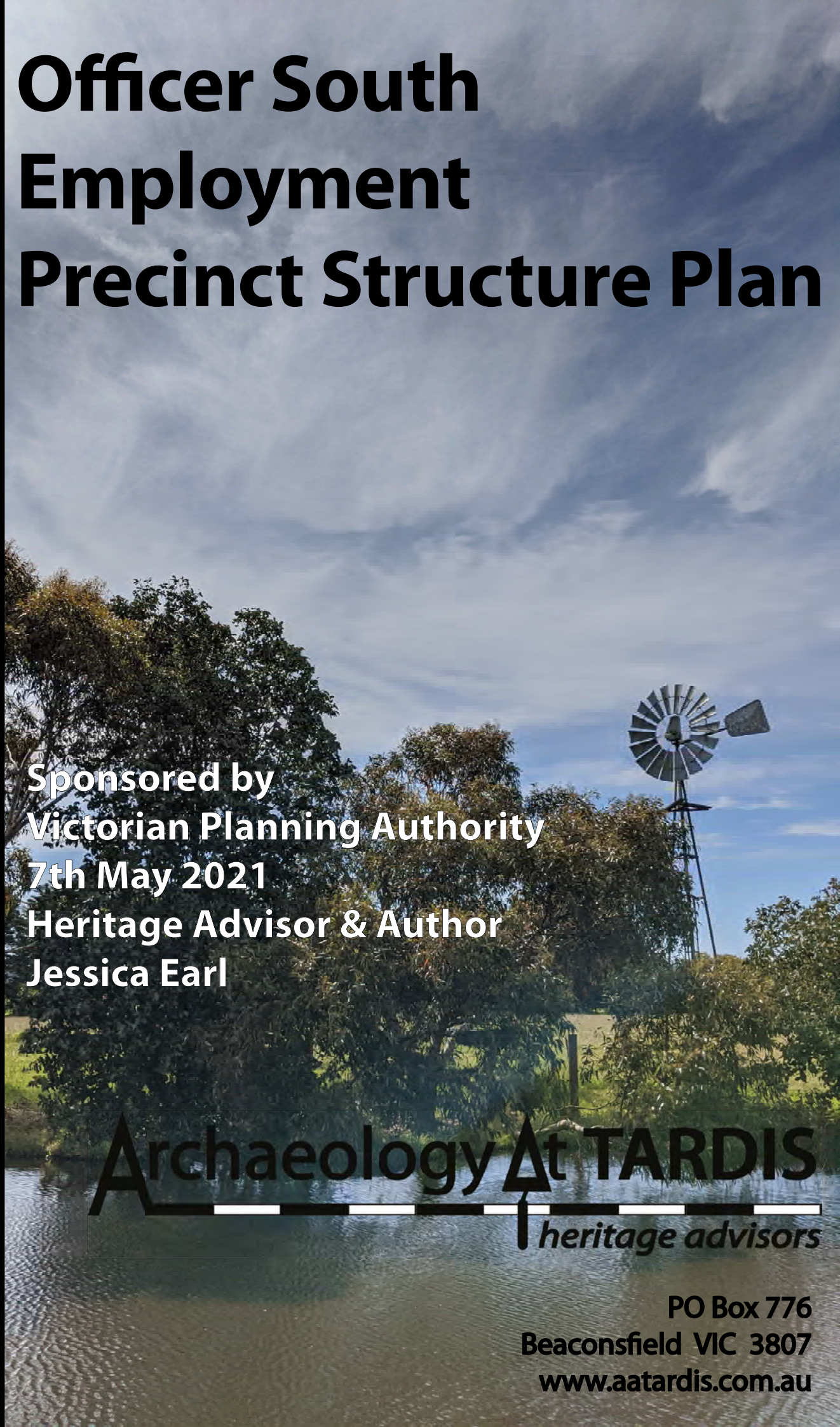
Aboriginal Cultural Heritgae Impact Assessment

Officer South Employment Precinct Structure Plan



Sponsored by
Victorian Planning Authority
7th May 2021

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OFFICER SOUTH

EMPLOYMENT PRECINCT STRUCTURE PLAN

ABORIGINAL CULTURAL HERITAGE IMPACT ASSESSMENT

Assessment Type	Aboriginal Cultural Heritage Impact Assessment
Sponsor	Victorian Planning Authority (ABN 58 651 383 439)
Heritage Advisors	Jessica Earl Archaeology At Tardis Pty Ltd
Authors	Jessica Earl
Completed	7th May 2021

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EXECUTIVE SUMMARY

This report presents the results of the desktop investigation into the Aboriginal cultural heritage values and statutory obligations for the Officer South Employment Precinct Structure Plan (Map 1). The Aboriginal Cultural Heritage Impact Assessment (ACHIA) has been prepared in order to develop a broader understanding of the activity area and the Aboriginal cultural heritage that is present.

The activity area is bound by Cardinia Creek to the west, Princess Freeway to the north, Lower Gum Scrub Creek to the east and the Urban Growth Boundary to the south. The activity area is located approximately 45 kilometres south-east of the Melbourne Central Business District (CBD) (Map 1).

The activity comprises the subdivision of 1,069 hectares of land for mixed-use development including industrial, commercial and residential development. These facilities may be supported by town centres, schools, community centres, parks and the relevant utilities that are needed to support such infrastructure.

There are 14 previously recorded Aboriginal cultural heritage places located within the activity area (VAHR 7921-0189; 7921-0194; 7921-0229; 7921-0230; 7921-0231; 7921-0232; 7921-0233; 7921-0234; 7921-0789; 7921-0800; 7921-0866; 7921-1225; 7921-1626; 7921-1727) (Map 4).

BACKGROUND INFORMATION – DESKTOP ASSESSMENT (SECTION 5)

The activity area has been largely subject to long term agricultural and pastoral activates since European occupation. The desktop has identified the activity area as having potential for surface and subsurface Aboriginal cultural heritage, most likely stone artefact scatters comprising silcrete and quartz flakes, tools, angular fragments and cores. There is a possibility for mature native trees along Cardinia Creek to possess Aboriginal cultural scarring if pre-Contact trees are present. There is potential for shell middens to exist along Cardinia Creek, as freshwater mussels existed within the waterway. If sand dunes are present, there is potential for Aboriginal ancestral remains. All other Aboriginal places, such as caves and rock art, are not likely to be located within the activity area.

Table 10 Desktop Summary of Aboriginal Cultural Heritage within the Activity Area (Map 5)

Place / Location	Aboriginal Cultural Heritage	Sensitivity
Cardinia Creek (Bank and Terrace)	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores – located 0-120cm beneath the ground surface – medium to high density.	High
	Scarred Trees – Mature native trees (>200 years old)	High
	Shell Middens- comprising freshwater mussels of the *Velesunio* species	High
	All Other Place Types	Low
Anabranches of Cardinia Creek (Bank and Terrace)	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores – located 0-120cm beneath the ground surface – medium to high density.	High

	Scarred Trees – Mature native trees (>200 years old)	High
	All Other Place Types	Low
Low-Lying Plain	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores – located 0-120cm beneath the ground surface	Low
	Scarred Trees – Mature native trees (>200 years old)	Low
	All Other Place Types	Low
Margins of Swamps	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores – located 0-120cm beneath the ground surface – low density.	Moderate
	Scarred Trees – Mature native trees (>200 years old)	Low
	All Other Place Types	Low
Prominent Sandy Rises Located Near a Waterway	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores – located 0-120cm beneath the ground surface – medium to high density.	High
	Scarred Trees – Mature native trees (>200 years old)	Moderate
	Aboriginal ancestral remains	Moderate
	All Other Place Types	Low

FIELDWORK –SITE INSPECTION (SECTION 9)

The site inspection was conducted on 15th, 16th and 17th September 2020 by Jessica Earl (supervising archaeologist, AAT), Willie Pepper (BLaSC), Eric Edwards (BLCAC), Malcom Hoye (WWWCHAC) and Naomi Zukanovic (WWWCHAC). The site inspection revealed five survey units within the activity area; low lying former floodplains (Survey Unit 1), undulating land (Survey Unit 2), former swamp margins (Survey Unit 3), land within 200m of a watercourse (Survey Unit 4), and developed land (Survey Unit 5). Areas of archaeological potential include rises within the gently undulating floodplains (Survey Unit 2), the margins of former swamps (Survey Unit 3), and land within 200m of a watercourse particularly where there are terraces, rises and sand deposits. Previous ground disturbance across the activity area includes the construction of the domestic dwellings, sheds, stables, artificial channels, drains, roads and dams.

Table 13 Site Inspection Areas of Archaeological Potential (Map 9)

Place / Location	Archaeological Potential	Details
Low Lying Former Floodplains	Low Stone artefacts, Scarred Trees	The low lying former floodplains would have been seasonally inundated with water prior to modern drainage. This area is unlikely to have been frequented by Aboriginal people, who would have favoured more resource-rich locations nearby. Since Contact, the land has been disturbed by stock grazing and the excavation of drainage lines.

EXECUTIVE SUMMARY

Place / Location	Archaeological Potential	Details
Former Swamp Margins	Moderate Stone artefacts	The margins of swamps typically have moderate archaeological potential, though Lower Gum Scrub Creek has been highly modified in the post-Contact era. There is moderate potential for stone artefacts to be present, albeit in disturbed contexts.
Rises	High Stone artefacts, Aboriginal Ancestral Remains	Where rises are present overlooking the former floodplains or in close proximity to waterways, these may have provided Aboriginal people relief from the surrounding waterlogged plains. There is therefore high potential for stone artefacts to be present on the rises. Where rises are prominent, near a waterway and soil profiles are deep sands, there is potential for Aboriginal ancestral remains to be present.
Land adjacent to permanent waterways (Cardinia Creek)	High Stone Artefacts, Aboriginal Ancestral Remains, Shell Middens, Scarred Trees	Land adjacent to waterways is traditionally considered to have high potential to contain deposits of Aboriginal artefacts. Land within 200m of Cardinia Creek has high potential to contain stone artefacts, shell middens, scarred trees (where mature native trees remain), and Aboriginal ancestral remains (where deep sand deposits are present).
Land adjacent to ephemeral waterways (anabranches of Cardinia Creek and natural drainage lines)	High Stone Artefacts	Land adjacent to waterways is traditionally considered to have high potential to contain deposits of Aboriginal artefacts. Land within 200m of all ephemeral waterways in the activity area has high potential to contain stone artefacts.
Entire Activity Area	None Earth features, stone features, quarries, rock art	All other place types are unlikely to be present.

CULTURAL VALUES ASSESSMENT (SECTION 10)

A Cultural Values Assessment will be undertaken with representatives from the WWWCHAC, BLCAC and BLaSC at a date to be determined. An addendum to this report will be prepared once this component is complete.

RECOMMENDATIONS – (SECTION 11)

The following table presents a summary of the recommendations presented in Section 11.

Table 11 Summary of Recommendations

Recommendation No.	Description	
Recommendation 1	Mandatory CHMPs	Mandatory CHMPs will be required in the following locations if a high impact activity, as listed in Division 5 of the *Aboriginal Heritage Regulations 2018*, is undertaken: • Land within 200 meters of Cardinia Creek; • Land within 200 meters of an unnamed lake and an unnamed swamp/wetland area; and • Land including a registered Aboriginal place; • Land within 50 meters of Registered Aboriginal places.
Recommendation 2	Voluntary CHMPs	Voluntary CHMPs should be undertaken in the following locations if a high impact activity, as listed in Division 5 of the *Aboriginal Heritage Regulations 2018*, is undertaken: • Land immediately adjacent to anabranches of Cardinia Creek. • Prominent sandy rises located near a waterway.
Recommendation 3	The Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC), Bunurong Land Council Aboriginal Corporation (BLCAC) and the Boonwurrung Land and Sea Council (BLaSC) must be consulted during the preparation of any future Cultural Heritage Management Plans.	
Recommendation 4	A conservation zone extending 100 meters from Cardinia Creek would protect the significant archaeological deposits immediately adjacent to the creek and would provide an opportunity to enhance the cultural landscape by revegetation of the area with Indigenous species. A conservation zone would permit passive recreational use of the land while protecting the Aboriginal cultural heritage present in these areas. An area of high archaeological potential which should also be included in the conservation zone is a section of the Cardinia Creek terrace in the northwest of Property ID 2. Including this section of the terrace within the conservation zone would likely protect what may be a significant archaeological sub-surface deposit at that location.	

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FIGURES (IN TEXT)

PHOTOS (IN TEXT)

MAPS (IN TEXT)

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Archaeology At Tardis Pty Ltd would like to thank VPA for their assistance in the preparation of this Aboriginal Cultural Heritage Impact Assessment.

