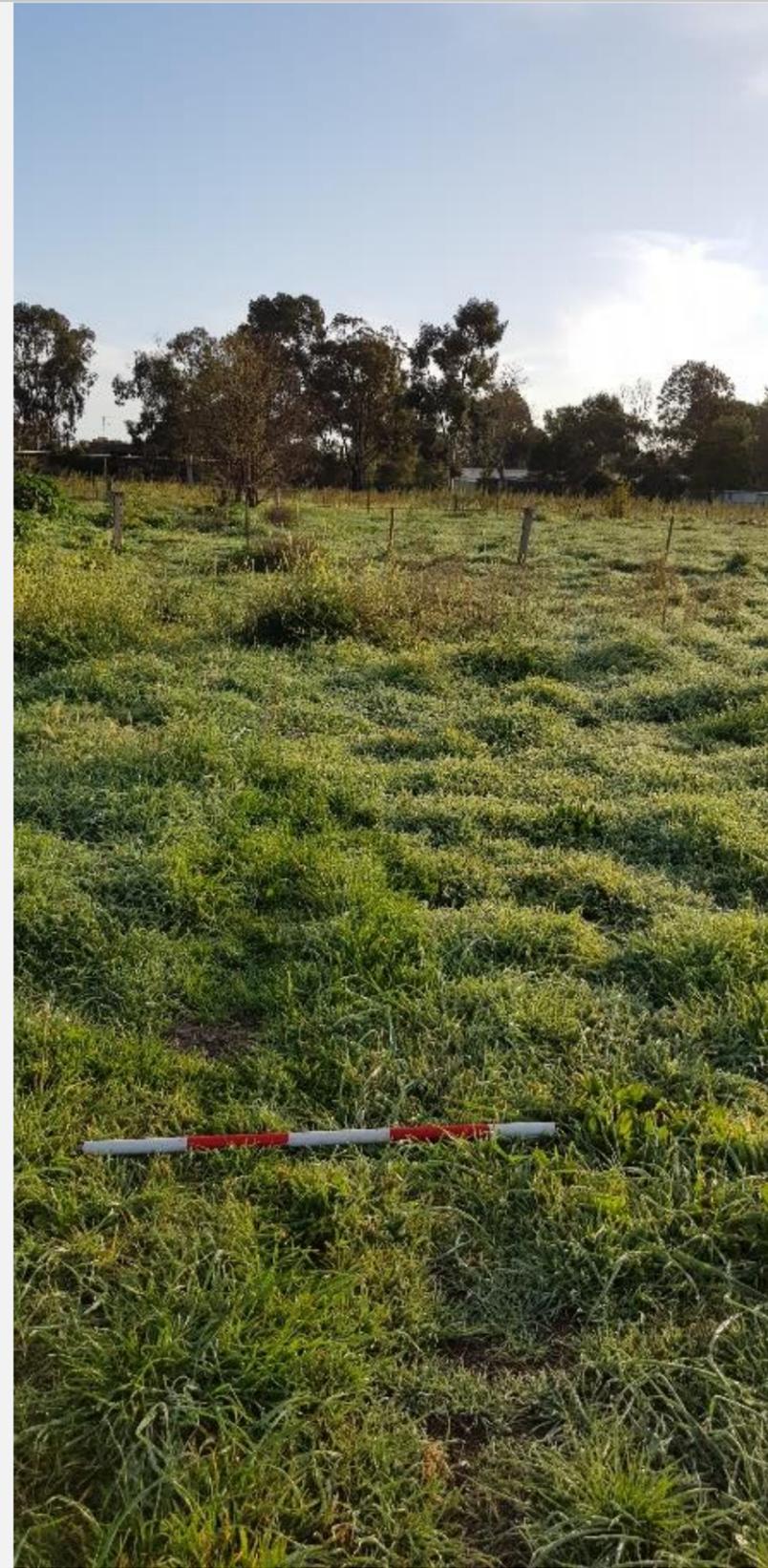


Plate 10: View dense paddocks facing west (M. Barker 24/3/22)

6.7 Aboriginal Cultural Heritage Identified

No ACHPs were identified within the Study Area during the field investigation (this includes artefact scatters, scarred trees, or rock shelters). No caves or cave entrances were noted within the Study Area. The absence of any evidence for ACHPs is likely due to dense grass coverage and resulting low ground surface visibility that characterised the majority of the Study Area.

