ecology & heritage partners

Final Report

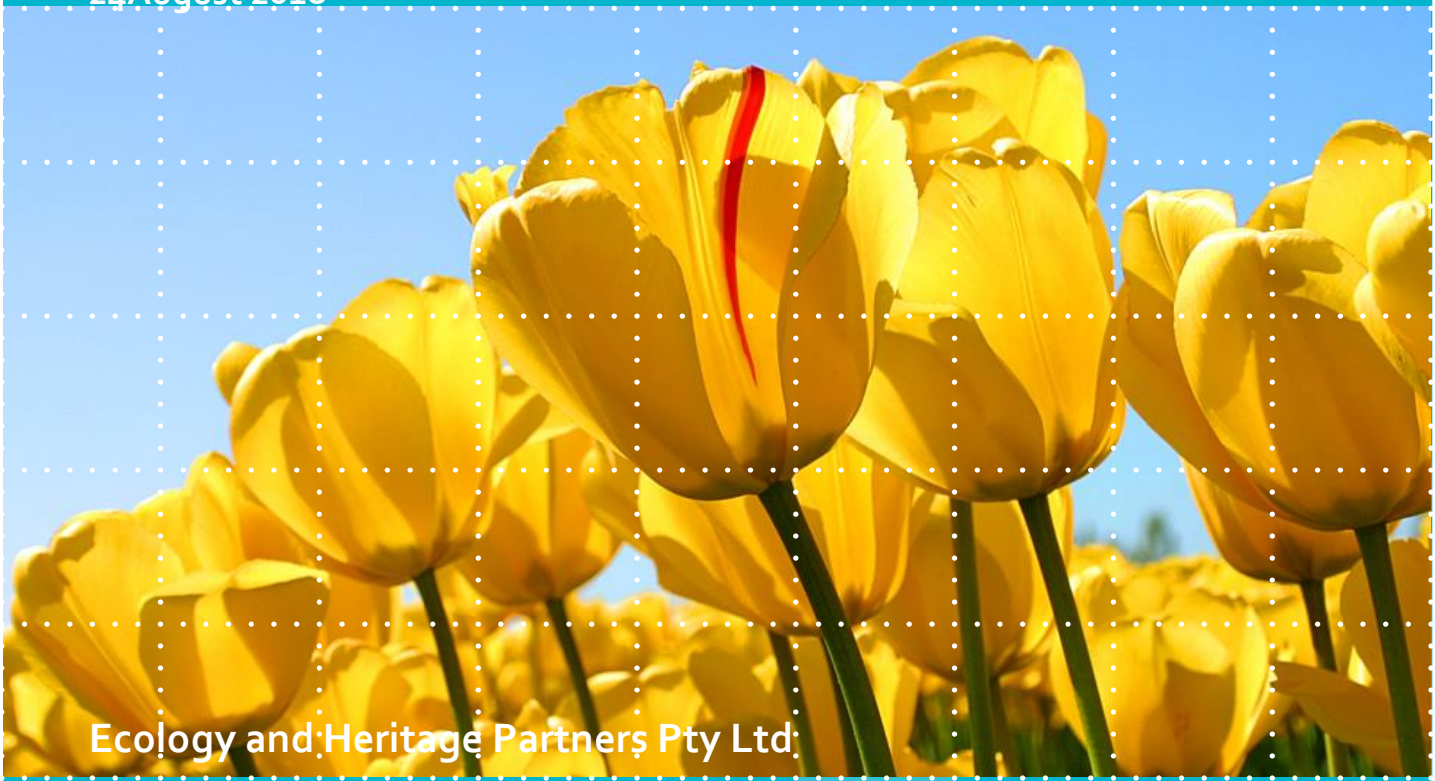
Proposed Planning Scheme Amendment and Planning Permit Application, 73-155 Ash Road, Leopold East, Victoria:

Desktop Aboriginal and Historical Heritage Assessment

Client

Ample Investments Group Pty Ltd

24 August 2018



Ecology and Heritage Partners Pty Ltd

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- Ample Investments Group Pty Ltd for project and site information.
- Aboriginal Victoria for information regarding Aboriginal Places.
- Heritage Victoria for information regarding historical heritage places.

DOCUMENT CONTROL

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Protocols for Handling Sensitive Information

Some of the information contained within this Aboriginal and Historical Heritage Assessment (AHHA) is culturally sensitive. Before releasing the contents of this AHHA to the public, permission should be sought from the relevant authorities and communities.

Disclaimer

Although Ecology and Heritage Partners Pty Ltd have taken all the necessary steps to ensure that an accurate document has been prepared, the company accepts no liability for any damages or loss incurred as a result of reliance placed upon the report and its contents.

ABBREVIATIONS

Acronym	Description
Act, the	*Aboriginal Heritage Act 2006*
AHHA	Aboriginal and Historical Heritage Assessment
BOM	Bureau of Meteorology
CHL	Commonwealth Heritage List
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority
DELWP	Department of Environment Land Water and Planning (Victoria)
DoE	Department of the Environment (Commonwealth)
DPCD	Department of Planning and Community Development (Victoria)
DPC	Department of the Premier and Cabinet (Victoria)
EES	Environment Effects Statement
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EVC	Ecological Vegetation Class
HHA	Historical Heritage Assessment
HO	Heritage Overlay
HV	Heritage Victoria
LDAD	Low Density Artefact Distribution
NHL	National Heritage List
NNTT	National Native Title Tribunal
AV	Aboriginal Victoria
RAP	Registered Aboriginal Party
RNE	Register of the National Estate
SLV	State Library of Victoria
VAHR	Victorian Aboriginal Heritage Register
VHI	Victorian Heritage Inventory
VHR	Victorian Heritage Register
VWHI	Victorian War Heritage Inventory
WAC	Wathaurung Aboriginal Corporation
WHL	World Heritage List

EXECUTIVE SUMMARY

Introduction

Ecology and Heritage Partners Pty Ltd was commissioned by Ample Investments Group Pty Ltd to prepare a desktop Aboriginal and Historical Heritage Assessment (AHHA) for the proposed Planning Scheme Amendment and Planning Permit Application in Leopold East, Victoria (City of Greater Geelong) (Map 1).

The Activity

Ample Investments Group Pty Ltd is proposing to rezone and subdivide land known as 73-155 Ash Road, Leopold East.

The Study Area

The study area is approximately 29.1 ha in size and is bounded by Ash Road on the West, and The Court to the North (Map 2).

Methods

The assessments undertaken as part of this desktop AHHA was a high level desktop assessment. The desktop assessment 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.

A field inspection and subsurface testing did not form part of the scope of works for this assessment.

Results

Desktop Assessment

The desktop assessment indicated that there have been 88 Aboriginal Places and 20 historical heritage places previously recorded within a 5km radius of the study area (Map 8, Map 9). No Aboriginal sites and no historical places were located within the study area. The desktop assessment concluded that Low Density Artefact Distributions and Artefact Scatters were the types of Aboriginal Places and Domestic and Farming and/or Pastoral sites were the types of historical heritage places most likely to occur within the study area.

Aboriginal Cultural Heritage

No Aboriginal cultural heritage was identified in the study area

Historical Heritage

No historical heritage places were located in the study area.

Summary of Management Recommendations

Aboriginal Cultural Heritage

Recommendation 1: No Requirement for Further Archaeological Investigation

As there are no known Aboriginal sites or areas considered to have Aboriginal likelihood there is no requirement for any further Aboriginal cultural heritage investigations.

Recommendation 2: Contingency for Aboriginal Heritage

There are no other known Aboriginal cultural heritage issues in regard to the proposed development. If any Aboriginal cultural heritage issues are encountered during the course of construction then works should cease within 10 m of the area of concern and a qualified Cultural Heritage Advisor (or AV) should be contacted to investigate.

Historical Heritage

Recommendation 3: No Requirement for Further Archaeological Investigation

As there are no known historical heritage sites or areas considered to have historical heritage likelihood there is no requirement for any further historical heritage investigations.

Recommendation 4: Contingency for Historical Heritage

There are no other known historical heritage issues in regard to the proposed development. If any historical heritage issues are encountered during the course of construction then works should cease within 10 m of the area of concern and a qualified Cultural Heritage Advisor (or Heritage Victoria) should be contacted to investigate.

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1 INTRODUCTION

1.1 Background and Scope of Works

Ecology and Heritage Partners Pty Ltd was commissioned by Ample Investments Group Pty Ltd to prepare a desktop Aboriginal and Historical Heritage Assessment (AHHA) for a proposed Planning Scheme Amendment and Planning Permit Application in Leopold East, Victoria (City of Greater Geelong) (Map 1). The project brief agreed upon by Ecology and Heritage Partners Pty Ltd and Ample Investments Group Pty Ltd is as follows:

- Review the relevant heritage databases (e.g. Victorian Aboriginal Heritage Register [VAHR] at Aboriginal Victoria [AV], Local Government Heritage Overlays, the Victorian Heritage Register and Inventory at Heritage Victoria (HV), the National Trust Register and Commonwealth heritage databases);
- Review relevant available literature (e.g. previous archaeological reports and Local Government heritage studies);
- Provide a brief review of land use for the study area;
- Identify and provide a series of maps showing any Aboriginal and historical archaeological heritage or areas likely to contain Aboriginal or historical heritage;
- Provide information in relation to any implications of Commonwealth and State environmental legislation and Government policy associated with the proposed development;
- Discuss any opportunities and constraints associated with the study area;
- Production of an AHHA report.

1.2 Location and Extent of Study Area

The study area is located at 73-155 Ash Road, Leopold East, Victoria, Victoria (Map 2).

The cadastral details of the study area are as follows:

Table 1: Cadastral Details of the Study area

Lot	Title Plan	Address	LGA
1	LP220941	73-85 Ash Road Leopold 3224	Greater Geelong
1	P848680	87-101 Ash Road Leopold 3224	Greater Geelong
1	TP959830	103-127 Ash Road Leopold 3224	Greater Geelong
1	TP613066	129-141 Ash Road Leopold 3224	Greater Geelong
1	TP811096	143-155 Ash Road Leopold 3224	Greater Geelong

1.3 Activity Description

The activity will be the proposed subdivision of two lots, currently known as 87-101 and 103-127 Ash Road. This AHHA is being prepared to form part of a planning permit application for the proposed subdivision.

1.4 Name of Client

This report was commissioned by Tract Consultants Pty Ltd (ABN: 12 055 213 842) for Ample Investments Group Pty Ltd.

1.5 Name of Cultural Heritage Advisors

This report was prepared by Felicity Buckingham, Joshua Flynn (Archaeologists/Heritage Advisors) and Austen Graham (Archaeologist/Heritage Consultant). The quality assurance review was undertaken by Oona Nicolson (Director/Principal Heritage Advisor). Mapping was provided by Monique Elsley (GIS Coordinator).

Felicity Buckingham

Felicity is a technical officer at Ecology and Heritage Partners Pty Ltd with over two years' experience in Australian historical archaeology. Felicity completed her archaeology degree at La Trobe University. Her honours thesis focussed on the historical glass from the former Coach and Horses Hotel in Ringwood, Victoria. Felicity was trained in Aboriginal and historic artefact analysis during her undergraduate studies at La Trobe University, and was twice awarded the Executive Dean's 'Award for Academic Excellence', as well as the 'Historical Archaeology in Australia Achievement Award' during the course of her degree.

Felicity has been involved in historical and Aboriginal excavations since 2010, and has specialised in historical artefact analysis since graduating in 2015. Her formal qualifications include:

- Bachelor of Archaeology (Hons), La Trobe University (2015).

Monique Elsley

Monique has extensive experience with ArcGIS desktop software for the production of mapping products and data analysis. Her first stint in the spatial industry was as a Cartographer at Lonely Planet Publications, in 2006 - 2007. Responsibilities included creating maps for and assisting with the finalisation of regional and city maps for soon to be released guidebooks, and updating the existing database with information obtained from aerial imagery and provided by authors. Following this, Monique gained employment as a Geomatics Research Scientist at the Department of Primary Industries from 2007 – 2009, and again in 2010 - both in a full-time and part-time capacity. Her work involved producing GIS data layers and maps for various projects, analysing results, undertaking a literature review, and contributing to technical reports and journals. Projects she was involved in focussed on climate change adaptation, Victorian land use and developing agricultural ecological zones. Most recently, whilst completing her PhD, Monique undertook casual lecturing and tutoring roles at RMIT. This included developing materials for a new practical exercise with the aim of teaching students how to produce quality maps using ESRI's ArcGIS software. Her formal qualifications include:

- Doctor of Philosophy, RMIT (2013);
- Bachelor of Applied Science (Geospatial Science) (Honours), RMIT (2008); and
- Bachelor of Applied Science (Multimedia Cartography), RMIT (2007).

Austen Graham

Austen is a technical officer at Ecology and Heritage Partners Pty Ltd with over two years' experience in Australian archaeology. Austen completed her archaeology degree at La Trobe University in 2015, and is currently completing her Master of Professional Archaeology. Her thesis focuses on Aboriginal archaeology, in particular heritage management procedures for canoe scarred trees in north-western Victoria. Austen was trained in artefact analysis and pottery analysis during her undergraduate and post-graduate studies at La Trobe University.

Austen has been involved in historical and Aboriginal excavations since 2010. Austen as a field archaeologist has participated in the investigation of large and complex archaeological sites, also contributing to the research of Ancestral Puebloan sites with the University of Nevada Las Vegas. She has also been involved in large scale Aboriginal salvage operations, and has assisted with numerous tasks including the identification of Aboriginal cultural heritage material. As a consultant, Austen has helped work on Cultural Heritage Management Plans. Her formal qualifications include:

- Bachelor of Archaeology, La Trobe University (2015), completing Masters in 2018.

Oona Nicolson

Oona Nicolson is a Director and the Principal Heritage Advisor at Ecology and Heritage Partners Pty Ltd. She is a heritage specialist with over 20 years of experience in the archaeological consulting sector, working in Victoria, South Australia, New South Wales and Tasmania. Oona regularly appears before VCAT and independent panels as an Expert Witness in the areas of Aboriginal and historical heritage. Oona has extensive experience in over 800 projects with a wide variety of Agents.

Oona's skills include project management, peer reviews, background research and due diligence assessments, archaeological survey, subsurface testing and salvage excavation, Aboriginal and non-Aboriginal site identification, recording and photography, site significance assessment, development of recommendations to mitigate the impact of development upon Aboriginal and non-Aboriginal historical heritage, flaked stone artefact and historical artefact recording and interpretation, communication and consultation with regulatory bodies (AV and HV), Agents, landowners, RAPs and community representatives, preparation of conservation management plans, expert witness statements, Permits and Consents to Disturb for Heritage Victoria, Historical Heritage Assessments and, desktop, standard and complex Aboriginal CHMPs. Her formal qualifications and memberships include:

- Bachelor of Arts (Honours in Archaeology; First Class), Flinders University (1996);
- Bachelor of Arts (Australian Archaeology and Australian Studies), Flinders University (1995);
- Past Archaeology (Alternate) Member of the Victorian Heritage Council;
- Maritime Archaeology Certificate: Part 1 (Part 2 pending), AIMA and NAS (U.K.);

- Australian Association of Consulting Archaeologists Inc. AACAI (Full Member and past National President);
- Member, Australian Archaeological Association (AAA);
- Fellow and Board Member of the Victorian Planning and Environmental Law Association;
- Accredited UDIA EnviroDevelopment Professional (Accredited August 2012)
- UDIA Urbanisation and Infrastructure Committee; and
- Heritage member of the South Australian Chamber of Mines and Energy (SACOME) Sustainability and Development Committee.

1.6 Consultation with Aboriginal Parties

Registered Aboriginal Parties or Traditional Owner Groups

The scope of works for this project did not include consultation with Registered Aboriginal Parties (RAP) or other Aboriginal stakeholders.

1.7 Native Title

A determination (Application VID6015/1998for all the study area was made on 15 March 2018. The claimant, Wathaurong People, lodged a Native Title claimant application with the National Native Title Tribunal on 31/7/1997 (Application VID6015/1998) which covers land within the study area. This application was withdrawn 9/09/1999, and as such no current Native Title claims exist for the study area.

In addition, the study area comprises privately owned land and therefore Native Title has been extinguished (see Appendix 1.2 for a summary of the Commonwealth *Native Title Act 1993*).

1.8 Report Review and Distribution

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

- Tract Consultants Pty Ltd
- Aboriginal Victoria; and
- Heritage Victoria.

1.9 Heritage Legislation

An overview of the *Aboriginal Heritage Act 2006*, the Commonwealth *Native Title Act 1993*, the Victorian *Planning and Environment Act 1987*, the *Heritage Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* is included in Appendix 1. This legislation is subordinate to the Victorian *Coroners Act 2008* in relation to the discovery of human remains.