Thank you should also be extended to:
David Portelli – Victorian Planning Authority
Hugh Stanford – Victorian Planning Authority
Jamie Sheehan – Victorian Planning Authority
Marcelle Bell – Cardinia Shire Council

ABBREVIATIONS

AAT	Archaeology at Tardis
ABN	Australian Business Number
ACHIA	Aboriginal Cultural Heritage Impact Assessment
ACHRIS	Aboriginal Cultural Heritage Register and Information Services
ASL	Meters above sea level
ASTT	Australian Small Tool Tradition
BLaSC	Boonwurrung Land and Sea Council
BLCAC	Bunurong Land Council Aboriginal Corporation
BP	Years Before Present (1950)
CBD	Central Business District
CHMP	Cultural Heritage Management Plan
EVC	Ecological Vegetation Classes
km	kilometre
LDADs	Low Density Artefact Distributions
m	metre
Ma	Million Years Ago
n.d.	No Date
NoI	Notice of Intent
PAHT	Preliminary Aboriginal Heritage Test
PSP	Precinct Structure Plan
r	regulation
RAP	Registered Aboriginal Party
the Act	*Aboriginal Heritage Act 2006*
the Secretary	Department of Premier and Cabinet
the Sponsor	Victorian Planning Authority
the Regulations	*Aboriginal Heritage Regulations 2018*
VAHR	Victorian Aboriginal Heritage Registry
VPA	Victorian Planning Authority
WWWCHAC	Wurundjeri Woi Wurrrung Cultural Heritage Aboriginal Corporation

PART 1 - ASSESSMENT

1 INTRODUCTION

1.1 Principle Reason for the Work

This Aboriginal Cultural Heritage Impact Assessment (ACHIA) has been commissioned by the Victorian Planning Authority (ABN 58 651 383 439) to inform precinct planning and design of the Officer South Employment Precinct Structure Plan (PSP). The activity is a subdivision of land in Officer South for mixed-use development including industrial, commercial and residential development. This report was commissioned to investigate the known and potential Aboriginal cultural heritage present in Officer South and provide recommendations for managing Aboriginal cultural heritage. There are three statutory triggers for the future heritage management within this PSP. They are: Regulation 25(1)(2) registered Aboriginal places and land within 50 meters of a registered Aboriginal place (Map 2), Regulation 26(1) land within 200 meters of a waterway (Cardinia Creek, Unnamed Lake and Unnamed Swamp/Wetland) (Map 2). The activity is a high impact activity pursuant to Regulation 49(1)(2)(3) as it includes the subdivision of land.

1.2 Sponsor

The Sponsor is the Victorian Planning Authority (VPA) - (ABN 58 651 383 439).

1.3 Location of the Activity Area and Cadastre

The activity area covers a total of 1,069 hectares and is bound by Cardinia Creek to the west, Princes Freeway to the north, Lower Gum Scrub Creek to the east and the Urban Growth Boundary to the south. The activity area is located approximately 45 kilometres south-east of the Melbourne Central Business District (CBD) (Map 1). The cadastre is presented in Appendix 2.

1.4 Description of the Activity Area

The activity area primarily comprises low-lying plains with elevation levels ranging from 37 meters above sea level (ASL) in the north-west of the activity area, and 18 meters ASL in the south-west, along Patterson Road. Lower Gum Scrub Creek runs down the eastern side of the activity area and Cardinia Creek runs down the western side. There is natural and planted re-vegetation along the banks of Cardinia Creek. There is an unnamed anabranch of Cardinia Creek running down the western side of the activity area. Two swamp areas are present in the north-western section of the activity area. The current use of the activity area is predominantly smaller rural/residential dominated by grazing. Due to the use of the area as farming and agricultural land, there are surface runoff drains located across the activity area. Modern dwellings and associated outbuildings, such as sheds and driveways, are scattered across the activity area. There is a horse trotting track located off of Officer South Road. Within the northern boundary of the activity area there is a large service station complex for the Princes Freeway comprising petrol station, fast food outlets, a public weighbridge and paved parking areas.

1.5 Notice of Intent to Carry out a Survey (NoI)

A Notice of Intent to Carry out a Survey (NoI) was submitted to Aboriginal Victoria on the 23rd July 2020 and subsequently amended on 27th August 2020, pursuant to Section 34A of the *Aboriginal Heritage Act 2006* (Appendix 4).

1.6 Heritage Advisor & Specialists

The heritage advisor and author for this project is Project Archaeologist Jessica Earl (Archaeology At Tardis Pty Ltd). Geomorphologist Cassia Paragnani authored the geological background (Sections 7.1- 7.4), and Dr Peter Mills authored the European historical background (Section 6.2) (Appendix 1).

1.7 Owners and Occupiers

The activity area is currently under private ownership. The full cadastre of the activity area is presented in Appendix 2.

1.8 Local Municipality

The local municipality is the Cardinia Shire Council.

1.9 Registered Aboriginal Party (RAP)

There is no Registered Aboriginal Party for the activity area. The Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC), the Bunurong Land Council Aboriginal Corporation (BLCAC) and the Boonwurrung Land and Sea Council (BLaSC) are considered by the Victorian Aboriginal Heritage Council to represent Traditional Owners of the activity area region, and were invited to participate in the conduct of the assessment.

At the time of preparation, the Bunurong Land Council Aboriginal Corporation (BLCAC) were RAP Applicants for land encompassing the study area.

At the time of preparation, the Boonwurrung Land and Sea Council (BLaSC) had an active Native Title Application filed with the Federal Court of Australia for land encompassing the study area (see Appendix 3).

1.10 Previously Registered Aboriginal Cultural Heritage Places Within the Activity Area

There are 14 previously recorded Aboriginal cultural heritage places located within the activity area (VAHR 7921-0189; 7921-0194; 7921-0229; 7921-0230; 7921-0231; 7921-0232; 7921-0233; 7921-0234; 7921-0789; 7921-0800; 7921-0866; 7921-1225; 7921-1626; 7921-1727) (Map 4).

1.11 Activity Size and Assessment Type

This ACHIA is for a *large sized project* as defined by the *Aboriginal Heritage Regulations 2018* and comprises a desktop assessment and site inspection.

1.12 Methodology

The model utilised within the report refers to known areas of Aboriginal cultural heritage or identified areas of potential and what actions should or need to be undertaken in these areas before development. This report informs the Sponsor of their statutory obligations regarding Aboriginal cultural heritage in response to the *Aboriginal Heritage Act 2006* and the *Aboriginal Heritage Regulations 2018.*

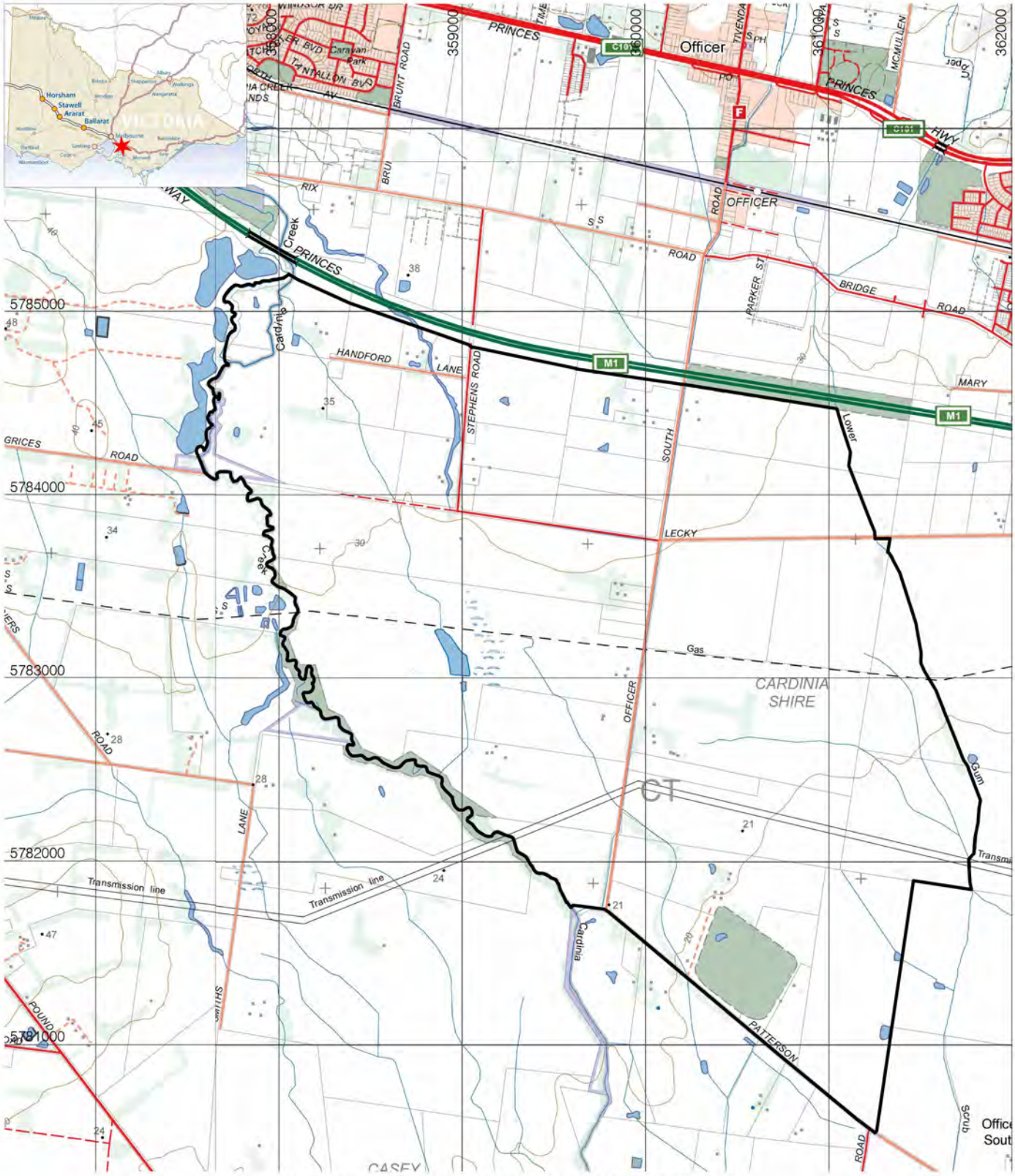
Areas likely to have high density, stratified or undisturbed Aboriginal cultural heritage have been attributed a High level of sensitivity. Areas likely to contain low density Aboriginal cultural heritage have been attributed a Moderate level of sensitivity, which will be further refined after the completion of a Cultural Values Assessment with the BLCAC, BLaSC and WWWCHAC. Areas that would not have been frequented by Aboriginal groups or utilised repeatedly have been attributed a low level of sensitivity. Additionally, areas that would have been attributed a Low level of sensitivity and have likely been disturbed by historical land use have been given an Extremely Low rating. No previously registered Aboriginal places are considered to have Nil Aboriginal cultural heritage sensitivity because natural or cultural processes may have relocated Aboriginal cultural heritage from surrounding areas and as such, should be assessed before development occurs.

The methodology and results of this report will be further refined after the completion of the Cultural Values Assessment.

1.13 Aims

This ACHIA aims to formulate a place prediction model for the activity area to identify:

- Known Aboriginal Places and sites within the precinct area;
- Whether it is reasonably possible that Aboriginal cultural heritage is present in the activity area;
- Areas of Aboriginal cultural heritage sensitivity that need to be taken into consideration within future development of plans;
- Identify areas that have been identified in Aboriginal oral history as places of significance;
- Areas of high Aboriginal cultural heritage significance or potential that may need to be protected from harm in the future; and
- Provide advice with regards to the heritage values and management recommendations contained within the activity area.



Topographic map used for Location Plan: 1:30,000 Number T7921-1-1-3

0 400 800

Scale of Metres

Legend:

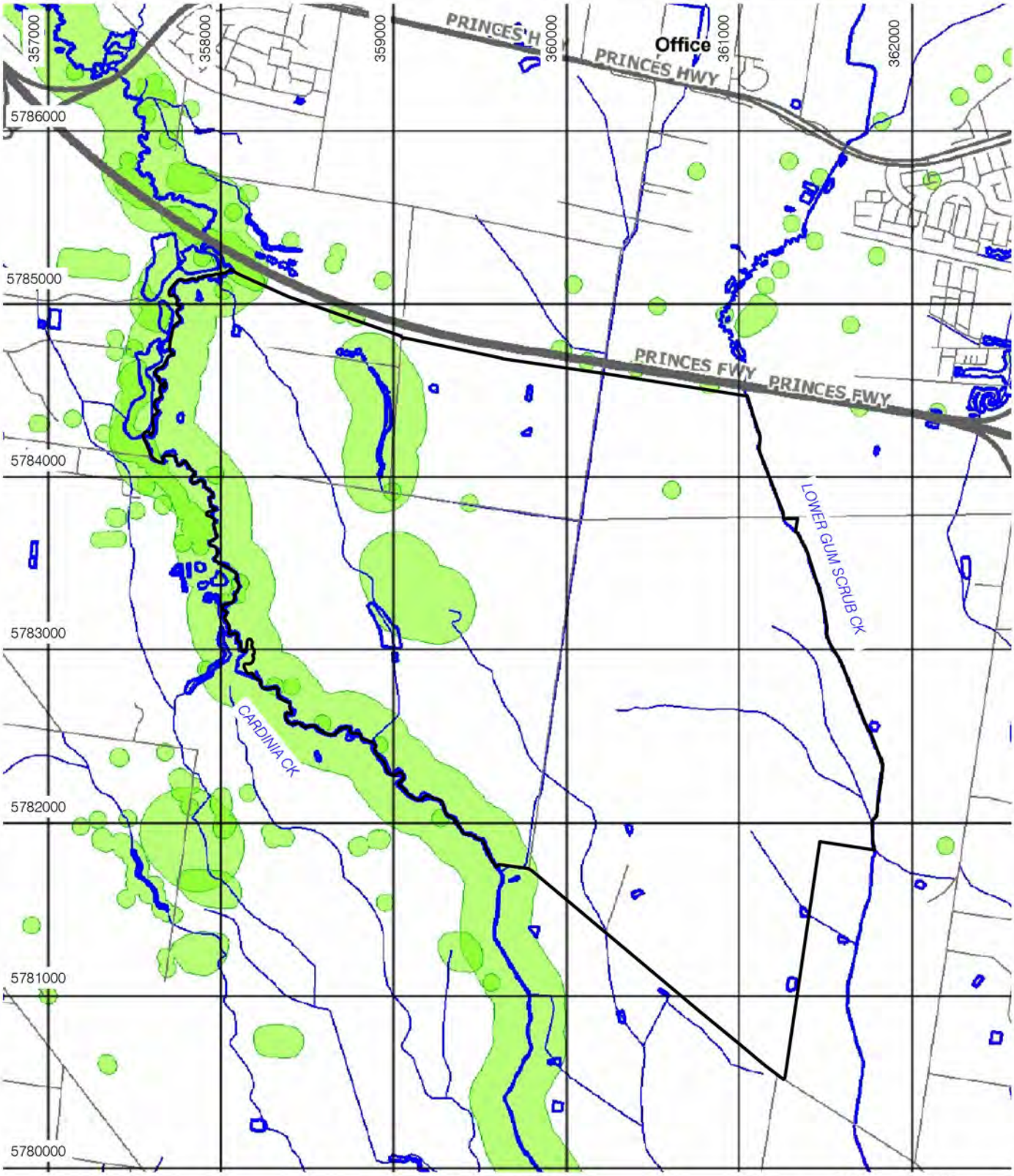
Activity Area Boundary
1,068 hectares (approx)

Parish: *Pakenham*
LGA: *Cardinia*

N

GDA94
MGA Zone 55

Map 1 Activity Area Location



Map 2 Statutory Areas of Aboriginal Cultural Heritage Sensitivity

2 LEGISLATION

2.1 Cultural Heritage Management Plan (CHMP) Triggers

Pursuant to Regulation 7, *Aboriginal Heritage Regulations 2018*, a CHMP is required for an activity if:

a) All or part of the activity area for the activity is an area of cultural heritage sensitivity; and

b) All or part of the activity is a high impact activity.

If only one of these two conditions applies, then the preparation of a mandatory CHMP is not required.

Areas of cultural heritage sensitivity are specified in Division 3 and Division 4 of Part 2 of the Regulations. High impact activities are specified in Division 5 of the Regulations.

A CHMP is also required:

1. If the Minister directs a CHMP to be prepared pursuant to Section 48 of the Act;

2. If an Environmental Effects Statement, Impact Management Plan or Comprehensive Impact Statement is required pursuant to Section 49 and 49A of the Act; or

3. If the Secretary has certified a Preliminary Aboriginal Heritage Test (PAHT) that has determined that an activity requires a CHMP pursuant to Section 46(e) of the Act.

None of these three conditions is known to exist for the Officer South Employment PSP currently.

The preparation of a PSP is not a high impact activity, however future activities will trigger a mandatory CHMP if located within an area of cultural heritage sensitivity.

2.2 Areas of Cultural Heritage Sensitivity Relevant to the Activity Area

Areas of cultural heritage sensitivity, as defined by the Aboriginal Heritage Regulations 2018, are set out in Part 2 Divisions 3 and 4.

A review of Divisions 3 and 4 of the Regulations and the Aboriginal Cultural Heritage Register Information System (ACHRIS) shows that part of the activity area includes areas of cultural heritage sensitivity (Map 2). The activity area is located within 200 meters of a waterway (Cardinia Creek, an unnamed lake & an unnamed swamp), pursuant to Regulation 26, within 50 meters of Aboriginal cultural heritage places VAHR 7921-0189; 7921-0194; 7921-0229; 7921-0230; 7921-0231; 7921-0232; 7921-0233; 7921-0234; 7921-0789; 7921-0800; 7921-0866; 7921-1225; 7921-1626; 7921-1727; 7921-0196; 7921-0235; 7921-0802; 7921-0867; 7921-1417; 7921-1560; 7921-1561; 7921-1602; 7921-1666, pursuant to Regulation 25 (Map 2).

25 Registered cultural heritage places

(1) A registered cultural heritage place is an area of cultural heritage sensitivity.

(2) Subject to subregulation (3), land within 50 meters of a registered cultural heritage place is an area of cultural heritage sensitivity.

(3) If part of the land within 50 meters of a registered cultural heritage place has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

26 Waterways

(1) Subject to subregulation (2), a waterway or land with 200 meters of a waterway is an area of cultural heritage sensitivity.

(2) If part of a waterway or part of the land within 200 meters of a waterway has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

There are no other statutory triggers for Aboriginal cultural heritage sensitivity within the Officer South Employment PSP.

2.3 High Impact Activities

High impact activities as defined by the *Aboriginal Heritage Regulations 2018*, are set out in Part 2, Division 5.

A review of Part 2, Division 5 of the *Aboriginal Heritage Regulations 2018* shows that the proposed future activities for the Officer South Employment PSP (Section 3) are high impact activities pursuant to regulations 46(1)(a)(b)(xxii), 46(1)(a)(b)(xxiii), 46(1)(a)(b)(xxvii)(A)(B)(C)(D), 47(1)(f) and 49(1)(a)(b)(2)(3). It is likely that as the development plan is finalised this list will be expanded.

46 Building and works for specified uses

(1) The construction of a building or the construction or carrying out of works on land is a high impact activity if the construction of the building or the construction or carrying out of the works—

a. Would result in significant ground disturbance; and

b. Is for, or associated with, the use of the land for any one or more of the following purposes –

xxii. An industry

or

xxiii. A retail premises

or

xxvii. A utility installation, other than a telecommunications facility if—

(A) The works are a linear project that is the construction of an overhead powerline with a length exceeding one kilometre or for which more than 10 power poles are erected; or

(B) The works are a linear project that is the construction of a pipeline with a length exceeding 500 meters; or

(C) The works are a linear project with a length exceeding 100 meters (other than the construction of an overhead power line or a pipeline with a pipe diameter not exceeding 250 millimetres); or

(D) The works affect an area exceeding 25 square meters;

47 Constructing specified items of infrastructure

(1) The construction of any one or more of the following is a high impact activity if the construction would result in significant ground disturbance—

(f) A roadway with a length exceeding 100 meters

49 Subdivision of land

(1) The subdivision of land into 3 or more lots is a high impact activity if—

(a) The planning scheme that applies to the activity area in which the land to be subdivided is located provides that at least 3 of the lot may be used for a dwelling or may be used for a dwelling subject to the grant of a permit; and

(b) The area of at least 3 lots is less than 8 hectares;

(2) The subdivision of land into 2 or more lots in an industrial zone is a high impact activity.

(3) In this regulation, *industrial zone* has the same meaning as in the VPP.

2.4 Statutory Obligations under the Native Title Act 1993

Native title is the recognition in Australian law that Indigenous people have the right to their land, water, traditional laws and customs. A native title determination decision must be administered by the Federal Court or High Court of Australia. Claims can only be on specific areas of land or water known as unalienated Crown land. Native Title cannot be given on residential freehold land or public lands such as roads, schools or hospitals, and once the land is alienated from the Crown. A search of the National Native Title Tribunal website demonstrates that under the Native Title Act 1993 there is one active Native Title application relevant to the activity area (Map 1; Appendix 3). The Boonwurrung People filed a claim on 29th May 2020 for land on the "Southern Coast of Victoria, generally in the coastal district of Melbourne and including Wilson's Promontory" (National Native Title Tribunal, accessed 2nd July 2020). This claim will not include any land which is part of this PSP unless any portions remain unalienated.

3 ACTIVITY DESCRIPTION

The future activity comprises the subdivision of 1,069 hectares of land for industrial, commercial and residential development. These residential facilities may be supported by town centres, schools, community centres, parks and the relevant utilities that are needed to support such infrastructure. The full scope of the works to be carried out and plans have not been drafted. VPA is undertaking this report as preliminary research into the area before plans are drawn. As such, a detailed outline of the activity cannot be given within this report.

Ancillary works are summarised below

- The construction of residential dwellings and the relevant utilities to support these structures;
- Roads and paths for relevant access;
- Public Transport Network;
- Industrial facilities;
- Business centres;
- Crossings of Cardinia Creek.

Aerial Photograph: Courtesy of DPI Website 2019

0 500 1000
Scale of Metres

Legend:

Activity Area Boundary
1,068 hectares (approx)

Contour Line

Parish: *Pakenham*
LGA: *Cardinia*

N
GDA94
MGA Zone 55

Map 3 Extent of Activity Area

4 DOCUMENTATION OF CONSULTATION

4.1 Meetings and Consultation

A meeting via Skype was held on the 22nd June 2020 to discuss the parameters of the project. A meeting with the WWWCHAC and BLaSC (BLCAC were invited to attend but were absent) was held on the 13th August 2020 to brief the traditional owner groups on the scope of the project and to discuss targeted areas for the site inspection.

Table 1 Meetings and Consultations

Attendance	Discussions
Meeting via Skype – Project Inception Meeting – *22nd June 2020* Jessica Earl (AAT) Tom Rymer (AAT) David Portelli (VPA) Hugh Stanford (VPA) Marcelle Bell (Cardinia Council) Alicia Brown (Cardinia Council)	A meeting was held between VPA, Cardinia Council and AAT to discuss the activity area and previous assessments that have taken place. It was determined that a meeting with the WWWCHAC, BLCAC and BLaSC would need to be organised to engage their participation in the ACHIA.
Meeting via Teleconference – Project Establishment Meeting – *13th August 2020* Jessica Earl (AAT) Tom Rymer (AAT) David Portelli (VPA) Pamela Neivandt (VPA) Marcelle Bell (Cardinia Council) Alison Brash (Cardinia Council) Caroline Spry (WWWCHAC) Natalie Langowski (WWWCHAC) Ron Jones (WWWCHAC) Bobby Mullins (WWWCHAC) Alan Wandin (WWWCHAC) David Tournier (BLaSC)	A meeting was held between VPA, Cardinia Council, AAT, WWWCHAC and BLaSC. BLCAC were invited to attend but were not present on the day. Aboriginal places within the selected geographic region, artefact characteristics, land use history and a broader discussion of the cultural heritage values of the geographic region were also discussed. Methodology and areas of focus for the site inspection were discussed. The TOGs expressed their desire for the entire activity area to be inspected, with particular focus on major and minor waterways and drainage lines.
Cultural Values Assessment of the Activity Area	A cultural values assessment of the Officer South Employment PSP activity area will take place at a date TBD.

4.2 Other Consultation

A Cultural Values Assessment will be held on-site with the WWWCHAC, BLCAC and BLaSC at a date to be determined.

4.3 Summary of Consultation Outcomes

A summary of consultation outcomes are as follows:

- An inception meeting was held on the 13th August 2020 with the WWWCHAC and BLaSC to present the scope of the project with the Elders and heritage advisors;

- WWWCHAC, BLCAC, BLaSC, VPA and AAT will be invited to engage in a Cultural Values Assessment of the activity area at a date to be determined;

- WWWCHAC, BLCAC, BLaSC attended the site visit;

- No oral traditions have been provided to date.

5 DESKTOP ASSESSMENT

The desktop assessment aims to formulate a place prediction model for the activity area (Section 8) to identify:

- Whether it is reasonably possible that Aboriginal cultural heritage is present in the activity area;
- Areas of archaeological potential; and
- If artefacts are likely to be present under the contemporary ground surface.

5.1 Victorian Aboriginal Heritage Registry Access and Search

The Aboriginal Cultural Heritage Register and Information System (ACHRIS) was accessed for reports and Aboriginal cultural heritage places by Jessica Earl on 24th June 2020.

5.2 Relevant Geographic Region

Within a 5-kilometre radius of the activity area there are a large number of Aboriginal cultural heritage places and archaeological reports (Table 2 & 3). It was not practical to investigate these all here. To formulate a model of archaeological potential, only places and reports within 500m of the activity area boundary were analysed in detail.

