Final Report

Paynes Road Precinct Structure Plan (PSP 31.2 - Toolern PSP Plan, Part C), Victoria:
Aboriginal Heritage Impact Assessment

Client
Metropolitan Planning Authority (MPA)

22 January 2015

Ecology and Heritage Partners Pty Ltd

Cultural Heritage Advisor
Terence MacManus

Authors
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ACKNOWLEDGEMENTS

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- The Metropolitan Planning Authority for project and site information.
- Boon Wurrung Foundation Limited for assistance in the field, cultural heritage information and evaluation of the report.
- Bunurong Land Council Aboriginal Corporation for assistance in the field, cultural heritage information and evaluation of the report.
- Wurundjeri Tribe Land and Compensation Cultural Heritage Council for assistance in the field, cultural heritage information and evaluation of the report.
- Office of Aboriginal Affairs Victoria.

Cover Photo: relocated basalt in the north of the study area.

(Photo by Ecology and Heritage Partners Pty Ltd)
**DOCUMENT CONTROL**

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<tr>
<td>Project manager</td>
<td>Rick Bullers</td>
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<td>Report author(s)</td>
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<td>Report reviewer</td>
<td>Oona Nicolson</td>
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<td>Mapping</td>
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### ABBREVIATIONS

See Glossary (Appendix 3, Page 61) for explanation of some of these terms.

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<td>National Environmental Significance</td>
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<td>National Heritage List</td>
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<td>National Native Title Tribunal</td>
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<td>Protected Matters Search Tool</td>
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<td>RNE</td>
<td>Register of the National Estate</td>
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<td>DoE</td>
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<td>State Library of Victoria</td>
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EXECUTIVE SUMMARY

Introduction

Ecology and Heritage Partners Pty Ltd was commissioned by Metropolitan Planning Authority (MPA) to prepare an Aboriginal Heritage Impact Assessment (AHIA) for the proposed Paynes Road Precinct Structure Plan (PSP 31.2 – Toolern PSP Plan, Part C) in Rockbank, Victoria (Melton City Council) (Map 1).

The Activity

The Paynes Road Precinct Structure Plan is an amendment to the existing Toolern Precinct Structure Plan. The MPA is preparing the PSP to provide a master plan for future development within the study area. This investigation is intended to identify issues relating to Aboriginal cultural heritage issues that may form either opportunities or constraints to the overall master planning process.

The Study Area

The study area is approximately 200 ha and is bounded by the Western Freeway to the north, Paynes Road to the east, the Melbourne-Ballarat line to the south and Mt Cottrell Road to the west. The study area is characterised by flat volcanic plains landforms. The land is largely open, treeless pasture, primarily used for pastoral and cropping activities. The northern half is currently vacant, while the southern portion is dotted with several residences and associated outbuildings as well as two harness racing dirt tracks. Murray Road (a dead end road which forms a T-intersection with Paynes Road) transects the centre of the eastern half of the study area.

Methods

The assessments undertaken as part of this AHIA were a background review and a field survey. The background review consisted of reviews of relevant heritage registers and databases, previous archaeological publications and unpublished reports, and a review of the environmental context of the study area, culminating in a predictive statement regarding the likelihood of Aboriginal cultural heritage occurring in the study area.

The field survey consisted of a ground surface survey of the study area by qualified archaeologists to discover any Aboriginal cultural heritage visible on the ground surface and to identify any areas of Aboriginal cultural heritage likelihood (areas that are considered likely to contain subsurface Aboriginal archaeological deposits).

Subsurface testing did not form part of the scope of works for this assessment.

Results

Desktop Assessment

The search identified a total of 20 registered Aboriginal sites within a 3 km radius of the study area. These sites consist of a total of 46 site component types (Table 1). Furthermore, previous studies have suggested the volcanic (basalt) plains between Kororoit Creek and Toolern Creek/Werribee River have a consistent but
dispersed pattern of artefact distribution with minor concentrations occurring on elevated landforms and stony rises.

Field Survey

No previously unrecorded Aboriginal sites were identified during the field survey however two quartz fragments were observed but determined to be non-cultural. In addition a series of elevated rises and ridges were mapped as areas exhibiting a degree of archaeological likelihood.

Conclusions

The results of the current study conform to previous predictive models and hypotheses concerning site occurrence in the Rockbank and Toolern areas. Specifically, the absence of waterbodies and culturally significant landforms such as Mount Cottrell suggest the current study area principally saw usage as a travel corridor and hunting and gathering territory between these more significant parts of the landscape, with limited patterns of artefact discard associated with these activities.

Recommendations

The Aboriginal Heritage Act 2006 (the Act) and Aboriginal Heritage Regulations 2007 (the Regulations) require that a mandatory CHMP be prepared for any high impact activity taking place within an area of cultural heritage sensitivity. Additionally, a voluntary CHMP may be undertaken for proposed high impact activities which are not located within areas of legislative cultural heritage sensitivity, but which are located in areas likely to contain Aboriginal cultural heritage (this satisfies the requirement under the Act to avoid harm to Aboriginal cultural heritage in areas where it is likely to be present). As such, any future development of the area must consider the implications of their proposed activities on the cultural heritage values of the study area as identified in this assessment.

As a result of this preliminary assessment of the study area, no Aboriginal cultural heritage places have been identified. As a result, no areas of cultural heritage sensitivity under the Regulations (r. 22) have resulted from the current assessment and therefore triggers for a mandatory CHMP have not been created.

However, the field assessment did identify several areas of Aboriginal cultural heritage likelihood (Map 9). Whilst these areas do not trigger a mandatory CHMP, a voluntary CHMP is recommended for any future high impact activities within those areas in order to satisfy best practice, and to avoid risk of unexpected discovery of cultural heritage material during works, thereby causing unnecessary delays to development.

Table E5 presents an overview of the requirements for CHMPs within the individual properties of the PSP area, the properties where voluntary CHMPs are recommended and the properties for which it is unlikely further Aboriginal cultural heritage assessment will be necessary.
### Table ES: Summary of future CHMP requirements by property number.

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1 INTRODUCTION

1.1 Background and Scope of Works

This Aboriginal Heritage Impact Assessment (AHIA) has been prepared for the Metropolitan Planning Authority (MPA) to identify Aboriginal cultural heritage sites within the Paynes Road Precinct Structure Plan (PSP 31.2 - Toolern PSP Plan, Part C) in Rockbank, Victoria (Melton City Council) (Map 1).

This assessment will inform future land use and the future urban structure for the PSP, and discuss the implications of any significant places and sites on the future development of the region. The assessment of the Aboriginal cultural heritage values of the study area was conducted in accordance with best practice and the guidelines provided by the Office of Aboriginal Affairs (OAAV).

The project brief agreed upon by Ecology and Heritage Partners Pty Ltd and the MPA was as follows:

- Review the Aboriginal Cultural Heritage Register and Information System (ACHRIS) to identify recorded Aboriginal sites and known areas of Aboriginal cultural heritage sensitivity within the precinct;
- Review of any previous assessments which are relevant to the PSP area, such as those relating to the approved Toolern PSP, the Rockbank PSP, the Melton Heritage Study and any other relevant archaeological assessment reports.
- Review of the geological and geomorphological framework of the study areas, and an evaluation of how this would have influenced Aboriginal occupation of the study area in the past;
- Review of the vegetative history of the study area and an evaluation of how resource availability would have affected Aboriginal occupation of the area in the past (particularly in relation to resource extraction and the likelihood of nearby sites);
- Review of land use and local histories, and conduct a search of archival sources (e.g. historic maps and aerial photos), which are relevant to the identification of areas of significant ground disturbance as defined by the Aboriginal Heritage Regulations 2007 which would affect determinations of areas of cultural heritage sensitivity within the study area; and
- Preparation of a comprehensive Aboriginal Heritage site prediction plan which will determine the likelihood of Aboriginal cultural heritage being present throughout the study area based on the results of the previous studies, the known heritage in the area, and the characteristics of the landforms particularly relating to known Aboriginal land-use patterns for the region. This site prediction plan will form the basis for the maps of Aboriginal heritage sensitivity and the development of the site assessment methodology.
- Preparation of a detailed survey methodology, including the identification of areas of Aboriginal cultural heritage sensitivity and recorded Aboriginal sites. The proposed survey methodology will be provided to MPA at least one week prior to fieldwork commencing.
All Aboriginal sites identified during the field survey, including the reinspection of the previously-recorded sites, will be recorded using a DGPS with accuracy to ±1.0 m in order to provide MPA with the most up-to-date data possible.

All sites identified were recorded in full in accordance with the Guidelines set out by The Archaeologist’s Field Handbook (Burke and Smith 2004), which conform to the standards required by OAAV. The field survey also aimed to identify any constraints or opportunities in relation to the future development of the PSP area.

1.2 Report Framework

This report has been prepared in accordance with the guidelines set out by OAAV regarding archaeological survey methodology and practice and has also been prepared in accordance with best practice and the guidelines of the Australian Association of Consulting Archaeologists (AACA) code of ethics.

Places of Aboriginal cultural heritage significance were assessed against the criteria as defined in Section 4 of the Aboriginal Heritage Act 2006, and OAAV Guidelines for Registering Aboriginal Places (2014).

1.3 Name of Cultural Heritage Advisor

This report was prepared by Ecology and Heritage Partners Pty Ltd Archaeologists/Cultural Heritage Advisors Terence MacManus, Dan Cummins and Rachel Power. The quality assurance review was undertaken by Ecology and Heritage Partners Pty Ltd Director/Principal Heritage Advisor Oona Nicolson. The field work was undertaken by Ecology and Heritage Partners Pty Ltd Archaeologist/Cultural Heritage Advisor Terence MacManus. Mapping was provided by Ecology and Heritage Partners Pty Ltd GIS Officer Monique Elsley.

1.4 Location of Study Area

The study area is located in Rockbank, Victoria (City of Melton). The study area is approximately 200 ha and is bounded by the Western Freeway to the north, Paynes Road to the east, the Melbourne-Ballarat line to the south and Mt Cottrell Road to the west. The study area is characterised by flat volcanic plains landforms. The land is largely open, treeless pasture, primarily used for pastoral and cropping activities. The northern half is currently vacant, while the southern portion is dotted with several residences and associated outbuildings as well as two harness racing dirt tracks. Murray Road (a dead end road which forms a T-intersection with Paynes Road) transects the centre of the eastern half of the study area.

1.5 Proposed Activity

The MPA is preparing a Precinct Structure Plan (PSP) for the study area to provide a master plan for future development within the study area. The Paynes Road PSP will provide mostly residential development as part of the West Growth Corridor, rezoning land from employment use as originally outlined by the approved Toolern PSP. The area will have excellent accessibility to surrounding areas via the existing Western Freeway and Outer Metropolitan Ring road, Paynes/Leakes Roads to the east and the Melton Highway to the north. The PSP will be of a scale in which local and higher level facilities can be delivered to
service both the existing and new communities. Public transport access will be by bus in the first instance, with potential for rail access at a new train station along the Melbourne - Ballarat line.

### 1.6 Name of Client

This report has been commissioned by the MPA (ABN: 77 803 352 468).

### 1.7 Registered Aboriginal Parties

There was not a RAP in place for the study area at the time the preparation of this report commenced. However, there is one Aboriginal group recognised by the Aboriginal Heritage Council that has applied for RAP status over the study area: the Boon Wurrung Foundation Limited (the Boon Wurrung).

Additionally, there are two relevant Aboriginal groups recognised by the Aboriginal Heritage Council as being stakeholder groups for the study area. These groups are the Bunurong Land Council Aboriginal Corporation (the Bunurong) and the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc. (the Wurundjeri).

Accordingly, all three relevant Aboriginal groups were consulted in relation to this assessment.

### 1.8 Native Title

There are currently no Native Title claims or determinations over the activity area and as the activity area predominantly comprises privately owned land, Native Title has been extinguished in these areas.

### 1.9 Report Review and Distribution

Copies of this AHIA will be lodged with the following organisations:

- The MPA;
- Melton City Council;
- Bunurong Land Council Aboriginal Corporation;
- Boon Wurrung Foundation Limited;
- Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.; and
- Office of Aboriginal Affairs Victoria.

### 1.10 Heritage Legislation

An overview of the Aboriginal Heritage Act 2006, the Commonwealth Native Title Act 1993, the Victorian Planning and Environment Act 1987 and the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 is included in Appendix 1, Page 55. This legislation is subordinate to the Victorian Coroners Act 2008 in relation to the discovery of human remains.
1.1 Limitations

The assessment is limited to the requirements outlined in the brief provided by MPA. Therefore it provides a brief analysis of the known Aboriginal cultural heritage sites within the PSP, together with a list of Aboriginal cultural heritage that was identified in the study area through a targeted archaeological survey. Physical identification of Aboriginal cultural material is limited to those areas where landowner access was granted, or was visible from public land (e.g. roadsides).

Analysis of the Aboriginal archaeological potential for the study area was based on analysis of previously registered sites, previous archaeological and cultural heritage reports, anecdotal evidence from landowners in the area, the results of the field survey and analysis of available mapping to identify landforms with archaeological sensitivity.
2 ABORIGINAL CULTURAL HERITAGE DESKTOP ASSESSMENT

The desktop assessment includes research into information relating to Aboriginal cultural heritage in or associated with the study area.

2.1 Geographic Region

The study area forms a part of the Victorian Volcanic Plain bioregion (VP). The VP is a wide-scale geological unit that stretches over most of western Victoria, from western Melbourne to the South Australian border. It is dominated by Cainozoic volcanic deposits which form extensive flat and undulating basaltic plains containing stony rises, old lava flows, volcanic cones and old eruption points. The VP is also dotted with numerous lakes and river systems, both fresh and saline. Specifically, the study area occurs in a more discrete unit of the VP; the Werribee-Keilor Plains.

For the purposes of this report, the geographic region relating to the study area is defined as the geomorphological characteristics of the VP within the boundaries of the study area. These geomorphological characteristics are defined by the Department of Environment and Primary Industries’ (DEPI’s) Victorian Geomorphological Framework (DEPI 2014a).

2.2 Environmental Context

Environmental factors influence how land may have been used in the past. This section reviews the environmental context of the study area to gain an understanding of environmental factors relevant to Aboriginal cultural heritage.

2.2.1 Geology, Geomorphology and Soils

The study area comprises one geomorphological unit, VGF 6.1.3 ‘plains with poorly developed drainage and shallow regolith’.

These shallow plains developed from lava flows across the region during the Late Pliocene and Pleistocene; a geological time known as the ‘Newer Volcanics’ (between approximately 1 and 2 million years ago). They are characterised by a thin basaltic regolith which clearly displays lava flow boundaries and has led to frequent corestones (floaters) extruding on the surface. The boundaries of these lava flows have led to shallow drainage lines throughout this geomorphological unit, which feed into ephemeral wetlands and swamps. A number of waterways incise this deposit including Kororoit Creek and Toolern Creek, located to the north and west of the current study area (DPI 2014b) (Map 5, Page 49).

Lithic materials commonly available in areas of volcanic activity include basalt, andesite, trachyte, phonolite, obsidian, quartzite and hornfels. These are igneous rocks which are formed when hot silicate melts and crystallises. Their crystalline structure is usually interlocking, however super-cooling of a silicate melt may result in the non-crystalline form known as glass (obsidian). Basalt is the most common igneous rock
Quartzite (quartz-rich sandstone) and hornfels (shale metamorphosed by high temperature) are metamorphic rocks which are formed by “various geological processes involving changes in temperature, pressure or chemistry” (Holdaway and Stern 2004:19-26).

The ancient volcanic lava flows which characterise the study area have led to the development of shallow sodic and non-sodic texture contrast soils such as sodosols and dermosols. Sodosols typically display a stark contrast between the A and B horizons, with both colour and texture markedly different in the weakly acidic soil and clay layers. Dermosols do not share this distinction between the A and B horizons, instead having gradational colours and textures between the two units, although they tend to have a more layered structure throughout the B horizon. Due to the shallow nature of the soils in the region, the clay B horizons tend to expand and contract with moisture, leading to cracking throughout the units (DPI 2014b).