6.8 Conclusions of the Standard Assessment

The YYNAC representatives considered it possible that buried former ground surfaces may be present along the prior watercourses that form the areas of cultural heritage sensitivity and required that CHMPs be undertaken in areas of cultural sensitivity as required.

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Appendices

Appendix 1: Notice of Intent to Carry Out an Archaeological Survey

Notice of Intention to carry out a survey for Aboriginal cultural heritage for the purposes of the *Aboriginal Heritage Act 2006*

This form has been prepared for use by a person intending to carry out a survey for Aboriginal cultural heritage ('Survey') to complete the notification provisions pursuant to s.34A of the *Aboriginal Heritage Act 2006* (the 'Act').

For clarification on any of the following please contact Victorian Aboriginal Heritage Register (VAHR) enquiries on 1800-762-003.

SECTION 1 – Person intending to carry out survey (applicant)

Applicant (*natural person or body corporate seeking to carry out survey*): City of Greater Shepparton

ABN/ACN: 59 835 329 843

Contact name: Alex Smith

Postal Address: 90 welsford Street, Shepparton

Telephone Number: 5832 9820

Fax number:

Mobile:

Email Address: Alex.Smith@shepparton.vic.gov.au

SECTION 2 – Survey supervisor

Name: Matthew Barker

Provide a description of the supervisor's qualifications and experience relevant to surveys for Aboriginal cultural heritage:

Matthew has a Bachelor of Archaeology (2004) with Honours (2005) in Archaeology from La Trobe University and has over seventeen years' experience working in the field of Aboriginal Archaeology and Cultural Heritage Management.

SECTION 3 – Description of proposed activity and Survey location

Project Name: Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment

List the relevant municipal district/s (ie, Local Council or Shire): City of Greater Shepparton

Clearly identify the proposed **activity** for which the survey relates (ie, cultural heritage or due diligence assessment, preliminary Aboriginal heritage test, research):

Tatura Structure Plan Aboriginal Cultural Heritage Impact Assessment – comprising a cultural heritage survey

Clearly identify the **location** (such as listing cadastral information, attaching a copy of a title search, or indicating the street address):

Lots 1-5 on PS501464, Lot 1 on 672794, Lots 1-2 on PS631794, Lot S3 on 745754, Lots S2 on 804491, Lot CP167176, Lots 5-9 on PS650095, Lots 1-2 on 327412, Lots 1-4 on PS804901

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Attach a map (to scale, with a north arrow and indicating the municipal district - if any) that clearly identifies the survey area.

- Please ensure the map refers to existing roads and features, rather than proposed roads and features, and includes their names.
- Please ensure the map has the survey area outlined on it.
- The map should have a legend; at least three readily identifiable geographical locations (such as road intersections, parcel boundaries, or road/river crossings) and should state the map's projection.

SECTION 4 – Expected start and finish date for the survey

Start date 24 / 22 / 22 Finish date 24 / 6 / 22

SECTION 5 – List any relevant registered Aboriginal party (if any)

This section is to be completed only where there is a registered Aboriginal party in relation to the survey area

YYNAC

SECTION 6 – Signature of applicant

I certify that to the best of my knowledge and belief that the information supplied is correct and complete.

Signed: Alex Smith Date: 24 / 3 / 22
[applicant]

SECTION 7 – Notification checklist

Ensure appropriate attachment/s are completed and attached to this notification (see section 3 of this form).