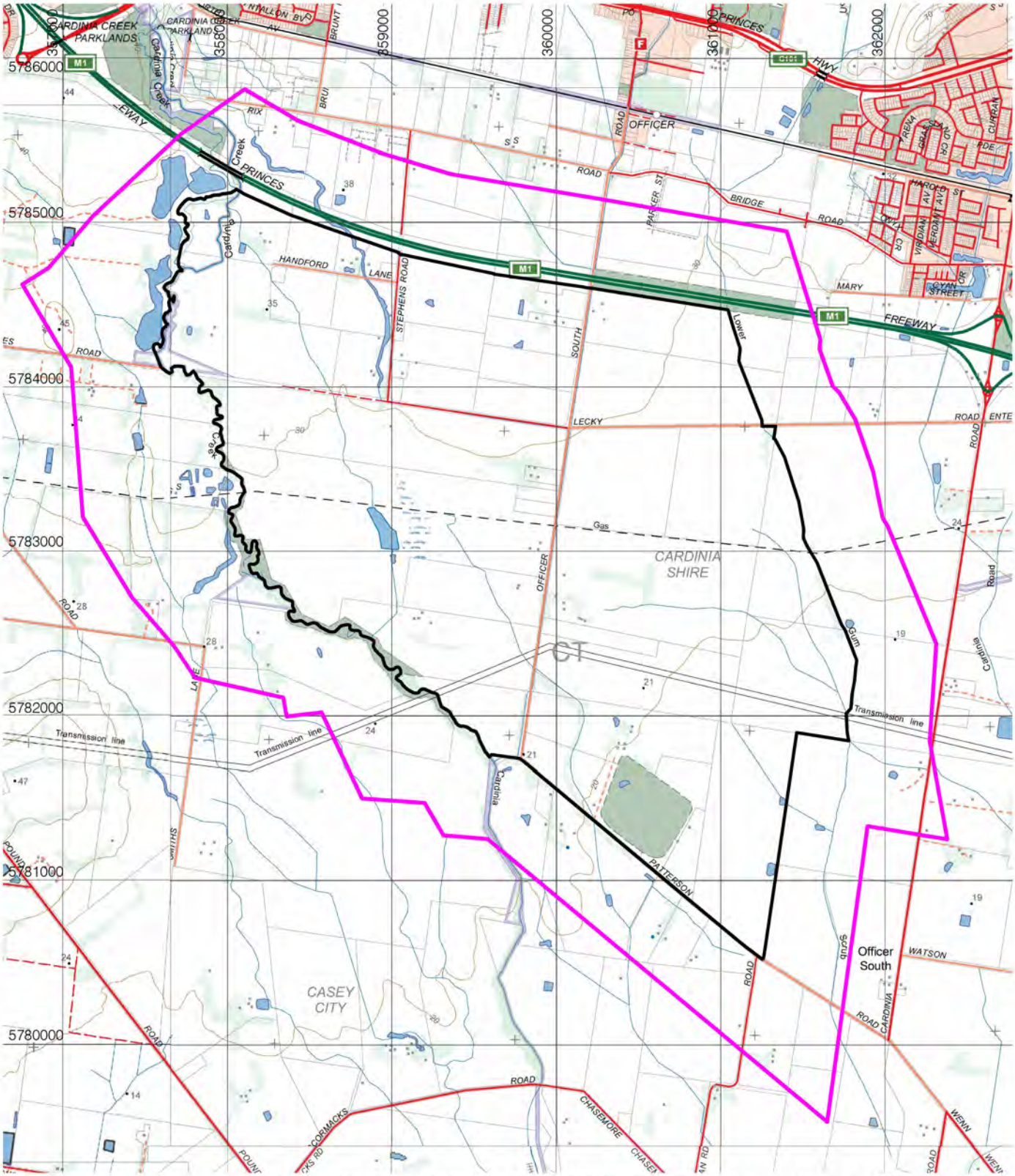
Table 2 Place Types Located within 5km radius of the Activity Area

Place Type	Number
Artefact Scatter	144
Low Density Artefact Distribution	27
Multi-Component Site	17
Object Collection	2
Scarred Tree	1
Total	191

Table 3 Archaeological Reports Located within 5km radius of the Activity Area

Report Type	Number
Regional Assessment	10
Small-Scale Investigation	55
CHMP- Desktop Assessment	3
CHMP- Standard Assessment	3
CHMP- Complex Assessment	74
Total	145

The geographic region relevant to the activity area is therefore defined as land within 500m of the activity area (Map 4). This geographic region contains a representative sample of landform features and Aboriginal cultural heritage places relevant to understanding and evaluating the potential for Aboriginal cultural heritage places to be present within the activity area, and the place types that are most likely to be present. The landforms within the geographic region include creeks, tributaries, anabranches, sand sheets, sandy rises, and floodplains. The geographic region land use includes built-up areas, major and minor roads and farmland (Map 4).



Topographic map used for Location Plan: 1:30,000 Number T7921-1-1-3

0 500 1000
Scale of Metres

N
GDA94
MGA Zone 55

Legend:

Activity Area Boundary
1,068 hectares (approx)

Geographic Region Boundary

Map 4 Geographic Region

5.3 Registered Aboriginal Places in the Relevant Geographic Region

Within the Officer South Employment PSP activity area there are 14 previously recorded Aboriginal places (Table 4; Map 4).

Table 4 Registered Aboriginal Places in the Activity Area

Place No.	Place Name	Place Type
7921-0189	Cardinia Creek 2	Artefact Scatter
7921-0194	Cardinia Creek 6	Artefact Scatter
7921-0229	Cardinia Creek 17	Artefact Scatter
7921-0230	Cardinia Creek 18	Artefact Scatter
7921-0231	Cardinia Creek 19	Artefact Scatter
7921-0232	Cardinia Creek 20	Artefact Scatter
7921-0233	Cardinia Creek 21	Artefact Scatter
7921-0234	Cardinia Creek 22	Artefact Scatter
7921-0789	PBM 3	Artefact Scatter
7921-0800	PB 6	Artefact Scatter
7921-0866	Officer South Rising Main	Artefact Scatter
7921-1225	Kara 1	Multi-Component Site
7921-1626	Minta Farm, Berwick, AS 1	Artefact Scatter
7921-1727	Cardinia Creek Princes Freeway	Multi-Component Site

There are a further 9 previously recorded Aboriginal places within 50m of the activity area (Table 5; Map 4).

Table 5 Registered Aboriginal Places within 50m of the Activity Area

Place No.	Place Name	Place Type
7921-0196	Cardinia Creek 8	Scarred Tree
7921-0235	Cardinia Creek 23	Artefact Scatter
7921-0802	PB 8	Artefact Scatter
7921-0867	Officer South Rising Main 2	Artefact Scatter
7921-1417	335 Grices Road Clyde North IA 1	Artefact Scatter
7921-1560	490 Soldiers Road, Clyde North LDAD 1	LDAD
7921-1561	490 Soldiers Road, Clyde North 2	Artefact Scatter
7921-1602	Smiths Lane LDAD	LDAD
7921-1666	335 Grices Road, LDAD 1	LDAD

Place Types

The geographic region comprises fifty-three registered Aboriginal places, consisting of forty-one artefact scatters, six Low Density Artefact Distributions (LDAD), five multi-component sites and a single scarred tree (Table 6).

Table 6 Place Types Located within the Geographic Region

Place Type	Number	%
Artefact Scatter	41	77.5
Low Density Artefact Distribution	6	11
Scarred Tree	1	2
Multi-Component Site	5	9.5
Total	53	100

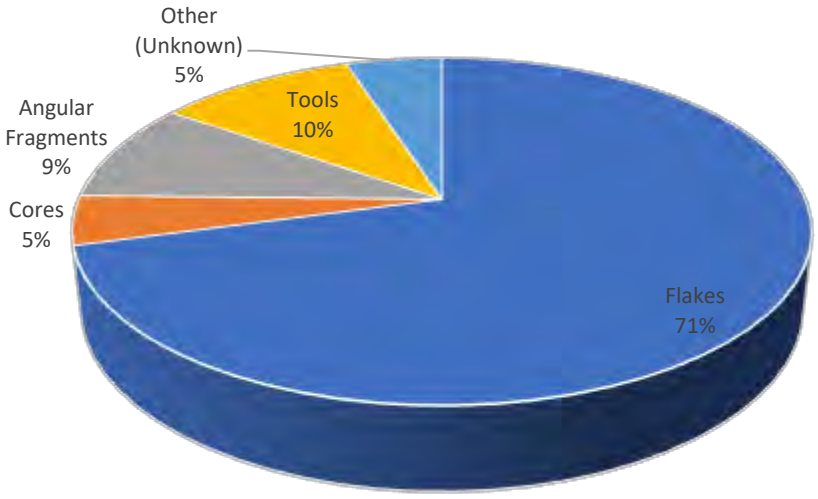
Site cards available for a number of places (n=9) within the geographic region contain limited data, as they were recorded prior to the introduction of the *Aboriginal Heritage Act 2006*. The following analysis is based on sites for which detailed information has been recorded, and therefore provides only a general overview of Aboriginal cultural heritage in the geographic region. The analysis may change as more Aboriginal places are recorded, and more information becomes available for analysis.

Stone Artefact Primary Form

Primary form is dominated by flakes (71%), followed by tools (10%), with smaller quantities of angular fragments (9%) and cores (5%). Formal tools include retouched and utilised flakes, blades, backed blades, geometric microlith, bondi points, points and scrapers.

There is evidence that microlith technologies have been in use in Australia since the early Holocene and into the terminal Pleistocene as individual artefacts (Hiscock & Attenbrow 1998; McNiven 2000; Slack et al. 2004). Their use increased greatly during the mid-late Holocene, and they were in abundant use in the south-east of Australia from c. 3500 years BP (Robertson et al. 2009). Tools within the geographic region include utilised flakes, geometric microliths, backed blades and scrapers. The presence of microliths is likely indicative of the Australian Small Tool Tradition (ASTT) and could date the assemblage to the Late Holocene (<5,000 years BP). Although they are found in earlier time periods (Slack et al. 2004; McNiven 2000), backed implements are generally considered to be part of multi-component hafted tools and are indicative of the Australian Small Tool Tradition, which proliferated around 3000–4000 years ago (Hiscock & Attenbrow 1998). The proportion of tools within the current assemblage is under 10%, which is expected for the region.

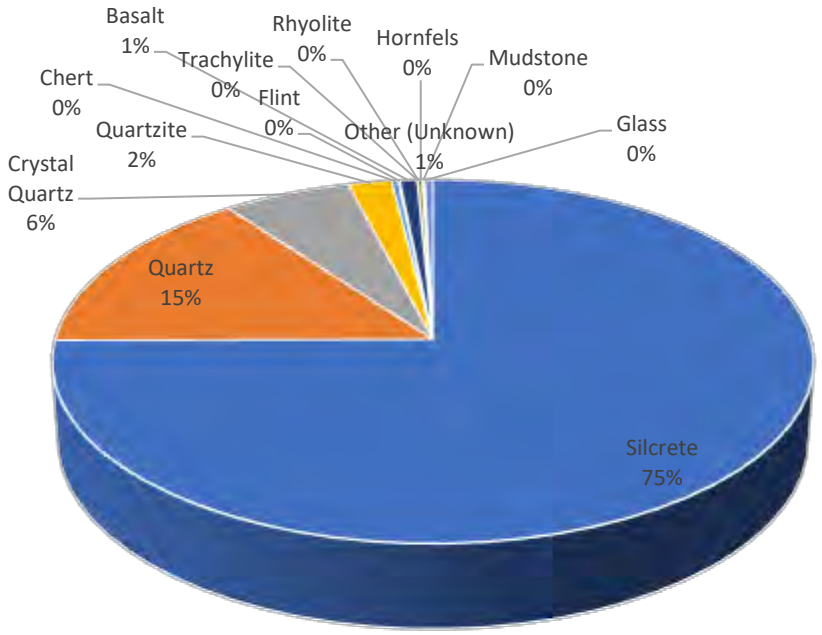
Chart 1 Stone artefact primary form



Stone Artefact Raw Materials

Raw material is overwhelmingly dominated by silcrete (75%), followed by quartz (15%), crystal quartz (6%) and quartzite (2%). There are minor quantities (totalling 2%) of other raw materials in the geographic region including chert, flint, basalt, trachylite, rhyolite, hornfels, mudstone and glass.

Chart 2 Stone artefact raw materials



Stone Artefact Depth

Stone artefact depths have been recorded in detail for 37 Aboriginal places. Artefacts have been recorded up to 120cm in depth. For sites where detailed artefact numbers are available, most places comprise subsurface artefacts only (81%), followed by places with artefacts in both surface and subsurface contexts (11%), and surface artefacts only (8%).

Proximity to Waterways

There is a strong correlation between the location of stone artefact scatters and distance from waterways (Chart 3). 57% of the stone artefact scatters were recorded within 100m of a waterway, and all were within 300m or less from Cardinia Creek or an anabranch of Cardinia Creek. Isolated artefacts occur across the low-lying plains in the PSP. Isolated artefacts can be found across all landforms in Victoria and represent events of casual discard. While most isolated artefacts within the PSP are located in close proximity to a waterway, there are a number of outliers that have been found up to 1.1km away. In the PSP there is therefore a weak relationship between isolated artefacts and waterways, and no pattern can be identified (Chart 4).