2.2.2 Landforms and Hydrology

The study area comprises shallow plains characterised by fertile cracking basalt soils prone to seasonal waterlogging and occasional basalt floaters. It is located approximately 1.5 km south of Kororoit Creek and 3.5 km east of Toolern Creek. Both waterways would have been an important part of the regional landscape for Aboriginal people and would have provided numerous food resources, materials and a constant supply of fresh water. Previous archaeological studies clearly identify high concentrations of Aboriginal archaeological sites within 200 metres of both Kororoit and Toolern Creeks and associated swamps.

2.2.3 Vegetation

According to DEPI’s Ecological Vegetation Classes (EVCs), the soils of the VVP would have historically supported a large range of vegetation defined under EVC 132_61: Heavier-soils Plains Grassland (DEPI 2014c). At the time of European settlement, this vegetation class consisted of low-lying treeless plants such as graminoids and herbs and included such species as Pimelea humilis (common rice-flower), Leptorhynchos squamatus (Scaly Buttons), Themeda triandra (kangaroo grass) and Convolvulus erubescens (pink bindweed) (Map 7).

The broader surrounding region would also have included pockets of vegetation classified under EVC 125: Plains Grassy Wetland, and EVC 68: Creekline Grassy Woodland. Similar to EVC 132_61, EVC 125 is listed as ‘usually treeless’, although it has been noted to include some instances of Eucalyptus camaldulensis (river red gum) or Eucalyptus ovata (swamp gum). EVC 125 would have supported a variety of herbs and graminoids similar to those seen in EVC 132_61, but would have also included species such as Potamogeton tricarinatus s.l. (floating podweed), Triglochin procerum s.l. (water ribbons) and Austrodanthonia duttoniana (brown-back wallaby-grass), due to the slightly wetter conditions of the soils within this unit. In contrast to the other EVCs of the area, EVC 68 would have historically consisted of a Eucalypt-dominated woodland predominantly comprised of Eucalyptus camaldulensis (river red gum) growing up to 15 m tall, with an associated shrub and grass layer consisting of species such as Rubus parvifolius (small-leaf bramble), Lemna disperma (common duckweed) and Glycine clandestina (twining glycine) (DEPI 2014c).

Today, the land is largely open, treeless pasture, primarily used for pastoral and cropping activities. The surface is strewn with basalt boulders, however many of these have been mechanically cleared.
2.2.4 Climate

The climate of the Rockbank area is characterised by warm summers and cool winters; temperatures range between an average maximum of 25.7°C and minimum of 14°C in summer to an average maximum 13.7°C and minimum 5°C in winter. Rainfall varies between a maximum of 56.7 mm in October and minimum of 35.2 mm in March, with annual average rainfalls of 539.9 mm (BOM 2014).

2.3 Aboriginal Context

The following section reviews the Aboriginal context of the study area and includes an examination of historical and ethnohistorical sources, previously recorded Aboriginal archaeological site types and locations in the geographic region of the study area, and archaeological studies undertaken in the area. Together, these sources of information can be used to formulate a predictive site model concerning what types of sites are most likely to occur in the study area, and where these are most likely to occur.

2.3.1 Archaeological Research

Archaeological evidence suggests that Aboriginal peoples had occupied all of Australia’s environmental zones by 40,000 years BP. Pleistocene archaeology of the Port Phillip Bay and Hinterland area documents human occupation in that region dating back at least 40,000 years. The oldest dated archaeological site in Victoria occurs at Keilor in Melbourne - charcoal from a hearth excavated in this area in 1973 has been dated to an age of 31,000 years BP (Flood 1995: 286). More recently research at the Bend Road site in Melbourne’s southeast has dates extending back to 30–35,000 BP (Hewitt and Allen 2010).

The archaeological record of the Greater Melbourne area includes a rich record of artefact scatters, scarred trees and stone arrangements that documents Aboriginal life dating from the Pleistocene through to the immediate pre-European past. The location and character of most of these sites point to important relationships between sites, landscapes, and resources available within the immediate area.

2.3.2 History and Ethnohistory

The following is a summary of historical and ethnographic accounts of the Wurundjeri and Bun Wurrung culture and practices. It is largely derived from non-Indigenous historical sources and does not incorporate the oral history of the contemporary Wurundjeri and Bun Wurrung communities. Such a record would require an exhaustive treatment beyond the scope of the current report. The current summary is thus a limited account of Wurundjeri and Bun Wurrung social and economic life that may facilitate a more detailed interpretation of the archaeological record by way of ethnographic analogy. Such analogy is not without its limitations. This summary is not intended to be a detailed study of the Wurundjeri and Bun Wurrung peoples prior and subsequent to European settlement and does not necessarily reflect any opinions or knowledge held by the contemporary Wurundjeri and Bun Wurrung communities.

1 The Bun Wurrung is the parent group from which the present day Boon Wurrung and Bunurong organizations both descend, and therefore the ethnographical history of the Bun Wurrung encapsulates the history of both the Boon Wurrung and the Bunurong.
The Bun Wurrung

The Bun wurrung shared a cultural and linguistic affinity with the Ngurai-Willam-wurrung, Daung wurrung, Djaadjwa wurrung, Wada wurrung and Woi wurrung language groups. Collectively these groups were known as the Kulin Nation occupying the south central Victorian region. This cultural grouping shared similarities in speech, burial practices, initiation, kinship marriage ties and religious beliefs. In fact, the Bun wurrung, Daung wurrung, Ngurai-Willam wurrung and the Woi wurrung possessed 93% common vocabulary. The Bun Wurrung also shared 75-80% common vocabulary with the Woi wurrung, and 77% with the Daung wurrung (Clark 1990: 361). The Kulin Nation groups shared similarities in speech, burial practices, initiation, kinship marriage ties and religious beliefs including common beliefs regarding Dreaming figures such as the creation ancestors Bunjil (eaglehawk) and Waa (crow) (Presland 2010: 15). The Kulin clans believed that the living world was divided into two halves or moieties, named Bunjil and Waa. All the Kulin groups have a patrilineal descent system (Howitt 2001: 126). Marriage partners were sought from within the Kulin Nation but outside of their own clan (Presland 2010: 15). Wives were taken from the opposite moiety and membership in the moiety had religious, economic and social implications and obligations that transcended local allegiances and clans (Barwick 1984).

The Bun wurrung were divided into six smaller clans and each clan was responsible for a specific section of Bun wurrung territory. The clan responsible for the area around the current study area was the Yalukit willam, whom historical sources place east of the Werribee River, Williamstown, Sandridge and St Kilda (Clark 1990: 365).

Resources

Similar to other Australian clans, the Bun wurrung were hunters and gatherers. Some of the native species which still exist that may have been hunted include the Long-nosed Potoroo, the Swamp Antechinus, the White-footed Dunnart, the Broad-toothed Rat, the Feather-tailed Glider and the Eastern Pygmy-possum, as well as the more familiar kangaroos, koalas and wombats (Smyth 1878). The Bun wurrung probably targeted these and other terrestrial species; however, they are also known as the “salt water people”, who heavily exploited the coastline and marine resources. The Wilsons Promontory area is known to have provided valuable food resources to the people, especially during the summer season.

Although women occasionally hunted, their primary role included gathering food and other resources. Women provided the bulk of the food (supplying as much as 80% of food requirements). They carried a collecting bag and long digging sticks which were vital in the gathering of tuberous plants; these comprised a third of the 940 plant species which have been recorded as food sources. In the Melbourne area, daisies, Lilies and orchids flourished. Murmung or yam daisies were eaten raw in spring but cooked at other times. In the Bun wurrung area the women were also in charge of collecting shell fish (Presland 2010). For vegetables they would collect a variety of bulbs, shoots and foliage like the Warrigal Spinach and they would make a drink from the nectar of the Coastal Banksia flowers.

The primary food source for the Bun wurrung was undoubtedly the coastal landscape that formed much of their traditional territory. This maritime adaptation is evidenced by the numerous shell middens on cliffs and sand dunes of Port Phillip, Bass Strait and the Western Port (Massola 1959: 180). Other middens can be found at one of their many coastal camps at Mordialloc, Frankston or Warneet on the Westernport Bay.
Here they would have accessed many of their favourite resources such as bird eggs, fish, shellfish, eels, freshwater mussels and crayfish.

Ritual and Magic

The Bun wurrung belief system is shared with the other Kulin clans; however, the ethnographic information regarding the Bun wurrung is limited. All Kulin groups believe in supernatural magic and the curative powers of medicine-men or witchdoctors.

Other spirits included the Toor-roo-dun, which appears related to the Bunyip. The Bun wurrung like all Kulin groups revered a creation spirit, Bunjil/Lohan who created all things except women. Bunjil carried a large knife with which he made the earth, mountains, rivers and creeks (Smyth 1878: 423). Bunjil had a wife Boi boi and a brother called Pallian (various spellings). Boi Boi and Bunjil had a son called Binbeal, who controlled the heavens and a daughter called Karakarook, whose concerns were of a more earthly nature. Pallian presided over the fish in the rivers and oceans.

Conflict

Before conflicts with Europeans arose, the Bun wurrung had several enemies, including the Braikolung and the Brataaulung, the most westerly clans of the Kurnai or Gunai tribes from the Gippsland region. They would raid the Bun wurrung camps, kill every man and take younger women. These conflicts continued following European contact, with the last recorded conflict occurring in the mid-1840s (Massola 1959:181). As Ellender (2001) demonstrates, the area of Southern Gippsland around Wilsons Promontory appears to have undergone a change in ownership from Bun wurrung peoples to Brataulung around 1844. This change was likely the culmination of a long standing feud between the two groups, and as a consequence there rose a depopulated buffer zone between the Bun wurrung and the Gunai (Kurnai) groups. As such, the whole area was susceptible to being later occupied by other Aboriginal groups and Europeans.

Post European Contact

The Bun wurrung were one of the first Victorian clans to be contacted by Europeans as early as 1803 in Sorrento. In resistance, they allied with the Woi wurrung, forming what early writers called “the two Melbourne tribes” (Massola 1959: 180). Following French and English exploration, there was the failed settlement at Sorrento in 1803 and the settlement at Corinella in 1826.

The Bun wurrung had contact with whalers and sealers from the beginning of the nineteenth century (such as the Lady Nelson voyage). It is possible that these early encounters had an impact in the number of individuals later recounted by settlers during the Protectorate period (Presland 2010: 84). During the mid-1850s attempts to create a permanent settlement failed due to poor soils and the lack of fresh water. Nonetheless, the presence of white people had a devastating influence among the Bun wurrung, with the rapid spread of chickenpox and other diseases that had fatal results on the Aboriginal people (Presland 2010: 87).

European settlement in the region had a devastating effect on the Bun wurrung. A steep decline in the Aboriginal population was recorded after initial contact with Europeans, primarily caused by conflict with whalers and sealers in the form of warfare and their practice of removing Aboriginal women from the area by barter or force, or the relocation of Aboriginal men to other places such as islands in Bass Strait (Gaughwin & Sullivan 1984: 82).
The introduction of new diseases also decimated the local Aboriginal population (Gaughwin & Sullivan 1984: 85). In 1840, Assistant Protector ordered the establishment of a protectorate station near what is now Endeavour Hills (Frankston); this was called Narre Narre Warren which formed part of the Western Port Protectorate (Massola 1959: 183). Between 1840 and 1844, Thomas worked in vain to convert the small numbers of Aboriginal people to a sedentary life at Narre Narre Warren. His efforts collided with the development of a Native Police Corps for Victoria, established firstly in 1837 and then in 1842, whose headquarters were based in the same Protectorate. Most young men were interested in leaving and joining the Corps, rather than staying permanently at the protectorate (CCLC 2012). In 1841 a camping reserve was established for the Bun wurrung at Mordialloc, and rations were distributed by the settler Alexander McDonald, and later by Honorary Correspondents to the Board of the Protection of Aborigines.

Between the years of 1839 and 1843 William Thomas worked with the Bun wurrung in a variety of roles, including accompanying them on hunting expeditions, recording some of their stories, and organising the Aboriginal camping reserves in order to keep the European settlers and the original inhabitants of the area separate. This did not always work and, Thomas spent a fair amount of time visiting Gaols which had incarcerated members of the Bun wurrung (Gaughwin & Sullivan 1984: 84-85). By 1856 many of the Bun wurrung had moved to the Mordialloc Station. A school for Aboriginal children was also set up on Merri Creek (Presland 1994: 100). The reserve ceased operation in 1878 and the remaining Aboriginal population were transferred to the Coranderrk Mission Station.

While many Aboriginal people lived on the missions and government stations, a significant number of people worked and lived on farms and pastoral stations. Some Aboriginal people farmed the land on smallholdings, or worked in industries such as fishing, the goldfields, and in the timber industries. People outside the reserves sometimes gathered together in camp sites on the outskirts of towns. They were also involved in sports such as cricket, football and athletics.

By the turn of the century only a small population of Aboriginal people lived on the missions and government stations, with most living and working in the same general area. The last missions and stations were phased out in the 1920s. Pressure from the government forced most of the remaining Aboriginal peoples to leave the Coranderrk Mission Station and it closed in 1924 (Presland 1994: 100). Since the 1920s, Aboriginal people have continued to live in most areas of Victoria, often with strong ties to their original clan and tribal areas.

Today the descendants of the Yalukit willam clan of the Bun wurrung language group are represented by the Bunurong Land Council Aboriginal Corporation and the Boon Wurrung Foundation.

The Wurundjeri

At the time of European contact, the Rockbank area and the surrounding region lay within the traditional lands of people from the Woi wurrung language group. This language group is believed to have occupied the Yarra and Maribyrnong watersheds, bounded on the north by the Dividing Range from Mount Bawbaw westward to Mount William and Mount Macedon and on the west by the Werribee River (Clark 1990: 379).

The Woi wurrung were divided into six smaller clans and each clan was responsible for a specific section of Woi wurrung territory. The clan responsible for the Rockbank area was the Kurung-jang-balluk whose
territory extended across the western side of Port Philip Bay, inland from the coast, from the Werribee River to Kororoit Creek (Clark 1990: 381-382).

Resources

The Woi wurrung country was rich in resources as it is located in the temperate south zone of Australia, which covers the south part of the continent. Due to a present rainfall in excess of 300 mm a year, the temperate zone has many watercourses and lakes, which provided a reliable water supply to the Aboriginal population. This allowed a relative growth of the human populations in the region, and in favoured areas, hunter-gatherers invested much labour on maintaining resources such as fish traps and weirs (Presland 2010: 48).

The Kurung-jang-balluk occupied a large region west of Melbourne. It consisted of wetlands which would supply food sources such as eels, mussels, fish, snakes and plants (plains grassy woodland); as well as an abundance of wetland birds. Past Aboriginal occupation in the area is still evident today through the scars that were left on trees and the stone tool fragments that are still being discovered across the landscape.

However, the mainstays of the Aboriginal diet were plants and roots. One of the most important foods was called Mymong (Microseris lanceolata), a tuber that resembled a dandelion, also known as Yam Daisy or Native Dandelion. In addition to this plant, there were more than 300 plants of which the roots or tubers were eaten, including the bulrush (Typha sp.), marsh club rush, early-nancy, milkmaid, various orchids (i.e. greenhood, onion and potato orchids) and many kinds of lilies (including bulbine lily, chocolate lily, flax lily, fringe lily, grass lily, gymea lily and pale vanilla lily) (Clarke 2011: 72). Roots of common reed (Phragmites australis) were also collected to manufacture items of personal adornment (Presland 2010: 71).