Please ensure this notice and all attached items are sent to the:

Director Heritage Services
Aboriginal Victoria
Department of Premier and Cabinet
GPO Box 4912
MELBOURNE VIC 3001

OR Email: vahr@dpc.vic.gov.au

Notes:

- Ensure that any relevant registered Aboriginal party is also notified. A copy of this notice may be used for this purpose. (A registered Aboriginal party is allowed up to 14 days to provide a written response to a notification specifying whether or not it intends to participate in the survey).
- In addition to notifying the Director Heritage Services and any relevant registered Aboriginal party, a Sponsor must also notify any owner and/or occupier of any land within the survey area. A copy of this notice may be used for this purpose.
- A copy of any documentation relevant to the survey must be given to the Secretary for recording on the Victorian Aboriginal Heritage Register within 30 days of producing the final report relating to the survey, or within 12 months of submitting this application, whichever is earlier.
- Relevant documentation means any site records, photographs, maps and plans relating to the survey and a copy of any final report.
- The applicant must notify the Secretary if the survey did not occur within 12 months of submitting this application.

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Appendix 2: Glossary

A

Angular fragment: A piece of stone that is blocky or angular, not flake-like.

Archaeology: The study of the remains of past human activity.

Area of Archaeological Sensitivity: A part of the landscape that contains demonstrated occurrences of cultural material. The precise level of sensitivity will depend on the density and significance of the material.

Artefact scatter: A surface scatter of cultural material. Aboriginal artefact scatters are defined as being the occurrence of five or more items of cultural material within an area of about 100m² (Aboriginal Victoria 1993). Artefact scatters are often the only physical remains of places where people have lived camped, prepared, and eaten meals and worked.

B

BP: Before Present. The present is defined as 1950.

Backed blade (geometric microlith): Backing is the process by which one or more margins contain consistent retouch opposite to the sharp working edge. A backed blade is a blade flake that has been abruptly retouched along one or more margins opposite the sharp working edge. Backed pieces include backed blades and geometric microliths. Backed blades are a feature of the Australian Small Tool Tradition dating from between 5,000 and 1,000 years ago in southern Australia (Mulvaney 1975).

Blade: A stone flake that is at least twice as long as it is wide.

Burial: Usually a sub-surface pit containing human remains and sometimes associated artefacts.

C

Core: A stone piece from which a flake has been removed by percussion (striking it) or by pressure. It is identified by the presence of flake scars showing the negative attributes of flakes, from where flakes have been removed.

E

Ethnography: The scientific description of living cultures.

Exposure: Refers to the degree to which the sub-surface of the land can be observed. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land use practices, such as ploughing or grading. It is generally expressed in terms of the percentage of the sub-surface visible for an observer on foot.

F

Flake: A stone piece removed from a core by percussion (striking it) or by pressure. It is identified by the presence of a striking platform and bulb of percussion, not usually found on a naturally shattered stone.

Formal tool: An artefact that has been shaped by flaking, including retouch, or grinding to a predetermined form for use as a tool. Formal tools include scrapers, backed pieces and axes.

G

GDA94 or Geocentric Datum of Australia 1994: A system of latitudes and longitudes, or east and north coordinates centred at the centre of the earth's mass. GDA94 is compatible with modern positioning techniques such as the Global Positioning System (GPS). It supersedes older coordinate systems (AGD66, AGD84). GDA94 is based on a global framework, the IERS Terrestrial Reference Frame (ITRF), but is fixed to a number of reference points in Australia. GDA94 is the Victorian Government Standard and spatial coordinates for excavations, transects and places in CHMP documents.

H

Hearth: an organic sub-surface feature; it indicates a place where Aboriginal people cooked food. The remains of a hearth are usually identifiable by the presence of charcoal and sometimes clay balls (like brick fragments) and hearth stones. Remains of burnt bone or shell are sometimes preserved within a hearth.