Chart 3 Artefact scatter distance to waterways

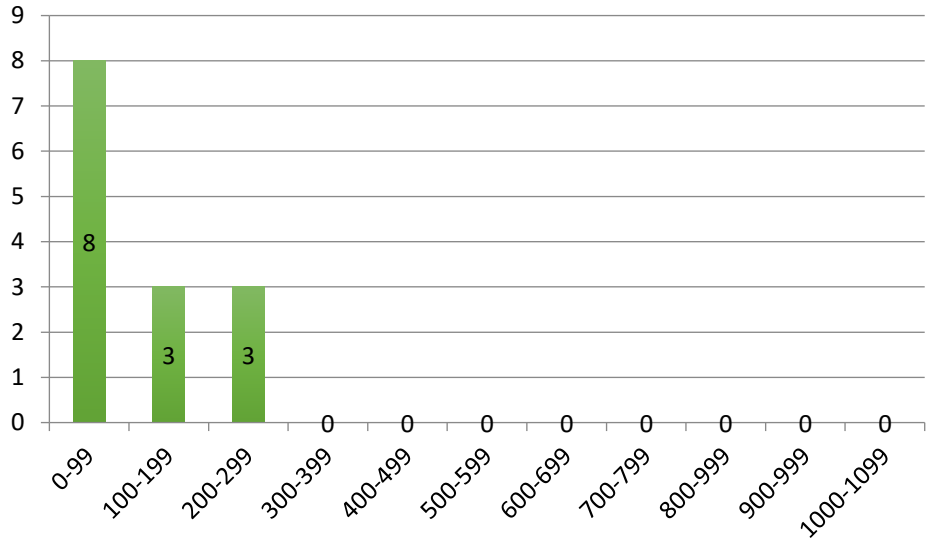
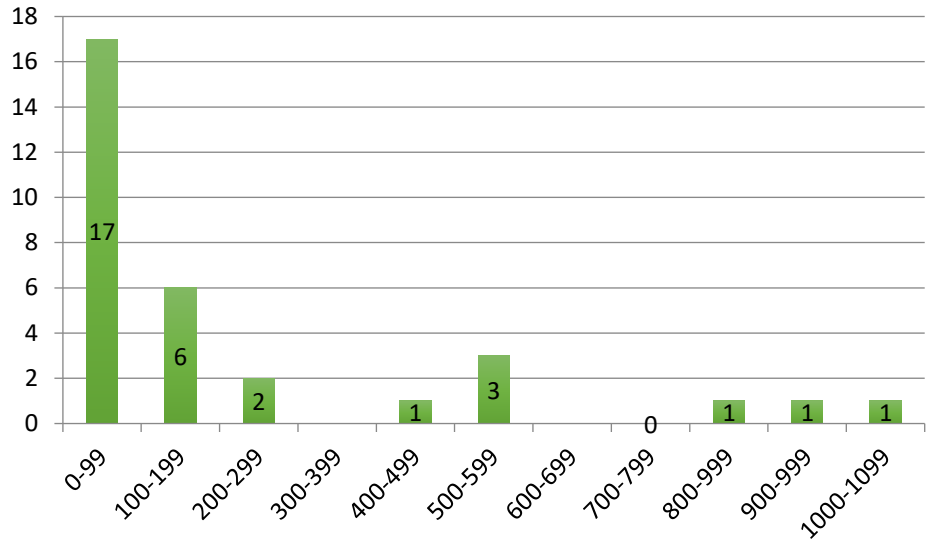


Chart 4 Isolated artefact distance to waterways



Landforms

Most frequently Aboriginal places (58%) in the geographic region have been recorded on low-lying plains or floodplains. Other significant landforms include the terraces (15%) and banks (19%) of waterways. A small number of places (6%) have been recorded on raised landforms such as dunes. One place was identified in a disturbed context on the bank of a dam. Typically isolated artefacts are the most likely site type to occur on the low-lying plains, while higher density artefact scatters are more frequently identified on the Cardinia Creek terrace. The two scarred trees within the geographic region have been identified on the bank and terrace of Cardinia Creek. The Cardinia Creek is an area of high strategic value and Aboriginal places are likely to be present on all landforms within close proximity of the waterway.

Condition

Of the 45 Aboriginal places for which condition has been recorded, 29% are in fair condition, 29% in poor condition, 22% have been destroyed, 13% in good condition and 7% in very poor condition. The condition of the remaining Aboriginal places was either not applicable or not recorded.

Scientific Significance

Forty-two Aboriginal places in the geographic region have been assessed for scientific significance and there is a wide distribution of results. Most frequently places were considered to have low scientific significance (n=13, 31%), followed by extremely low (n=7, 17%), high (6, 14%), moderate (5, 12%), very low (5, 12%), very high (3, 7%), low-moderate (2, 5%), and no scientific value (1, 2%).

Places Subject to Dating

No places within the geographic region have been subject to dating. Formal tools (retouched and utilised flakes, blades, backed blades, geometric microlith, bondi points, points and scrapers) were identified within the geographic assemblage. There is evidence

that microlith technologies have been in use in Australia since the early Holocene and into the terminal Pleistocene as individual artefacts (Hiscock & Attenbrow 1998; McNiven 2000; Slack et al. 2004).

Scarred Tree

The scarred tree (VAHR 7921-0196) present in the geographic region is a dead tree of unknown species, with a scar measuring 200 centimetres in length and 35 centimetres in width. It was noted by the recorder that the scar length would originally have been longer, however the top of the tree was gone. The scarred tree is located 2m from Cardinia Creek.

A second scarred tree present in the geographic region is discussed below as it is part of multicomponent site VAHR 7921-1727.

Multi-component sites

A total of five multi-component sites have been registered, four (VAHR 7921-0799, 7921-0838, 7921-1225, 7921-1227) comprise artefact scatter and object collection components, while the remaining one (VAHR 7921-1727) is a large place comprising artefact scatters, object collections and a scarred tree.

VAHR 7921-0799 comprised a single quartzite flake located on a floodplain identified during construction of the Princes Freeway. This place was destroyed by the construction of the road. The artefacts from this Aboriginal place were reburied approximately 315m east of the original site location.

A total of 10 artefacts, registered as VAHR 7921-0838 were identified on a floodplain east of Cardinia Creek. The place is considered to have low scientific significance and is in poor condition. The stone artefacts from this place were reburied following analysis at a new location, approximately 2.4km east of the original site location.
Located in the current activity area, on an alluvial plain VAHR 7921-1225 comprised two silcrete flakes. The stone artefacts were collected from their original location and their last location was recorded as analysed at 38 Bertie Street, Port Melbourne.

VAHR 7921-1227 comprised a single silcrete flake, located on an alluvial floodplain. This stone artefact was collected from its original location and its last location was recorded as analysed at 38 Bertie Street, Port Melbourne.

VAHR 7921-1727 is a multicomponent site comprising artefact scatter, scarred tree and object collection components. This site was registered during the preparation of CHMP 15501 when three previously recorded places were "retired" by Kapteinis et al. (2018) and re-registered as this multi-component site. The site extent of VAHR 7921-1727 is the largest in the geographic region measuring 23,000m^2. The scarred tree (originally recorded as VAHR 7921-0403 by Tulloch 2001) is a red gum located on the bank of Cardinia Creek. The tree was in good health and had one scar 3.4m long by 0.6m wide. Two artefact scatters (previously recorded as VAHR 7921-0245 and 7921-0739) were combined and form the largest stone artefact scatter in the geographic region. A total of 4,313 artefacts are present at this place, representing 71% of stone artefacts in the geographic region. The raw stone material most frequently utilised was silcrete (n=3,258) and flakes (n=3,112) were the

predominant artefact primary form. The artefacts from part of this place (what was formerly VAHR 7921-0739) were reburied within the place extent.

Table 7 Summary of Artefact Scatter Place Attributes Within the Geographic Region

Attribute	Details
Artefact Data Classes	Flakes (n=4320, 71%), Tools (n=631, 10%), Angular Fragments (n=568, 9%), Cores (n=280, 5%) and other unknown (n=306, 5%).
Place Type	Artefact Scatter (n=41), LDAD (n=6), Scarred Tree (n=1), Multi-Component Site (n=5).
Artefact Raw Materials	Silcrete (n=4574, 75%), Quartz (n=912, 15%), Crystal Quartz (n=373, 6%), Quartzite (n=126, 2%), Chert (n=19, <1%), Flint (n=5, <1%), Basalt (n=50, <1%), Trachylite (n=1, <1%), Rhyolite (n=1, <1%), Hornfels (n=12, <1%), Mudstone (n=3, <1%), Glass (n=5, <1%) and other unknown raw materials (n=24, <1%).
Landform	Low-lying plain/ floodplain (58%); creek terrace (15%); creek bank (19%); sand dune (6%); bank of a dam (2%). Typically isolated artefacts are the most likely site type to occur on the low-lying plains, while higher density artefact scatters are more frequently identified on the Cardinia Creek terrace.
Distance from Waterways	57% of artefact scatters were located within 100 meters of a freshwater source. No artefact scatters were located more than 300m from a waterway. Isolated artefacts may be present across all landforms within the PSP.
Scientific Significance	81% of places were assessed for scientific significance (n=42), of this 31% (n=13) were low, 17% (n=7) extremely low, 14% (n=6) high, 12% (n=5) moderate, 12% (n=5) very low, 7% (n=3) very high, 5% (n=2) low to moderate and 2% (n=1) was of no scientific value. Scientific significance was not recorded for 19% (n=10) of places.
Depth of Artefacts	8% of Aboriginal places were located on the ground surface, 81% were located sub-surface and the remaining 11% were identified in both surface and subsurface contexts.

Summary

The regional stone artefact assemblage suggests that the Aboriginal place-types most likely to occur in the activity area are stone artefact scatters, or LDADs containing flakes, angular fragments, tools and cores, made of silcrete or quartz. Aboriginal places can be found across all landforms associated with waterways, including floodplains, terraces and creek banks. Artefacts are most likely to be present in a subsurface context and have been found to a maximum of 120cm deep.

5.4 Reports and Published Works in the Geographic Region

Jessica Earl (AAT) was provided a draft of the Preliminary Cultural Heritage Study prepared by Green (2019) for land at 185 Officer South Road. While not available on ACHRIS, VPA

provided a copy of the study for inclusion in this desktop assessment. A portion of the study area for Green (2019) is located within the northwest of the current activity area. This Preliminary Cultural Heritage Study comprised a desktop review of Aboriginal cultural heritage values and a site visit. One place VAHR 7921-1225 was identified within the area during desktop assessment. The areas of archaeological sensitivity within the study area were considered to be low terraces present within the floodplain. Green suggested that subsurface testing conducted during assessment for two approved CHMPs (Vines et al. 2008; Kaptenis *et al.* 2018) had adequately tested the archaeologically sensitive landforms in the study area. Green (2019: 20-22) noted that Lower Gum Scrub Creek was redeveloped in 2013, and the current alignment is artificial. There is therefore low potential for archaeological deposits to be present along the modern alignment.

Given the preliminary nature of this assessment, only a limited site visit was undertaken to test the site prediction model. Previously recorded place VAHR 7921-1225 was reinspected, however no additional Aboriginal cultural heritage material associated with the site was found. No systematic pedestrian survey was undertaken across the study area. There was also no subsurface testing undertaken as part of this assessment. There were no Aboriginal places found during the site visit.

Archaeological Reports within the Geographic Region:

ACHRIS shows there are 11 regional investigations (Gaughwin 1981, Gaughwin & Sullivan 1984; Presland 1983; Smith 1989 & 1991; Goulding 1988; Massola 1959; Rhoads 1994; Bird 1993; du Cros & Rhodes 1998; Feldman & Long 2006). Only those directly relevant to this assessment are discussed below.

Smith (1989 [1991]) conducted a regional investigation of the Aboriginal archaeology of the Berwick to Bunyip Corridor; the activity area lies within this corridor. Sixty-two Aboriginal places were recorded. Places comprise 32 surface scatters of stone artefacts, 15 scarred tree sites and 15 isolated artefact occurrences. The highest place and artefact densities were found to occur on sandy ridges in the Cranbourne area, particularly those associated with water. This finding has also been previously noted by Presland (1983) and Gaughwin (1981). The dominant stone material types identified in the surface scatters by Smith (1989) were chert and quartz. The majority of artefact types were flaked pieces and flakes, with less than 2% of the recorded assemblage consisting of formalised tools (Smith 1989: 47). The activity area is included within Smith's landscape unit Landscape Unit 2 (1989: 11-12, Figure 2). The site prediction model formulated for this landscape unit by Smith (1989: 60) is applicable to the activity area and concludes that:

> Artefact scatters and isolated artefacts are the most likely site type to occur in this unit; Sites are most likely to occur within 60m of creek lines and other water sources and most are likely to occur along the banks of permanent creek lines, such as Toomuc and Ararat Creeks; A high number and density of sites occurs along Cardinia Creek. Sites along Cardinia Creek will, in general, occur within 150m of the creek and the majority (91%) will occur within 50m; Scarred tree sites are not expected to occur more than 50m from creek lines; Artefact scatters in this unit will be dominated by quartz, chert or silcrete with the former site type being the most common.

In 1998 du Cros and Rhodes prepared an overview of Aboriginal cultural heritage along Melbourne's waterways and floodplains. Their predictive models revealed that waterways and floodplains in the Melbourne area were very likely to contain evidence of Aboriginal

occupation in the form of surface artefact scatters, isolated artefacts, scarred trees and to a lesser extent, shell middens, burials, and quarries. The authors suggested that clan estates may have been delineated by certain creeks and rivers, and that this may have influenced the types of campsites found along their banks. They noted a high density of artefactual material along the banks and escarpment of the Werribee River, for example, which they interpreted as large campsites, meeting points or gathering places. Smaller sites they interpreted as transitory, formed by the movement of people along or across the waterways.