Similar to other hunter-gatherer societies, there was a division of labour based on gender. Men would engage in hunting and women gathered plants and roots; although it is not unusual that these subsistence activities overlap, especially with women and young children capturing small animals during their foraging excursions.

Before the European invasion disrupted their way of life, the Eastern Kulin clans were able to move freely around their land on an annual cycle, with some Woi wurrung bands spending the warmer months on the banks of the lower Yarra, and during the cooler months they would move to higher land into the Dandenong Ranges (Presland 2010). A significant place along the Yarra River was a wetland complex called Bolin, where mature eels were captured by hand or speared (Presland 2010: 67-68). Nets and traps were also used to capture eels and fish during the day and at night; spear fishing from a canoe was also practiced in freshwater bodies, attracting fish with a lighted brand near the water’s surface. Two common freshwater fish that were captured include the Australian Grayling (Prototroctes maraena) and Tupong (Pseudaphritis urvillii) (Presland 2010: 68).

Possums, especially the brush-tailed possum (Trichosurus vulpecular) were hunted for their meat and their skins that would later be used to make cloaks. Other animals included kangaroo, bandicoot, emu and other smaller quadrupeds; these were cooked and distributed among the participants of the hunting party, according to a set of very strict rules (Howitt 2001: 764-765).
Ritual and Magic

The Woi wurrung believed that the Wirrarap (medicine-man) could kill persons, far or near, by means of Mung, or evil magic, through the agency of many substances, among which the Thundal, or quartz crystals, stood first. The ‘power’ of the Thundal could be projected either invisibly, or as a small whirlwind. The effect on a man trapped in this power caused a chill, pain and shortness of breath. The medicine-man would then stare at the victim until he saw the substance leaving, run after it, catch it and bag it, breaking a piece off it to prevent it escaping again (Howitt 2001: 365).

In terms of disposal of the dead, many of the Woi wurrung clans would practice inhumation as a symbol of respect, such as those groups on the Yarra River (the Woi wurrung balluk); however, the Woi wurrung from Mount Macedon (the Gunung willam balluk) burned their dead. Among the Woi wurrung groups that practiced inhumation, men and women were treated in a similar fashion. The Woi wurrung would bury a man with his personal property; in the case of men, his spear-thrower was stuck in the ground at the head of the grave, while a woman had her digging stick placed at her head (Howitt 2001: 458).

Conflict

The connections that existed between the different Kulin clans were maintained and strengthened at regular meetings. These gatherings were also opportunities to settle disputes and to conduct business, and occurred throughout the landscape. One of the places where these types of gatherings occurred in the Woi wurrung territory was along the low reaches of the Yarra River, in an area now occupied by the Melbourne Cricket Ground and Richmond Oval (Presland 2010: 40).

Since the end of the eighteenth century, the Woi wurrung were aware of the presence of white men in the south of Victoria, with small groups of sealers becoming established to the east of Wilsons Promontory. From the mid-1830s the territories of the Eastern Kulin Nation were invaded in a wholesale manner as European pastoralists grew in numbers and spread out with their sheep and cattle (Presland 2010: 87). The foundation of the city of Melbourne in the heart of the Eastern Kulin territory also affected the way in which the member clans of the Kulin could move on the landscape. The contacts between the Kulin and the European people were plagued with conflicts, and often these resulted in many deaths. European diseases such as influenza, to which the Kulin had no immunity, played a large part in the decline of the population (Presland 2010: 90). Finally, alcohol drinking, disease and inter-tribal fighting were among other major factors in declining numbers of the Kulin groups, although according to Wiencke (1984: 34-35) and Presland (2010: 90), the loss of desire to live and reproduce also played a major factor, with fewer births registered after 1836.

During the late 1830s and early 1840s, there was a sustained guerrilla campaign conducted by a small group of Kulin; however this movement could not prevail, and was quickly counter-attacked by a larger offensive of European settlers. One such event was the “Faithfull massacre” in April 1838 in which seven assigned convicts, whilst driving sheep for the Faithfull Brothers, were killed on Broken River, near present-day Benalla. This attack prompted a number of reprisal raids which resulted in the deaths of dozens of Woi wurrung (Presland 2010: 89-90).
European Contact:

The Woi wurrung played a prominent role in early settlement history. In particular a clan leader, or Ngurungaeta, known as William Barak, witnessed as a boy the signing of the 'treaty' between Woi wurrung and Bun wurrung elders and John Batman, the founder of Melbourne. However, European arrival in the region had a devastating impact on Aboriginal people, and a steep decline in population was recorded soon after European arrival in of Australia. It is likely that Aboriginal communities had already suffered severe population decline prior to the official settlement in 1835 as a result of disease and conflict with whalers, sealers and squatters.

In 1839 the Aboriginal protectorate scheme was introduced in Victoria. Four Assistant Protectors were appointed under a Chief Protector, George Augustus Robinson. The role of the protectorates was to provide food, shelter and medical supplies, record cultural and population information and to indoctrinate Aboriginal peoples into the western European cultural and economic systems. Aboriginal reserves and stations were established across Victoria and Aboriginal peoples were encouraged to move to them. Woi wurrung clans moved to the reserves and stations set up at Narre Narre Warren, Mordialloc, Warrandyte, and on the Acheron River. A school for Aboriginal children was also set up on Merri Creek (Presland 1994: 100). The Protectorate was largely unsuccessful and was disbanded in 1849.

The Central Board for the Protection of the Aborigines was founded in 1860 to provide an administrative structure to manage Aboriginal people in Victoria. Under their direction a series of missions and government stations were set up throughout Victoria where Aboriginal people could live (Department for Victorian Communities, AAV Website). In the 1860s the Coranderrk Mission Station was opened near Healesville. Aboriginal people from the Woi wurrung clan moved through, lived and worked on the station almost semi-autonomously up until the 1880s (Presland 1994: 100). Most Aboriginal people of Woi wurrung descent can trace their ancestry to people who were associated with the Coranderrk Mission Station.

While many Aboriginal people lived on the missions and government stations, a significant number of people worked and lived on farms and pastoral stations. Some Aboriginal people farmed the land on smallholdings, or worked in industries such as fishing on the Murray, the goldfields, and in the timber industries. People outside the reserves sometimes gathered together in camp sites on the outskirts of towns. They were also involved in sports such as cricket, football and athletics.

By the turn of the century only a small population of Aboriginal people lived on the missions and government stations, with most living and working in the same general area. The last missions and stations were phased out in the 1920s, though some of the land which was once part of the missions is now under the control of Aboriginal communities (Department for Victorian Communities, AAV Website). Pressure from the government forced most of the remaining Aboriginal peoples to leave the Coranderrk Mission Station and it closed in 1924 (Presland 1994: 100).

Since the 1920s, Aboriginal people have continued to live in most areas of Victoria, often with strong ties to their original clan and tribal areas. This century, Aboriginal history has been marked by peoples’ efforts to maintain their collective identity and culture (Department for Victorian Communities, AAV Website).

Today the descendants of the Kurung-jang-balluk clan of the Woi wurrung language group are represented by the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.
2.3.3 Oral History

The Bunurong, the Boon Wurrung and the Wurundjeri did not have any oral histories relating to the study area for inclusion in this report.

2.4 Database Searches

The following database searches were conducted:

2.4.1 Victorian Aboriginal Heritage Register

A search of the Victorian Aboriginal Heritage Register (VAHR) was conducted on 28 August 2014. A 5 km search radius was initially investigated, but returned an extremely high number of results (n=95 sites, consisting of 159 site component types). A large number of these sites are associated with Toolern Creek, which is 3.5 km west of the study area. As these Creekside landforms are not consistent with the study area, the search radius was reduced to 3 km in order to obtain results that would be more relevant to, and representative of, the current study area. Searching an area with this radius ensured that a relevant and representative sample of information was obtained.

The search identified a total of 20 registered Aboriginal sites within a 3 km radius of the study area. These sites consist of a total of 46 site component types (Table 1). The difference between the number of sites and number of site component types is because several sites contain two or more site component types. No Aboriginal Historical References were identified within a 3 km radius of the study area.

While there are no Aboriginal cultural heritage sites located within the study area itself, one site (a low density artefact distribution comprising two site components) is located within 200 m:

- VAHR 7822-3704 (Paynes Road Low Density Artefact Scatter 1).

Table 1 shows that stone artefact sites account for all of the site component types in the search area, with low density artefact distributions being by far the most prevalent site type in the region (n=72%). It should also be noted that due to changing conventions for the recording of archaeological sites over time, some of the sites listed as ‘artefact scatters’ may in fact represent ‘isolated artefacts’, as early recording forms made no distinction between the two site types. In addition, in 2013, the standards for recording Aboriginal sites changed once more and resulted in the ‘isolated artefact’ category no longer being used. Isolated artefacts, or any artefact scatter with a density less than 10 artefacts across 10 m$^2$ are now recorded as ‘Low Density Artefact Distributions’ (LDADs).

A summary of the Aboriginal archaeological site component types appears in Table 1 and a list of all sites in the search area is shown in Table 2.

<table>
<thead>
<tr>
<th>Site Component Type</th>
<th>Quantity</th>
<th>Percentage (%)</th>
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</thead>
<tbody>
<tr>
<td>Low Density Artefact Distributions</td>
<td>33</td>
<td>72</td>
</tr>
<tr>
<td>Artefact Scatters</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>100</td>
</tr>
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</table>

Table 1: Summary of Previously Identified Aboriginal Site Component Types within 3 km of the Study Area
Table 2: List of Previously Identified Sites within 3 km of the Study Area

<table>
<thead>
<tr>
<th>VAHR Site Number</th>
<th>Site Name</th>
<th>Site Type</th>
<th>Within Study Area?</th>
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</thead>
<tbody>
<tr>
<td>7822-1206</td>
<td>Leakes Rd 8</td>
<td>Artefact Scatter</td>
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</tr>
<tr>
<td>7822-1208</td>
<td>Leakes Rd 10</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
<tr>
<td>7822-1211</td>
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<td>Artefact Scatter</td>
<td>No</td>
</tr>
<tr>
<td>7822-1212</td>
<td>Leakes Rd Combined 2</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
<tr>
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<td>Leakes Rd 15</td>
<td>Artefact Scatter</td>
<td>No</td>
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<td>Artefact Scatter</td>
<td>No</td>
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<td>Leakes Rd 23</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
<tr>
<td>7822-2124</td>
<td>Mk 2</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
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<td>Atherstone South 1 IA</td>
<td>Artefact Scatter</td>
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</tr>
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<td>7822-3323</td>
<td>Atherstone South 2 IA</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
<tr>
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<td>Atherstone South 3 IA</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
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<td>7822-3706</td>
<td>Rockbank North Elevated Rises</td>
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</tr>
<tr>
<td>7822-3707</td>
<td>Rockbank North Rim Site Complex</td>
<td>Artefact Scatter</td>
<td>No</td>
</tr>
<tr>
<td>7822-3620(-1-16)</td>
<td>Rockbank Precinct Structure Plan 1</td>
<td>Low Density Artefact Distribution</td>
<td>No</td>
</tr>
<tr>
<td>7822-3657</td>
<td>222 Ferris Rd 1 IA</td>
<td>Low Density Artefact Distribution</td>
<td>No</td>
</tr>
<tr>
<td>7822-3699(-1-4)</td>
<td>Rockbank North LDAD 1</td>
<td>Low Density Artefact Distribution</td>
<td>No</td>
</tr>
<tr>
<td>7822-3700(-1-7)</td>
<td>Rockbank North LDAD 2</td>
<td>Low Density Artefact Distribution</td>
<td>No</td>
</tr>
<tr>
<td>7822-3704(-1-3)</td>
<td>Paynes Road Low Density Artefact Scatter 1</td>
<td>Low Density Artefact Distribution</td>
<td>No – but located within 200 m</td>
</tr>
<tr>
<td>7822-3745</td>
<td>Leakes Road Surface Artefact</td>
<td>Low Density Artefact Distribution</td>
<td>No</td>
</tr>
<tr>
<td>7822-3773</td>
<td>222 Ferris Rd 2</td>
<td>Low Density Artefact Distribution</td>
<td>No</td>
</tr>
</tbody>
</table>

### 2.4.2 Local Council

The study area is located within, and is governed by, the City of Melton Planning Scheme. Planning schemes set out policies and provisions for the use, development and protection of land.

The Heritage Overlay of the City of Melton Planning Scheme was examined (DTPLI 2014). No Aboriginal heritage places listed on the Heritage Overlay are present within the study area.

### 2.4.3 Previous Archaeological Investigations

Localised and regional archaeological investigations have established the general character of Aboriginal sites located within the same geographic region as the study area. This information, together with an environmental context, histories of land use and, historical and ethnohistorical sources, can be used to form the basis for a site prediction statement.

A summary of archaeological reports relevant to the geographical region of the study area appears below (Table 3).
Regional Assessments

In 1989 du Cros prepared a large scale study (#236) of the Western Region Melbourne Metropolitan Area (#236) encompassing the Victorian Volcanic Plains bioregion. As such du Cros’ findings and site prediction model are of direct relevance to this investigation. Stone artefact scatters, isolated artefacts and scarred trees were identified as most likely to occur close to large or permanent swamps. It was further observed that within the western region Aboriginal sites were most likely to be found on river and creek flats, terraces or slopes within 100 meters of a major waterway. du Cros predicted that the majority of surface sites on the plains would date to between 120 and 3,000 years ago.

In 1990 Vines conducted a historical and archaeological survey for the Melton East structure plan study (#246), directly east of the current study area. During the survey a total of seven Aboriginal sites were identified, comprising four artefact scatters, two isolated finds and an area of artefacts eroding out of a bank of Kororoit Creek. All but one site were located along Kororoit Creek within 100 m of the water. As with previous surveys conducted in the area, the study indicated the importance of Kororoit Creek as a water source ad food resource for past Aboriginal peoples.

In 1994 du Cros and Murphy prepared a desktop archaeological overview of Kororoit Creek between Deans Drive, Rockbank and the Princes Highway, Laverton, located north of the current study area (#755). The study identified a total of 77 previously recorded Aboriginal sites, mainly comprising surface scatters and isolated artefacts, along the banks of Kororoit Creek. These sites are predominately located from the creek bank to above the break of slope and are mainly composed of flaked pieces with few formal tools. Again, the study served to highlight the importance of Kororoit Creek as a focal point in the landscape.

In 2004 Vines, Nicolson and Matthews (#2823) investigated the Melton East Growth Corridor for cultural heritage and archaeological potential. The area covered approximately 5,500 hectares on the western edge of Melbourne (Vines, Nicolson and Matthews 2004). Thirty six Aboriginal archaeological sites were previously recorded in the area. Vines et al (2004) predicted that Aboriginal archaeological sites are most likely to occur on land close to creeks and swamps, while isolated finds are likely to occur away from waterways where the ground surface is relatively undisturbed.

In 2006 Edmonds and Long (#3872) produced a large scale desktop assessment for the Melton-Caroline Springs growth area. Many Aboriginal sites were identified throughout the region, several of which were located close to the current study area. The report details the likelihood of finding sites within the various landforms of the area based on previous studies undertaken, and determines that the most likely place to find Aboriginal sites is within proximity to permanent and ephemeral water courses, and that artefact scatters and scarred trees were the most likely site types to occur.

Studies to the West of the Study Area (Toolern Creek)

Minos (2013) undertook a Cultural Heritage Management Plan (#12736) for the western business accelerator and centre for excellence, located at 222 Ferris Road, Melton South (directly west of the current study area). One 1 x 1m test pit and five shovel probes were excavated as part of the complex assessment. One Aboriginal place comprising a single artefact was identified during excavations.
Kiddell and Scibilia (2012) completed a Cultural Heritage Management Plan (12154) for the Atherstone Wetlands, Melton South, located to the west of the current activity within close proximity of Toolern Creek. The activity area was within the area covered by previous CHMP 10720 (see below), however the construction of wetlands was excluded from the activity defined in CHMP 10720 therefore an additional assessment was needed. The desktop assessment found that there were two previously recorded places within the activity area (VAHR 7822-3328; previously known as 7822-2093, and 7822-2402). The first comprises a large artefact scatter consisting of predominately surface material dispersed across the plain overlooking the Toolern creek, while the latter comprises a medium density artefact scatter, located on the alluvial creek flat and mostly occurring in a sub-surface context. VAHR 7822-3328 was relocated during the standard assessment; however VAHR 7822-2402 could not be relocated. Salvage works were recommended.