2 DESKTOP ASSESSMENT

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

2.1 Geographic Region

The geographic region for this AHHA is defined on a 5 km radius of the study area (Map 4). The region includes elevations of up to 80m, as well as Reedy Lake, the Barwon River, Lake Connewarre, and creeks originating from Lake Connewarre. The region (and the study area itself) forms part of the Otway Plain bioregion (DELWP 2018a). This geographic region shows broadly similar environmental characteristics that may influence Aboriginal occupation. Therefore it is relevant to any Aboriginal cultural heritage that may be present within the study area.

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

Geology

The surface geology of the Bellarine Peninsula consists primarily of sand sheets overlaying Miocene clays. The hills in the centre of the Peninsula are formed from the oldest sand sheet, which is Tertiary in age. Parts of the Tertiary sand sheet have been weathered to form a 'gently rolling plain' and more recent sands of variable depth have in turn covered these. The flat areas at the toe of the plain such as at Clifton Springs also consist of these recent (Quaternary) sands (Wright 1973; Bird 1993).

Leopold is located on a notable rise (about 50 m Above Sea Level [ASL]) that probably marks a fault between the flat alluvial plain east of Geelong, and the undulating sand hills that comprise the 'plateau' that characterises the central parts of the Bellarine Peninsula.

The subject land falls within a single geological unit, the above-mentioned Moorabool Viaduct Sands (VRO 2018). These Miocene and Early Pliocene sands and clays and equivalent sediments have been described by Abele (1977), who details the variation in localities such as Batesford and Torquay. For the Bellarine Peninsula he notes '…sand and sandy clay, commonly ferruginous and at least in part equivalent to the Moorabool Viaduct Sand are widespread on the Bellarine Peninsula' (Abele 1977: 45). This formation is overlain by recent siliceous sand. This sand is dark grey in colour and loosely consolidated and is likely to vary in depth along the alignment. The humic soils associated with the above noted drainage lines and swampy-boggy areas appear to be the only notable variation in the local surface sediments (VRO 2018). Refer to Geology (Map 5).

Geomorphology and Soils

Refer to Geomorphology (Map 6).

The study area is located within the Southern Uplands geomorphological unit (GMU 3.3.1) (VRO 2018) The uplifted block of the Bellarine Peninsula forms a very weakly dissected undulating plain of low elevation (less than 150 m). Drainage from the remnant basalts of the Palaeogene Older Volcanics forms a vaguely radial pattern on the elevated plateau. A narrow strip of deeply weathered Cretaceous Otway Group rocks occurs in outcrop along the southern edge of the Curlewis Monocline, which forms the northern boundary of the peninsula. Landslides and narrow gullies have formed along the northern edge of the monocline. A sheet of marine sands of Late Neogene age covers the southern portion of the uplifted Bellarine block.

East of Colac the Pliocene sand has been uplifted along the Colac Monocline to form a gently undulating plateau fringing the southern edge of the volcanic plain and the north-western edge of the Otway Ranges. The plateau had been dissected by the tributaries to the Barwon River south of Birregurra to Whooreel. Further south, this unit is transitional to the rolling hills geomorphological unit (3.3.2). Soil types include mottled (and occasionally sodic) texture contrast soils (Chromosols, Sodosols) on the Neogene sediments and black self-mulching soils (Vertosols) on the Palaeogene Older Volcanics.

2.2.2 Landforms and Hydrology

The Bellarine Peninsula is an uplifted landmass bounded by the Barrabool Fault to the north and the Bellarine Fault along the east. It forms the southern and western boundary of the Port Phillip Sunkland. The southern side of the Peninsula fronts the coast of Bass Strait and its south-eastern point (Point Lonsdale) forms the western heads of the entrance to Port Phillip Bay. Topographically, the landforms on the Bellarine Peninsula vary from vast areas of shallow lakes and low-lying estuary (namely Lake Connewarre and Reedy Lake) to the uplifted tertiary plain in the centre of the Peninsula, and the basalt hills between Drysdale and Portarlington (Bird 1993).

Lake Connewarre

Lake Connewarre is the largest physiographic feature in the area of the proposed alignment and along with Reedy Lake form substantial wetlands along the course of the Barwon River. Bird (1993) provides the following description:

Lake Connewarre is a shallow lagoon bordered on the north and east by bluffs cut into the sandstones of the Moorabool Viaduct Formation underlain by Fyansford Clay, over which there have been landslides, and on the south by low-lying country with subdued ridges of dune calcarenite surmounting a wide lava flow, consisting of Plio-Pleistocene basalt from Mount Duneed. Downstream from Geelong the river Barwon flows across a former lake basin now occupied by extensive rush and reed swamp. This is known as Reedy Lake, and is underlain by Late Pleistocene sediments containing marine shells, deposited when the area was submerged by a higher sea live, and later covered by Holocene peaty deposits. The Barwon enters Lake Connewarre by way of a small marshy delta, built where reeds have trapped river silt. Tectonic disruption, lava flows, dune accretion, and erosion and deposition by the Barwon River have all contributed to the shaping of this landscape.

Lake Connewarre itself has a maximum depth of about 2 m and is saline and tidal. The archaeology of Lake Connewarre is poorly known due to a lack of investigation (VRO 2018).

Refer to (Map 6).

2.2.3 Vegetation

According to the Department of Environment, Land, Water and Planning's (DELWP) Ecological Vegetation Classes (Pre-1750 EVCs), the soils of the Otway Plain bioregion would have historically supported vegetation classified as EVC 175 (DELWP 2018b). These vegetation classes would have consisted of a variable open eucalypt woodland to 15m tall, or occasionally Sheoak woodland to 10m tall over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on sites with moderate fertility on gentle slopes or undulating hills on a range of geologies (Map 7).

Many of these types of vegetation would have been utilised by Aboriginal people in the area for food and the creation of weapons and vessels, and would have supported a range of game that could be hunted for food.

In particular, Sheoak was used in the manufacture of tools and weapons, as well as being utilised as a food source (Nash 2004: 12). Kangaroo Grass was also a food resource (Nash 2004: 9). Black Wattle was used to make weapons (Florabank 2018), Apple Berry was utilised for its fruits (Victorian Native Seed 2018) and Austral Bracken had a range of uses, from shelter to medicines and food (Herbiguide 2018). Variable Sword edge was also used in the production of fibres (Clarke 2014).

2.2.4 Climate

The climate of Leopold is characterised by warm, dry summers and cold, wet winters; temperatures range between an average maximum of 25°C and minimum of 13.2°C in January to an average maximum 13.6°C and minimum 5.2°C in July. Rainfall varies between a maximum of 30.8mm in January and 45.6mm in July, with annual average rainfalls of 534.8mm (BOM 2018).

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 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 1973 has been dated to 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 Leopold 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. Most of these sites point to important relationships between sites and landscapes and resources within the immediate area.

2.3.2 History and Ethnohistory

The *Wadawurrung/Watha wurrung* language was one of the five primary languages spoken in south-western Victoria. The *Wadawurrung* people are part of the greater Kulin nation surrounding Port Phillip and Western Port Bays (Clark 1990), with an area that is bounded to the east by the Werribee River, to the south by Port Phillip Bay and Bass Strait, to the west by various watercourses and roadways including Painkallac Creek at Aireys Inlet, Salt Creek at Woorndoo Upper and Fiery Creek to the west of Beaufort and the ridgeline of the Great Dividing Range to the north (J. Young, pers. comm. 7 May 2013).

Linguistically, the *Wadawurrung* were most similar to the *Djadja wurrung* to the north and the *Woi wurrung*, *Bun wurrung* and *Daung wurrung* to the east (Clark 1990: 276). Collectively these five groups form the Kulin Nation, who shared similarities in language, customs, and some traditions. It appears that the *Wadawurrung* were genetically related to the other four Kulin groups, but diverged enough in terms of language, their burial practices and distinctive facial and body markings at corroborees (Clark 1990: 276-277) to be a separate tribal group. Their traditional land includes both coastal and inland environments, and thus the *Wadawurrung* interacted with neighbouring clans along their western boundary (*Gulidjan* and *Djargurd wurrung*), whose speech was essentially the same, as well as various clans belonging to other Eastern Kulin groups, such as the *Woi wurrung* (Wurundjeri), and the *Bun wurrung* to the east, the *Dja Dja wurrung* to the north.

The *Wadawurrung* and their eastern and northern neighbours shared a patrilineal form of moiety system. The Kulin social world was divided into either one of two moieties; the *Waa* (crow) or B*unjil* (eaglehawk) moieties (Clark 1990: 276). Marriage was always across the moieties, with a *Waa* person having to marry a *Bunjil* person, preferably from a distant clan group (Barwick 1984: 104-105). In some instances, members of the *Wadawurrung* clans intermarried with the matrilineal clans of the *Gulidjan, Djab wurrung*, and the *Djargurd wurrung,* although in many instances, these practices ended in inter-clan hostility.

Land Tenure

The *Wadawurrung* were divided into 25 or 26 clans, each of which was responsible for a specific area of land within the wider *Wadawurrung* territory, with group sizes between 40 to 60 people. According to Clark (1990: 311) and Presland (2010: 28-29), each of these clans occupied a distinctive geographical area and belonged to one of the two moieties. *Wadawurrung* groups that belong to the *Waa* moiety include the *Beerekwart balug* (Mount Emu), *Bengalat balug* (Indented Head), *Carninje balug* (Emu Hill station, Lintons Creek), *Corrin corringer balug* (Carranbulluc), *Moner balug* (Trawalla station, Mount Emu Creek), and the *Tooloora balug* (Mount Warrenheip, Lal Lal Creek, west branch of Moorabool River).

Clans of the *Bunjil* moiety include the *Burrumbeet balug* (Lakes Burrumbeet and Learmonth), *Keyeet balug* (Mount Buninyong), *Marpeang balug* (Blackwood, Myrniong, Bacchus Marsh), *Moijerre balug* (Mount Emu Creek), *Peerickelmoon balug* (near Mount Misery), *Wadawurrung balug* (Barrabool Hills), and the *Wongerrer balug* (head of Woady Yallock Creek).

Clans of unknown moiety association include the *Barere barere balug* (Colac and Mount Bute stations), *Borogundidj* (Yarrowee River), *Carringum balug* (Carngham), *Corrac balug* (Commeralghip station and Kuruc-

a-ruc Creek), *Gerarlture* (west of Lake Modewarre), *Neerer balug* (between Geelong and the You Yangs), *Pakeheneek balug* (Mount Widderin), *Woodealloke gundidj* (Wardy Yallock River, south of Kuruc-a-ruc Creek), *Worinyaloke balug* (west side of Little River), and the *Yaawangi* (You Yang Hills).

Nowadays, descendants of a *Wadawurrung* woman named 'Queen Mary' and her son John Robinson (*aka* Robertson), and are identified as members of the Wathaurung Aboriginal Corporation (WAC).

Resources

The mainstays of the Aboriginal diet were plants and roots. One of the most important foods was called Murnong (*Microseris lanceolata*), a tuber that resembled a dandelion, also known as Yam Daisy or Native Dandelion. Other roots that were also cooked by boiling them in hot water include potatoes (Milkmaids: *Burchardia umbellata*), tarook (Blushing bindweed) and puewon (Bulbine lily). In a similar fashion to other Kulin clans, especially the *Wurundjeri*, the *Wadawurrung* used sharp sticks *(karni)* to dig roots out, separate bulbs and aerated the soil. Other commonly utilised plants and fruits included watercress (Boyungkaal: *Nasturtium officinal*), Warrigal Cabbage (New Zealand Spinach, Captain Cook's Lettuce: *Terragonia tetragoniodes*) and native raspberry (*Rubus parvifolius*), all of which can be eaten either fresh or used as a flavour enhancer. Other plants consumed all over Australia were also utilised by the *Wadawurrung*, including aquatic plants such as the water ribbons (*Triglochin procera*) (Gott and Conran 1991: 9).

The coastal and riverine *Wadawurrung* clans had access to a wide variety of fish, including mullet, whiting, flounder, flathead, salmon, trevally, tommy-rough and many other species were speared and netted, particularly along tidal flats and in estuaries. Shellfish and seafood were also exploited including abalone (*Haliotis* sp.), turbot (gastropod) and pipi shell (*Paphies australis*) (Barwon Bluff Marine Sanctuary 2012). Finally, all mammals present were probably target species for hunting. Birds and eggs were also taken, along with lizards and insects.

When the *Wadawurrung* were migrating to the north where there are fewer freshwater streams, women used to collect water from freshwater wells. These wells are natural depressions on rocks, of which there are still some in use, one located near the Werribee River (about a mile from its mouth), and one more located on Big Rock in the You Yangs (Presland 2010: 62-63).

Presumably the *Wadawurrung* along with the *Girai wurrung* clans gathered at Lake Bolac with local *Djab wurrung* clans in early Autumn to take advantage of the annual migratory season of eels (*Anguilla australis*) (Clark 1990: 276).

Conflict

It has been reported that during the 1830s the *Wadawurrung* were 'at enmity' with both the *Dgargurd wurrung* and the *Gulidjan* clans as a result of disputes related to marriage arrangements (Robinson journal 7.04.1840, in Clark 1990:275). This 'war' was the result of *Djargurd wurrung* and *Wadawurrung* men competing for *Gulidjan* women. During the early years of the Buntingdale mission, it was reported that the *Wadawurrung* and the *Djargurd wurrung* clashed several times as they competed for superiority within the mission (Clark 1990: 275).

Shortly after the first contact with the Europeans, the clan populations diminished rapidly. Contact between the *Wadawurrung* and European people first occurred in 1802, when Matthew Flinders and his party made their way to the nearby You Yangs. By 1803 contact between European explorers and *Wadawurrung* people

had turned violent on at least one occasion, whereby one or two *Wadawurrung* were killed and several others were injured (Clark 1990: 277). Violent encounters between Aboriginal people and settlers continued through the late 1830s and early 1840s. By 1841 some of the clans had rapidly declined and by 1849 one report estimated that the number of Aborigines in the Geelong region had been reduced to 25% of their 1836 population. Restricted access to resources, disease, inter-tribe hostility and European extermination were cited as the main causes (Clark 1990: 308).

Religion

The basic unit of *Wadawurrung* social organisation was the clan, a group based on kinship through the male line with a shared religious identity (Barwick 1984: 105-6). The clan was a land-owning unit whose territory was defined by ritual responsibilities (Barwick 1984: 106). The common spiritual identities resulted in the larger tribal groups also being intimately interconnected. The basis of the *Wadawurrung* religious identity is totemism, which is likened to the Dreamtime – the time of creation when the ancestral being roamed the land, creating people and naming the animals and plants.

Wadawurrung society is divided into two groups, called moieties, each with specific Totemic Beings belonging to it. Every person belongs to one or the other moiety (*Bunjil* the eaglehawk or *Waa* the crow) (Barwick 1984: 105-6). Clan moiety in *Wadawurrung* society is patrilineal. For the members of this unit, the clan, the totem is a symbol of membership of the unit. It is recognised for the members of this clan and those of other clans. This totem has strong territorial and mythological ties associated with it, and it is believed that it can warn them of approaching danger.

Ritual and Magic

The *Wadawurrung* beliefs system is shared with the other Kulin clans; however, the ethnographic information regarding the *Wadawurrung* is scarce. All Kulin groups believe in black magic and the curative powers of medicine-men or witchdoctors. A peculiar practice by the *Wadawurrung* was to put the rough cones of the She-oak (*Casuarina quadrivalvis*) into a man's fire, so that the smoke might blow into his eyes and blind him (Howitt 2001: 366).

In terms of disposal of the dead, the *Wadawurrung* from the Barrabool Hills (the Wathawurrung balug) and those from around Port Phillip practiced the inhumation of their dead as a symbol of respect. This practice is in sharp contrast to that of neighbouring clans from the *Woi wurrung* (such as the *Gunung willam balug*) who practice cremation (Howitt 2001: 458). Different disposal practices are one of the cultural differences between the *Wadawurrung* and their neighbours that set them apart, as mentioned earlier (Clark 1990: 276-277).

However, being part of the larger Kulin sub-group, the *Wadawurrung* share some ritual practices, included cannibalism. Cannibalistic practices have been documented, including the ceremonial consumption of human flesh and/or blood, not only from enemies, but also from relatives. The connotations of these two practices are different, with the former being more a sign of revenge, and the latter mostly ceremonial. In 1837 some members of the *Wadawurrung* killed an old man and a child and brought with them on the ends of their spears portions of their flesh, which they ate with great exultation (Howitt 2001: 752).

European Settlement

From the 1830s, European settlement of the coast, as well as settlement of the inland by explorers and overlanders from NSW, resulted in Aboriginal people experiencing displacement from their lands and massive changes in their way of life. The encroachment onto Aboriginal land by pastoralists resulted in numerous conflicts, reduction in the availability of food resources and the introduction of new diseases. Despite the upheavals, Aboriginal people tried to maintain some of their traditions, with some ceremonies such as initiations and occasionally corroborees observed by settlers. In many places Aboriginal people became part of the new colonial life, finding work as shepherds, stockriders, shearers, bark cutters and domestic servants.