Feldman and Long (2006) conducted a desktop review of Aboriginal cultural heritage values relevant to the Casey-Cardinia areas for the purpose of reviewing and revising growth plans. Their study area encompassed the entirety of the current activity area and geographic region, it was noted that archaeological potential in the area varied greatly according to landform. The authors broke their analysis into 6 areas based on landform (1) Major Drainage Corridor, (2) Intermediate Plains, (3) Urban Areas, (4) Koo-Wee Rup Swamp, (5) Northern Foothills and (6) Cranbourne Massif and Surrounding Plains. Following a review of previous work in the region, Feldman and Long (2006) made the following conclusions of relevance to the current activity area. Within major drainage corridors the most likely site types to occur would be artefact scatters of high density and scarred trees along Cardinia Creek. On the intermediate plains, where there are areas of alluvial flats, stone artefacts may be present in lower densities.

Small Scale Investigations

ACHRIS shows there are 17 smaller-scale investigations (Murphy 1992; Costello et al. 1998; Tulloch 2001; Bell 2002; Stone 2002; Muir & Nicolson 2002; Thomson & Nicolson 2005; Thomson & Muir 2005; Howell-Muers & Long 2006; Murphy & Rymer 2007; Murphy et al. 2007; Jenkins et al. 2010; Kennedy et al. 2012; Murphy & Kennedy 2009; Sutton et al. 2015; Cummins and Ward 2014; Rymer 2017) within the geographic region of the activity area. These include surveys, desktop assessments, sub-surface testing and salvage excavations. A summary of these studies is as follows:

- The majority are surveys (n=7) followed by desktops (n=4), subsurface testing (n=4), and salvage excavations (n=2);
- Seven investigations found new Aboriginal cultural heritage places as part of their surveys or sub-surface testing;
- None have conducted radiometric dating; and
- Areas of Aboriginal cultural heritage sensitivity are typically identified as previously recorded Aboriginal places, creek terraces, hill crests, land within close proximity to waterways such as Cardinia Creek, and sandy rises.

Cultural Heritage Management Plans

ACHRIS shows there are 25 approved CHMPs within the geographic region (Murphy & Rymer 2008; Vines et al. 2008; Jenkins & Paterson 2009; Murphy & Morris 2012; Murphy & Rymer 2009; Stevens & Vines 2011; Green 2011; Hislop et al. 2013; Murphy & Rymer 2012; Tunn & Foley 2016; Hislop 2014; Murphy et al. 2015; Hislop 2015; Power, Beaton & Hernandez 2015; Tunn & Welsh 2015; Chamberlain 2016; Rhodes & Chamberlain 2016; Hislop 2015; Burch 2016; Murphy & Rymer 2017; Murphy, Rymer & Stammers 2019; Kapteinis et al. 2018; Clark & Janson 2019; Rymer & Stammers 2019; White et al. 2019).

Of these, three reports (Jenkins & Patterson 2009; Stevens & Vines 2011; White et al 2019) overlap with a portion of the activity area. A summary of these CHMPs follows:

- Areas of Aboriginal cultural heritage sensitivity include Cardinia Creek banks, terraces and anabranches, previously recorded Aboriginal places, sand sheets, sandy rises, hill crests, land within 200m of waterways and prior waterways;
- The analysis of the above reports indicates that the landform with highest archaeological potential is the terrace of Cardinia Creek;
- The majority of CHMPs have conducted desktop, standard and complex assessments (n=23). The remaining two comprised only a desktop assessment;
- Nine are linear assessments and 16 are area assessments;
- The area complex assessments have assessed 1,604.26 hectares;
- The complex assessments have excavated at least 4,645.956m^2;
- A total of 17 CHMPs have registered new Aboriginal cultural heritage places;
- No CHMPs have conducted radiometric dating and no Pleistocene sites are recorded in the CHMPs.

The following reports are the most relevant to the current activity area. CHMPs Jenkins and Patterson (2009); Stevens and Vines (2011) and White et al. (2019) overlap a portion of the current activity area. CHMPs Murphy and Rymer (2008); Murphy and Morris (2012); Tunn and Foley (2016); Murphy et al. (2015); Murphy and Rymer (2017); Kapteinis et al. (2018) and Rymer and Stammers (2019) directly abut the current activity area. CHMPs Murphy and Rymer (2012) and Chamberlain (2016) are located less than 50m west of the activity area across Cardinia Creek.

CHMPs within the activity area

Jenkins and Paterson (2009) prepared CHMP 10636 for a sewer main from Officer South to east of Greenhills Road, Pakenham, a length of approximately 9km with an average width of 30m. This study overlaps the current activity area on the northern boundary at the Princes Freeway and Officer Road South. The standard assessment identified areas of potential archaeological sensitivity as low-moderate on the floodplain at Officer South and high on the margins of existing and prior waterways, terraces and hills (Greenhill Road) with stone artefact scatters the Aboriginal cultural heritage place-type most likely to be present. Subsurface testing was conducted at Gum Scrub Creek, Toomuc Creek, Greenhill Road, amongst other locations. Two test pits (TP1 and TP29) were excavated within the current activity area, neither of which were positive for Aboriginal cultural heritage material. The authors found that land around the creeks had been significantly disturbed by construction of the Pakenham Bypass. Stone artefacts were only recovered on Greenhill Road in seven of 27 test pits (p48-49). A total of 130 stone artefacts were recovered comprising 10 flakes, 3 tools, 8 core fragments, 8 flaked pieces and 83 pieces of quartz debitage (p76). The artefacts were presumed to be associated with previously registered stone artefact scatter VAHR 7921-0601 investigated in detail on the northern slopes of Green Hill by Rhodes (2006). The cultural materials were assessed as having moderate scientific significance and confirmed the general regional sensitivity model for low potential on the floodplains with moderate on hills. Salvage was recommended including hand (in the location of a possible small knapping event) and mechanical excavation.

- Jenkins et al. (2010) conducted salvage excavations at VAHR 7921-0601. This place is outside of the geographic region and the salvage will not be analysed in detail here.

Stevens and Vines (2011) carried out CHMP 11091 for the VicUrban@Officer Mixed Use Development, a section of which overlaps the current activity area north of Lecky Rd and east of Officer South Rd. The desktop assessment identified the most likely site type to be encountered in the study area to be stone artefact scatters. The standard assessment failed to identify any Aboriginal cultural heritage, however did identify areas of archaeological potential. The area considered to be of the highest archaeological potential was a low rise adjacent to the floodplain of Gum Scrub Creek.

The complex assessment incorporated grader scrapes, mechanical trenching, controlled hand excavation and shovel test probes. Several Aboriginal cultural heritage places were identified during the complex assessment. These were stone artefact scatters VAHR 7921-0590, 7921-0630, 7921-0637, 7921-1225, 7921-1226 and 7921-1227. VAHR 7921-1225 was located within the current activity area. This stone artefact scatter comprised two silcrete flakes, found at a depth of 30-35cm in sandy clay on the alluvial plain approximately 550m from Gum Scrub Creek. The artefacts were collected from their original location to be analysed and stored at Biosis Research Pty Ltd in Port Melbourne. All of the newly registered Aboriginal heritage places were attributed low scientific significance due to their low artefact densities, and only one place (VAHR 7921-1226) was subject to salvage.

- Rymer (2019) conducted the salvage excavation of VAHR 7921-1226. This place is outside of the geographic region and the salvage will not be analysed in detail here.

White et al. (2019) prepared Amended CHMP 16632 for the proposed construction of new freeway ramps at Princes Freeway, Officer South. Approximately a 145m section of the study area for CHMP 16632 overlaps with the current activity area's northern boundary at Officer South Rd. A desktop assessment identified three previously recorded Aboriginal places in the study area, isolated artefacts VAHR 7921-0788, 7921-0799 and 7921-0787. Standard assessment of the activity area confirmed that all three places were destroyed during construction of the Princes Freeway. Much of the study area was considered to have undergone high levels of ground disturbance from works including utility installation, development construction, freeway construction and infrastructure, as well as roads and other access tracks. This includes the portion of the study area overlapping the current activity area at Officer South Rd. Only two areas were considered to have moderate potential for Aboriginal cultural heritage, two 1x1m test pits and five shovel probes were placed within these areas. The complex assessment did not identify any new Aboriginal heritage places. None of the excavated test pits were located within the current activity area.

CHMPs adjacent to the activity area

Murphy and Rymer (2008) prepared CHMP 10045 for the sewer rising main at Officer South along the southern boundary of the Pakenham Bypass and crossing Cardinia Creek, along the majority of the northern boundary of the current activity area. Two stone artefact scatters (VAHR 7921-0866 & 7921-0867) were recorded during subsurface testing. VAHR 7921-0866 was located on the west bank of a tributary of Cardinia Creek and comprised 45 stone artefacts with an artefact density of 4.35 per m2. Stone artefacts comprised 32 complete, broken & split flakes, 2 broken blades, 1 complete tool, 3 core & core fragments and 7

angular fragments made from silcrete (n=44) and basalt (n=1). The Aboriginal cultural heritage place was interpreted as a location used for manufacture and maintenance of stone tools. VAHR 7921-0867 was located on the east bank of the tributary and comprised a single silcrete flake. The Aboriginal cultural heritage place was interpreted as an event of casual discard or loss. The former Aboriginal cultural heritage place was assessed having low and the latter having very low scientific significance. One previously registered Aboriginal cultural heritage place, VAHR 7921-0739 on the east bank of Cardinia Creek, was also investigated. A total of 156 stone artefacts were recovered at a density of 9.4 per m2 and comprised 107 flakes, 19 blades, 7 tools, 2 core & core fragments and 21 angular fragments made form silcrete (n=34), quartz (n=34), crystal quartz (n=7) and quartzite (n=1). The Aboriginal cultural heritage place was interpreted as reflecting multiple episodes of stone tool manufacture and maintenance and assessed having moderate scientific significance. Both new Aboriginal cultural heritage places were effectively salvaged while VAHR 7921-0739 was preserved from harm.

Murphy and Morris (2012) prepared CHMP 10656 for the Cardinia Road Employment PSP at Officer South immediately east of the current activity area across Lower Gum Scrub Creek. The desktop assessment of the area predicted the most likely site types to be present were low density stone artefact scatters in a surface context. Where native vegetation was retained it was predicted possible for scarred trees to be present. A standard assessment was undertaken both by vehicle and pedestrian survey, where vehicles were used to identify areas of good visibility and then systematic pedestrian survey was carried out over those areas. One new Aboriginal heritage place was identified, VAHR 7921-1205, two silcrete artefacts in close proximity to a man-made dam. Areas of predicted archaeological sensitivity were refined by the survey to include slightly elevated land within the floodplain, gently undulating land within 200m of current and former watercourses. Complex assessment comprised the excavation of a total of 15.316m^2. Of this only 1m^2 was found to be positive for Aboriginal cultural heritage. A single silcrete artefact was identified in sandy silt at 35cm and registered as VAHR 7921-1204. Both Aboriginal places identified during standard and complex assessment were considered to be of extremely low scientific significance. There were no specific management recommendations made as both places were considered to have been effectively salvaged through preparation of this CHMP.

Tunn and Foley (2016) carried out CHMP 12430 for the proposed residential subdivision of land at 110 Smiths Lane, Clyde North directly adjacent to a small portion of the current activity area west of Cardinia Creek. A desktop assessment identified sensitive landforms as dune crests, land adjacent to waterways, stable Aeolian and alluvial landforms. The standard assessment confirmed the site prediction model. Despite generally extremely low surface visibility, one new Aboriginal heritage place was identified during survey. A single quartz flaked artefact was found on a dune crest (VAHR 7921-1536). A total of 70m^2 was excavated during complex assessment with both manual and mechanical test pits. Aboriginal cultural heritage material was found in 19.2m^2 and was registered as four new Aboriginal places (VAHR 7921-1547; 7921-1582; 7921-1583; 7921-1584). All newly registered places were identified on elevated rises or dunes and subsurface artefacts were found to be distributed between 35cm and 75cm deep. It should be noted that no complex excavation was carried out within close proximity to Cardinia Creek as a 100m buffer was to be preserved as a conservation area. Several management recommendations were included as part of the assessment. It was recommended a surface collection of artefacts occur at VAHR 7921-1536. Salvage excavation was recommended at VAHR 7921-1547, 7921-1582, 7921-1583 and 7921-1584.

- A salvage report was not available at the time this report was published.

Murphy et al. (2015) prepared approved CHMP 13457 for 40 hectares at 490 Soldiers Road, Clyde North immediately adjacent to the western boundary of the current activity area across Cardinia Creek. The land comprised a floodplain and a very gently elevated plain with Cardinia Creek forming the eastern boundary. During the standard assessment no Aboriginal cultural heritage was identified. The following areas of archaeological potential for subsurface stone artefacts were identified: Cardinia Creek terrace (high), land within 150m of the Cardinia Creek anabranch (moderate) and the Cardinia Creek floodplain (moderate). The complex assessment found a total of 98 stone artefacts which were registered as three new Aboriginal Places (VAHR 7921-1559; 7921-1561; 7921-1560). The majority of artefacts (n=64) were recovered from VAHR 7921-1559. The creek terrace was the preferred location being elevated, dry and in close proximity to water. Silcrete (79%) was the dominant raw material followed by quartz (5%), crystal quartz (5%), coastal flint (5%), chert (4%), quartzite (1%) and hornfels (1%). Flakes (69%) dominated the assemblage, followed by blades (14%), tools (6%), cores (6%) and angular fragments (5%). Stone artefacts were found to a maximum depth of 85cm with the majority found at 20cm to 35cm depth.