Kiddell and Clark (2011) conducted a Cultural Heritage Management Plan (11765) for the Toolern Creek Wetland, Melton South, located to the west of the current activity within close proximity of Toolern Creek. The desktop assessment found that the activity area was almost entirely within the extent of one previously recorded large, medium density artefact scatter (VAHR 7822-2093). This site comprises a 3.2 m long scatter which extends eastwards across the escarpment overlooking Toolern Creek, with the more significant cultural deposits located towards its southern extent. The activity area was located at the northern extent. A surface salvage within the boundaries of the activity area was recommended as part of the management of this site.

Scibilia and Kiddell (2011) completed a Cultural Heritage Management Plan (11840) for the Atherstone (Stone Ridge Stages 1-6) residential development, Melton South, located to the west of the current activity within close proximity of Toolern Creek. As highlighted above, previous archaeological investigations undertaken within the vicinity of the activity area - specifically on the embankments of the Toolern Creek - have resulted in the discovery of vast surface artefact scatters with low density subsurface deposits. A total of two Aboriginal places were identified during the standard assessment (VAHR 7822-2983) and (VAHR 7822-2993). Based on this, a total of 72 shovel test holes and two 1 x 1 m hand excavated test pits were excavated within the activity area. An additional three Aboriginal sites were identified. All sites recorded comprised low to medium density surface and subsurface artefact scatters of silcrete, quartz and quartzite.

Noble, Clayton and Woodfield (2010) completed a Cultural Heritage Management Plan (10720) for the Toolern Creek Regional Park, Melton South, located to the west of the current activity within close proximity of Toolern Creek. The desktop assessment identified a total of six previously recorded Aboriginal places within the activity area (VAHR 7822-2087, 2088, 2089, 2093, 2097 AND 2223). Two previous CHMPS relating to a sewerage pipeline (10048 and 10585) had been previously prepared within the activity area, and the associated construction works had caused a degree of ground disturbance across the site. However, it was concluded that given the close proximity of Toolern Creek along the western boundary of the site it was likely that further Aboriginal cultural heritage material would be located. No additional sites were recorded during the standard survey; however the boundaries of one existing site were extended. Complex testing involved four 1 x 1 m test pits, six 50 x 50 cm test pits and a total of 385 shovel probes. Six additional sites were identified during sub-surface investigations, comprising one scarred tree (VAHR 7822-2407) and five subsurface artefact scatters (VAHR 7822-2402, 2403, 2404, 2405 and 2406.) During the assessment, previously recorded site VAHR 7822-2093 was extended to incorporate VAHR 7822-2097, as they were
found to be part of one continuous scatter, with the landform occupied by these two sites and the characteristics of their cultural deposits indistinguishable.

**Studies to the East of the Study Area**

Green and Lever (2013) completed an Aboriginal Heritage Impact Assessment for the Rockbank Precinct Structure Plan (PSP1099), directly east of the current activity area. A total of eight previously recorded Aboriginal places were identified within the activity area during the desktop assessment. One LDAD (VAHR 7822-3620) comprising 16 stone artefacts located between Leakes Road and Paynes Road, and two artefact scatters were identified during the field survey. All three sites were located south of the railway alignment. Areas north of the railway line were surveyed however no additional sites were located. This suggests the landscape north of the rail line directly to the east of the current study area lacks the archaeological potential observed elsewhere in the region.

In 2013 Williams, Virgin and Wright completed a Cultural Heritage Management Plan (#12754) for the Regional Rail Link Ballarat line between Christies Road, Deer Park and Paynes Road Rockbank. A total of four new Aboriginal sites were identified during the survey. The survey noted extensive disturbance resulting from the construction of the railway line and frequent access to the rail corridor for maintenance works. Access tracks ran parallel to the railway line on at least one side of the railway line for the length of the activity area and were subject to ongoing frequent use by heavy vehicles. Buried fibre optic cables were present within the rail corridor and substantial signal infrastructure was also observed within the rail corridor. Along the rail corridor, large basalt boulders had been excavated from the danger zone and dumped on the sides of the rail corridor. Given this, the activity area was considered to have very low potential for containing archaeological deposits.

Berelov et al. (2010) conducted a Cultural Heritage Management Plan (#11416) for the proposed Caroline Springs Station Access Road Enlargement, Christie’s Road, Ravenhall. One previously recorded site (VAHR 7822-1922) was found to be located within the study area. The standard assessment comprised a pedestrian field survey in which variable ground surface visibility was encountered (10-100%). No new Aboriginal Places were identified during the field survey and the previously recorded Aboriginal Place was not relocated. This Aboriginal Place was found to have been destroyed during the construction of the Deer Park Bypass between 1996 and 1997. It was therefore considered unlikely that any Aboriginal Places would be located within the study area and no further works were deemed necessary.

Lawler (2008) conducted a Cultural Heritage Management Plan (#10246) for the Western Highway – Rockbank to Melton Access Restoration Project. The field survey recorded one new artefact scatter site on the present service land adjacent to Trouts Road North. The survey noted poor soil visibility and archaeological sensitivity of the proposed access road between Leakes Road and Paynes Road. No additional cultural material was detected during sub-surface investigations. It was concluded that the newly identified site was not in context and had previously been disturbed due to the construction of the Western Highway service lane.

Tucker (2006) completed archaeological subsurface testing for an area associated with the Leakes Road Interchange with the Western Highway, Rockbank, east of the current study area. The area had been previously surveyed by Gary Vines (2000 and 2004, below) who identified twelve Aboriginal sites in the area. These comprised single artefact occurrences, hundreds of metres apart of quartz flakes and cores as well as
one basalt core. Tucker’s assessment primarily focused on subsurface testing. The archaeological subsurface investigation involved the excavation of ten mechanical transects and two 1x1 m test pits which identified one silcrete artefact in total. As part of the 2006 assessment, twelve previously recorded sites (in Vines 2004) were amalgamated into four different sites:

1. Leakes Rd Combined 1 (VAHR 7822-1211) comprising VAHR 7822-1209, VAHR 7822-1210 and VAHR 7822-1211;
2. Leakes Rd Combined 2 (VAHR 7822-1212) comprising VAHR 7822-1212, VAHR 7822-1215, VAHR 7822-1216, VAHR 7822-1217, VAHR 7822-1218, VAHR 7822-1219 and VAHR 7822-1220;
3. Leakes Rd 15 (VAHR 7822-1213) and;
4. Leakes Rd 16 (VAHR 7822-1214).

These sites were assessed as being low-density, predominately surface scatters. The study area was reassessed of having a low incidence of cultural heritage material present. It was recommended that, Consents to Disturb each of the sites would be required from Wurundjeri before the proposed works could go ahead, which were granted prior to the construction of the Leakes Road Interchange.

Hyett (2006) completed an archaeological assessment of a proposed service centre located north of the intersection of the Western Freeway and Troups Road, Rockbank, located south of the two large swamps. It was identified that most sites in the region are located in close proximity to water sources, and that sites found away from water sources tend to be isolated artefacts. However, Hyett did not identify any Aboriginal archaeological sites during the survey.

Vines (2004) undertook an archaeological assessment for the Western Freeway interchange at Leakes Road, Rockbank. The study (following on from Vines 2000) aimed to assess the impacts of a specific alignment provided by VicRoads for the interchange. The sites that were to be potentially impacted included all 23 sites registered by Vines’ previous survey (2000), in particular the sites from VAHR 7822-1209 through to VAHR 7822-1220.

Rockbank Studies (Kororoit Creek)

MacManus and Power (in progress) have recently conducted preliminary assessments of the Mt Atkinson and Tarnie Plains PSP areas, with both investigations comprising a desktop assessment and field survey. These investigations were intended to identify issues relating to Aboriginal cultural heritage that may form either opportunities or constraints to the overall master planning process. In regard to the Mt Atkinson PSP area, a total of 20 Aboriginal cultural heritage places were identified within the boundaries of the study area. As predicted, these areas were primarily located on the elevated slopes of the Mt Atkinson eruption cone, although they were also present in isolated locations with the generally lower undulating plains. Within the Tarnie Plains PSP area no new sites (in addition to the previously recorded site) were identified during the field survey. A number of areas of cultural heritage likelihood were identified however, predominately located within areas of low undulating stony rises, but also included areas where the landscape was particularly elevated or dropped off suddenly. The pattern of site locations for both investigations is characteristic of Aboriginal cultural heritage within the Victorian Volcanic Plains geographical region.
Cummins, Nicolson, Kaskadanis and Alberto (2014) conducted a complex Cultural Heritage Management Plan (#12192) for the proposed initial development and infrastructure requirements in Rockbank North as part of the Rockbank North Precinct Structure Plan. The activity area was 477.16 ha in size. The desktop assessment found that eleven Aboriginal Places were previously registered within the activity area. The standard assessment involved a pedestrian transect field survey. It found several stone artefacts within the activity area and recommended that a complex assessment (subsurface testing) be carried out. A stratified sampling methodology was employed and a total of 172 stratigraphic test pits of varying dimensions and 23 mechanical trenches were excavated. As a result of the testing, the total number of Aboriginal Places identified within the activity area were consolidated into six large ‘site complex’ artefact scatters and four low density artefact scatters. This study demonstrated that very high artefact density sites occur in close proximity to Kororoit Creek and also on elevated landforms and stony rises within close proximity to the Rockbank Swamp/Deans Marsh wetland system.

Ward et al. (2014) completed a Cultural Heritage Management Plan (#12193) for the proposed Leakes Road Water Pipeline and Road Works, Rockbank North. A total of 13 shovel probes were excavated as part of the sub-surface testing. No Aboriginal places were identified. This was attributed to the fact that the entire activity area has undergone significant previous ground disturbance as a result of road construction, drain cutting and the installation of underground utilities.

Vines (2000) undertook an archaeological survey of an area at Rockbank including the junction of the Western Highway and Leakes Road. The assessment involved undertaking historical research of the area and a field survey to assess any remaining areas of cultural heritage. The field assessment identified both historical and Aboriginal places, comprising isolated stone artefacts, a dry stone wall, historical buildings and remnants of the old Department of Defence radio base. As a preliminary evaluation, Vines examined previous archaeological reports of the area, ethnographic literature, maps and aerial photographs. The pedestrian survey then took place in which three people walked in a single linear transect five metres apart from each other. Some of the features noted were ground visibility, vegetation, soil conditions and the environmental setting. Aboriginal places were also recorded during the survey. Vines’ investigation identified a total of 23 Aboriginal places – all isolated finds - primarily consisting of quartz material, and occasionally quartzite and silcrete materials. The registered places included Leakes Rd 1 through to Leakes Rd 23 (VAHR 7822-1199 to VAHR 7822-1221). One of these Aboriginal archaeological sites occurred within the current activity area including Leakes Rd 1 – Leakes Rd 10 (VAHR 7822-1199 to VAHR 7822-1208). All sites were recorded as being of low significance with limited research potential and it was concluded that the most likely site types in the area were isolated stone artefacts and stone artefact scatters. Due to the density of artefacts found, Vines noted that a more thorough analysis was not able to be carried out; however, that this small number of artefacts indicated the ‘lack of any sedentary occupation or specific activity in the studied area’. Vines (2000) states that other relatively undisturbed areas across the studied area have potential for stone artefact scatters, but in much lower densities and that the 23 Aboriginal places found during the Leakes Road Interchange survey represent what can be termed the “background archaeology” of Melbourne’s western basalt plains. Furthermore, Vines notes that for over 40,000 years utilisation of the grasslands for hunting and gathering would have meant that Aboriginal people passed over almost every square metre of this country many times. Random discard, accidental loss, and tool maintenance during
hunting forays over this period, would have resulted in artefacts being scattered quite randomly across the entire landscape.

Murphy (1998) undertook an archaeological survey of the Department of Defence land at Rockbank, which is north east of the current study area, across the Western Highway. The desktop assessment identified Kororoit Creek as an area of high archaeological sensitivity for surface and subsurface sites, likely to contain isolated artefacts and artefact scatters. Murphy suggested sites located in the central part of the activity area are likely to be more disturbed than those along the Kororoit Creek corridor. One previously recorded Aboriginal archaeological site was located within the activity area; Rockbank Swamp (VAHR 7822-1042). Murphy identified one new Aboriginal archaeological site comprising an artefact scatter, Beatty’s Rd 1 (VAHR 7822-1045).