By the 1850s the *Wadawurrung* had suffered a massive decrease in numbers (Clark 1990: 298). Between 1837 and 1852 the *Wadawurrung* population went from 275 to 30 people, a decline of 90% as the result of disease and conflict. Many of the clans were also driven away from the heavily settled areas of Geelong and Melbourne to the north and west. Widespread conflict led to a system of official protectorates (1835-1849), reserves and rations depots aimed at providing protection and supplies to displaced Aboriginal people. 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 in to the western European cultural and economic systems. Aboriginal reserves and stations were established across Victoria and Aboriginal peoples were encouraged to move to them (Clark 1990: 311-329). *Wadawurrung* clans moved to the reserves and stations set up at Wesleyan Mission Station and Buntingdale Station (Clark 1990: 293). 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. This involved local reserves and local guardians who operated Honorary Correspondent Depots, distributing food and clothing to local Aboriginal people (Clark 1990: 301). By the end of 1861 three reserves were established for the *Wadawurrung*; Steiglitz, Karngun, and Mt. Duneed (Clark 1990: 300). In addition, a rations station was established at Stockyard Hill in 1860, which operated until 1874. Between 1901 and 1906, all three reserves were handed back to the Department of Lands as they were no longer required due to the decrease in Aboriginal population (Clark 1990: 307).

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, goldmining and logging. 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.

Today the descendants of the *Wadawurrung* are represented by the RAP for the activity area, the Wathaurung Aboriginal Corporation.

2.3.3 Oral History

Because this report did not include consultation with the Wathaurung Aboriginal Corporation, no oral history was provided.

2.3.4 Database Searches

The following database searches were conducted:

2.3.4.1 *Victorian Aboriginal Heritage Register*

A search of the Victorian Aboriginal Heritage Register (VAHR) was conducted on 30 May 2018 for sites within a 5km radius of the activity area. Searching an area with this extent ensured that a relevant and representative sample of information was obtained.

The search identified a total of 27 registered Aboriginal places[1] within a 5km radius of the activity area. These sites consist of a total of 88 site components comprising four site component types (Table 2). The difference between the number of sites and number of site components is because several sites contain two or more site component types. No Aboriginal Historical References were identified within a 5km radius of the study area (Map 8).

None of these sites are located within the study area (Map 8).

Other sites located in close proximity to the study area are:

- VAHR 7721-1171 (Ash Road Leopold IA); this site comprises an artefact scatter registration of a single isolated artefact. The artefact was a silcrete flake identified within the confines of a vehicle track in 2011.
- VAHR 7721-1174 (Ash Road IA); this site comprises an artefact scatter registration of a single isolated artefact. The artefact was a chert flake identified to the south west of the survey area in 2011.
- VAHR 7721-1341 (Mollers Lane 1); this site comprises a low density artefact distribution registration of 33 artefacts. The aboriginal place is to the east of the survey area. 26 of the artefacts were located on the surface with the remaining seven located within sub surface deposits. Artefacts consisted of the and cores, stone flakes and angular fragments. The artefacts were manufactured from a variety of material types including quartz, quartzite and silcrete.
- VAHR 7721-0096 (Campbell Point 1 BP 85/15); this site comprises a shell midden on the northern shore of lake Connewarre to the south of the survey area.
- VAHR 7721-0009 (Bell Vue 1); this site comprises a single scarred tree to the north west of the survey area.

Table 2 shows that stone artefact sites, either low density artefact distributions or artefact scatters, account for all but four of the site component types in the search area and are by far the most prevalent site type in the region (n=95%). 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. Furthermore, isolated artefacts are today recorded as a form of LDADs.

A summary of the Aboriginal archaeological site component types appears in Table 2 and Figure 1 and a list of all sites in the search area is shown in Table 3.

The predominant site type within a 5km radius of the Study Area are Low Density Artefact Scatters, located

[1] Note: the terms used in this report, Aboriginal place, Aboriginal cultural heritage and Aboriginal archaeological site, are used interchangeably and essentially are referring to an Aboriginal place that is an archaeological site.

to the east of the study area, followed by Artefact Scatters. Four of these artefact scatters were located on Ash Road, Leopold, immediately to the south of the study area (Map 8). No burials were located within 5km of the study area.

Table 2: Summary of Previously Identified Aboriginal Site Component Types within five km of the Study Area

Site Type	Quantity	Percentage (%)
Low Density Artefact Distributions	63	72
Artefact Scatters	21	24
Scarred Trees	3	3
Shell Middens	1	1
Total	**88**	**100**

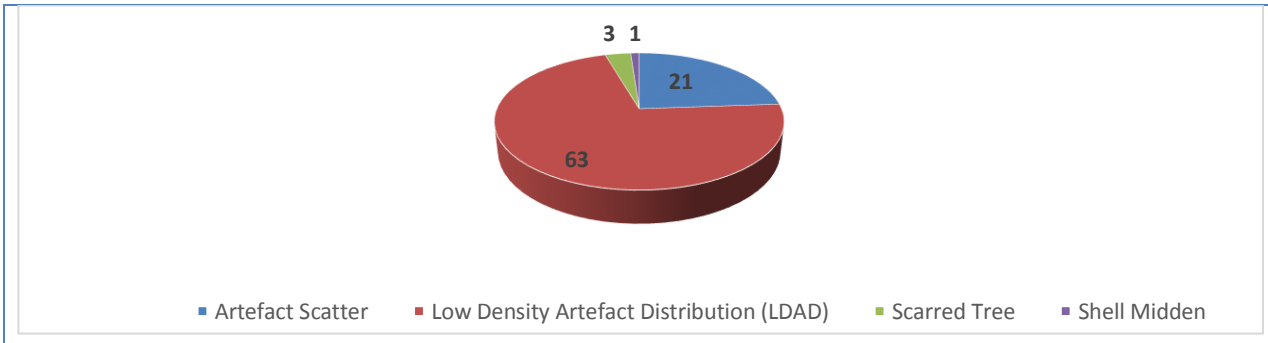


Figure 1. Summary of Previously Identified Aboriginal Site Component Types within five km of the Study Area

Table 3: List of Previously Identified Sites within 5 km of the Study Area

VAHR Site Number	Component Number	Site Name	Component Type	Within Activity Area?
7721-0009	1	Bell Vue 1	Scarred Tree	No
7721-0010	1	Bell Vue 2	Scarred Tree	No
7721-0009	1	Bell Vue 1	Scarred Tree	No
7721-0010	1	Bell Vue 2	Scarred Tree	No
7721-0011	1	Bell Vue 3	Scarred Tree	No
7721-0057	1	Bpas 1	Artefact Scatter	No
7721-0096	1	Campbell Point 1 BP 85/15	Shell Midden	No

VAHR Site Number	Component Number	Site Name	Component Type	Within Activity Area?
7721-0622	1	Bawtree Road 1	Artefact Scatter	No
7721-0623	1	Bawtree Road 2	Artefact Scatter	No
7721-0768	1	Leopold Marina 1	Artefact Scatter	No
7721-0769	1	Leopold Marina 2	Artefact Scatter	No
7821-0028	1	Wattle Grove	Artefact Scatter	No
7721-1027	1	Point Henry 14	Artefact Scatter	No
7721-1028	1	Point Henry 13	Artefact Scatter	No
7721-1030	1	Point Henry 1	Artefact Scatter	No
7721-1031	1	Point Henry 2	Artefact Scatter	No
7721-1032	1	Point Henry 6	Artefact Scatter	No
7721-1033	1	Point Henry 8	Artefact Scatter	No
7721-1034	1	Point Henry 9	Artefact Scatter	No
7721-1171	1	146 Ash Road Leopold IA	Artefact Scatter	No
7721-1172	1	160-172 Ash Road IA2	Artefact Scatter	No
7721-1173	1	160-172 Ash Road IA3	Artefact Scatter	No
7721-1174	1	160-172 Ash Road IA	Artefact Scatter	No
7721-1341	2-34	Mollers Lane 1	Low Density Artefact Distribution	No
7721-1343	2-31	Mollers Lane	Low Density Artefact Distribution	No
7821-0400	1	White Park Bpas 67	Artefact Scatter	No
7821-0401	1	Curlewis Bpas 68	Artefact Scatter	No
7821-0402	1	Geelong/Q'cliff Rwy Bpas 69	Artefact Scatter	No
7821-0600	1	Miranda Crt 1	Artefact Scatter	No

2.3.4.2 *Local Council*

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

The Heritage Overlay of the City of Greater Geelong Planning Scheme was examined (DELWP 2018c). No Aboriginal heritage places listed on the Heritage Overlay are present within the study area.

2.3.5 Previous Aboriginal 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.

Desktop assessments as well as field surveys have been undertaken either at Ash Road, Leopold, or in adjacent streets (such as Mollers Lane, all less than 1km from the study area) in 2005 (Maitri and Murphy), 2011 (Webb), 2012 (Buellers and Harbour), and 2017 (Barker, Toscano and White). All of which identified the potential for Aboriginal Cultural Heritage Places in their desktop assessments (particularly Low Density Artefact Scatters and Artefact Scatters). Aboriginal Cultural Heritage Places were subsequently identified in some cases during field surveys.

A summary of archaeological reports relevant to the geographical region of the study area appears below (Table 4).

Table 4: Archaeological Reports Relevant to the Study Area

Author, Date, Report #	Description and Location	Results
McBryde, I. 1979 #294	Diffusion of culture and cultural traits discussed in relation to the exchange of lithics focusing on axe heads in Northern New South Wales and greenstone in Victoria (multiple locations, including the Greater Geelong Region).	The Victorian quarry sites of Mt William, Mt Camel and Berrambool extend up to 700km from their source. For all quarries the distribution lies west of the main Dividing Range and east of the lower Murray and Mt Lofty Ranges. The movement of goods could reflect the existence of exchange networks, patterns of seasonal movement within tribal territories and regular meetings. Significantly, material is defined by a broad classification scheme and distribution suggests the incorporation of greenstone trade into existing networks over an extended area.
Stockton, J. 1983 #170	Study of prehistoric archaeological sites in the Bellarine Peninsula to help inform future planning for land use and development areas (multiple locations not including the Leopold area. This investigation is included due to its relevance of its content regarding aboriginal sites and water bodies/courses).	Report is critical of survey methods up to the date of the report being formulated. The report calls for more standardisation in survey methods for site identification.
Black, C.F. 1984 #728	A report on the history of the occupying tribes of Melbourne and Geelong (Wathaurung, Kurung, Wurundjeri, Taungurong and Bunurung), and other Aboriginal people in the study area (multiple locations not including the Leopold area specifically. This report is included due to its relevance of its content regarding the Wathaurung people).	This report examines previous archaeological surveys and historical documents to include information on tribal areas, ethnographic and demographic information, current land use of the area by Aborigines, and Aboriginal archaeological sites.

Author, Date, Report #	Description and Location	Results
Rhodes, J. 1986 #22	First volume of an archaeological study of the Bellarine Peninsula (multiple locations within the greater Geelong and Leopold areas).	Study found that 90 percent of the region had been subjected to historical land use practices. As such it was believed that aboriginal cultural deposits would be largely in a disturbed state. Aboriginal sites located were believed to have been only briefly occupied based upon artefactual remains.
Rhodes, J. 1986 #23	Appendices of report number #22	Appendices for report number 22.
Freslov, J. 1996 #1852	A report to formulate a working model for the management of aboriginal cultural material for both government bodies and aboriginal bodies (multiple locations including the greater Geelong and Leopold areas).	A detailed report, plain language report and aboriginal coastal heritage policy kit were formulated for future management works by government departments and aboriginal organisations.
Amorosi, L. 1998 #1260	A personal collection of Aboriginal artefacts of W.L. Koenig (approximately 50km from the current Study Area)	The W. L. Koenig Collection is primarily made up of Aboriginal stone artefacts from the area surrounding his home in Winchelsea which is approximately 37 km west of Geelong, Victoria. This collection contains Aboriginal stone artefacts, two ground axes from New Guinea, skeletal remains, a Tjurunga stone, a basket, boomerangs, a spear thrower and cord made from vegetable matter. 139 of the 651 artefacts have a provenance or name provided, usually by the name of a town or landmark. Koenig's collection contains a high frequency of complete artefacts and interesting examples of artefact types. However, this report is only a broad indicator of areas where the artefacts were traded or collected due to the lack of provenance.
du Cros, H. and Rhodes, D. 1998 #1320	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 (multiple locations not including the Geelong region. This investigation is included due to its relevance of its content regarding aboriginal sites and water bodies/courses).	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. du Cros and Rhodes suggested several creeks and rivers may have acted as clan estate boundaries, which could have a bearing on the nature of the campsites found along them. A high density of material has been found along the bank and escarpment of the Werribee River, including several large and dense artefact scatters. These have been interpreted as large campsites, perhaps as gathering places for meetings. The smaller sites have been interpreted as transitory, either travelling along or across waterways. du Cros and Rhodes determined waterways and floodplains contained the highest number of sites.
Weaver, F. 1998 #1287	Archaeological survey ahead of the development of an abalone farm (approximately 6km from the current Study Area).	No aboriginal cultural material was identified during the survey.

Author, Date, Report #	Description and Location	Results
Marshall, B. & Schell, P. 1998 #1370	A desktop investigation of 36 locations along the Victorian coastline aimed at assessing the impact on cultural heritage by CA/CCG projects and providing future management of Aboriginal resources by CA/CCG projects (multiple locations, including Curlewis, approximately 10km from the current Study Area. This investigation is included due to its relevance of its content).	Some project areas were defined as having high densities sites and scientifically important due to deposits of Pleistocene age. Isolated artefacts, surface scatters and shell middens were the dominant sites; rarer sites were scarred trees, isolated hearths, quarry/stone sources, fish traps, art sites and human remains.
Jordan, J. and Richards, T. 1999 #856	An investigation of the Barwon River Basin's written archaeological record; further surveys demonstrated low/insufficient records from previous investigations (multiple locations not including the Leopold area. This investigation is included due to its relevance of its content regarding aboriginal sites and water bodies/courses).	All parts of the Barwon Basin must be considered archaeological sensitive. The areas of highest sensitivity are the coast, the vicinity of freshwater sources and the foothills of the Otway Range. Site damage is high due to human disturbance, intact or nearly intact sites noted as high priority for protection.
Marshall, B. 2001 #1831	An archaeological survey ahead of the installation of a 12.5km section of pipe by Barwon Water (approximately 3.5km from the study area).	No aboriginal cultural material was identified during the survey.
Light, A., and Schell, P. 2001 #2239	A report looking into 66 different submissions for works along the Coast to assess the need for archaeological excavations (multiple locations, some within the greater Geelong region).	15 of the applications were found not to require further work. 51 of the applications needed a program of field assessments before they could be allowed to proceed.
Webb, C. 2011 #4383	A Cultural Heritage Management Plan for a proposed re-zoning and development, Ash Road, Leopold (<1km from the current Study Area).	Assessment found that there were no previously identified aboriginal places within the study area, however the site survey, despite poor ground visibility, identified two stone artefacts, and the potential for additional sites to be identified, given improved visibility.
Marshall, B. 2002 #2296	Desktop study along three possible corridors for a ring road around Geelong (multiple locations, the closest to the current Study Area approximately 22km).	A total of 57 Aboriginal places were recorded within 2.5 km of the bypass corridors, although few sites were recorded in the corridors the geomorphologic landforms were used to determine sensitivity; Volcanic Plains low, alluvial plains unknown, Moorabool Hills low, Rivers and Creeks high, Reedy Lake unknown, Corio bay high and point Henry high. Subsurface testing was recommended for all three corridor possibilities.