Holocene, recent, or postglacial period: The time from the end of the Pleistocene Ice Age (c. 10,300 BP) to the present day.

I

In-situ: A description of any cultural material that lies undisturbed in its original point of deposition.

L

Land System: Description for an area of land based on an assessment of a series of environmental characteristics including geology, geomorphology, climate, soils, and vegetation

M

Midden: Shell middens vary widely in size composition and Complexity. Deposits vary in Complexity, they range from being homogenous to finely stratified deposits. Material which may be found in middens includes different shell species, stone artefacts, hearths, and animal bones.

Q

Quarry (stone/ochre source): A place where stone or ochre is exposed and has been extracted by Aboriginal people. The rock types most commonly quarried for artefact manufacture in Victoria include silcrete, quartz, quartzite, chert and fine-grained volcanics such as greenstone.

Quartz: A mineral composed of silica with an irregular fracture pattern. Quartz used in artefact manufacture is generally semi-translucent, although it varies from milky white to glassy. Glassy quartz can be used for conchoidal flaking, but poorer quality material is more commonly used for block fracturing techniques. Quartz can be derived from waterworn pebble, crystalline or vein.

P

Pleistocene: The dates for the beginning and end of the Pleistocene generally correspond with the last Ice Age. That is from 3.5 to 1.3 million years ago. The period ends with the gradual retreat of the ice sheets, which reached their present conditions around 10,300 BP.

Pre-contact: Before contact with non-Aboriginal people.

Post-contact: After contact with non-Aboriginal people.

R

Raw material: Organic or inorganic matter that has not been processed by people.

Registered Aboriginal Cultural Heritage Places: These are Aboriginal sites registered on the Victorian Aboriginal Heritage Register (VAHR).

Regolith: The mantle of unconsolidated soil/sediments/weathered rock materials forming the surface of the land that rests upon the bedrock.

S

Scarred trees: Aboriginal derived scars are distinct from naturally occurring scars by their oval or symmetrical shape and occasional presence of steel, or more rarely, stone axe marks on the scar's surface. Other types of scarring include toeholds cut in the trunks or branches of trees for climbing purposes and removal of bark to indicate the presence of burials in the area. Generally, scars occur on River red gums (*Eucalyptus camaldulensis*) or grey box (*E. microcarpa*) trees. River red gums are usually found along the margins of rivers, creeks, and swamps with grey box on near and far floodplains. Size and shape of the scar depended on the use for which the bark was intended. For example, bark was used for a variety of dishes and containers, shields, canoes and construction of huts.

Significance: The importance of a heritage place or place for aesthetic, historic, scientific, or social values for past, present, or future generations.

Silcrete: Soil, clay or sand sediments that have silicified under basalt through groundwater percolation. It ranges in texture from very fine grained to coarse grained. At one extreme it is cryptocrystalline with very few clasts. It generally has characteristic yellow streaks of titanium oxide that occur within a grey and less commonly reddish background. Used for flaked stone artefacts.

Spit: Refers to an arbitrarily defined strata of soil removed during excavation.

Stratification: The way in which soil forms in layers.

Stratified deposit: Material that has been laid down, over time, in distinguishable layers.

Stratigraphy: The study of soil stratification (layers) and deposition.

Stone Artefact: A piece of stone that has been formed by Aboriginal people to be used as a tool or is a by-product of Aboriginal stone tool manufacturing activities. Stone artefacts can be flaked such as points and scrapers or ground such as axes and grinding stones.

T

Tool: A stone flake that has undergone secondary flaking or retouch.

Transect: A fixed path along which one excavates or records archaeological remains.

V

Victorian Aboriginal Heritage Register: A list of all registered Aboriginal cultural heritage places (Aboriginal Places) in Victoria.

Visibility: Refers to the degree to which the surface of the ground can be observed. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land use practices, such as ploughing or grading. It is generally expressed in terms of the percentage of the ground surface visible for an observer on foot.

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