Table 3: Archaeological Reports Relevant to the Study Area

<table>
<thead>
<tr>
<th>Author, Date, Report #</th>
<th>Description and Location</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Du Cros, H. 1989 #236</td>
<td>An archaeological survey in of the western region of the Melbourne metropolitan area.</td>
<td>Nineteen new sites were recorded during the survey; the majority of these were found along water courses. The 19 sites comprise 15 artefact scatters, 3 isolated artefacts, and 1 quarry. The majority of the sites recorded were from the Werribee River or Kororoit Creek areas. Du Cros suggests that the Western Region would have had exploitable resources attractive to Aboriginal people. Charcoal and burnt clay were present in the burial fill. No carbon date was taken.</td>
</tr>
<tr>
<td>Vines, G. 1990 #246</td>
<td>Archaeological surveys were conducted in small sections of a larger study area located immediately east of Robinsons Road and immediately north of the railway line at Deer Park.</td>
<td>No sites were identified within the areas that form part of the current activity area. However, seven Aboriginal stone artefact scatters were identified along Kororoit Creek.</td>
</tr>
<tr>
<td>Webb, C. 1991 #415</td>
<td>An impact report of a cable laying project between Melbourne and Adelaide.</td>
<td>Most of the area surveyed was close to roads or in an already disturbed area. Recommendations were for the project to proceed with further survey of some sections.</td>
</tr>
<tr>
<td>Webb, C. 1994 #416</td>
<td>Survey of proposed cable route from Melbourne to Ballarat, following mostly existing roads and rail services.</td>
<td>Much of the area is disturbed farmland. Two sites site were located along Parwan Creek, with recommendations to protect one in situ deposit and no protective action against the other disturbed one.</td>
</tr>
<tr>
<td>Du Cros, H. &amp; Watt, P. 1993 #637</td>
<td>A survey of the Skeleton Creek Catchment area within the Werribee Growth Corridor.</td>
<td>The desktop assessment determined that the majority of Aboriginal sites within the Werribee area are found along rivers and creeks. Fifteen artefact scatters and isolated artefacts have been previously recorded within the study area (7822-0206/0209, 0313/0320, 0422/0423, 0425 [VAHR]). The assessment of European and Aboriginal Heritage of the Skeleton Creek Catchment identified six historic archaeological sites, but no new Aboriginal sites. The Historic sites include Leake’s Dairy (7822H-0135), Truganina Estate (7822H-0136), Leake’s Cells (7822-0137), Leake’s Rd 1 (7822H-0138), and a Stockyard Ruin (7822H-0139).</td>
</tr>
<tr>
<td>Author, Date, Report #</td>
<td>Description and Location</td>
<td>Results</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Vines, G. 1993 #701</td>
<td>An archaeological survey for a 1 km stretch of land extending north and south of the Western Freeway, and 500 m east and west of Hopkins and Sinclair’s Roads, Rockbank.</td>
<td>A tributary of Skeleton Creek runs through the southern part of the study area. Kororoit Creek extends across the northern boundary of the activity area. These water courses would have supported rich food resources for local Aboriginal tribes and it is likely that Aboriginal campsites would have been located near these water sources. Three previously unrecorded isolated artefacts were recorded during the survey (site numbers not provided).</td>
</tr>
<tr>
<td>Lane, S. 1997 #1066</td>
<td>An archaeological investigation for the proposed Western Freeway - Western Ring Road Connection, Deer Park.</td>
<td>A total of nine Aboriginal sites, comprising five isolated artefacts and four surface scatters, were identified during survey. Two further artefacts were identified during subsurface testing. The majority of sites were located east, a current or possible past source of freshwater.</td>
</tr>
<tr>
<td>du Cros, H &amp; Rhodes, D. 1998 #1320</td>
<td>This report aimed to provide an overview and assessment of waterways and floodplains for The Waterways and Drainage Group within Melbourne Water to understand the impact on cultural heritage.</td>
<td>The predictive models provided in this report illustrate that waterways and floodplains in and around Melbourne should still be considered highly likely to yield evidence of Aboriginal occupation. Site types considered common are surface artefact scatters, isolated artefacts and scarred trees. Rarer site types are fresh water middens, burials and quarries.</td>
</tr>
<tr>
<td>Newby, J. and Muir, S. 1998 #1356</td>
<td>Pedestrian survey was undertaken at the intersection of the Western Freeway and Hopkins Road.</td>
<td>The ground surface visibility varied across the studied area from poor to good conditions; however the general condition of visibility was poor. During the assessment, two grey silcrete artefacts were recorded as an isolated find (7822-1058). These were located along a fence line within a ploughed garden field.</td>
</tr>
<tr>
<td>Thompson, A. 2003 #2760</td>
<td>Cultural Heritage Management Plan</td>
<td>All areas of exposure that were accessible across the study area were inspected, with intense survey across the stony rise of Mt Atkinson in the northern section and the drainage line in the southern section of the study area. Large basalt boulders across the site and dense grass cover did limit accessibility however. A total of fourteen Aboriginal archaeological sites were recorded during the initial preliminary survey, including six artefact scatters and eight isolated artefact occurrences. The majority of these sites were located across a prominent stony rise and the lower slope of Mt Atkinson.</td>
</tr>
<tr>
<td>Murphy, A. and Morris, A. 2011 #11609</td>
<td>Cultural Heritage Management Plan for the installation of a gas pipeline extending from Middle Road, Truganina, along Hopkins Road to Taylors Road, Plumpton.</td>
<td>A mandatory Cultural Heritage Management Plan was prepared by Murphy and Morris in 2011 (#11609) for the installation of a gas pipeline extending from Middle Road, Truganina, along Hopkins Road to Taylors Road, Plumpton, following the eastern boundary of the current study area. The pedestrian survey identified land with low archaeological potential including land within 200 m of Kororoit creek and Upper Skeleton Creek, elevated landforms and stony rises associated with Mount Atkinson; and elevated land near former swamps adjacent to the studied area. The desktop assessment and field survey indicated that Aboriginal cultural heritage is likely to be present near current and former waterways and on elevated landforms within the activity area. A complex assessment was undertaken in the areas of likelihood; no new Aboriginal places were recorded during the assessment.</td>
</tr>
</tbody>
</table>
2.5 Aboriginal Archaeological Site Prediction Statement

The following site prediction statement\(^2\) has been formulated from the review of previous assessments. The statement presented is based on a site type approach. (For further information on site types see OAAV 2014).

The review of the previously recorded Aboriginal archaeological sites and previous archaeological investigations indicates that the most likely\(^3\) site types in the study area are stone artefact scatters and low density artefact distributions. These site types are by far the most prevalent in the region, representing the only site types previously found within 3 km of the study area. Given the previous studies undertaken within close proximity to the study area, none of which identified other site types across the study area such as scarred trees, mounds, quarries or Aboriginal burials, it is considered unlikely these will be found within the study area during the current assessment.

**Stone Artefact Scatters** are considered likely to occur in the activity area. Stone artefact scatters, in addition to being one of the most prevalent site types identified throughout Victoria, have comprised a large number of site types previously identified within the study area and surrounding region. It is reasonable to therefore expect that stone artefact scatters may also be present in the previously unsurveyed sections of the study area.

Stone tools were made by hitting one piece of stone, called a core, with another called a ‘hammerstone’, often a pebble. This would remove a sharp fragment of stone called a flake. Both cores and flakes could be used as tools. New flakes were very sharp, but quickly became blunt during use and had to be sharpened again by further flaking, a process called ‘retouch’. A tool that was retouched has a row of small flake scars along one or more edges. Retouch was also used to shape a tool.

Not all types of stone could be used for making tools. The best types of stone are rich in silica, hard and brittle. These include quartzite, chert, flint, silcrete and quartz. Aboriginal people quarried such stone from outcrops of bedrock, or collected it as pebbles from stream beds and beaches. Many flaked stone artefacts found on Aboriginal sites are made from stone types that do not occur naturally in the area. This means they must have been carried over long distances.

Stone tools are the most common evidence of past Aboriginal activities in Australia. They occur in many places and are often found with other remains from Aboriginal occupation, such as shell middens and cooking hearths. They are most common near rivers and creeks. It is easier to find them where there is limited vegetation or where the ground surface has been disturbed, for example by erosion.

Artefact scatters are the material remains of past Aboriginal people’s activities. Scatter sites usually contain stone artefacts, but other material such as charcoal, animal bone, shell and ochre may also be present. No two scatters are exactly the same.

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\(^2\) The term “site prediction statement” is sometimes referred to as “site prediction model”. Ecology and Heritage Partners Pty Ltd prefers the term “statement” as it is more accurate; “statistical modelling” is a rigorous and comprehensive process using empirical data.

\(^3\) Likely is an assessment of site types with a 50% or more likelihood of occurring; Unlikely is an assessment of site types with less than 50% likelihood of occurring.
Artefact scatters can be found wherever Aboriginal occupation has occurred in the past. Aboriginal campsites were most frequently located near a reliable source of fresh water, so surface scatters are often found near rivers or streams where erosion or disturbance has exposed an older land surface.

**Low Density Artefact Scatters (LDADs)** are considered likely to occur in the activity area. Sites of this type, including sites formerly registered as ‘isolated artefacts’ which would be considered part of an LDAD recording under modern registration guidelines, are known to be present within close proximity to the study area and in the surrounding region. Low densities of stone artefacts are by far the most common site type identified across Victoria, and it is reasonable to predict they will also occur within the previously unsurveyed sections of the study area. It is also possible that increased visibility conditions in areas which have been subject to prior survey may result in new identification of scattered artefacts within these areas of visibility.

LDADs are defined as scatters of stone artefacts (surface and/or subsurface) which are spread across a given area at a density lower than 10 artefacts in any given 10 m$^2$ area. LDADs can consist of a single artefact found in isolation, to hundreds of artefacts spread across a wide area so long as the density does not cross the 10 artefacts in 10 m$^2$ threshold. Due to the nature of this site type, artefacts under the same LDAD recording can represent multiple site uses, occupational histories, knapping events, discard events or visitational cycles. They can be found anywhere across the landscape; from camp sites, to areas of industry or ceremony, to accidental/opportunistic discard events as people were moving through the landscape – this wide scope of possible site formation processes increases the likelihood one or more LDAD may be present within any given area not subject to significant disturbance activities since European settlement.

**Scarred Trees** are considered unlikely to occur in the activity area. The majority of the study area has been cleared of remnant native vegetation for the construction of roads, railways, housing, or for the establishment and operation of agricultural and pastoral land. Additionally, the previous studies which have been undertaken within close proximity to the study area did not identify remnant vegetation with evidence of cultural scarring during their assessments.

Aboriginal people caused scars on trees by removing bark for various purposes such as for use as vessels, as tools for digging or food preparation (i.e. grinding dishes), for shields used in war and inter-tribal conflict or for canoes, paddles, and other watercraft. The scars, which vary in size, expose the sapwood on the trunk or branch of a tree. Scarred trees are found all over Victoria, wherever there are mature native trees, especially box and red gum. They often occur along major rivers and around lakes, partly due to conservation bias related to European settlement and land clearance, although they have been known to occur on floodplains and amidst otherwise cleared farmland.

**Shell Middens** are considered unlikely to occur in the activity area. This site type is not known to occur in the study area or the surrounding region, and is generally found in close proximity to reliable water sources of sufficient volume to support a range of marine or riverine life.

Shell middens may occur in both freshwater and coastal contexts. Shell middens are accumulations of shell produced by Aboriginal people collecting, cooking and eating shellfish. Shell middens often contain evidence of cooking such as charcoal, ash, fire-stones, burnt earth or burnt clay. Sometimes they also contain animal bones, fish bones, stone tools and Aboriginal burials.
Freshwater shell middens are found along river banks and flood plains, near swamps and lakes, and in sand dunes. They are sometimes found in dry areas, where fresh water was once present. Freshwater shell middens usually occur as fairly thin layers or small patches of shell. The shells usually come from both the freshwater mussel (Velesunio ambiguus) and river mussel (Alathyria jacksoni). The shells may be the remains of just one meal or hundreds of meals eaten over thousands of years.

Freshwater mussel shells may also be found in Aboriginal oven mounds, but usually only in small quantities. Middens may be visible as scatters of broken mussel shell, exposed along vehicle tracks. If you look closely, you may find mussel shells buried in the surrounding soil. Middens are also commonly visible as scatters of mussel shell eroding down the slopes of dunes. Again, the scatters can usually be traced up the dune to the buried shell layer. Shell fragments in the upcast from rabbit burrows in dunes may also indicate a midden.

Shell middens are also found in many areas along the Victorian coast. They can be located in sheltered positions in the dunes, coastal scrub and woodlands, within rock shelters, or on exposed cliff tops with good vantage points. They can occur near rocky or sandy shores and also close to coastal wetlands, inlets, estuaries, bays and river mouths. Coastal shell middens are found as layers of shell exposed in the sides of dunes, banks or cliff tops, or as scatters of shell exposed on eroded surfaces. They range in size from a few metres across to many hundreds of metres and can consist of a thin, single layer, or multiple layers forming a thick deposit.

Mounds are considered unlikely to occur in the activity area. These sites types are not generally known to be found in the region, and the operation of farming activities across much of the study area in the past, along with the development of the area for housing, roads and railway lines, means it is likely any mounds which may have once been present may have been destroyed or degraded beyond recognition.

Aboriginal mounds are places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and, sometimes, Aboriginal burials. Mounds usually occur near rivers, lakes or swamps but occasionally some distance from water. They are also found on dunes and sometimes among rock outcrops on higher ground.

Quarries are considered unlikely to occur in the activity area, as there is no known source of stone suitable for Aboriginal artefact manufacture within the bounds of the study area.

Aboriginal quarries are the sites where Aboriginal people took stone from rocky outcrops to make chipped or ground stone tools for many different purposes. Not all types of stone were suitable for making tools, so an outcrop of good stone that could be easily quarried was a valuable resource. Aboriginal people quarried different types of stone, each with its own special value and use. Stone tools were made from greenstone, silcrete, quartz, quartzite, basalt and chert. Pigments were made from quarried ochre, and grinding tools were made from sandstone. Some quarries are small, consisting of just a single protruding boulder. Other quarries incorporate many outcrops and areas of broken stone that can cover thousands of square metres.

Stone Arrangements are considered unlikely to occur in the activity area, as none of the previous investigations near to the study area have identified evidence of these site types and the impacts of agriculture and pastoralisation since European settlement of the region is likely to have impacted or destroyed any such sites.
Aboriginal stone arrangements are places where Aboriginal people have positioned stones deliberately to form shapes or patterns. The purpose of these arrangements is unknown because their traditional use ceased when European settlement disrupted Aboriginal society. They were probably related to ceremonial activities. Stone arrangements occur where there are plenty of boulders, such as volcanic areas, and where the land could support large bands of people. Surviving stone arrangements are rare in Victoria, and most are in the western part of the State.

**Stony Rises** are considered likely to occur in the activity area. The study area forms part of an undulating basalt landscape upon which these site types occur.

Stony Rises are a geological formation that emerges from the smooth lava fields of the western plains of Victoria, a fertile region that for tens of thousands of years supported the lives of its indigenous Aboriginal people. Stony Rises occur in a number of forms but generically comprise loosely consolidated rocks and boulders elevated above the surrounding plain. Ephemeral lakes occur at low points often adjacent to the Stony Rises, and are often interspersed with low-lying, poorly-drained plains (Joyce 2003). Stony rises provided vantage points to local Aboriginal tribes across the tribal territory.

Stony Rises are considered an area of Aboriginal archaeological sensitivity as they are likely to contain stone artefact sites. Stony Rises are known to be the site of Aboriginal stone huts and stone circle arrangements, and can also contain hearth sites. Previous studies have shown a tendency for stone artefacts located in surface and/or subsurface contexts on stony rises. Artefact distribution patterns commonly comprise isolated stone artefacts and diffuse low density artefact scatters occurring across the volcanic plans, with moderate to higher densities of stone artefacts occurring on stony rises and that only occasional isolated stone artefacts may occur away from stony rises. The most significant sites are located on the stony sites near watercourses. Scarred trees may occur where mature native vegetation is located in proximity to former swamps.

**Aboriginal Burials** are considered unlikely to occur in the activity area. Although Aboriginal people have a long history of occupation in Victoria, burial practices in the volcanic plains areas varied greatly over time, and between different Aboriginal groups. Stony areas and areas with dense clayey soils may have been less likely to involve interment, due to the difficulty involved with digging through the clays. Other burial practices such as cremation, stowage of bodies in trees or rock clefts, or even left in the open are all less likely to have left archaeological traces to the present day. Equally, burials under cairns or stone arrangements are likely to have been impacted or destroyed by the clearance of the study area for agricultural or pastoral activities or the development of housing, roads and railway lines.

Aboriginal burials are normally found as clusters of human bones eroding from the ground, or exposed during ground disturbance. Aboriginal customs for honouring and disposing of the dead varied greatly across Victoria, but burial was common. Aboriginal burial sites normally contain the remains of one or two people, although cemeteries that contain the remains of hundreds of people buried over thousands of years have been found. Sometimes the dead person was buried with personal ornaments and artefacts. Charcoal and ochre are also often found in burial sites.

Although Aboriginal burials are quite rare in Victoria, they have been found in almost every kind of landscape, from coastal dunes to mountain valleys. They tend to be near water courses or in dunes surrounding old lake beds. Many burials have been found on high points, such as dune ridges, within
surrounding flat plains. They are often near or within Aboriginal occupation sites such as oven mounds, shell middens or artefact scatters.

**Aboriginal mortuary trees** are considered unlikely to occur in the activity area. Although it’s possible this practice may have been utilised within the study area, due to the hard nature of the soils and the clearance of native vegetation rom the area following European settlement it is unlikely any remnant native trees which might retain human remains are still present within the study area.

Accounts of Aboriginal mortuary trees are contained in newspaper reports (Mount Ararat Advertiser 1858), ethnohistorical accounts (Bride 1983[1898]: 322), oral history (Ron Howlett, personal communication 2003), and unpublished diaries (Johns 1877). These accounts describe the following treatment of Aboriginal human remains: the corpse was allowed to decompose. Later, the remains were recovered and sometimes the bones of limbs were distributed among relatives to be kept as relics. Then, postcranial remains were bundled and placed in a hollow tree, sometimes with the skull. On other occasions, the skull was deposited in a hollow tree while postcranial remains were given to a relative for placement at a later date, possibly also in a hollow tree (article: 70).

The Chief Protector of Aborigines, George Augustus Robinson, recorded several different forms of treatment of the dead by the northern Djab Wurrung clans in his 1841 journal (Clark 1987: 15, 1998: 335, 368), including placement in trees. The ethnographic record for south western Victoria also indicates that while low-ranking individuals were usually placed in simple burials, higher-ranking individuals were subject to more complex rituals that included placement in trees (Dawson 1881: 62–66; Howitt 1996 [1904]: 455–457; article: 63).