Author, Date, Report #	Description and Location	Results
Buckley, K., McConnell, A., And Wickman, S. 2002 #2705	A predictive sensitivity zoning model for the West Victoria Region. (multiple locations not including the Leopold area. This investigation is included due to its relevance of its content regarding aboriginal sites and water bodies/courses).	Archaeological sites are stated to be virtually everywhere in the study area with the challenge of the report to identify patterns of differing density. The predictive model defined 3 zones of sensitivity. 1) Southern periphery, 2) Northern periphery and 3) Interior. Factors affecting site location in decreasing importance are; proximity to an ecotone, proximity to fresh water, elevation below 200m and flatness of ground. Distance from coast, location of water and elevation were all relative factors in the number of sites. The highest density of sites was located at 0-5km from the water, coastal basins at river mouths and damp sclerophyll forest and wet heathland appear to contain high densities.
Rhodes, D. 2003 #2533	A report assessing the Aboriginal cultural heritage on the Port Phillip coastline and the potential for submerged Pleistocene-early Holocene archaeological sites within Port Phillip and the impacts of the proposed activity on these sites. Channel deepening modifications are proposed within the shipping channels (multiple locations not including the Leopold area. This investigation is included due to its relevance of its content regarding aboriginal sites and water bodies/courses).	The coastline of the bay was analysed by selecting nine soil sampling units located within 300 m of the coast. These sample units were intended to provide a representative sample of Port Phillip's coastal landforms. A desktop assessment of archaeological sites in each sampling unit was carried out. A total of 574 archaeological sites are registered with AV within 300 m of the Port Phillip coast, the majority of which (81%) are shell middens. 125 sites are within the sampling units selected for this study. Findings show that the majority of the sites in the sampling units (74%) occur within 25 m of the coast; and the majority are located on cliffed sections of the coast, except for Point Cook. It was determined that calcarenite below the Nepean Bay bar may contain Aboriginal cultural heritage. Also, the submerged basalt shelf extending between Williamstown and Point Lillias contains potential for Aboriginal cultural heritage sites.
Collins, S. Marshall, B. and Webb, C. 2004 #2689	Archaeological assessment ahead of a proposed pipe installation by Barwon Water. (multiple locations within an approximate range of between 0-10km from the study area).	Two aboriginal sites were located during the pedestrian survey AAV 7721-0622 and AAV 7721-0621. A further site was identified during the subsurface testing program. AAV 7721-0623. Sites were respectively an artefact scatter followed by two isolated artefacts.
Maitri, M., and Murphy, A. 2005 #3206	A report of a study into the potential aboriginal and historical archaeology of 251-319 Melaluka Road (approximately 1km from the current Study Area).	No aboriginal or historical archaeological sites were identified during the survey.
TerraCulture 2006 #3430	A survey of 702-720 Portarlington Road (approximately 4km from the current Study Area)	This survey was conducted for a proposed residential subdivision approximately 2 km north of the current subject land. No Aboriginal or historical cultural heritage places were identified. However, further archaeological investigations for Aboriginal cultural heritage in the form of sub-surface testing, and additional historical research was recommended.
Chandler, J. 2007 #10067	A Cultural Heritage Management Plan for a proposed retirement village, 402-404 Bellarine Highway, Moolap (approximately 5km from the current Study Area).	No aboriginal archaeological sites were identified during the desktop assessment or survey.

Author, Date, Report #	Description and Location	Results
Buellers, R., and Harbour, M. 2012 #11176	A Cultural Heritage Management Plan for a proposed residential subdivision, Ash Road, Leopold (<1km from the current Study Area).	While no aboriginal sites were located in the activity area during a desktop assessment, the desktop assessment concluded that artefact scatters and isolated artefacts were the types of Aboriginal sites most likely to occur within the activity area. Two such 'typical' sites (isolated artefacts) were subsequently identified during testing.
Tunn, J. and Welsh, L. 2016 #14097	A Cultural Heritage Management Plan including survey, regarding the change of use of the activity area in support of a proposed residential hotel facility at Campbell Point House, Leopold (approximately 4.5km from the current Study Area).	This plan showed that the distribution of registered Aboriginal places within the geographic region indicated some association with waterbodies and watercourses and locations further away, however these places appear as low density and more discrete stone artefact manifestations. The gently undulating landscape also provided a moderate potential for Aboriginal places to be located, however did note the area, generally, had been highly disturbed by European farming and settlement. Potential for surface and subsurface deposits remained in areas where ground surfaces were intact or minimally disturbed.
Barker, D., Toscano, M., and White, K. 2017 #14185	Desktop, Standard and Complex Assessments undertaken ahead of a proposed residential subdivision, Mollers Lane, Leopold (<1km from the current Study Area).	The Assessment identified two previously unrecorded Aboriginal Cultural Heritage Places, and suggested that there is likely to be further subsurface Aboriginal artefacts present within the Activity Area - likely in the form of low density artefact scatters or isolated artefacts. These artefacts are, however, unlikely to be in situ due to the high levels of subsurface ground disturbances such as ploughing within the Activity Area.

2.3.6 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 AV 2018).

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 artefacts scatters and low density artefact distributions. Other likely site types to occur are scarred trees and shell middens. Site types considered unlikely to occur in the study area are, mounds, quarries, stone arrangements and Aboriginal burials.

Stone Artefact Scatters are considered likely to occur in the activity area. Stone artefact scatters are the most common site type previously recorded within the vicinity of the survey area. It is likely that stone artefact scatters may be encountered within the study area itself.

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

[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.

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 alike.

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 Distributions are considered likely to occur in the activity area. Low density artefact scatters area a common site type within the local area. A number of the previously identified artefact scatters would now be described as low density artefact scatters within new naming conventions. Low density artefact scatters are therefore even more common than they appear from the data. It is considered likely a result that LDADs may be encountered within the survey area.

Low density artefact distributions are stone artefact sites that comprise less than 10 artefacts in a 10 x 10 m area and where artefact clusters are all contained within a single 1:100,000 scale map sheet. LDADs can occur singly and may occur anywhere in the landscape. Surface artefacts may be indicative of further subsurface archaeological deposits. This site type 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.

Scarred Trees are considered unlikely to occur in the study area. While scarred trees have been previously identified within the vicinity of the survey area, past land use make the presence of sufficiently old trees less likely.

Aboriginal people caused scars on trees by removing bark for various purposes.

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, around lakes and on flood plains.

Shell Middens are considered unlikely to occur in the study area. While shell middens are common along the coast and some waterways the survey area is sufficiently inland to make the presence of shell middens unlikely. The closest previously recorded shell midden is located on the northern shore of lake Connewarre

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 rockshelters, 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 study area. No mounds have been previously identified within the vicinity of the survey area. Mounds are typically destroyed by past land use activities making them an unlikely site type to encounter in areas of previous European occupation.

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 study area. The survey area lack the usual source materials for stone artefact manufacture making the presence of a quarry unlikely.

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 study area. Stone arrangements are a rare site type within Victoria and are particularly susceptible to destruction by past land use making their presence within the study area unlikely.

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 unlikely to occur in the study area. Stony rises are unlikely to be encountered within the survey area owing to the nature of local geography.

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 study area. While the presence of burials is possible their relative rarity as a site type throughout Victoria makes them unlikely to be encountered within the study area.

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.

2.3.7 Aboriginal Heritage Desktop Assessment – Summary of the Results and Conclusions

The desktop assessment indicates that a total of 88 Aboriginal Places, comprising a total of 222 components, occur within a 5km radius of the study area. Many of these sites occur immediately to the south and east of the Study Area, as well as further east, and north (Map 8). This does not necessarily reflect that Aboriginal sites don't occur in other locations; only that development in and around Leopold is a driving factor for more intensive archaeological investigation.

A review of previous archaeological investigations in and around the activity area indicates that Aboriginal archaeological sites occur primarily in relation to reliable waterways, or along their tributaries, particularly on terraces or in elevated areas overlooking those resources. Sites may comprise wholly surface artefacts, subsurface artefacts or a combination of both. Artefact densities vary across landforms, with higher density sites located towards Lake Connewarre, and lower density sites located along tributaries of the lake to the north. Topsoil disturbance can affect the archaeological integrity of sites, but is not necessarily an indicator that Aboriginal cultural heritage has been removed. No Aboriginal Places are located within the study area or within a 50 metre radius of the existing study area boundary.

2.4 Historical Context

The section reviews the historical context of the study area and includes an examination of primary historical sources, relevant heritage databases, previously recorded historical built-heritage or archaeological site types and locations in the geographic region of the study area, and previous heritage 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.

2.4.1 History

2.4.1.1 Regional History

The first European person to arrive in the Bellarine Peninsula was Lieutenant John Murray, who entered the mouth of Port Phillip Bay on 14 February 1802. He sailed around the area for one month and was then forced to return to Sydney due to a lack of supplies. Later in the same year (26 April) Captain Matthew Flinders entered and crossed Port Phillip Bay on the *Investigator* and later landed at Indented Head where he camped and moved further northwest along the Bellarine Peninsula, in the vicinity of Portarlington. He crossed Port Phillip Bay again to investigate the You Yangs, later returning to Indented Head.

In early 1803, the *Cumberland* set sail for Port Phillip with the Surveyor-General Charles Grimes aboard, with the intention of surveying the coast for potential settlement. The men landed at Portarlington and on foot, headed westward and crossed five dry 'dingles' before reaching Point Henry. Technically, dingles are deep dells (valleys), usually shaded with trees. These 'dingles' could refer to the number of small creeks that head inland from the coast in the Clifton Springs area.

Also in 1803 the *Ocean* and the *Calcutta* arrived at Sorrento, laden with convicts including William Buckley, settlers and marines. The settlement was abandoned due to the poor quality of the soil. However, before William Buckley escaped from the Sorrento settlement, and went on to live with the *Wathaurong* for the next 32 years, during which time there was little or no European exploration of the Bellarine Peninsula.

In 1835, Buckley learned of three white men camped at Indented Head, who were part of John Batman's Port Phillip exploration party. The party went on to explore the area, returning once again and later left three of the exploration party at their base camp. These men made a garden and built a house of sods. After some interaction with the local Aborigines, Buckley approached the camp on the 6 July 1835. It was during this time Batman explored the Bellarine Peninsula; he climbed the Bellarine Hills and reported;

> *I found the Hills of a most superior description beyond my most sanguine expectation – the Land Excellent and very rich a light black soil covered with Kangaroo Grass* (cited in Wynd 1988: 6).

The early European settlement of the Bellarine Peninsula spread from the west, with Point Henry being an important landing place, and from the eastern or bay end, following in the tracts of Batman and other explorers. Wynd (1986: 8) noted that while '[M]ost people are aware that 500,000 acres around Melbourne were purchased (through a deed – 'Batman's Treaty')… it is not so well known that in a separate deed 100,000 acres around Geelong, including the whole of the Bellarine Peninsula, were purchased' .

Large tracts of land were initially taken up by squatters, many of whom did little more than run stock over loosely defined runs. Mr Thomas Sproat held the 'Bellarine Hills' run of 1,280 acres between 1842 and 1852. The Misses' Newcombe and Drysdale's 'Bellarine' run was some 1,920 acres; this run borders the study area to the west (Spreadborough and Anderson 1983:268-270). As the various land Acts became introduced in the 1840s and 50s, squatting runs began to dissolve and were replaced by small farming allotments purchased by 'Selectors'.

Leopold was originally known as Kensington and, like other small towns on the Peninsula, was established along major roads as settlement grew out from Geelong. Kensington was the name given to the subdivision of 1852, which led to the rise of the township. Within the next three years churches were erected and the town blossomed. By 1885 descriptions of the town were as follows; '…a small village, 52 miles S.W. of Melbourne and 12 miles west of Queenscliff, with Connewarre 2 miles S. The district is a good fruit-growing one. There are two churches and a state school, with a population of about 100 persons, within one mile of the post office…' (cited in Wynd 1988:103). In 1885 the town name was changed due to the apparent confusion with Melbourne's suburb Kensington and Leopold was chosen.

Throughout most of the 20th century Leopold remained a small township servicing the surrounding rural sector. During the second half of the century and most recently, Leopold has experienced unprecedented urban growth and with this the demise of local farms.

2.4.1.2 Land Use History

An 1888 map of the Parish of Moolap (Figure 1) shows that the study area comprised a section of land owned by T. Foster (Figure 1 and 2). Since European settlement of the study area and surrounding region, the land has been utilised for various farming uses including grazing, potato farming, hobby farms, and crops. In addition, 73-155 Ash Road contains a number of residential dwellings. The study area has undergone some ground disturbance associated with farming including houses, storage sheds, fencing, tree planting etc.

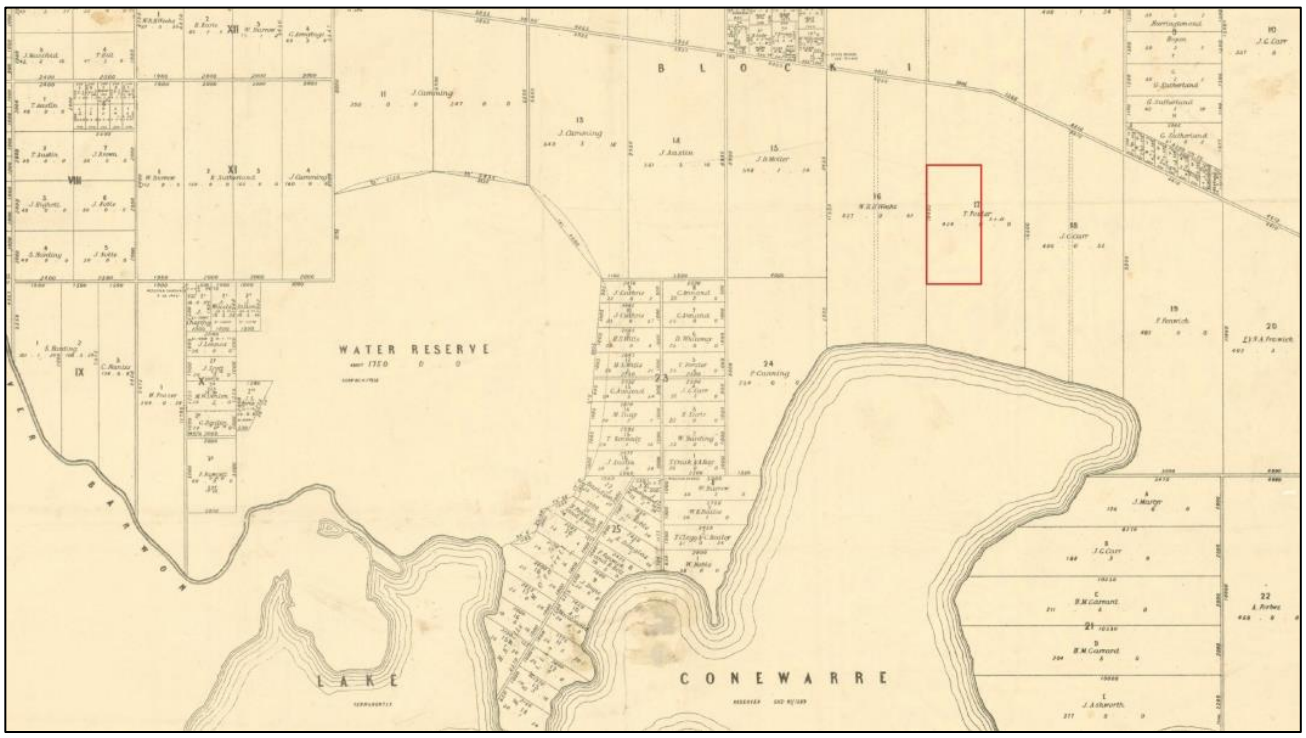


Figure 1. Map of Parish of Moolap, 1888. Study area falls within Parcel 17.

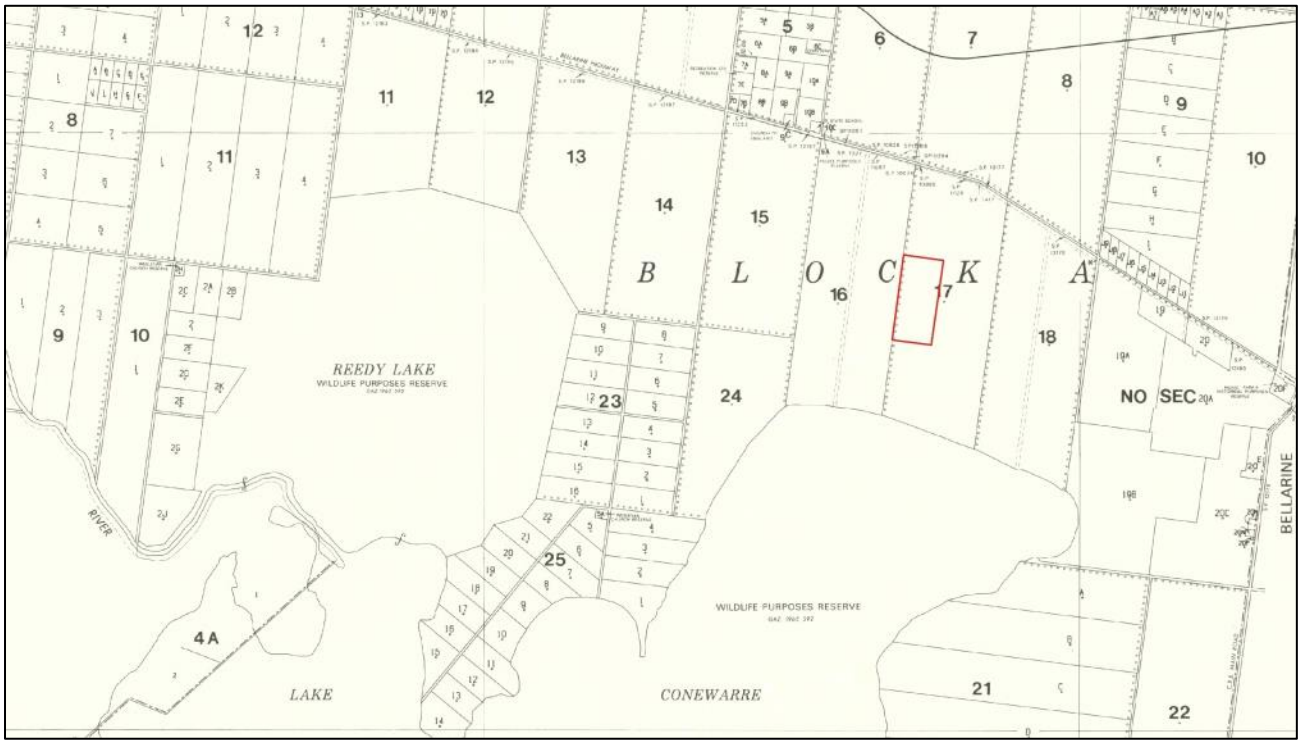


Figure 2. Map of Parish of Moolap 1976. Study area falls within Parcel 17.