Murphy and Rymer (2017) prepared CHMP 14930 for a shared pathway and works for the Cardinia Creek Masterplan. The study area of this report directly abuts the current activity area west across Cardinia Creek. Following a desktop review of landforms within the geographic region, the authors identified the Cardinia Creek terrace as the landform most likely to be sensitive for Aboriginal cultural heritage. Floodplains were considered to have low sensitivity for Aboriginal cultural heritage. The standard assessment was undertaken across both landforms, however effective survey coverage was only 5% on the terrace and 2% on the floodplain. A total of six surface artefacts were found on the Cardinia Creek terrace. Complex assessment comprised the excavation of 29 test pits, totalling 10.25m^2 of which 5m^2 was positive for Aboriginal cultural heritage. Where stone artefacts were identified, soils were typically silty/sandy silt to 45cm deep on the terrace. There was no Aboriginal cultural heritage material found on the floodplain. Artefact primary forms included flakes, blades, angular fragments, two amorphous scrapers, a single geometric microlith and a unidirectional core. All artefacts identified during both standard and complex assessment were registered as low density artefact distribution VAHR 7921-1666. This place was considered to have low scientific significance, however both a surface collection and salvage excavation were recommended prior to works commencing.

- A salvage report was not available at the time this report was published.

Kapteinis et al. (2018) prepared CHMP 15501 for the upgrade of the Monash Freeway, the study area for which is directly adjacent to the entire northern boundary of the current activity area. A desktop assessment identified 15 existing Aboriginal places within the study area, including stone artefact scatters, isolated artefacts, a scarred tree and a potential archaeological deposit. The majority of the study area had previously been subject to survey, therefore standard assessment concentrated on previously un-surveyed tracts of land, and inspections of previously recorded Aboriginal places. Five areas of archaeological potential were identified during standard assessment: a hill crest, a gentle slope, a rise, Cardinia Creek and its adjacent land, and a potential archaeological deposit near VAHR 7921-1293. Complex assessment comprised the manual excavation of a total of 9m^2. No Aboriginal cultural heritage was identified. A number of changes to the condition of existing

Aboriginal places were made on the site registry during preparation of this CHMP. In total 11 places were found to have been destroyed during previous road construction works and if not already listed, their condition was updated as such. Management recommendations included the avoidance of harm at two Aboriginal places (VAHR 7921-0838 and 7921-1727). Where avoidance was not possible, minimisation of harm using geofabric and crushed rock was recommended. If it was determined that harm could not be avoided, the two places must be subject to salvage. A number of management recommendations were also outlined in regards to protection of sensitive landforms, Cultural heritage stockpiles and two artefact reburial locations.

Rymer and Stammers (2019) prepared CHMP 16170 for the proposed subdivision and development of land at Minta Farm, Soldiers Road, Berwick. This study was located directly adjacent to the current activity area to the west of Cardinia Creek. The desktop and standard assessments for this study were originally conducted under draft CHMP 11319 by both Wheeler et al. (2011) and Murphy and Rymer (2016). The conclusions drawn from standard assessment were that artefacts were present in varying densities across all landforms within the area: crests, a high ridgeline, floodplain and Cardinia Creek terrace. Complex assessment was also undertaken in two phases, initially by Wheeler et al. (2011) and subsequently by Rymer and Stammers (2019). In total, combining the results of complex testing by both authors, 32.84m^2 was excavated at Minta Farm. Of this, 12.56m^2 was positive for Aboriginal cultural heritage. In total two Aboriginal places, artefact scatter VAHR 7921-1626 and low density artefact distribution VAHR 7921-1625 were registered. The majority of artefacts across both places were found on the ground surface, but were identified subsurface to a maximum depth of 70cm. VAHR 7921-1625 comprised 17 stone artefacts, the predominant artefact type was flakes (n=13) and the most common raw stone material was silcrete (n=13). VAHR 7921-1626 comprised 174 stone artefacts, of which the majority were silcrete (n=155) followed by quartz (n=49). Artefact primary form at VAHR 7921-1626 was mostly flakes (n=44), however a small number of tools were present (n=16). Management recommendations included the salvage of VAHR 7921-1626 at three test pit locations prior to works commencing.

- A salvage report was not available at the time this report was published.

CHMPs within 50m of the activity area

Murphy and Rymer (2012) prepared CHMP 12096 for 31 hectares at 335 Grices Road, Clyde North which is located approximately 20m west of the activity area on the western side of Cardinia Creek. Landforms include a flood plain along Soldiers Road, a small rise, an anabranch and sandy bank terraces of Cardinia Creek. The standard assessment identified areas of archaeological potential including the small rise, land within 50m of a dam on the anabranch of Cardinia Creek and land within 50m of the eastern boundary of the activity area closest to Cardinia Creek. The complex assessment excavated a total area of 26.28m^2 and 2.57m^2 found stone artefacts. A total of 32 stone artefacts were recovered and recorded as three separate artefact scatters (VAHR 7921-1416; 7921-1417; 7921-1418). VAHR 7921-1416 comprised 29 silcrete artefacts and was assessed as having low-moderate scientific significance. VAHR 7921-1417 comprised one silcrete flake and was assessed as having extremely low scientific significance. VAHR 7921-1418 comprised one silcrete and one quartzite flake and was assessed as having extremely low scientific significance. Salvage was recommended at VAHR 7921-1416.

- Rymer (2017) conducted salvage excavations at VAHR 7921-1416 which is located approximately 155m west of the current Activity Area. The conclusions from the complex assessment in CHMP 12096 were confirmed, that is, the site comprises the remains of a small limited number of knapping events, possibly from the same silcrete nodules or nodules from the same silcrete source. A comparison of sites along Cardinia Creek terrace showed that there was differential intensity of use of the terrace. This likely reflects the permanence of water sources, for example, the presence of waterholes or deeper sections of the waterway where potable water would remain for extended periods of time. The relatively modest density of artefacts suggests this stretch of Cardinia Creek terrace was relatively less intensively used than other sections to the north and to the south.

Chamberlain (2016) prepared CHMP 13801 for a proposed subdivision at 20 Smiths Lane, Clyde North, located approximately 40m west of the current activity area on the opposite side of Cardinia Creek. Sensitive landforms identified during a desktop assessment included sand dunes, a low rise and the land within close proximity of Cardinia Creek. These were confirmed during standard assessment, in addition to a small unnamed waterway on the western side of the area. A total of six auger probes (100mm diameter) were also excavated to establish stratigraphy across the area. No Aboriginal cultural heritage was identified during survey. Complex assessment comprised the manual and mechanical excavation of a total of 35.36m^2. Of this 11.24m^2 was positive for Aboriginal cultural heritage material. A total of 152 stone artefacts were registered as three new Aboriginal places, artefact scatters VAHR 7921-1606 and 7921-1607, and low density artefact distribution VAHR 7921-1602. Salvage of all three places was recommended prior to works commencing.

- A salvage report was not available at the time this report was published.

6 HISTORY AND ETHNOHISTORY

6.1 Ethnohistory

The *Bunurong* tribe belonged to the inter-marriage and language group known as the *Kulin*, which inhabited areas around Melbourne (Figure 1). The *Kulin* were a confederation of five language groups that shared mutual economic and social relationships. They shared religious beliefs, having common creation legends and dreamtime ancestors. These religious beliefs formed the basis for social organisation and management of land and resources. *Kulin* people were affiliated with either one of two religious groups named after dreamtime ancestors (*Bunjil* – Eaglehawk, *Waa* – crow). Affiliation was determined by birth and established marriage relationships (Clark 1990).

The territory of the *Bunurong* is thought to have extended north from Western Port Bay to the Dandenong Ranges (Thomas in Gaughwin & Sullivan 1984: 86). The northern boundary is thought to have been delineated by the source of streams in the Dandenong Ranges, while the western boundary is thought to have been the Werribee River, and the eastern boundary was the Nicholson River (Gaughwin & Sullivan 1984: 87). An 1839 census of the *Bunurong* by Thomas suggested that at the time of colonisation, this tribe comprised of approximately 500 persons or 'six square miles per person' (Thomas nd 9: 47). Other descriptions of *Bunurong* territory suggest that the territory (Massola 1959: 180):

> extended along the coast from Werribee River on the west, to Cape Liptrap on the east, in an area taking in Williamstown (Koort-Boork-Boork), St Kilda (Euro-yoroke), the eastern environs of Port Phillip (Nerm) and all of Westernport (Warn-mer-in). Inland it reached to the Dandenong Ranges (Cor-han-warabul), Miboo, Warragul, Neerim and the Upper Latrobe.

The *Woiworung* clan who may have had reciprocal land use rights in the activity area were the *Baluk-willam*. The *Baluk-willam* clan occupied territory extending from the "ranges and swamps south of Yering on the upper Yarra, extending south-east to Koo-wee-rup Swamp and headwaters of Latrobe River, south-west to adjoin *Bunurong* clans about Cranbourne and Dandenong" (Barwick 1984: 120; Clark 1990: 386). The clan was patrilineal and belonged to the *Waa* moiety system. Clan leaders were known as *ngurungaeta* and the recognised leader of the *Baluk-willam* at the time of contact was *Morundulk* (ca 1773-1840) – his son *Bolete* (1819-1845) was a member of the Native Police (Barwick 1984: 120; Clark 1990: 386).

There is little ethnographic information about the lifeways of the *Baluk-willam* clan at the time of European settlement. The few instances and recollections cited by early residents make no reference to clans or clan estates, movements or names. However, information cited within local histories can be assumed to be that of *Baluk-willam* clan members.

Exchange of goods and intermarriage between the *Woiworung* and the *Bunurong* groups is known to have occurred (Sullivan 1981: 36). *Kulin* people often met for interclan gatherings, such as that recorded in 1844 when groups of *Woiworung* people were camped on the site of the future MCG, and a group of *Bunurong* were camped on the site of the future Government House (Presland 1994: 47). The *Bunurong* held meetings every three months and corroborees were held during full and new moons (Thomas nd 21: 97). Notices of planned gatherings were distributed to neighbours via message sticks. During these inter-

tribal gatherings, marriages were arranged, disputes settled and goods traded. Greenstone from the Mt William quarries in the *Woiworung* territory was transported or traded into the *Bunurong* territory (McBryde 1984).

In the early days of European settlement numerous Aboriginal people were known to reside in the district, and were considered to belong to the *Bunurong* tribe. They are cited camping by the edge of dense vegetation with their activities focused along the major watercourses such as Cardinia and Toomuc Creeks. The women collected fresh water mussels from creeks as well as small animals, and plant foods. Men speared fish, hunted kangaroo, possum, snake and emu, and children played around camps or in shallow sections of creeks (Beaumont et al 1979: 34). Aboriginal activity was recorded at a large waterhole on Cardinia Creek (northern end of Akoonah Park) where they speared fish and bartered for other food from local settlers such as Robert Henry. Fish were both plentiful and larger than the milk dish in which they were carted by the Aboriginals (Beaumont et al 1979: 13). The Aboriginal name for this deep water hole was Ghin Ghin Bean, which was adopted for the extensive pastoral run to the south. There are references to Aboriginal people visiting homesteads to seek tobacco, or to investigate curious objects such as a music box. Canoe trees were known to exist along Cardinia Creek and by the Grasmere Swamp, where stone axes were also collected.

One early resident, Mrs Fritzlaff is known to have had cordial relationships with local Aboriginal, whom she gave sweet tea whenever they visited her property. Mrs Fritzlaff is also known to have been visited by Aboriginal women, some of who carried their children in wooden coolamons on their backs. Another local resident at that time, a Mrs Halleur, was often greeted with a large quantity of wood-grubs to be exchanged for jam. Local Aboriginal women were also cited as feeding ground-up woodworms to young European children (Beaumont et al 1979: 69). In the 1860s, a 'corroboree' ground was thought to have been located near a hill north of Princes Highway and east of Pakenham Road (Murphy 2004).

By the 1860s the traditional Aboriginal owners had been dispossessed of their land and food resources. The dense scrub which characterised the low-lying areas for much of its early settlement period hampered both European and Aboriginal movement in the area. There are no recorded Aboriginal pathways through this region; however, it can be assumed that at least some of the present day roads through the area likely followed narrow tracks established and maintained by local Aboriginal people. Most early settlers initially followed the tracks of explorers McMillan (1839) and Strzelecki (1840) that kept to the lower foothills (BPHS 1982: 30). It is possible that these explorers were also following pre-existing Aboriginal pathways.