The study of the Moyston Mortuary Tree and references to additional mortuary trees within the region demonstrate a local pattern of mortuary practices in south western Victoria. While burials in lunettes, earth mounds, and sand dunes are more common in the region, more complex practices also existed in south western Victoria in the late pre-contact to early post-contact periods (Sprague 2005: 70).

### 2.6 Desktop Assessment – Summary of the Results and Conclusions

The desktop assessment indicates that there are no previously recorded Aboriginal archaeological sites located within the Paynes Road PSP area (nor are any located in the broader Tooler PSP area). That said however, there are a large number of sites within the surrounding landscape, many of which are located within the bordering Rockbank PSP area. These sites consist of stone artefact sites, namely low density artefact distributions and artefact scatters. Given the close proximity of these sites there is potential for Aboriginal cultural material to be located within the study area.
3 FIELD SURVEY

The field survey of the study area included vehicular, pedestrian and visual survey to detect the presence of Aboriginal cultural heritage or areas of site-specific archaeological sensitivity associated with the activity area.

The study area was surveyed on 4 and 5 September 2014 by Ecology and Heritage Partners Pty Ltd Archaeologist/Cultural Heritage Advisor Terence MacManus. The RAP applicant group for the study area, the Boon Wurrung, were represented by Marbee Williams for both days, and the two Aboriginal stakeholder groups were represented by Shane Nicolson for the Wurundjeri, and both Fiona Newson and Daniel Turnbull for the Bunurong.

A summary of the archaeological survey attributes appears in Appendix 2.

3.1 Methodology of the Field Survey

The field survey took the form of a pedestrian, vehicular and visual survey in which the three participants walked in a stratified random sampling strategy, targeting the areas of visibility within the properties of the study area to which access was granted (Map 9). The study area was assessed for the presence of any remnant native trees which might bear evidence of cultural scarring, and the geomorphological character of the study area was surveyed for evidence of caves, cave entrances and/or rock shelters.

3.2 Visibility, Exposure and Coverage

Ground surface visibility (GSV) was highly variable throughout the study area.

Agricultural/Pastoral Areas

The majority of the study area comprised land used for agricultural or pastoral purposes. These areas had extremely variable GSV, ranging from some sections of 80-100% visibility where ploughing had recently occurred (Plate 1) or stock had worn away the grass, to areas of 0% visibility where fallow or stony ground had overgrown with weeds, native grasses and exotic paddock grasses (Plate 2). This was most evident in the northern half of the study area, where recently sown crops were present across the majority of the site and allowed excellent visibility of the recently-tilled soil, however the sections of the properties in the northern half which had not been cropped were filled with naturally-extruding and machine-piled basalt floaters, and were choked with tall grasses and weeds which led to nearly 0% GSV across the entirety of these areas.

Developed Areas

Several sections of the study area have been developed for residential use, road construction, and the installation of high voltage power lines and underground utilities such as electricity, gas, telecommunications, sewerage, potable water and stormwater drainage. In these areas of disturbance, GSV was extremely low, with asphalt or housing footprints obscuring the natural ground surface. In areas where utilities had been installed there were some areas of GSV, however the introduction of fill to the area as part...
of the utility installations and the grading or removal of the natural topsoils of the area had limited the effectiveness of this visibility (Plate 20; Plate 26; Plate 25). Additionally, sections of the private land within the study area had been disturbed for the installation of farm dams of varying sizes which, whilst providing excellent GSV along the margins, were comprised of a mix of redeposited topsoils and underlying clays from the dam’s construction (Plate 10; Plate 17).

Overall, the majority of the study area had GSV between 0% and 10%, with visibility greatest in isolated areas such as around the bases of extruding basalt boulders, along vehicle and stock-worn tracks, at the bases of shrubs and dense clusters of grasses or in small naturally-occurring clearings of vegetation (Plate 20). Some sections of the land in the southern half of the study area had also undergone recent ploughing/sowing activities and in these areas, similarly to the northern half of the study area, GSV was greatly improved (Plate 21).

3.3 Limitations of the Field Survey

The field survey was limited by several factors. Chief amongst these was the lack of access to some of the properties within the PSP area. The inability to contact some of the landholders in order to gain permission to enter their property or the refusal of access to properties during the survey program by landowners, meant that properties 7 and 9 were not intensively surveyed. This limitation was partially overcome by undertaking visual surveys of these areas from adjoining properties or vantage points in the landscape, and determining the likelihood of the landforms within those areas to contain Aboriginal cultural heritage (Table 5).

Similarly, some of the properties to which access was obtained were extremely large (Property 1 in particular), making pedestrian survey of the entire area in these sections untenable. Survey of these areas therefore followed a stratified sampling strategy, whereby the field team traversed the properties in relatively wide transects, targeting areas of greater visibility or areas considered to have higher potential for Aboriginal cultural heritage due to their location in the landscape. As a result, it is possible that some surface Aboriginal cultural heritage might have been missed in the areas not intensively surveyed by the field team, however the likelihood of Aboriginal cultural heritage being identified in the extremely poor GSV of these areas is considered to have been very low even in the event the field team had walked across 100% of the study area.

3.4 Results of the Field Survey

The field survey assessed the majority of the study area via pedestrian survey, through areas of variable but generally good GSV. As a result, the archaeological character of the area as it relates to Aboriginal cultural heritage was able to be established for the majority of the study area.

Several sections of the study area were identified as areas of Aboriginal cultural heritage likelihood following the survey. These were predominantly assessed based on the landforms within the study area, but also included sections of the study area that appeared to have been less disturbed in the past.
This section discusses the general characteristics of the study area as identified by the field survey, and synthesises these results in the discussion of areas of Aboriginal cultural heritage likelihood in Section 3.1.5.

### 3.5 Landforms

The landforms of the study area were found to conform to the expectations of the desktop assessment. The majority of the study area comprises the low, undulating volcanic plain characteristic of the VVP, with small stony rises and areas of extruding basalt present throughout the area.

The most prominent of the rises and swales produced by this undulation were present in the northwestern corner of Property 1, which was gradually but significantly elevated over the remainder of the land within that property, and the gradual rise which began from the eastern boundaries of Properties 2, 3 and 4, and which culminated in a significant ridgeline visible in the southern section of Property 7 (Plates 23 and 24). These two raised sections were mirrored by particularly low ground lying between them, with properties 2, 3, and 4 containing some of the least elevated areas within the study area – it is possible that some of the ground in both Properties 3 and 4 may have been a natural accumulation point for water over wetter periods in the past.

The land in the northeastern section of the study area (the eastern half of Property 1) was generally flat with only very minor undulations across the landscape, however it should be noted that this area has been highly ploughed in the past, and most dramatically undulating sections in this area were restricted within or around the unploughed sections of the paddocks. These unploughed sections were rife with naturally-extruding basalt boulders (and machine-moved boulders presumably removed from the ploughed landscape surrounding them), and are likely to be largely undisturbed by the past agricultural activities across the rest of the property.

### 3.6 Aboriginal Cultural Heritage and Areas of Aboriginal Cultural Heritage Likelihood

No new Aboriginal cultural heritage sites were identified within the study area during the field survey.

During the course of the assessment, three potential Aboriginal archaeological sites were identified within the study areas, occurring in Properties 1 and 3. These consisted of a possible petroglyph, possible surface stone artefacts in three locations (which would represent one low density artefact distribution across the area) and a possible scarred tree. All four sites were determined, upon later inspection, to be non-artefactual/Aboriginal in origin.

The possible Aboriginal petroglyph was identified upon a basalt boulder amidst one of the rock piles in Property 1 (Plate 3). The marked rock was identified near the boundary of the ploughed paddock and the relatively undisturbed stony section approximately 100 m northeast of the centre of the southern boundary to Property 1 (Plate 4). The rock was visually assessed in the field, and photographs were taken for comparison against other known examples of Aboriginal petroglyphs. It was determined that the markings on the stone were more likely a combination of weathering processes and marks made by machinery used to move the stone to its current location.
The three possible stone artefacts were identified predominantly in Property 1 (n = 2), but also in Property 3 (n = 1). The two possible artefacts which were present in Property 1 both consisted of quartz, with the northernmost artefact (located approximately 500 m southeast of the northwestern boundary of the study area) representing a possible quartz core (Plate 5) and the southernmost artefact (located approximately 525 m southeast of the southwestern corner of Property 1, approximately 40 m north of the southern boundary of the property) representing a possible quartz flake (Plate 6). Field analysis of these artefacts determined they were most likely the result of impact to natural quartz pebbles/nodules by ploughing equipment over the area in the past. Additionally, quartz pebbles and nodular inclusions are known to occur throughout the Victorian Volcanic Plains, so their presence within the study area is not unexpected. The third of the possible stone artefacts was identified along the southern boundary of Property 3, approximately 200 m southeast of the southwestern corner of the property. This possible artefact represented an apparently unmodified quartzite stone, which may have been a manuport (a stone carried to a region from its natural location with the intent of use in knapping/grinding/spiritual activities, but which does not have any macroscopic evidence of such use). Although no other quartzite material was identified in the study area during the field assessment, it is not unusual to find naturally-occurring quartzite within the VVP, therefore the presence of this example in isolation was not deemed unequivocal enough to warrant registration as an Archaeological site.

The land immediately surrounding each of the possible surface artefacts was intensively surveyed by the field team at the time the potential artefacts were identified, but no further material was found in association.

Finally, the possible scarred tree site was identified in Property 4, and is the southeastern of the three large trees visible on the aerial photography and mapping of the area (approximately 170 m southwest of the northeastern corner of Property 3). The morphology of the scar suggests it was formed by natural processes; it lacks the structural characteristics or depth indicative of cultural modification. Furthermore, analysis of the tree itself determined it was unlikely to be of an age reasonable for Aboriginal scarification, and no evidence of cut-marks or other anthropogenic modification was present.
Plate 1: Recently planted and ploughed area of Property 1; showing high GSV.

Plate 2: Poor GSV across unploughed area of Property 1.

Plate 3: Possible petroglyph (considered non-cultural) from Property 1.

Plate 4: Possible petroglyph in context with piled basalt in Property 1.

Plate 5: Possible quartz artefact from Property 1 (#1).

Plate 6: Possible quartz artefact from Property 1 (#2).
3.6.1 Previously Recorded Sites

There were no previously recorded sites located within the study area.

3.6.2 Areas of Aboriginal Likelihood

Several areas of Aboriginal cultural heritage likelihood were identified as a result of the field survey (Map 9). These areas are discussed by property, below:

Property 1 (Plates 7-9):

Property 1 exhibits four areas of Aboriginal cultural heritage likelihood (Map 9). These four areas consist of:

- an area of high ground in the northwest corner of the study area adjacent to the western Freeway (Plate 9);
- a stony rise in the centre of the property;
- two smaller stony rises in the eastern part of the property (Plate 7).

Property 2 (Plates 10-12):

Overall property 2 is largely low and gently undulating area of volcanic plain with little topography or features of archaeological sensitivity (Plates 11 and 12). Property 2 exhibits a single area of Aboriginal cultural heritage likelihood (Map 9). This area is adjacent to the dam shown in Plate 10. As the dam is located in an area of an ephemeral wetland and may have provided access to freshwater resources including migratory birds in wetter periods.

Property 3 (Plates 13-14):

Similar to Property 2, property 3 rises gradually toward the east of the property. Although the ephemeral wetland in property 2 may have crossed into the northwest corner of property 3, this area has been heavily modified by dam construction.

Property 4 (Plates 15-16):

Similar to Property 2 and 3, property 4 rises gradually toward the east of the property. Three large trees occur on this property and one exhibited damage that was determined not to be the result of cultural modification. Property 4 is covered with a dense layer of pasture grass which significantly reduced GSV (Plates 15, 16). No specific areas of cultural heritage likelihood were identified.

Property 5 (Plates 17-20):

Property 5 has a large (Dry) dam in the southeast corner of the property where significant earth moving has occurred. However, this dam does not appear to be associated with a natural waterbody and has limited sensitivity despite improved GSV in the immediate area (Plate 17). However, the majority of the property has exceedingly poor (<1%) GSV as extensive native grasses blanket the ground (Plates 18-19). An area of very high GSV was observed in the northern part of the property where vehicle tracks have left the ground surface exposed; however, no cultural heritage was observed in this area.
Property 6 (Plates 21-22)

Property six has a heavily ploughed paddock in the south (Plate 21), and the northern part of the property has a large dwelling and several rows of planted ornamental trees. The far northern part of the property is largely undisturbed (Plate 22). Property 6 exhibits no specific archaeological likelihood. As the northern part of the ridge that extends into Property 7 (below) has a steady gradient with limited archaeological sensitivity.

Property 7 (Plates 23-24)

Property 7 was subject to visual inspection only due to access constraints. Property 7 is largely unmodified and exhibits a linear ridgeline that exhibits a low level of archaeological likelihood (Map 9).

Property 8 (Plates 25-27)

Property 8 has been subject to extensive modification in the form of a horse track and associated infrastructure. It has an area of unmodified land in the centre of the horse track but exhibits no specific areas of archaeological likelihood.

Property 9 (Plates 28-29)

Property 9 was subject to visual inspection only due to access constraints. It is a small property with significant agriculture infrastructure and housing.

Property 10 (Plates 30-32)

Property 10 was subject to visual inspection only due to access constraints. Like property 8 it is dominated by horse infrastructure including a track and large sheds in the northeast corner (Plate 31). The majority of the property is level volcanic plain with no specific cultural heritage potential.
Plate 7: View across unploughed stony rises in eastern part of Property 1 (facing SW).

Plate 8: View east across undulating plains in Property 1.

Plate 9: View of Property 1 facing east from high point in northwest corner of study area.

Plate 10: Disturbance from dam at western boundary of Property 2.

Plate 11: Property 2 facing east from western boundary.

Plate 12: Marbee surveying in area of high GSV in northeast paddock of Property 2, facing east.
Plate 13: Property 3 facing east toward rows of windbreak (planted) trees.

Plate 14: Property 3 facing west from eastern boundary.

Plate 15: Property 4 facing east from the northwest corner.

Plate 16: View northeast from the centre of Property 4.

Plate 17: Large Dam in southeast corner of Property 5.

Plate 18: Facing south from centre of eastern boundary of Property 5, note very poor GSV.
Plate 19: Property 5 facing west across northern paddock.

Plate 20: Improved GSV along tracks in northwest corner of Property 5.

Plate 21: Facing northwest across southern half of Property 6.

Plate 22: View west across northern half of Property 6.

Plate 23: View of rise in southern part of Property 7, view is SW from property 8.

Plate 24: View west across property 7.
Plate 25: Horse tracks, fencing and planted vegetation in Property 8.

Plate 26: Existing infrastructure and disturbance associated with horse stables, sheds, tracks and planted vegetation in Property 8.

Plate 27: View south from northwest corner of Property 8 to Mt Cotrell.

Plate 28: View northeast from western boundary of Property 9.

Plate 29: View west from eastern boundary of Property 9.

Plate 30: Property 10 looking northwest from eastern boundary.
Plate 31: Facing southwest across western part of the Property 10 showing disturbance associated with agricultural use.

Plate 32: View facing southwest across Property 10 from eastern boundary.

3.7 Field Survey - Summary of Results and Conclusions

Table 4 summarises the results of the field assessment and the archaeological sensitivity of the study area by property.

Table 4: Results of Field Survey: Sites and Areas of Sensitivity within the Study Area.