2.4.2 Database Searches

2.4.2.1 Victorian Heritage Register

The Victorian Heritage Register (VHR), established by the Victorian *Heritage Act 1995*, provides the highest level of statutory protection for historical sites in Victoria. Only the State's most significant historical sites are listed on the VHR.

The VHR also lists historic shipwrecks in Victorian State waters. Under the Victorian *Heritage Act 1995*, all shipwrecks in Victorian State waters that wrecked 75 years[4] or more ago (including any parts that were originally from that shipwreck) are protected. Certain shipwrecks that are less than 75 years old may also be declared historic shipwrecks.

A search of the VHR was conducted for a 5km radius area centred on the study area. The search identified a total of 2 registered historical heritage places in the search area (Map 8). These sites include:

- H1117 (Melaleuka Homestead); and
- H0776 (St Marks on the Hill Anglican Church).

[4] Note that that this is a blanket, 75-year, rolling provision. This means that more shipwrecks become protected each year as the 75th anniversary of their loss is reached

Neither of these sites are located within the study area.

2.4.2.2 *Victorian Heritage Inventory*

The Victorian Heritage Inventory (VHI), established by the Victorian *Heritage Act 1995*, provides the statutory protection for all historical archaeological sites, areas or relics, and private collections of relics, in Victoria. Sites listed on the VHI are not of State significance but are usually of regional or local significance.

A search of the VHI was conducted for a 5km radius area centred on the study area. The search identified a total of 8 registered historical heritage places in the search area (Map 8). These sites include:

- H7721-0026 (Hoare Homestead)
- H7721-0030 (Well, Leopold)
- H7721-0033 (Bell Vue Homestead)
- H7721-0036 (Homestead Site, Point Henry)
- H7721-0245 (Leopold Marina Historic Site)
- H7821-0034 (Homestead site, Curlewis)
- H7821-0036 (Curlewis Railway Station); and
- H7821-0051 (Scarborough Railway Station).

None of these sites are located within the study area. D7721-0034 (Leopold Railway Station) was delisted from the Victorian Heritage Inventory in August 2012. IT is/was located approximately 3km from the Study Area.

2.4.2.3 *Victorian War Heritage Inventory*

The Victorian War Heritage Inventory (VWHI) was established in 2011 as a means to catalogue Victoria's war history such as war memorials, avenues of honour, memorial buildings, former defence sites and places of commemoration. Places listed on the VWHI do not currently have discrete statutory protection, however many are concurrently listed on the VHR, VHI, or local planning schemes.

A search of the VWHI was conducted for a 5km radius area centred on the study area. The search identified a total of 3 registered historical heritage places in the search area (Map 9). These sites include:

- Leopold Memorial Park,
- Stained Glass Window at Leopold St. Marks Anglican Church, 721-729 Bellarine Highway, Leopold; and
- Stained Glass Window at Leopold St. Marks Anglican Church (putative)

None of these sites are located within the study area.

2.4.2.4 *Local Council*

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

The Heritage Overlay (HO) of the City of Greater Geelong Planning Scheme was examined for a 5km radius area centred on the study area. The search identified a total of 21 registered historical heritage place in the search area (Map 9). These sites include:

- HO1561 (Geelong-Queenscliff Railway Line);
- HO1586 ('Bayview' Residence);
- HO1587 (St. Francis Xavier Catholic Church);
- HO1591 ('Carinya' Residence);
- HO1609 (Uniting Church);
- HO1610 (Residence, 580 Wallington Road, Wallington);
- HO1611 (Wallington Hall);
- HO1567 ('Kalimnar' Residence);
- HO1568 (Leopold Cemetery);
- HO1570 (Residence, 90 Matthews Road, Leopold);
- HO1571 ('Monmeath' Residence);
- HO1572 (Moolap Primary School - former);
- HO0289 ('Toongabbie' Residence);
- HO0284 ('Lake View' Homestead);
- HO0285 ('Melaleuca' (also known as Melaleuka) Residence);
- HO0287 ('Springfield' Residence);
- HO290 ('Toorang' Homestead);
- HO288 (St Marks on the Hill Church);
- HO1535 (Residence, former Allens Week farm, 40 Ashgarth Avenue, Leopold);
- HO1539 (Residence, former Moolap Inn, 350 Bellarine Highway, Moolap); and
- HO1540 (Leopold Hall).

None of these sites are located within the study area.

2.4.2.5 National Trust Register

The National Trust of Australia (Victoria) is an independent, not-for-profit organisation that classifies a number of heritage places. Listing on the National Trust Register (NTR) does not impose any statutory protection, however often National Trust listings are supported by the local council Planning Scheme.

A search of the NTR was conducted for a 5km radius area centred on the study area. The search identified a total of 3 registered historical heritage places in the search area – the same three places identified in the VWHI search.

None of these sites are located within the study area.

2.4.2.6 Commonwealth and International Heritage Lists

The Commonwealth Department of the Environment (DoE) maintains the National Heritage List (NHL), a register of exceptional natural, Aboriginal and historical heritage places which contribute to Australia's national identity. DoE also maintains the Commonwealth Heritage List (CHL), a register of natural, Aboriginal or historical heritage places located on Commonwealth land which have Commonwealth heritage values.

A place can be listed on one or both lists, and placement on either list gives the place statutory protection under the EPBC Act.

The World Heritage List (WHL) lists cultural and natural heritage places which are considered by the World Heritage Council to have outstanding universal value.

DSEWPC also maintains the Register of the National Estate (RNE) which is a list of natural, Indigenous and historic heritage places throughout Australia. Following amendments to the *Australian Heritage Council Act 2003*, the RNE was frozen on 19 February 2007, and no new places have been added or removed since then. The RNE ceased as a statutory register in February 2012, although items listed on the RNE may continue to be considered during approvals processes. Many items on the RNE have been listed on the NHL or CHL. They may also be registered on State or local heritage registers. In these cases, those items are protected under the relevant Commonwealth or State heritage legislation. However, items that are only listed on the RNE no longer have statutory heritage protection.

Listings on the NHL, CHL, WHL and RNE are accessed via the Australian Heritage Database (AHD), managed by DoE.

DoE also maintains the Commonwealth Historic Shipwreck Database (HSD). Under the Commonwealth *Historic Shipwrecks Act 1976*, all shipwrecks in Commonwealth waters that were lost 75 years or more ago are protected. For Victoria, the majority of these are also reflected as listings on the VHR.

A search of the AHD and HSD was conducted for a 5km radius area centred on the study area. The search did not identify any registered historical heritage places in the search area.

2.4.2.7 Summary

A summary of the relevant historical heritage sites appears in Table 5.

Table 5: Summary of Previously Identified Historical Heritage Sites within 5km of the Study Area

Register & Site Number	Site Name	Site Type	Within Study Area?
VHRH1117 HO 285	'Melaleuca' (Melaleuka) Residence	Residence	No
VHI H7721-0026	Hoare Homestead	Residence	No

Register & Site Number	Site Name	Site Type	Within Study Area?
VHI H7721-0030	Well, Leopold	Farming	No
VWHI (no number given)	Leopold Memorial Park	Memorial	No
RNE 3641	Lake Connewarre State Game Reserve	Reserve	No
RNE 16417	Indigenous Place	Aboriginal Site	No
HO284	'Lake View' Homestead	Residence	No
HO287	'Springfield' Residence	Residence	No
HO288 NTR B2078	St Mark's on The Hill Anglican Church	Religious	No
HO289	'Toongabbie' Residence	Residence	No, but is immediately east of study area
HO290	'Toorang' Homestead	Residence	No
HO1535	Residence	Residence	No
HO1539	Former Moolap Inn 'Green Gables'	Inn	No
HO1540	Leopold Hall	Residence	No
HO1561	Geelong-Queenscliff Railway Line	Infrastructure/Transport	No
HO1567	'Kalimnar' Residence	Residence	No
HO1568	Leopold Cemetery	Cemetery	No
HO1570	Residence	Residence	No
HO1571	'Monmeath' Homestead	Residence	No
HO1586	'Bayview' Residence	Residence	No

2.4.3 Previous Historical Archaeological Investigations

Regional and localised archaeological investigations have established the general character of historical archaeological sites located within the same geographic region as the study area and, heritage studies have been conducted for the City of Greater Geelong Local Government Area (LGA). These studies often define the historical character of the LGA or for a specific township, predominantly for built heritage but also for archaeological heritage. This information, together with the information gathered in Section 2.4.2 can be used to form the basis for a site prediction statement (Section 2.4.4)

TerraCulture (2005) surveyed land at 90-172 Ash Road, Leopold in relation to a potential re-zoning of the land for possible future residential development. Two Aboriginal artefacts were identified during the ground surface survey. While no historical archaeological artefacts or sites were located, visibility factors did not preclude the future identification of such sites

A summary of archaeological reports relevant to the geographical region of the study area appears below (Table 6).

Table 6: Historical Archaeological Reports Relevant to the Study Area

Author, Date & HV Report #	Description and Location	Results
Practical Archaeology Services 1998 #0684	An archaeological survey for the proposed establishment of an aquaculture project, Austin Street, Leopold (approximately 4.5km from study area).	A desktop assessment indicated that while multiple Aboriginal and historic sites are located within 8km of the study area, none were present within the study area. However, one section of the study area was identified as having potential for historical archaeological sites.
TerraCulture 2004 #1878	An archaeological survey and subsurface testing for the proposed duplication of the water transfer main between Leopold and Ocean Grove (multiple locations within an approximate range of between 0-10km from the study area).	A ground survey identified two Aboriginal archaeological sites. As a result, subsurface testing occurred within the vicinity of the artefact scatters (772109621/0622 [VAHR]). A desktop assessment determined that there were no previously recorded historical sites on or near the proposed alignment. No historical archaeological sites were identified during the ground survey or subsurface testing.
Maitri, M., and Maitri, M. 2005 #2313	A ground surface survey of land located at 251-319 Melaluka Road, Leopold (approximately 1km from study area).	A desktop assessment indicated that historic sites dating to the late 1800's may be present within the study area. These sites are associated with small-scale land ownership. No historical archaeological sites were identified. However, one un-surveyed section of the study area was identified as having potential for historical archaeological sites.
TerraCulture 2005 #2514	An archaeological survey at 711-729 Portarlington Road, Leopold (approximately 4.5km from study area).	A desktop assessment determined that there were no previously recorded historical archaeological sites within or near to the study area. However, it was considered possible that historical sites may be present. A ground surface survey identified two Aboriginal artefact sites (7721-0768/0769 [VAHR]) and one historical archaeological site (H7721-0115). The historic sites consisted of a European rubbish dump, containing mostly bottles and ceramics.
TerraCulture 2006 #2639	An archaeological survey of land located at 702-720 Portarlington Road, Leopold (approximately 4.5km from study area).	A desktop assessment determined that there were no previously recorded historical archaeological sites within or near to the study area. However, it was considered possible that historical sites may be present. The ground surface survey identified no Aboriginal or historical archaeological sites.
Weaver, F. 2006 #2997	Excavations and recording of European material from a historical rubbish dump (H7721-0115) (approximately 4.5km from study area).	TerraCulture (2005) recorded a historical rubbish dump site during a survey of the study area in 2005. Weaver (2006) undertook subsequent excavations at the site. Twenty spoil heaps containing European cultural material were located. These spoil heaps had been created by the land owner during earth works. Weaver identified 10 artefact material groups: glass, ceramic, plastic, leather, metal, fibro cement, rubber, abrasive grit, Bakelite and bone. The artefacts were believed to have been attributed to the running of a farm property.
TerraCulture 2011 #3977/4004	An archaeological survey of land located at 90-172 Ash Road, Leopold (<1km from the study area).	A desktop assessment determined that while there were four previously recorded Aboriginal archaeological sites within 4km of the study area, none were located within the study area itself. A ground surface survey identified two Aboriginal artefacts, as well as areas of archaeological potential. No historical archaeological sites were identified.

Author, Date & HV Report #	Description and Location	Results
Ecology & Heritage Partners 2012 #3999	An archaeological survey of land located at 160-172 Ash Road, Leopold (<1km from the study area).	A desktop assessment determined that there were no previously recorded historical archaeological sites within or near to the study area. However, it was considered possible that historical sites may be present. The ground surface survey identified no Aboriginal or historical archaeological sites.

2.4.4 Historical Archaeological Site Prediction Statement

The following site prediction statement has been formulated from the review of previous assessments. The statement presented is based on a site type approach. The review of the previously recorded historical archaeological sites and previous archaeological investigations indicates that the most likely[5] site types in the study area are domestic sites and farming and/or pastoral sites.

Domestic Sites are unlikely to occur in the study area, although many assessments and surveys undertaken in the past (Table 6) indicate the potential for historical sites. Evidence of domestic occupation may include structural remains or ruins of homesteads and/or outbuildings, domestic rubbish dumps or bottle dumps, wells or underground storage tanks.

Tree Plantings are unlikely to occur in the study area. While tree plantings are associated with domestic sites, domestic sites themselves are unlikely to occur within the Study Area. Historical tree plantings may be evidenced by large introduced trees planted along original driveways, paddock boundaries or close to homestead sites.

Farming Sites are unlikely to occur in the study area. Despite the history of land use on Ash Road and Leopold generally (as discussed in section 2.4.1) including farming, no historical archaeological sites have been identified thus far in desktop assessments or field surveys. However, given its history, there is potential for the identification of this site type. Evidence of farming may include fence lines, dams, water channels, plantings or terracing.

Pastoral Sites are unlikely to occur in the study area, for the same reasons outlined above in 'Farming Sites'. Breeding of livestock and dairying may be evidenced by the remains of stockyards, stables, barns and holding pens.

Road and Rail Infrastructure Sites are unlikely to occur in the study area. Old road or railway routes may be evidenced by bridges, railway tracks or road or railway embankments.

Gold Mining Sites are unlikely to occur in the study area. Evidence of gold mining may include deep mine shafts, adits and spoil heaps, mining equipment and machinery such as puddling machines, batteries and engines, and water races.

[5] Likely is an assessment of site types with a 50% or more likelihood of occurring; Unlikely is an assessment of site types with 50% or less chance of occurring).

Shipwreck Sites are unlikely to occur in the study area. Evidence of shipwrecks may include pieces of worked timber (particularly if evidence of steam-bending is present), ballast, coal, pieces of iron, fired bricks and machinery such as engines, drive-gear (shafts and propellers), winches, and stoves.

War Heritage Sites are unlikely to occur in the study area. War heritage sites may include standing monuments and marked locations, but may also include avenues of honour, grave sites, ex-military sites and local memorial sites.

2.4.5 Historical Heritage Desktop Assessment – Summary of the Results and Conclusions

The desktop assessment indicates that a total of 20 Historic Places and Historical archaeological sites occur within a 5km radius of the study area, generally to the north towards Port Phillip Bay (Map 9). This does not necessarily signify that Historical sites don't occur in other locations; only that development in and around Leopold is a driving factor for more intensive archaeological investigation.

A review of previous archaeological investigations in and around the activity area indicates that Historical archaeological sites occur primarily in relation to roads, railways and other transport links, as well as proximity to Port Phillip Bay.

Note that topsoil disturbance can affect the archaeological integrity of sites, but is not necessarily an indicator that Historical cultural heritage has been removed. The presence of registered Historic Places and Historical archaeological sites within 5km of the Study Area, together with its proximity to roads (the Bellarine Highway), and the nearby Hoare Homestead (VHI H7721-0026, also see Map 9), means that a site inspection may be recommended to see if any historical sites exist within the study area.

3 DETAILS OF CULTURAL HERITAGE IN THE STUDY AREA

3.1 Aboriginal Cultural Heritage in the Study Area

No Aboriginal Places were located within the study area (Error! Reference source not found.).

3.2 Historical Heritage in the Study Area

No historical archaeological sites were located within the study area (Error! Reference source not found.

4 MANAGEMENT RECOMMENDATIONS

This section provides a summary of the recommendations made in relation to the Aboriginal and historical heritage values of the study area. For Aboriginal cultural heritage the following recommendations explain whether a Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* will or will not be required. In areas where it is considered that a CHMP is not required, this will be because that area was considered to have no Aboriginal cultural heritage likelihood (archaeological sensitivity) and/or because the study area has been subject to previous significant ground disturbance. Note that planning requirements may require a CHMP to be prepared for all of the study area. The areas requiring a complex CHMP (i.e. archaeological subsurface investigation) are therefore discussed below.

A summary of the Recommendations is provided at the end of this section (Error! Reference source not found.).

4.1 Aboriginal Cultural Heritage

Recommendation 1: No Requirement for Further Archaeological Investigation

As there are no known Aboriginal sites or areas considered to have Aboriginal likelihood there is no requirement for any further Aboriginal cultural heritage investigations.

Recommendation 2: Contingency for Aboriginal Heritage

There are no other known Aboriginal cultural heritage issues in regard to the proposed development. If any Aboriginal cultural heritage issues are encountered during the course of construction then works should cease within 10 m of the area of concern and a qualified Cultural Heritage Advisor (or AV) should be contacted to investigate.

4.2 Historical Heritage

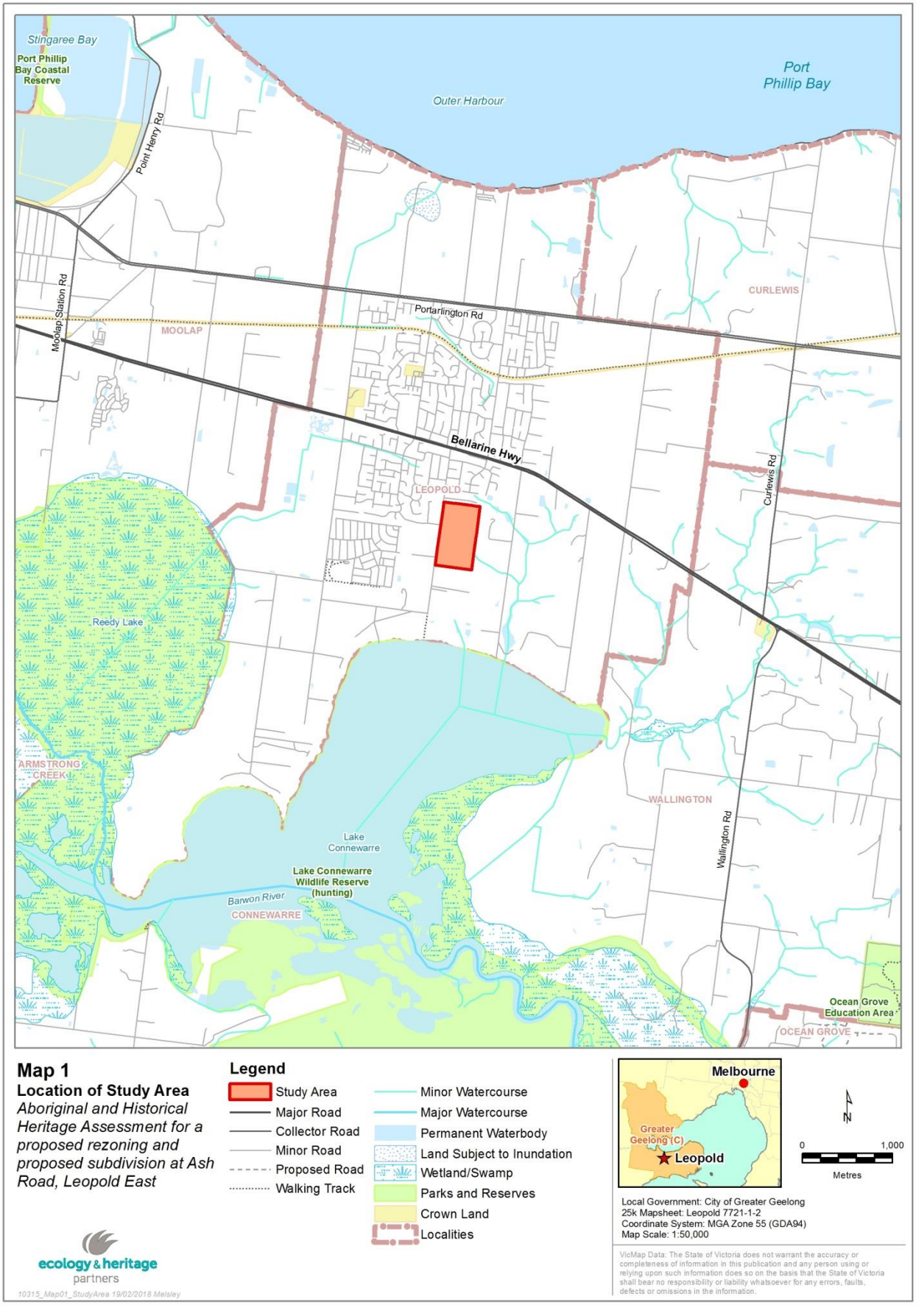
Recommendation 3: No Requirement for Further Archaeological Investigation

As there are no known historical heritage sites or areas considered to have historical heritage likelihood there is no requirement for any further historical heritage investigations.

Recommendation 4: Contingency for Historical Heritage

There are no other known historical heritage issues in regard to the proposed development. If any historical heritage issues are encountered during the course of construction then works should cease within 10 m of the area of concern and a qualified Cultural Heritage Advisor (or Heritage Victoria) should be contacted to investigate.

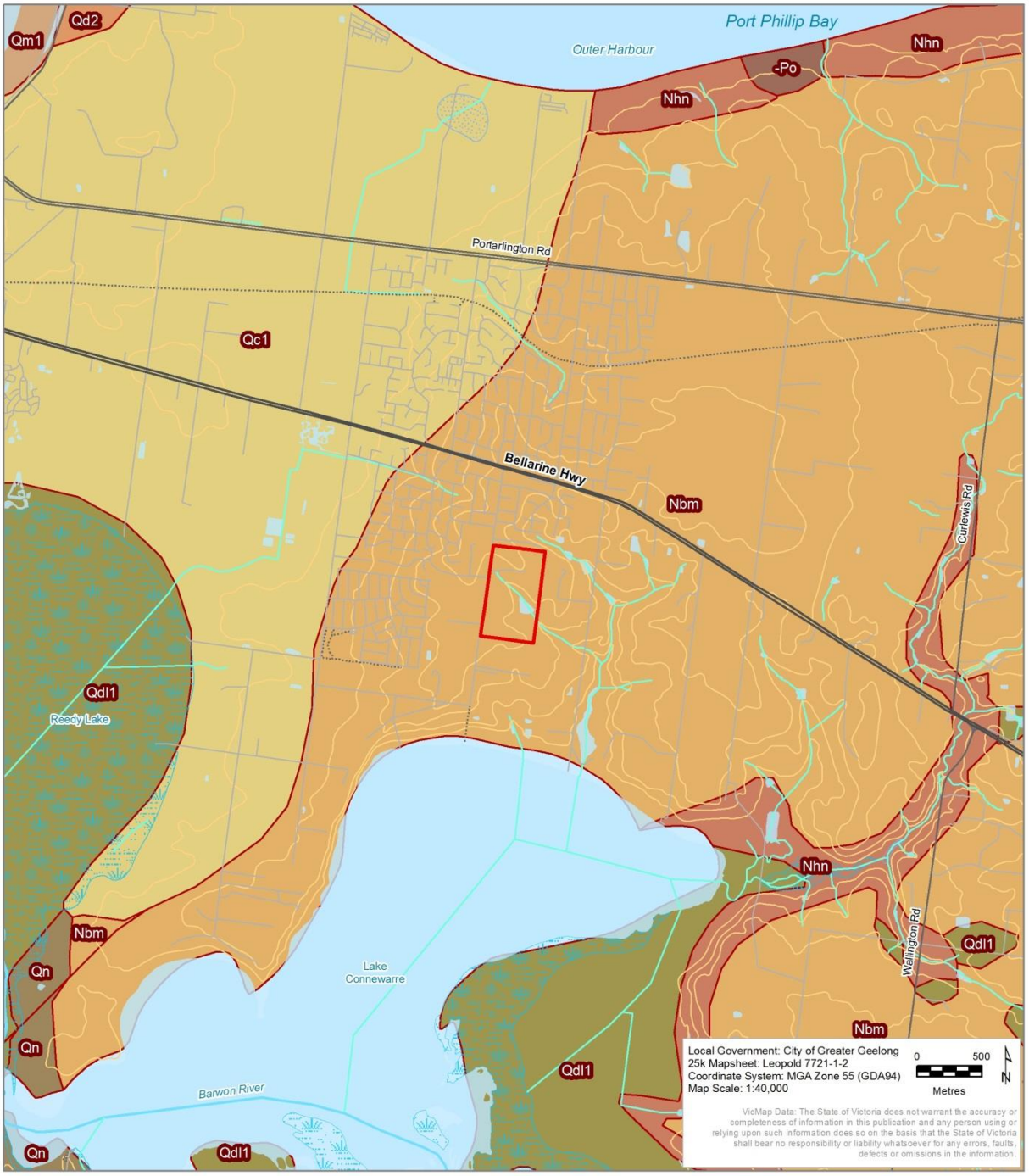
MAPS


Stingaree Bay
Port Phillip Bay Coastal Reserve
Outer Harbour
Port Phillip Bay
Point Henry Rd
Moolap Station Rd
Portarlington Rd
MOOLAP
CURLEWIS
Bellarine Hwy
LEOPOLD
Curlewis Rd
Reedy Lake
ARMSTRONG CREEK
WALLINGTON
Lake Connewarre
Lake Connewarre Wildlife Reserve (hunting)
Barwon River
CONNEWARRE
Wallington Rd
Ocean Grove Education Area
OCEAN GROVE
Map 1
Location of Study Area
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East
Legend
Study Area
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
Melbourne
Greater Geelong (C)
Leopold
N
0
1,000
Metres
Local Government: City of Greater Geelong
25k Mapsheet: Leopold 7721-1-2
Coordinate System: MGA Zone 55 (GDA94)
Map Scale: 1:50,000
VicMap 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 bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.
ecology & heritage partners
10315_Map01_StudyArea 19/02/2018 Melsley

Aerial source: Nearmap 2017

Map 3: Proposed Development Plan


Stingaree Bay
Outer Harbour
Port Phillip Bay
Point Henry Rd
Portarlington Rd
Moolap Station Rd
Bellarine Hwy
Curlewis Rd
Reedy Lake
Otway Plain
Lake Connewarre
Barwon River
Wallington Rd
Victorian Volcanic Plain
Map 4
Relevant Geographic Region
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East
ecology & heritage partners
10315_Map04_GeogrRegion 19/02/2018 Meisley
Legend
Study Area
Minor Watercourse
Major Watercourse
Permanent Waterbody
Land Subject to Inundation
Wetland/Swamp
Bioregions
Otway Plain
Victorian Volcanic Plain
Elevation (10m contours divided in natural breaks (Jenks))
10 m
10 - 30 m
30 - 40 m
40 - 60 m
60 - 80 m
Melbourne
Greater Geelong (C)
Leopold
N
0
1,000
Metres
Local Government: City of Greater Geelong
25k Mapsheet: Leopold 7721-1-2
Coordinate System: MGA Zone 55 (GDA94)
Map Scale: 1:55,000
VicMap 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 bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



Map 5
Geology
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East

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10315_Map05_Geology 19/02/2018 Melsley

Legend

Study Area

Geology

-Po - Older Volcanic Group, Extrusive: tholeiitic and minor alkaline basalts (Palaeogene (Eocene) to Palaeogene (Oligocene) in age)

Nbm - Moorabool Viaduct Sand, Gravel, sand, silt (Neogene (Miocene) to Neogene (Pliocene) in age)

Nhn - Newport Silt, Marine: glauconitic silt, marl, minor limestone (Neogene (Miocene) to Neogene (Miocene) in age)

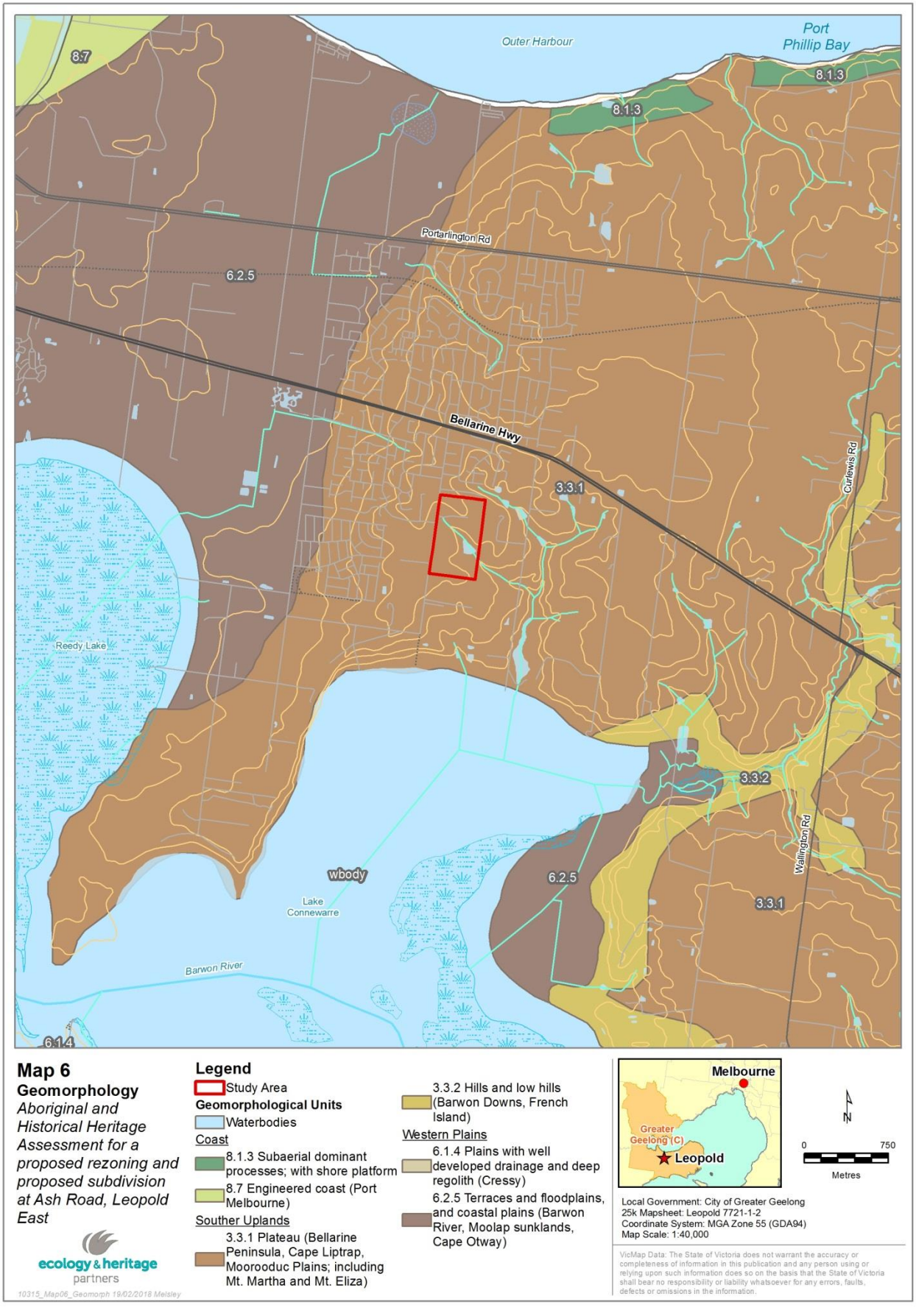
Qc1 - Unnamed colluvium, Fluvial: "gully" alluvium, colluvium: gravel, sand, silt (Quaternary (Holocene) to Quaternary (Holocene) in age)