<table>
<thead>
<tr>
<th>Property Identification Number</th>
<th>Assessment: Pedestrian/Visual Only</th>
<th>Sites present: Y/N</th>
<th>Sensitivity assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pedestrian</td>
<td>No</td>
<td>Three areas of likelihood</td>
</tr>
<tr>
<td>2</td>
<td>Pedestrian</td>
<td>No</td>
<td>One area of likelihood</td>
</tr>
<tr>
<td>3</td>
<td>Pedestrian</td>
<td>No</td>
<td>No archaeological sensitivity</td>
</tr>
<tr>
<td>4</td>
<td>Pedestrian</td>
<td>No</td>
<td>No archaeological sensitivity</td>
</tr>
<tr>
<td>5</td>
<td>Pedestrian</td>
<td>No</td>
<td>No archaeological sensitivity</td>
</tr>
<tr>
<td>6</td>
<td>Pedestrian</td>
<td>No</td>
<td>No archaeological sensitivity</td>
</tr>
<tr>
<td>7</td>
<td>Visual Only</td>
<td>No</td>
<td>One area of likelihood</td>
</tr>
<tr>
<td>8</td>
<td>Pedestrian</td>
<td>No</td>
<td>No archaeological sensitivity</td>
</tr>
<tr>
<td>9</td>
<td>Visual Only</td>
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<tr>
<td>10</td>
<td>Visual Only</td>
<td>No</td>
<td>No archaeological sensitivity</td>
</tr>
</tbody>
</table>

3.7.1 Conclusion

The study area is a largely flat area of the Volcanic Plains. As the location is equidistant from major water sources – Kororoit Creek to the north and east and Toolern Creek to the west, the study area appears to have been used primarily as a transit corridor and hunting ground between these more resource-rich areas. Similarly, the proximity of prominent features on the landscape such as Mount Cottrell and Mount Atkinson...
suggest that these were more important parts of the cultural landscape. Whilst it is probable that certain landforms within the study area were used intermittently as camping or tool-making locations over the 50,000 years of Aboriginal history, the lack of permanent water or other resources; and their relative proximity elsewhere in the Rockbank area, suggests that the location was unlikely to be the location of large or seasonally occupied semi-permanent campsites. For similar reasons, it can be speculated that mobile Aboriginal bands would have ‘pushed-on’ to these more favourable and social locales even at the end of their foraging range rather than camp in this relatively depauperate area.

Thus the data from the current study confirms the observations made during previous archaeological research within the geographic region which suggests large and dense artefact scatters most commonly occur in the immediate vicinity of waterways and water bodies, with the frequency, size and density of scatters decreasing with distance from water. However, on the broader, flatter volcanic plains at a distance from water, a consistent but low density of isolated or small artefact scatters occur. On these open plains it is generally around points of elevation (even with quite limited variation from the surrounding land) that comparatively higher numbers of artefacts occur; presumably these elevated stony outcrops and ridges provided viewpoints that facilitated navigation across the landscape and better vantages for observing game and other hunting and travelling bands.

Another possible hypothesis is that the artefacts demonstrate a specific travelling route between significant habitation and cultural sites. Rockbank lies at the point where the Werribee River and Kororoit Creek come to closest proximity. The Pinkerton grey box forest, which is a demonstrated site for obtaining bark (i.e. a number of scarred trees have been recorded there) and Mt. Cottrell and Mt Atkinson, which were also Aboriginal ..(Places) with artefact sites associated..are also along this route. The hypothesis therefore, is that this was a heavily travelled route that linked the major water and other resources of local clans and so greater densities of discarded or accidently lost artefacts occur here. However, this must still be tested by appropriate archaeological field survey sampling of the region..(Vines 2000:30)

The current study confirms the general nature of Vines’s hypothesis; with the lack of water and cultural significant landforms meaning the current study area principally saw usage as a travel corridor between these more significant parts of the landscape, as previous researchers within the activity area and broader geographic region have concluded (Vines 2000, 2004, Vines et al. 2004, Clark 1995). Clark (1995: 11) has suggested that the Western Highway follows the boundary between the Bun Wurrung to the south and Woi Wurrung to the north and that the highway corresponded with Aboriginal tracks that passed through neutral or collectively held lands.

Cummins et al. (2014) have suggested the occurrence of predominantly quartz artefacts in these intermediary landscapes reflects a pattern of discard across these transit corridors that favours widely available and expediently manufactured quartz artefacts. By comparison with those sites adjacent to the Creeks and Swamps of the region, artefacts of silcrete, hornsfels and quartzite were less likely to be deposited at these transitional places. These more highly regarded materials were likely subject to transportation over greater distances, curation and reuse. The occurrence of a small number of possible quartz objects within the current study area may reflect this general pattern and requires further evaluation.
4 REQUIREMENTS FOR FUTURE CULTURAL HERITAGE MANAGEMENT PLANS WITHIN THE STUDY AREA

The purpose of this AHIA was to provide a general overview of Aboriginal cultural heritage within the study area, for the purposes of informing future land use and the future urban structure of the PSP.

The Aboriginal Heritage Act 2006 (the Act) and Aboriginal Heritage Regulations 2007 (the Regulations) require that a mandatory CHMP be prepared for any high impact activity taking place within an area of cultural heritage sensitivity. Additionally, a voluntary CHMP may be undertaken for proposed high impact activities which are not located within areas of legislative cultural heritage sensitivity, but which are located in areas likely to contain Aboriginal cultural heritage (this satisfies the requirement under the Act to avoid harm to Aboriginal cultural heritage in areas where it is likely to be present). As such, any future development of the area must consider the implications of their proposed activities on the cultural heritage values of the study area as identified in this assessment.

As a result of this preliminary assessment of the study area, no Aboriginal cultural heritage places have been identified. As a result, no areas of cultural heritage sensitivity under the Regulations (r. 22) have resulted from the current assessment and therefore triggers for a Mandatory CHMP have not been created.

However, the field assessment did identify several areas of Aboriginal cultural heritage likelihood (Map 9). Whilst these areas do not trigger a mandatory CHMP, a voluntary CHMP is recommended for any future high impact activities within those areas in order to satisfy best practice, and to avoid risk of unexpected discovery of cultural heritage material during works, thereby causing unnecessary delays to development.

Table 5 presents an overview of the requirements for CHMPs within the properties of PSP area, the properties where voluntary CHMPs are recommended and the properties for which it is unlikely further Aboriginal cultural heritage assessment will be necessary.
### Table 5: Summary of future CHMP requirements by property number.

<table>
<thead>
<tr>
<th>MPA Property Number</th>
<th>Mandatory CHMP Required</th>
<th>Voluntary CHMP Recommended</th>
<th>No Further Assessment Required</th>
</tr>
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</tr>
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<td>☑</td>
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</table>
MANAGEMENT RECOMMENDATIONS

This assessment is intended to inform master planning for a precinct structure plan. Therefore at this stage potential impacts to the sites within the study area are unknown. The following generic recommendations are given to facilitate appropriate management considerations in the interim, and to identify future possible constraints to proposed development activities within the study area.

Recommendation 1: Preparation of a Voluntary CHMP

The proponent of the activity is not legally required by the Aboriginal Heritage Act 2006 and the Aboriginal Heritage Regulations 2007 to prepare a mandatory CHMP because no areas of Cultural Heritage Sensitivity (CHS) occur within the study area. As no archaeological sites or other Aboriginal Places were identified during the current Field Survey no areas of CHS will be created as a result of registering such places on the Victorian Aboriginal Heritage Register (VAHR).

Nonetheless, it is recommended that the sponsor prepare a voluntary CHMP prior to the commencement of the activity as areas of Aboriginal Cultural Heritage likelihood have been identified during the current investigations. These areas of archaeological likelihood are relatively small given the large size of the PSP footprint and represent a strong case for consideration of a complex assessment of these landforms alone. Specifically, as the current study included a thorough survey of the property, it would be appropriate to limit the voluntary CHMP to a complex assessment (obviating the need for a standard assessment) in keeping with Regulation 60 of the Aboriginal Heritage Regulations 2007.

There is a high risk that the proposed activities; including residential, industrial, commercial development and associated infrastructure works may impact Aboriginal archaeological sites. As such there are a number of advantages to preparing a CHMP:

- **No requirement for Cultural Heritage Permits at a later stage:** There are no cultural heritage permit requirements in relation to a CHMP as long as you are acting in accordance with the CHMP. There is no requirement for an excavation permit or a permit to harm, or any of the other permit requirements. In effect, the approved CHMP is a permit. If something turns up unexpectedly during the activity, there is no permit requirement. These are dealt with through contingency plans in the CHMP, already signed off and agreed to by Aboriginal Affairs Victoria (in the absence of a RAP) in the CHMP process;

- **Increased certainty for your project:** As there are no Cultural Heritage Permit requirements at a later stage, there is a more certainty for the project. If a CHMP has been prepared, there is certainty that the project can proceed. This certainty is provided during the planning phase, allowing the activity to be unimpeded. Preparing a CHMP provides the proponent with peace of mind. A CHMP removes the activity from the harm provisions of the Aboriginal Heritage Act 2006, as long as the proponent acts in accordance with the CHMP; and

- **Good Risk Management:** Lastly, preparing a CHMP is good risk management for a project.
MAPS
Map 1
Location of Study Area
Aboriginal Heritage Impact Assessment: Paynes Road Precinct Structure Plan (PSP 31.2-Toolern PSP Plan, Part C)

Legend
- Study Area
- Railway
- Freeway
- Major Road
- Collector Road
- Minor Road
- Proposed Road
- Walking Track
- Minor Watercourse
- Major Watercourse
- Permanent Waterbody
- Land Subject to Inundation
- Wetland/Swamp
- Parks and Reserves
- Crown Land
- Localities

Legend Map
- Melton (5)
- Eynesbury
- Melbourne

Note: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall not be liable for any errors, faults, defects or omissions in the information.
Map 3
Proposed Development Plan
Aboriginal Heritage Impact Assessment: Paynes Road Precinct Structure Plan (PSP 31.2-Toolen PSP Plan, Part C)
Map 7
Pre 1750 Ecological Vegetation Classes
Aboriginal Heritage Impact Assessment: Paynes Road Precinct Structure Plan (PSP 31.2-Toorong PSP Plan, Part C)

Legend
- Study Area

Ecological Vegetation Classes (pre 1750)
- Creekline Grassy Woodland
- Floodplain Riparian Woodland
- Lignum Swamp
- Plains Grassland
- Plains Grassy Wetland
- Plains Grassy Woodland
- Plains Woodland/Plains Grassland Mosaic

Local Government: Melton Shire
25k MapSheet: Sydney Urban West 7832-42
Coordinate System: MGA Zone 55 (GDA94)
Map Scale: 1:60,000

VoidMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall have no liability for any errors, faults, defects or omissions in the information.
Map 8
Previously Recorded Aboriginal Places
Aboriginal Heritage Impact Assessment: Paynes Road Precinct Structure Plan (PSP 31.2-Toororm PSP Plan, Part C)
Map 9
Survey Results
Aboriginal Heritage Impact Assessment: Paynes Road Precinct Structure Plan (PSP 31.2-Toolern PSP Plan, Part C)

Legend
- Study Area
- Contours (50cm)
- Quartz Fragments (not cultural)
- Tree (not CMT)
- Naturally Modified Boulder

Areas of Aboriginal Heritage Likelihood
- Ephemeral Wetland
- High Ground and Rises
APPENDICES
Appendix 1: Heritage Legislation

A1.1 Victorian Aboriginal Heritage Act 2006

The Aboriginal Heritage Act 2006 protects Aboriginal cultural heritage in Victoria. A key part of the legislation is that Cultural Heritage Management Plans (CHMPs) are required to be prepared by Sponsors (the developer) and qualified Cultural Heritage Advisors in accordance with the Aboriginal Heritage Act 2006 and the accompanying Aboriginal Heritage Regulations 2007. A CHMP is the assessment of an area (known as an ‘activity area’) for Aboriginal cultural heritage values, the results of which form a report (the CHMP) which details the methodology of the assessment and sets out management recommendations and contingency measures to be undertaken before, during and after an activity (development) to manage and protect any Aboriginal cultural heritage present within the area examined.

The preparation of a CHMP is mandatory under the following circumstances:

- If the Aboriginal Heritage Regulations 2007 require a CHMP to be prepared (s. 47);
- If the Minister of Aboriginal Affairs Victoria requires a CHMP to be prepared (s. 48); or
- If an Environmental Impact Statement (EIS) is required by the Environment Effects Act 1978 (s. 49).

The Aboriginal Heritage Regulations 2007 require a CHMP to be prepared:

- If all or part of the proposed activity is a ‘high impact activity’; and
- If all or part of the activity area is an area of ‘cultural heritage sensitivity’; and
- If all or part of the activity area has not been subject to ‘significant ground disturbance’.

The preparation of a CHMP can also be undertaken voluntarily. Having an approved CHMP in place can reduce risk for a project during the construction phase by ensuring there are no substantial delays if sites happen to be found. Monitoring construction works is also rarely required if an approved CHMP is in place.

Approval of a CHMP is the responsibility of the Registered Aboriginal Party who evaluates the CHMP and then it is lodged with the Secretary of the Department of Planning and Community Development (DPCD) to take affect or, the Secretary of the DPCD (QAAV). They will be examining the CHMPs in detail with key points including:

- Addressing whether harm to heritage can be avoided or minimised;
- All assessments (including test excavations) must be completed before management decisions are formulated; and
- Survey and excavation must be in accordance with proper archaeological practice and supervised by a person appropriately qualified in archaeology.

There are three types of CHMPs that may be prepared (The Guide to preparing a CHMP 2010). These are:

- Desktop; Standard; and Complex

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4 In 2013, The DPCD was abolished and QAAV was transferred to the Department of the Premier and Cabinet (DPC). However the wording within the Act still retains reference to the Secretary of DPCD
A desktop CHMP is a literature review. If the results of the desktop show it is reasonably possible that Aboriginal cultural heritage could be present in the activity area, a standard assessment will be required.

A standard assessment involves a literature review and a ground survey of the activity area. Where the results of ground survey undertaken during a standard assessment have identified Aboriginal cultural heritage within the activity area, soil and sediment testing, using an auger no larger than 12 cm in diameter, may be used to assist in defining the nature and extent of the identified Aboriginal cultural heritage (Regulation 59[4]).

Where the results of ground survey undertaken during a standard assessment have identified Aboriginal cultural heritage within the activity area or areas which have the potential to contain Aboriginal cultural heritage subsurface, a complex assessment will be required. A complex assessment involves a literature review, a ground survey, and subsurface testing. Subsurface testing is the disturbance of all or part of the activity area or excavation of all or part of the activity area to uncover or discover evidence of Aboriginal cultural heritage (Regulation 62[1]).

It is strongly advised that for further information relating to heritage management (e.g. audits, stop orders, inspectors, forms, evaluation fees, status of RAPs and penalties for breaching the Act) Sponsors should access the OAAV website (http://www.aboriginalaffairs.vic.gov.au/).

The flow chart above also assists in explaining the process relating to CHMPs.

A1.2 Commonwealth Native Title Act 1993

Native Title describes the rights and interests of Aboriginal and Torres Strait Islander people in land and waters, according to their traditional laws and customs. In Australia, Aboriginal and Torres Strait Islander people’s rights and interests in land were recognised in 1992 when the High Court delivered its historic judgment in the case of Mabo v the State of Queensland. This decision overturned the legal fiction that Australia upon colonisation was terra nullius (land belonging to no-one). It recognised for the first time that Indigenous Australians may continue to hold native title.

Native Title rights may include the possession, use and occupation of traditional country. In some areas, native title may be a right of access to the area. It can also be the right for native title holders to participate in decisions about how others use their traditional land and waters. Although the content of native title is to be determined according to the traditional laws and customs of the title holders, there are some common characteristics. It may be possessed by a community, group, or individual depending on the content of the traditional laws and customs. It is inalienable (that is, it cannot be sold or transferred) other than by surrender to the Crown or pursuant to traditional laws and customs. Native Title is a legal right that can be protected, where appropriate, by legal action.