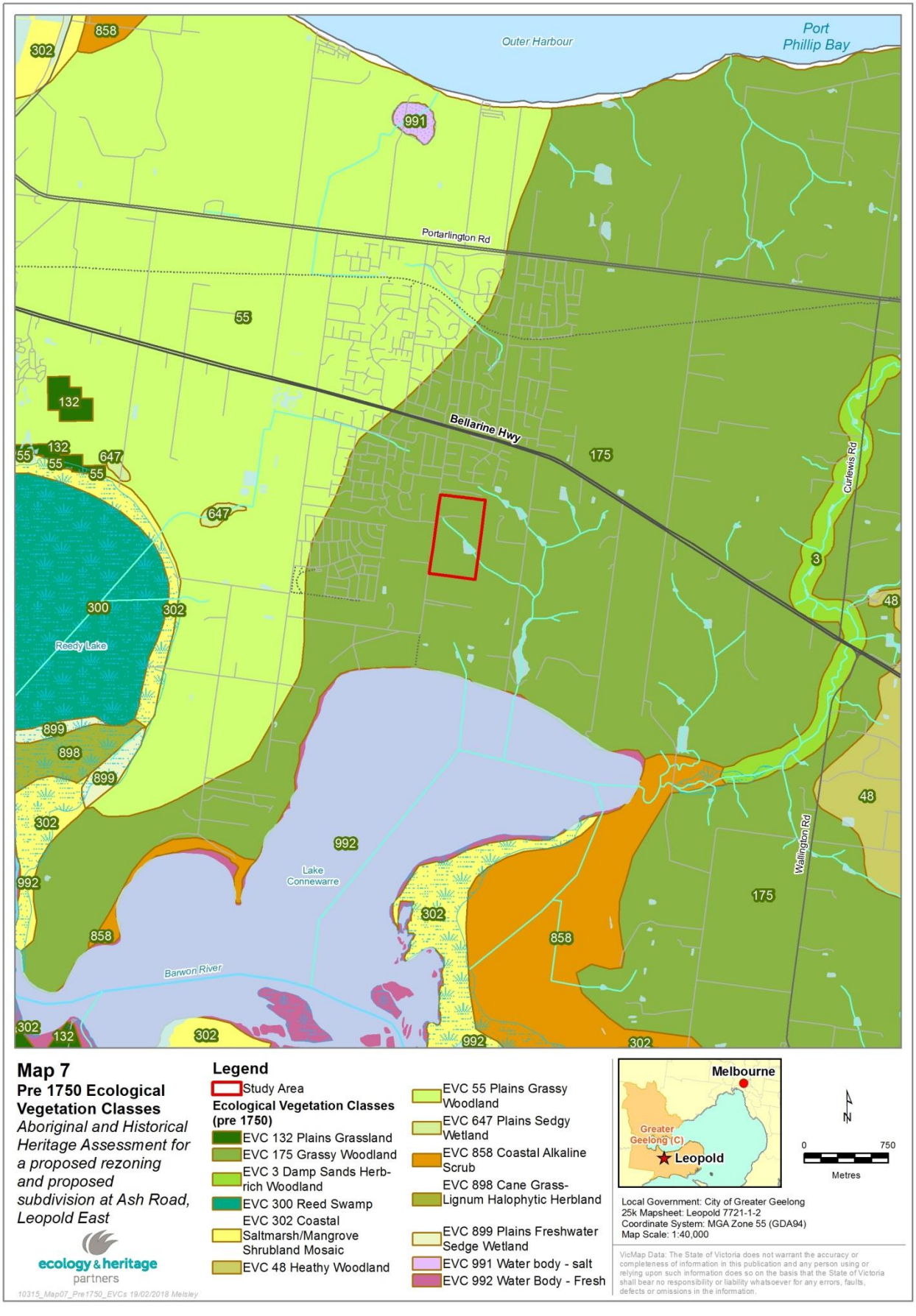
Qd2 - Unnamed dune deposits, Aeolian: dune deposits: sand, clay, calcareous sand (Quaternary (Pleistocene) to Quaternary (Pleistocene) in age)

Qdl1 - Unnamed coastal dune deposits, Aeolian: coastal and inland dunes: dune sand, some swamp deposits (Quaternary (Holocene) to Quaternary (Holocene) in age)

Qm1 - Unnamed swamp and lake deposits, Paludal: lagoon and swamp deposits: silt, clay (Quaternary (Holocene) to Quaternary (Holocene) in age)

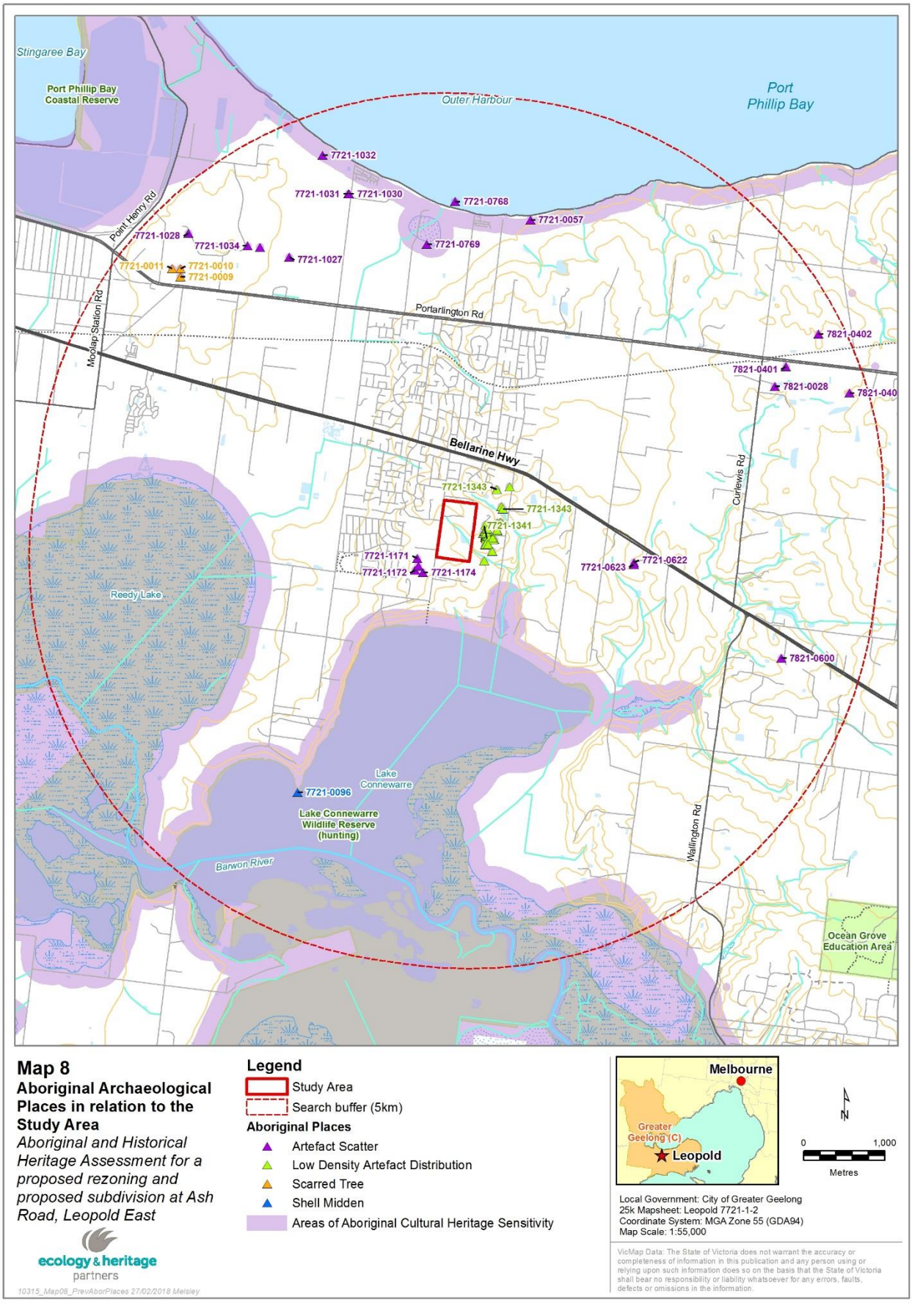
Qn - Newer Volcanic Group, Extrusive: tholeiitic to alkaline basalts, minor scoria and ash (Neogene (Pliocene) to Quaternary (Holocene) in age)


Outer Harbour
Port Phillip Bay
8.7
8.1.3
8.1.3
Portarlington Rd
6.2.5
Bellarine Hwy
3.3.1
Curlewis Rd
Reedy Lake
3.3.2
Wallington Rd
wbody
6.2.5
Lake Connewarre
3.3.1
Barwon River
6.1.4
Map 6
Geomorphology
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East
ecology & heritage partners
10315_Map06_Geomorph 19/02/2018 Meisley
Legend
Study Area
Geomorphological Units
Waterbodies
Coast
8.1.3 Subaerial dominant processes; with shore platform
8.7 Engineered coast (Port Melbourne)
Souther Uplands
3.3.1 Plateau (Bellarine Peninsula, Cape Liptrap, Moorooduc Plains; including Mt. Martha and Mt. Eliza)
3.3.2 Hills and low hills (Barwon Downs, French Island)
Western Plains
6.1.4 Plains with well developed drainage and deep regolith (Cressy)
6.2.5 Terraces and floodplains, and coastal plains (Barwon River, Moolap sunklands, Cape Otway)
Melbourne
Greater Geelong (C)
Leopold
N
0
750
Metres
Local Government: City of Greater Geelong
25k Mapsheet: Leopold 7721-1-2
Coordinate System: MGA Zone 55 (GDA94)
Map Scale: 1:40,000
VicMap 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 bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



Map 7
Pre 1750 Ecological Vegetation Classes
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East

ecology & heritage partners



Map 8
Aboriginal Archaeological Places in relation to the Study Area
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East

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10315_Map08_PrevAborPlaces 27/02/2018 Melsley

Legend

- Study Area
- Search buffer (5km)

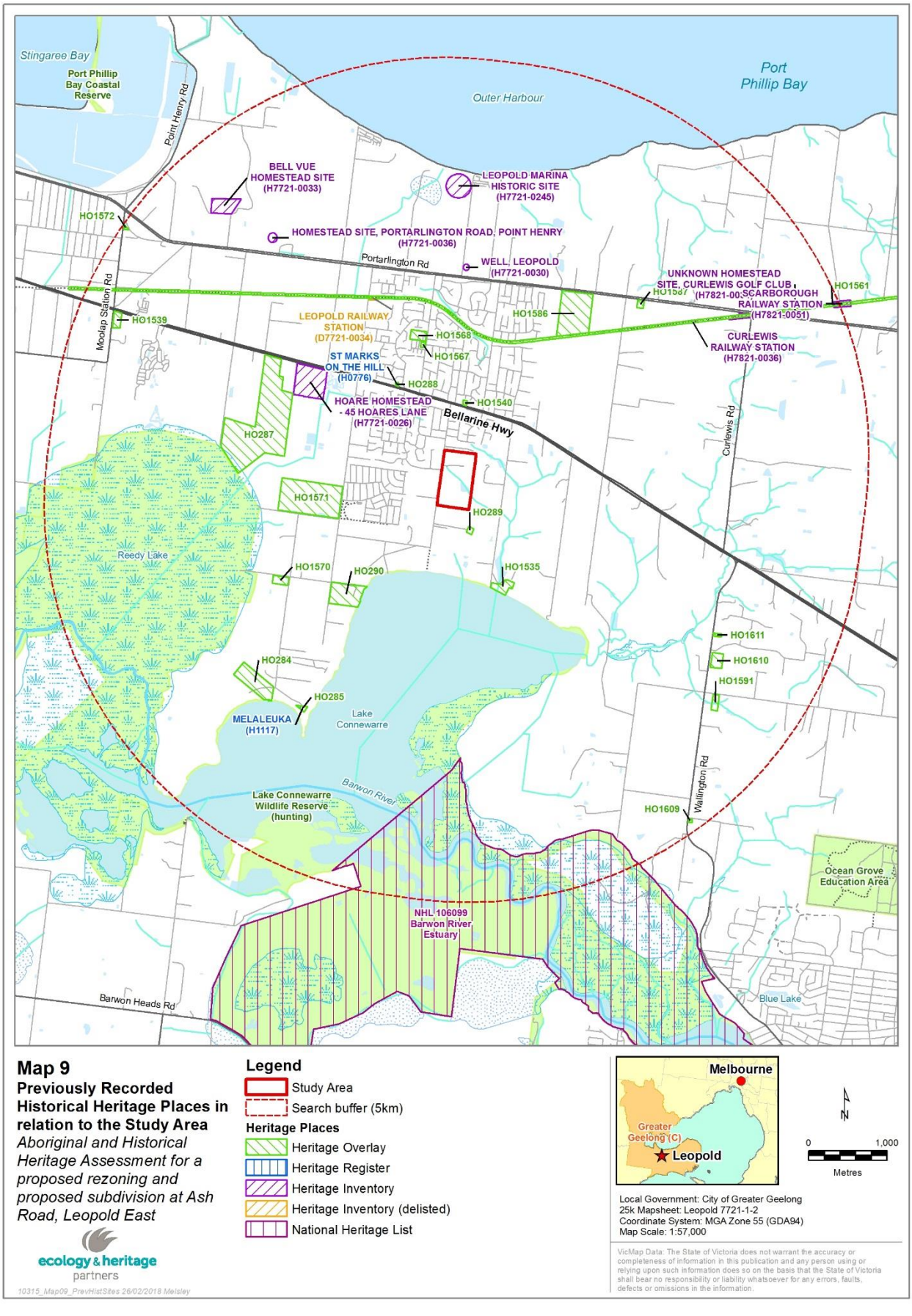
Aboriginal Places

- Artefact Scatter
- Low Density Artefact Distribution
- Scarred Tree
- Shell Midden
- Areas of Aboriginal Cultural Heritage Sensitivity

N

0 1,000
Metres

Local Government: City of Greater Geelong
25k Mapsheet: Leopold 7721-1-2
Coordinate System: MGA Zone 55 (GDA94)
Map Scale: 1:55,000



Map 9
Previously Recorded Historical Heritage Places in relation to the Study Area
Aboriginal and Historical Heritage Assessment for a proposed rezoning and proposed subdivision at Ash Road, Leopold East

ecology & heritage partners

10315_Map09_PrevHistSites 26/02/2018 Meisley

Legend

- Study Area
- Search buffer (5km)

Heritage Places

- Heritage Overlay
- Heritage Register
- Heritage Inventory
- Heritage Inventory (delisted)
- National Heritage List

N

0 1,000
Metres

Local Government: City of Greater Geelong
25k Mapsheet: Leopold 7721-1-2
Coordinate System: MGA Zone 55 (GDA94)
Map Scale: 1:57,000

APPENDICES

Appendix 1: Heritage Legislation

A1.1 *Aboriginal Heritage Act 2006* (State)

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 2018*. 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 2018* 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 2018* 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.

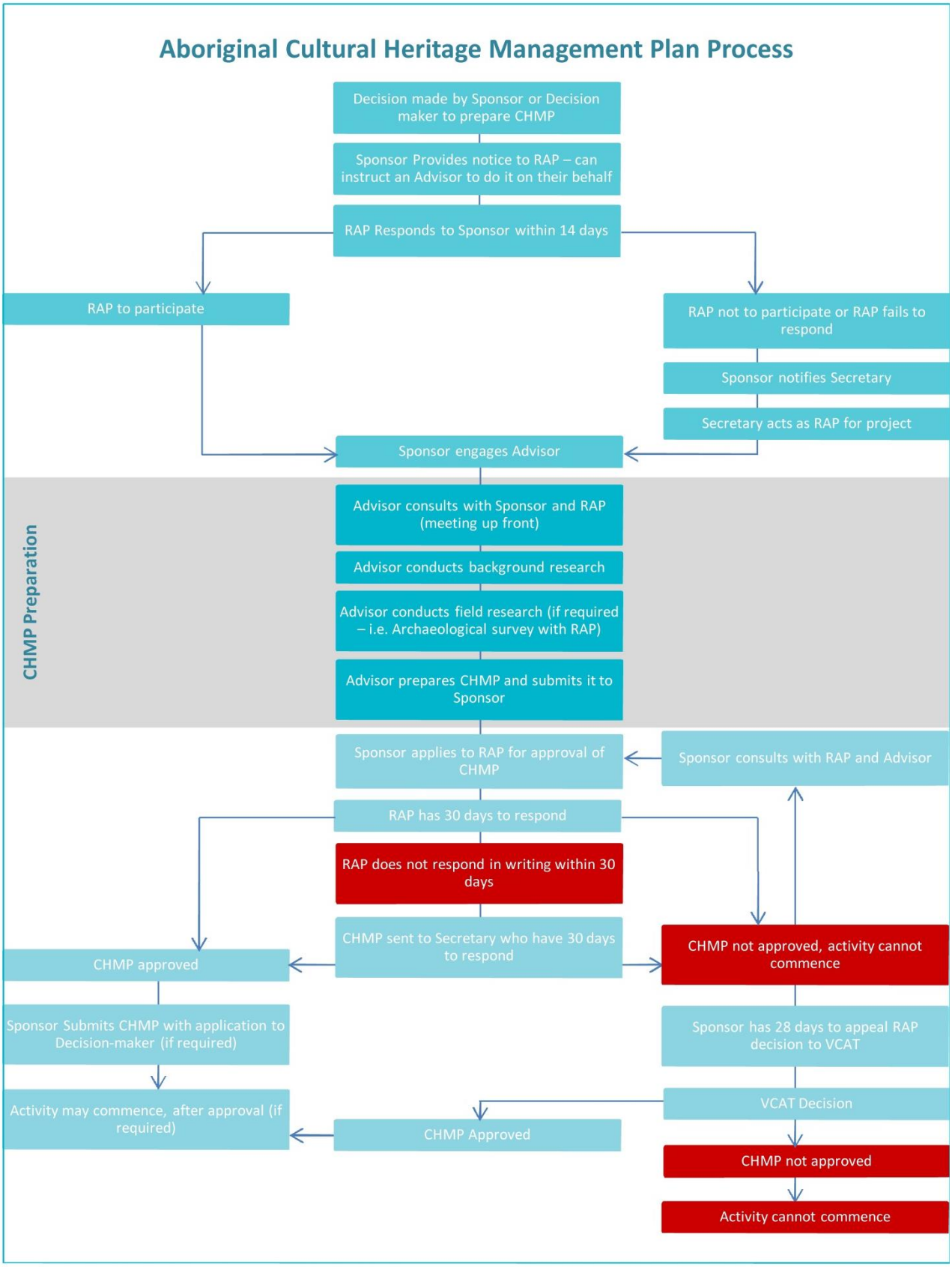
Approval of a CHMP is the responsibility of the Registered Aboriginal Party who evaluates the CHMP and then it is lodged with the Secretary of the Department of Planning and Community Development (DPCD) to take affect or, the Secretary of the DPCD (AV)[6]. They will be examining the CHMPs in detail with 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.