Native Title may exist in areas where it has not been extinguished (removed) by an act of government. It will apply to Crown land but not to freehold land. It may exist in areas such as:

- Vacant (or unallocated) Crown land;
- Forests and beaches;
- National parks and public reserves;
• Some types of pastoral leases;
• Land held by government agencies;
• Land held for Aboriginal communities;
• Any other public or Crown lands; and/or
• Oceans, seas, reefs, lakes, rivers, creeks, swamps and other waters that are not privately owned.

Native Title cannot take away anyone else’s valid rights, including owning a home, holding a pastoral lease or having a mining lease. Where native title rights and the rights of another person conflict the rights of the other person always prevail. When the public has the right to access places such as parks, recreation reserves and beaches, this right cannot be taken away by Native Title. Native Title does not give Indigenous Australians the right to veto any project. It does mean, however, that everyone’s rights and interests in land and waters have to be taken into account.

Indigenous people can apply to have their native title rights recognised by Australian law by filing a native title application (native title claim) with the Federal Court. Applications are required to pass a test to gain certain rights over the area covered in the application. The Native Title Tribunal (NNTT) was established to administer application processes. Once applications are registered, the NNTT will notify other people about the application and will invite them to become involved so all parties can try to reach an agreement that respects everyone’s rights and interests. If the parties cannot agree, the NNTT refers the application to the Federal Court and the parties argue their cases before the Court.

As a common law right, native title may exist over areas of Crown land or waters, irrespective of whether there are any native title claims or determinations in the area. Native Title will therefore be a necessary consideration when Government is proposing or permitting any activity on or relating to Crown land that may affect native title.

A1.3 Victorian Planning and Environment Act 1987

All municipalities in Victoria are covered by land use planning controls which are prepared and administered by State and local government authorities. The legislation governing such controls is the Planning and Environment Act 1987. Places of significance to a locality can be listed on a local planning scheme and protected by a Heritage Overlay (or other overlay where appropriate). Places of Aboriginal cultural heritage significance are not often included on local government planning schemes.

A1.4 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides a national framework for the protection of heritage and the environment and the conservation of biodiversity. The EPBC Act is administered by the Australian Government Department of the Environment (DoE). The Australian Heritage Council assesses whether or not a nominated place is appropriate for listing on either the National or Commonwealth Heritage Lists and makes a recommendation to the Minister on that basis. The

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5 The information in this section was taken from the Department of Sustainability and Environment, Fact Sheet on Native Title, 2008
Minister for the Environment, Water, Heritage and the Arts makes the final decision on listing. DoE also administers the Register of the National Estate.

The objectives of the EPBC Act are:

- To provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance;
- To promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources;
- To promote the conservation of biodiversity;
- To provide for the protection and conservation of heritage;
- To promote a cooperative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples;
- To assist in the cooperative implementation of Australia's international environmental responsibilities;
- To recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and
- To promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.

A1.5 Victorian Coroners Act 2008

The Victorian Coroners Act 2008 requires the reporting of certain deaths and the investigation of certain deaths and fires in Victoria by coroners to contribute to the reduction of preventable deaths. Of most relevance to heritage is the requirement for any “reportable death” to be reported to the police (s. 12[1]). The Coroners Act 2008 requires that the discovery of human remains in Victoria (s. 4[1]) of a person whose identity is unknown (s. 4[9]) must be reported to the police.
Appendix 2: Archaeological Survey Attributes

ABORIGINAL CULTURAL HERITAGE PLACE ASSESSMENT:
ARCHAEOLOGICAL SURVEY AND EXCAVATION ATTRIBUTES FORM

Project Name: Paynes Road Precinct Structure Plan (PSP 1082) Victoria: Aboriginal Heritage Impact Assessment.

Author/Consultant: Terence MacManus
Cultural Heritage Management Plan #: N/A
Cultural Heritage Permit #: N/A

Survey Attributes
Ground Surface Visibility: Highly Variable
Actual Survey Coverage: 6500m²
Effective Survey Coverage: ~5%
Survey Spacing (m): 5 m
Transect Width (m): 4 m
Number in Crew: 3
Landform: Volcanic Plain
Vegetation: Exotic and native
Disturbance: Variable throughout

Survey Method
- Pedestrian
- Vehicular
- Visual Survey

Survey Design
- Opportunistic
- Random
- Systematic
- Stratified
- Other

Sample
- Area
- Transect
- Locality
- Haphazard
- Other

Survey Type
- Surface

Paynes Road Precinct Structure Plan (PSP 31.2) Victoria: Aboriginal Heritage Impact Assessment, January 2015
### Appendix 3: Glossary

Items highlighted in **bold italics** in the definition are defined elsewhere in the glossary.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td><strong>Aboriginal Cultural Heritage Likelihood</strong></td>
<td>An area assessed by a Cultural Heritage Advisor as having potential for containing either surface or subsurface Aboriginal archaeological deposits. This term is used in this report to differentiate between legislated areas of cultural heritage sensitivity and areas considered by an archaeologist to be sensitive.</td>
</tr>
<tr>
<td><strong>Aboriginal Site</strong></td>
<td>A location containing Aboriginal cultural heritage, e.g., Artefact scatter, isolated artefact, scarred tree, shell midden, whether or not the site is registered in the VAHR, cf. Aboriginal cultural heritage place.</td>
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<tr>
<td><strong>Angular Fragment</strong></td>
<td>An artefact which has technologically diagnostic features but has no discernible ventral or dorsal surface and hence is unidentifiable as either a flake or a core.</td>
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<tr>
<td><strong>Area Of Cultural Heritage Sensitivity</strong></td>
<td>An area specified as an area of cultural heritage sensitivity in Division 3 or Division 4 of Part 2 of the Aboriginal Heritage Regulations 2007.</td>
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<td><strong>Artefact Scatter</strong></td>
<td>Stone artefact scatters consist of more than one stone artefact. Activities associated with this site type include stone tool production, hunting and gathering or domestic sites associated with campsites. Stone artefacts may be flakes of stone, cores (flakes are removed from the stone cores) or tools. Some scatters may also contain other material such as charcoal, bone, shell and ochre.</td>
</tr>
<tr>
<td><strong>Assemblage</strong></td>
<td>The name given to encompass the entire collection of artefacts recovered by archaeologists, invariably classified into diagnostic items used to describe the material culture.</td>
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<tr>
<td><strong>Backed</strong></td>
<td>When one margin of a flake is retouched at a steep angle, and that margin is opposite a sharp edge. The steep margin is formed by bi-polar or hammer and anvil knapping. Also used to describe artefacts with backing, e.g., Backed artefact.</td>
</tr>
<tr>
<td><strong>Backed Artefact</strong></td>
<td>A class of artefact employed by archaeologists to describe artefacts which are backed. Sometimes divided into elouera, bondi point, microlith and geometric.</td>
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<tr>
<td><strong>Bipolar</strong></td>
<td>A flaking technique where the object to be reduced is rested on an anvil and struck. This process is identified by flakes with platform angles close to 90 degrees as well as apparent initiation from both ends. Some crushing may also be visible.</td>
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<tr>
<td><strong>Burials</strong></td>
<td>Aboriginal communities strongly associate burial sites with a connection to country and are opposed to disturbance of burials or their associated sites. General considerations for the presence of burial sites are the suitability of Subsurface deposits for digging purposes; with soft soil and sand being the most likely. They are more likely near water courses or in dunes near old lake beds or near the coast. Burials are often located near other sites such as oven mounds, shell middens or artefact scatters.</td>
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<tr>
<td><strong>Chert</strong></td>
<td>A cryptocrystalline siliceous sedimentary stone.</td>
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<td><strong>CHMP</strong></td>
<td>Cultural Heritage Management Plan. A plan prepared under the Aboriginal Heritage Act 2006.</td>
</tr>
<tr>
<td><strong>Core</strong></td>
<td>An artefact which has technologically diagnostic features. Generally this class of artefact has only negative scars from flake removal, and thus no ventral surface, however, for the purposes of this research core has been employed to encompass those artefacts which were technically flakes but served the function of a core (i.e. The provider of flakes).</td>
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<td><strong>Cortex</strong></td>
<td>The weathered outer portion of a stone, often somewhat discoloured and coarser compared with the unweathered raw material.</td>
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<td><strong>Decortications</strong></td>
<td>The process of removing cortex from a stone (generally by flaking).</td>
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<td>Acronym</td>
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<tr>
<td>Deep Ripping</td>
<td>The ploughing of soil using a ripper or subsoil cultivation tool to a depth of 60 cm or more (see significant ground disturbance).</td>
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<td>DEPI</td>
<td>Department of Environment and Primary Industries. The Victorian State Government department responsible for management of natural heritage in Victoria.</td>
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<tr>
<td>DPC</td>
<td>Department of the Premier and Cabinet. The Victorian State Government department, of which OAAV is a part, responsible for management of Aboriginal cultural heritage in Victoria.</td>
</tr>
<tr>
<td>DTPLI</td>
<td>Department of Transport, Planning and Local Infrastructure. The Victorian State Government department, of which HV is a part, responsible for management of historical heritage in Victoria.</td>
</tr>
<tr>
<td>Flake</td>
<td>An artefact which has technologically diagnostic features and a ventral surface.</td>
</tr>
<tr>
<td>HV</td>
<td>Heritage Victoria. A division of DTPLI responsible for management of historical heritage in Victoria.</td>
</tr>
<tr>
<td>Isolated Finds Or Artefacts</td>
<td>Isolated finds refer to a single artefact. These artefacts may have been dropped or discarded by its owner once it was of no use. This site type can also be indicative of further subsurface archaeological deposits. These site types can be found anywhere within the landscape, however, they are more likely to occur within contexts with the same favourable characteristics for stone artefact scatter sites.</td>
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<tr>
<td>LDAD</td>
<td>Low Density Artefact Distribution. A category of Aboriginal Place type in the VAHR comprising single stone artefacts and/or distributions of multiple stone artefacts at concentrations of less than 10 artefacts in a 10 x 10 m area.</td>
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<tr>
<td>Manuport</td>
<td>An object which has been carried by humans to the site.</td>
</tr>
<tr>
<td>Oriented Length</td>
<td>Dimension measured according to the following criteria: The length of the flake from the platform, at 90˚ to force indicators such as ring-crack, bulb of percussion, force ripples and striations, to the opposing end. Where there were an insufficient number of features present to take this measurement, such as when the flake was broken, this variable was not recorded (sometimes referred to as percussion length).</td>
</tr>
<tr>
<td>Oriented Thickness</td>
<td>Dimension measured at 90˚and bisecting the oriented width dimension. This was done from the ventral surface to the dorsal surface (sometimes referred to as percussion thickness).</td>
</tr>
<tr>
<td>Oriented Width</td>
<td>Dimension measured at 90˚and bisecting the oriented length dimension. This was done from one margin to the other. As this measurement and oriented thickness, both rely on oriented length, these were not recorded where the oriented length was not recorded (sometimes referred to as percussion width).</td>
</tr>
<tr>
<td>Procurement</td>
<td>The process of obtaining raw material for reduction.</td>
</tr>
<tr>
<td>Quarries</td>
<td>Stone quarries were used to procure the raw material for making stone tools. Quarries are rocky outcrops that usually have evidence of scars from flaking, crushing and battering the rock. There may be identifiable artefacts near or within the site such as unfinished tools, hammer stones, anvils and grinding stones.</td>
</tr>
<tr>
<td>Quartz</td>
<td>A crystalline form of silica.</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>RAP</td>
<td>Registered Aboriginal Party. An Aboriginal organisation with responsibilities relating to the management of Aboriginal cultural heritage for a specified area of Victoria under the Aboriginal Heritage Act 2006.</td>
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<tr>
<td>Raw Material</td>
<td>The kind of stone the artefacts were manufactured from.</td>
</tr>
<tr>
<td>Reduction</td>
<td>The process of removing stone flakes from another pieces of stone. Generally this is performed by striking (hard hammer percussion) one rock with another to remove a flake.</td>
</tr>
<tr>
<td>Registered Cultural Heritage Place</td>
<td>An Aboriginal site recorded in the VAHR, cf. Aboriginal site.</td>
</tr>
<tr>
<td>Retouch</td>
<td>Retouch is when a flake is removed after the manufacture of the original flake. This sequence can be observed when a flake scar is present and encroaches over the ventral surface and thus must have been made after the initial flake removal. Recorded whether retouch was absent or present on the artefact.</td>
</tr>
<tr>
<td>Rock Shelter</td>
<td>A concave area in a cliff where the cliff overhangs; or a concave area in a tor where the tor overhangs; or a shallow cave, where the height of the concave area is generally greater than its depth.</td>
</tr>
<tr>
<td>Scarred Trees</td>
<td>It is known that the wood and bark of trees have been used for a variety of purposes, such as carrying implements, shield or canoes. The removal of this raw material from a tree produces a ‘scar’. The identification of a scar associated with aboriginal custom as opposed to natural scarring can be difficult. The scar should be of a certain size and shape to be identifiable with its product; the tree should also be mature in age, from a time that aboriginal people were still active in the area.</td>
</tr>
<tr>
<td>Significant Ground Disturbance</td>
<td>Disturbance of topsoil or surface rock layer of the ground or a waterway by machinery in the course of grading, excavating, digging, dredging or deep ripping, but does not include ploughing other than deep ripping.</td>
</tr>
<tr>
<td>Silcrete</td>
<td>A silicified sedimentary stone, often with fine inclusions or grains in a cryptocrystalline matrix. Because of the nature of the grains in silcrete (a hindrance in knapping/flaking predictability) the stone is sometimes heat treated. This exposure to heat can be identified by the presence of pot-lidding as well as a ‘lustre’ to the stone which is otherwise absent in the stones’ natural state. Exposure to sufficient heat homogenises the stone matrix and improves the knapping (flake path) predictive potential (Crabtree &amp; Butler 1964; Mandeville and Flenniken 1974; Purdy 1974; Domanski and Webb 1992; Hiscock 1993; Domanski et al. 1994). Similar to indurated mudstone, it has also been demonstrated that silcrete from the hunter valley often turns a red colour after being exposed to heat (Rowney 1992; Mercieca 2000).</td>
</tr>
<tr>
<td>Stone Arrangements</td>
<td>Stone arrangements are places where Aboriginal people have deliberately positioned stones to form shapes or patterns. They are often known to have ceremonial significance. They can be found where there are many boulders, such as volcanic areas and are often large in size, measuring over five metres in width.</td>
</tr>
<tr>
<td>Taphonomy</td>
<td>The study of the processes (both natural and cultural) which affect the deposition and preservation of both the artefacts and the site itself.</td>
</tr>
<tr>
<td>Technology</td>
<td>A form of artefact analysis which is based upon the knapping/manufacturing process, commonly used to subsequently infer behaviour patterns, cultural-selection and responses to raw material or the environment.</td>
</tr>
<tr>
<td>Thumbnail scraper</td>
<td>A conceptual class of artefact employed to describe small rounded retouched flakes with steep margins (based on the classification by Mulvaney and Kamminga 1999).</td>
</tr>
<tr>
<td>VAHR</td>
<td>Victorian Aboriginal Heritage Register. A register of Aboriginal cultural heritage places maintained by OAAV.</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>VHI</td>
<td><strong>Victorian Heritage Inventory</strong>. A register of places and objects in Victoria identified as historical archaeological sites, areas or relics, and all private collections of artefacts, maintained by HV. Sites listed on the VHI are not of State significance but are usually of regional or local significance. Listing on the VHR provides statutory protection for that a site, except in the case where a site has been “D-listed”.</td>
</tr>
<tr>
<td>VHR</td>
<td><strong>Victorian Heritage Register</strong>. A register of the State’s most significant heritage places and objects, maintained by HV. Listing on the VHR provides statutory protection for that a site.</td>
</tr>
</tbody>
</table>
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