[6] In 2013, The DPCD was abolished and AV 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.


Aboriginal Cultural Heritage Management Plan Process
Decision made by Sponsor or Decision maker to prepare CHMP
Sponsor Provides notice to RAP – can instruct an Advisor to do it on their behalf
RAP Responds to Sponsor within 14 days
RAP to participate
RAP not to participate or RAP fails to respond
Sponsor notifies Secretary
Secretary acts as RAP for project
Sponsor engages Advisor
CHMP Preparation
Advisor consults with Sponsor and RAP (meeting up front)
Advisor conducts background research
Advisor conducts field research (if required – i.e. Archaeological survey with RAP)
Advisor prepares CHMP and submits it to Sponsor
Sponsor applies to RAP for approval of CHMP
Sponsor consults with RAP and Advisor
RAP has 30 days to respond
RAP does not respond in writing within 30 days
CHMP sent to Secretary who have 30 days to respond
CHMP approved
CHMP not approved, activity cannot commence
Sponsor Submits CHMP with application to Decision-maker (if required)
Sponsor has 28 days to appeal RAP decision to VCAT
Activity may commence, after approval (if required)
CHMP Approved
VCAT Decision
CHMP not approved
Activity cannot commence

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 AV website (https://www.vic.gov.au/aboriginalvictoria.html).

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

A1.2 *Native Title Act 1993* (Commonwealth)

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[7].

A1.3 *Planning and Environment Act 1987* (State)

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 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

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 Minister for the Environment, Water, Heritage and the Arts makes the final decision on listing. DSEWPaC also administers the Register of the National Estate.

[7] The information in this section was taken from the Department of Sustainability and Environment, Fact Sheet on Native Title, 2008

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 *Coroners Act 2008* (State)

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[g]) must be reported to the police.

Appendix 2: Significance Assessment

A2.1 The ICOMOS Burra Charter

The standard for determining significance of places is derived from an international formula developed by ICOMOS (International Council on Monuments and Sites). In Australia, the Burra Charter has been developed by ICOMOS which is a Charter for the Conservation of Cultural Significance (Australia ICOMOS 1999).

The Burra Charter defines cultural significance as "aesthetic, historic, scientific, social or spiritual value for past, present or future generations" (Australia ICOMOS 1999: Section 1.2). Cultural significance is a concept which helps in estimating the value of places. The Burra Charter Cultural Significance Guidelines definitions of the values implicit in assessing cultural significance are as follows (Australia ICOMOS 1999):

Aesthetic value: Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; the smells and sounds associated with its place and use.

Historic value: historic value encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all the terms set out in this section.

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

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

Social value: Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group.

National Historic Themes

It is noted that when assessing historic values that the use of historic themes is of benefit. Historic themes are used by heritage professionals to assist in understanding the meanings and connections that historic places may have in addition to the physical fabric of a place. Themes can help explain how particular elements of a place are significant because of their ability to illustrate important aspects of its history (Australian Heritage Commission 2001). The nine theme groups that are most commonly used nationally are:

Theme 1	Tracing the evolution of the Australian environment
Theme 2	Peopling Australia
Theme 3	Developing Local, Regional and National economies
Theme 4	Building settlements, towns and cities
Theme 5	Working
Theme 6	Educating
Theme 7	Governing
Theme 8	Developing Australia's cultural life
Theme 9	Marking the phases of life

These theme groups are further expanded into more focussed sub-themes which will not be expanded on here. The themes are intended to be non-hierarchal and a historic place may have a number of themes, which reflects how we look at the past, allowing for an integrated, diverse and complex human experience (Australian Heritage Commission 2001).

A2.2 The *Heritage Act 1995* Criteria

The *Heritage Act* 1995 defines eight criteria against which cultural heritage significance can be assessed. These criteria are used to assist in determining whether places of potential State significance should be included in the Heritage Register. They are as follows:

Criterion A	The historical importance, association with or relationship to Victoria's history;
Criterion B	Good design or aesthetic characteristics;
Criterion C	Scientific or technical innovations or achievements;
Criterion D	Social or cultural associations
Criterion E	Potential to educate, illustrate or provide further scientific investigation in relation to Victoria's cultural heritage;
Criterion F	Importance in exhibiting a richness, diversity or unusual integration of features;
Criterion G	Rarity or uniqueness of a place or object; and
Criterion H	The representative nature of a place or object as part of a class or type of places or objects.

In addition it is appropriate when assessing the significance of a site in Victoria to consider whether it is of Local, Regional or State (or potentially National) significance.

A2.3 Scientific Significance

Scientific significance of a heritage place (particularly archaeological sites) is also assessed in Victoria using a commonly accepted formula developed by Bowdler (1981) and Sullivan and Bowdler (1984). These are relative estimates of significance based on the current knowledge available about sites or places in a region. The assessment uses three criteria; site contents, site condition and representativeness.

Site Contents Rating

1 No cultural materials remaining.

2 Site contains a small number (e.g. 0-10 artefacts) or limited range of cultural materials with no evident stratification.

3 Site contains:

a. A larger number, bit limited range of cultural materials; and/or

b. Some intact stratified deposit.

4 Site contains:

a. A large number and diverse range of cultural materials: and/or

b. Largely intact stratified deposit; and/or

c. Surface spatial patterning of cultural materials that still reflect the way in which the cultural materials were laid down.

Site Condition Rating

0 Site destroyed.

1 Site in a deteriorated condition with a high degree of disturbance but with some cultural materials remaining.

2 Site in a fair to good condition , but with some disturbance.

3 Site in an excellent condition with little or no disturbance. For surface artefact scatters this may mean that the spatial patterning of cultural material still reflects the way in which the cultural materials were laid.

Representativeness

Representativeness refers to the regional distribution of a site type. It is assessed on whether the site type is common, occasional or rare within a given region. Current knowledge on the number of and distribution of archaeological sites in a region can change according depending on the extent of previous archaeological investigation.

The assessment of representativeness also takes into account the contents and condition of a particular site. An example is that in any region, there may be a limited number of sites of a particular type, which have been subject to minimal disturbance. These sorts of undisturbed sites (containing in situ deposits) would therefore be given a high significance rating for representativeness.

The **representativeness ratings** used for archaeological sites are:

1 Common occurrence

2 Occasional occurrence

3 Rare occurrence

Overall Scientific Significance Rating

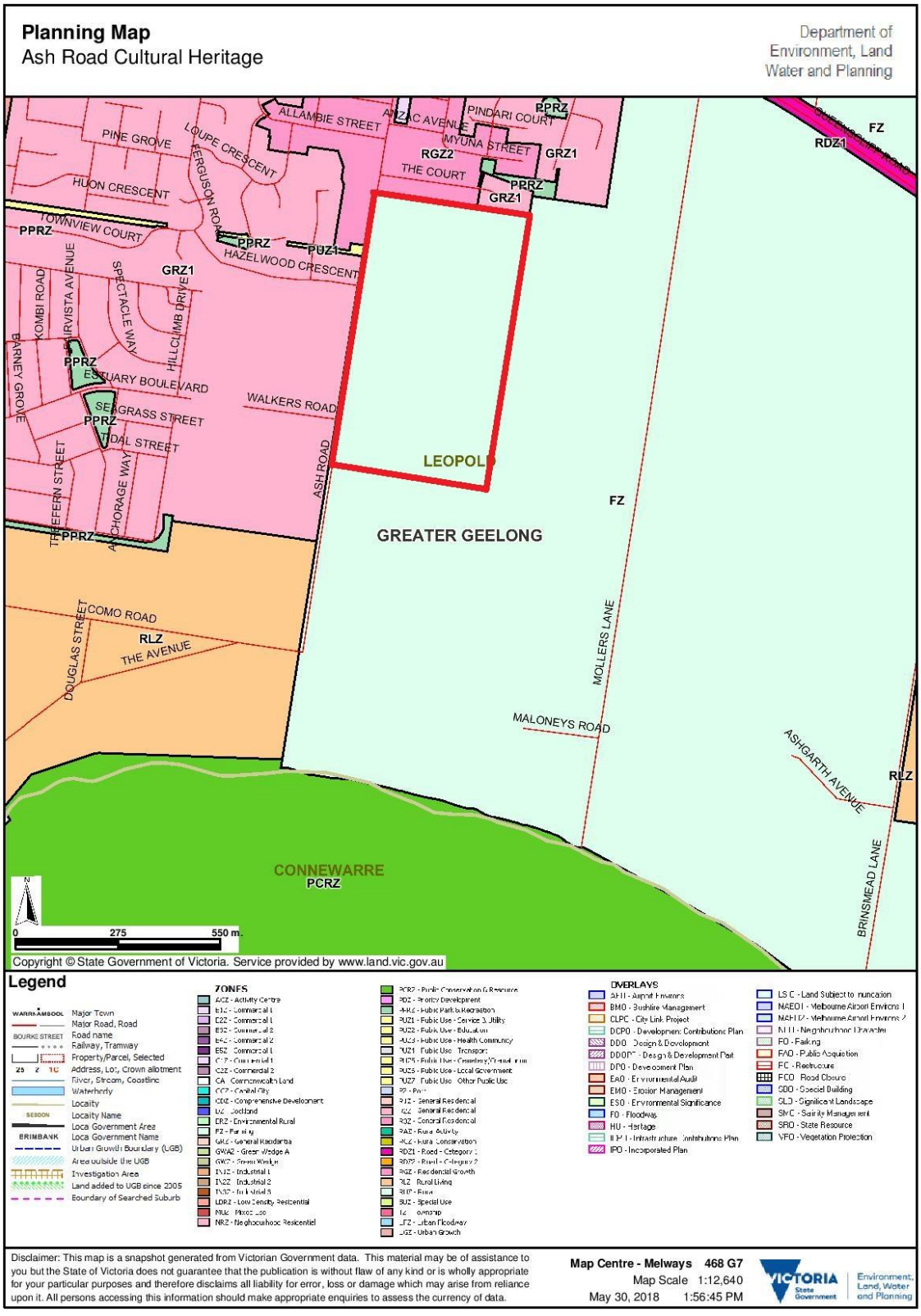
An overall scientific significance rating is assigned to the site based on a cumulative score from the assessment. This results in one of the following ratings being assigned for scientific significance:

1-3 Low

4-6 Moderate

7-9 High

Appendix 3: Council Zoning Requirements



Appendix 4: Glossary

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

Acronym	Description
Aboriginal Cultural Heritage Likelihood	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.
Aboriginal Place	An Aboriginal cultural heritage site registered on the ***VAHR***, cf. ***Aboriginal Site***.
Aboriginal Site	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 Place***.
Angular Fragment	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
Area Of Cultural Heritage Sensitivity	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*.
Artefact Scatter	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.
Assemblage	The name given to encompass the entire collection of artefacts recovered by archaeologists, invariably classified into diagnostic items used to describe the material culture.
Backed	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.
Backed Artefact	A class of artefact employed by archaeologists to describe artefacts which are backed. Sometimes divided into elouera, bondi point, microlith and geometric.
Bipolar	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.
Burials	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***.
Chert	A cryptocrystalline siliceous sedimentary stone.
CHMP	**Cultural Heritage Management Plan**. A plan prepared under the *Aboriginal Heritage Act 2006*.
Core	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 (ie. The provider of flakes).
Cortex	The weathered outer portion of a stone, often somewhat discoloured and coarser compared with the unweathered raw material.
Decortications	The process of removing cortex from a stone (generally by flaking).

Acronym	Description
AV	**Aboriginal Victoria**. A division of ***DPC*** responsible for management of Aboriginal cultural heritage in Victoria.
Deep Ripping	The ploughing of soil using a ripper or subsoil cultivation tool to a depth of 60 cm or more (see ***significant ground disturbance***).
DELWP	**Department of Environment, Land, Water and Planning.** The Victorian State Government department, of which **HV** is a part, responsible for management of historical heritage in Victoria.
DoE	**Department of the Environment**. The Commonwealth Government department responsible for management of heritage sites on the World, National or Commonwealth Heritage lists.
DPC	**Department of the Premier and Cabinet**. The Victorian State Government department, of which ***AV*** is a part, responsible for management of Aboriginal cultural heritage in Victoria.
EPBC Act	**Environment Protection and Biodiversity Conservation Act 1999** (Commonwealth)
Fabric (Heritage)	Any physical element, feature, material or finish that is associated with the heritage values in all or part of a structure, place, object, feature or site. The original heritage fabric is any such physical element that was an integral part of the original heritage site.
Feature (Archaeological)	A collection of one or more contexts representing some human non-portable activity that generally has a vertical characteristic to it in relation to site stratigraphy.
Flake	An artefact which has technologically diagnostic features and a ventral surface.
High Impact Activity	An activity specified as a high impact activity in Division 5 of Part 2 of the *Aboriginal Heritage Regulations 2007*.
Heritage Place	A *registered* historical site listed on a heritage planning instrument that affords statutory protection to the site.
Heritage Values	The values of a heritage site that relate to its historical, social, cultural, spiritual, architectural, archaeological or technological significance.
Historical Heritage Likelihood	An area assessed by a Heritage Advisor as having potential for containing either surface or subsurface historical archaeological deposits or fabric.
Historical Site	An historical site, whether or not recorded in the ***VHR***, ***VHI*** or other historical site database (cf. ***Heritage Place***).
HHA	**Historical Heritage Assessment**. An assessment of the historical heritage values of a defined study area by a qualified heritage consultant.
HO	**Heritage Overlay**. A list of Heritage Places of local significance with statutory protection under a local government planning scheme.
HV	**Heritage Victoria**. A division of ***DTPLI*** responsible for management of historical heritage in Victoria.
Isolated Finds Or Artefacts	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.
LDAD	**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.
Manuport	An object which has been carried by humans to the site.
NHL	**National Heritage List**. A register of heritage places, under the EPBC Act, of heritage places of national significance.

Acronym	Description
Oriented Length	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).
Oriented Thickness	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).
Oriented Width	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).
Procurement	The process of obtaining raw material for reduction.
PSP	**Precinct Structure Plan**. A master plan to guide development in a specified section of one of Melbourne's growth areas (cf. ***MPA***).
Quarries	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.
Quartz	A crystalline form of silica.
RAP	**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*.
Raw Material	The kind of stone the artefacts were manufactured from.
Reduction	The process of removing stone flakes from another piece of stone. Generally this is performed by striking (hard hammer percussion) one rock with another to remove a flake.
Registered Cultural Heritage Place	An Aboriginal site recorded in the ***VAHR***, cf. ***Aboriginal site***.
Retouch	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.
RNE	**Register of the National Estate**. A commonwealth-managed register of heritage assets; as of 2012 the RNE no longer provides statutory protection to heritage places.
Rock Shelter	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.
Scarred Trees	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.
Significant Ground Disturbance	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***.

Acronym	Description
Silcrete	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 & 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).
Stone Arrangements	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.
Taphonomy	The study of the processes (both natural and cultural) which affect the deposition and preservation of both the artefacts and the site itself.
Technology	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.
Thumbnail scraper	A conceptual class of artefact employed to describe small rounded retouched flakes with steep margins (based on the classification by Mulvaney and Kamminga 1999).
VAHR	**Victorian Aboriginal Heritage Register**. A register of Aboriginal cultural heritage places maintained by ***AV***.
VHI	**Victorian Heritage Inventory**. 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".
VHR	**Victorian Heritage Register**. 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.
WHL	**World Heritage List**. A register of heritage places, under the EPBC Act, of heritage places of international significance.

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