Many local place names and properties have supposedly originated from extracts of the local Aboriginal language. There is little possibility now to challenge the accuracy of these words. However, their existence verifies some level of verbal communication between early European landowners and local Aboriginal people. The Aboriginal word *Karr-Din-Yarr* (Cardinia) was interpreted to mean "Looking at the Rising Sun" (Beaumont et al 1979: 10). Another early run *Ghin Ghin Bean* (Gin Gin Bin) was said to have meant "Deep Dark Waters" and refers in particular to a deep water hole, one of the best known features of Cardinia Creek. In 1851 extensive fires swept through this area, forcing some local residents to shelter in this water hole within Cardinia Creek. The local Aboriginal people who were still residing in the area during the time of these fires are recorded to have commented "that the bright fellow (the sun) had got the blight in his eye" (Beaumont et al 1979: 12). The deep dark

water hole referred to so often in local histories has long since disappeared through the general deterioration of Cardinia Creek and its margins, though its location is well known (within the area of Akoonah Park).

Figure 1 Language Areas and Clans (Clark 1990: 364)

6.2 European Historical Background

ca1840–ca1858 Squatting era

Squatters began taking over Aboriginal land in this area in the late 1830s. The subject land falls within the boundaries of the Gin Gin Ben run. This run of 7,000 acres was occupied by J.F. Turnbull and H. Reoch from 1840-43 and by J.B. Quarry from 1844 to 1846.

James Lecky held the Gin Gin Ben run lease from 1846. In 1848, Gin Gin Ben was estimated as being able to carry 500 head of cattle (*VGG*, 4 October 1848, Gaz.40 p.4134). By 1854 Lecky had obtained a 640-acre pre-emptive right along Cardinia Creek. The rest of the Crown land of the Gin Gin Ben run was surveyed and most of the allotments gradually sold off at Crown land sales. Remaining allotments of unalienated Crown land would continue to be occupied under grazing leases until the 1870s. James Murray leased Gin Gin Ben run grazing land from 1858 (see below) Ralph Blunt held grazing leases on Crown land, originally part of the Gin Gin Ben run, from ca1871 (see below).

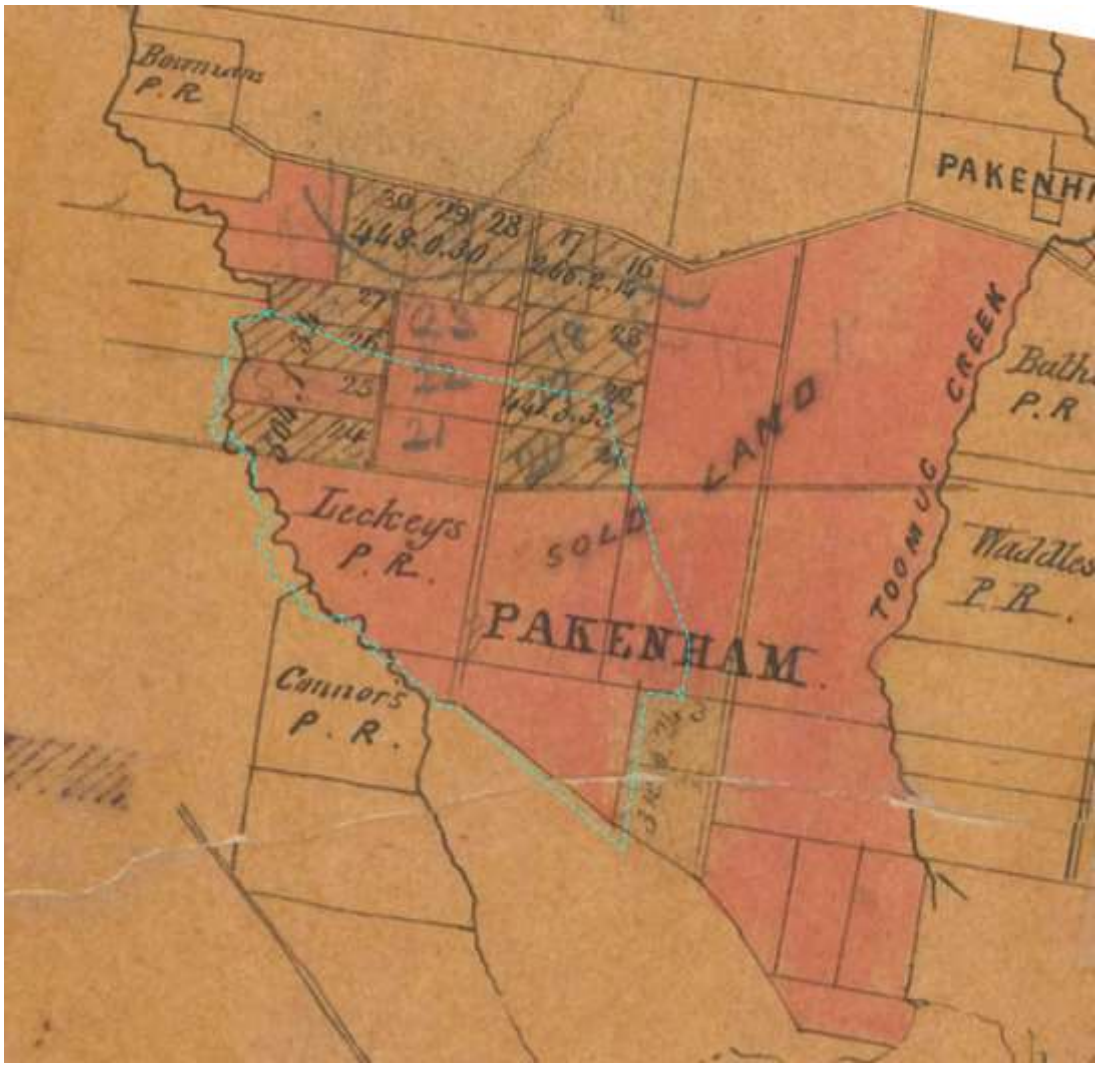


Figure 2 Outline of study area in blue over full extent of Gin Gin Ben Run, with Leckey's Pre-emptive Right and subsequent sold and unsold Crown land allotments. The plan is undated but probably dates from late 1850s (Run 313 Ghinginbean Pakenham, undated, VPRS 8168/P2 Unit 8919).

ca1855–1930s the Leckys and 'Cardinia Park' (including Gin Gin Bean pre-emptive right)

Cardinia Shire Heritage Overlay HO91

James and Elizabeth (Wood) Lecky

Elizabeth and James Lecky and their six children sailed from Liverpool to Port Phillip in 1841. The Lecky family first took up land near Greensborough. They then took up the license of the Gin Gin Bean [Ben] Run and settled there in 1846, living in the "comfortable" homestead built by the former owner (Billis & Kenyon 1935; Billis & Kenyon 1932 p.81; *Argus*, 15 February 1939:5). In 1850 and 1851 James advertised the services of his stud stallion Young Emperor at his station on Cardinia Creek (*Argus*, 6 September 1850:1; 3 October 1851:4). He would subsequently make his name as a Clydesdale studmaster, breeding Thane of Fire, Black Douglas, The Duke of Edinburgh, Prince Charlie and Princess Maud, all of which were "show celebrities" (Billis & Kenyon, 1935).

James Lecky must have gained his pre-emptive right by 1854, as when the Gin Gin Bean Station was offered sale in December that year it carried 400 head of cattle and included a pre-emptive right of 640 acres (*Argus*, 8 December 1854:8). Gin Gin Bean was again included in a sale of stock and stations in 1855, where it was described as having a frontage of 4 miles to the Cardinia Creek, with 350 cattle including 80 milkers included in the sale (*Age*, 8 November 1855:8).

Lecky purchased the 521-acre Allotment 9, to the west of his pre-emptive right block, before 1863 (Department of Sustainability and Environment, 2002; Nelson & Alves 2009). In 1884 the post-and-rail fencing of this lot was described as "very old", so it may have been purchased well before 1863 (James Lecky probate papers, 1884). 1875 rate books show 1160 acres owned by Robert S. and James Lecky in 1875, indicating that the property combined the pre-emptive right and Allotment 9 (Graeme Butler & Ass., Vol.3 p.322).

In 1881 stud advertisements by "James Leckey and Sons" they referred to the property as "the Cardinia Creek Stud Farm, five miles south of Berwick". Another stud was advertised at the same time at J.S. White's property "Cardinia Park", a completely different property two miles south of Berwick (*South Bourke & Mornington Journal*, 26 October 1881:4). 'Cardinia Park' would not be used to refer to the Lecky property until ca1888 (see below).

Before James Lecky Senior died in 1884 aged 81, he had left the Gin Gin Bean property and was resident at "Cranbourne House" Cranbourne. At his death Lecky owned Allotment 25 Parish of Cranbourne, 320 acres northwest of and adjacent to the township of Cranbourne, on which was a six-roomed wattle and dab cottage, and this is the likely location of Cranbourne House (not extant). (No other mention of Cranbourne House has been found.) At his death James Senior also owned the Gin Gin Bean 640-acre pre-emptive right Portion A Parish of Pakenham, on which was "a wattle and dab cottage containing 4 rooms and kitchen, the land fenced partly with wire and partly post and rail, very old". He also owned Portion 9 Parish of Pakenham 521 acres, fenced with post and rail "very old" (*Age*, 19 February 1884:1; James Lecky probate papers, 1884; Department of Lands & Survey, 1948). Elizabeth died in 1891 at her residence 'Broomhedge', a grazing property one mile from Cranbourne, aged 89 (*Argus*, 21 November 1891:1; 23 January 1937:24).

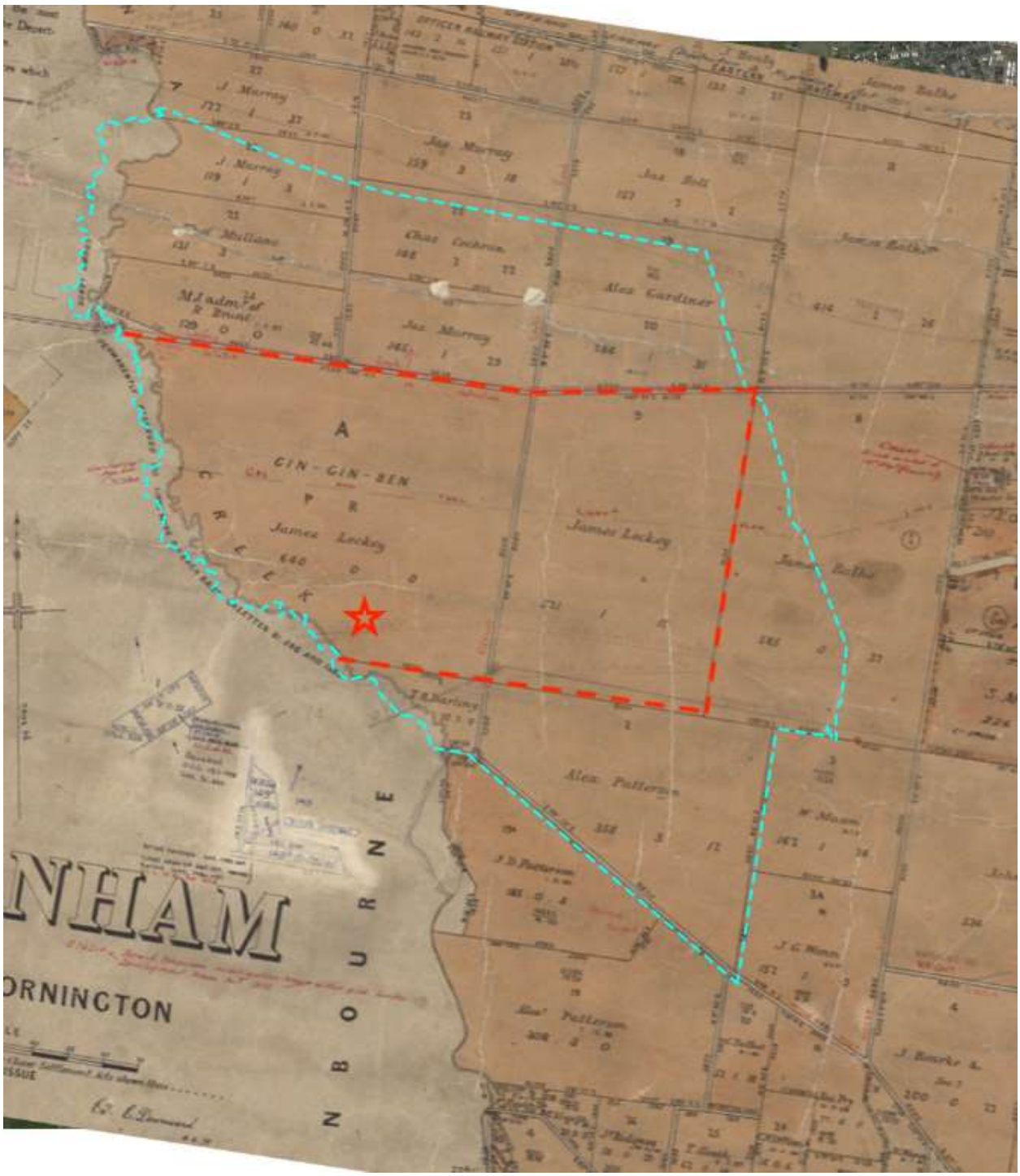


Figure 3 Outline of study area in blue over the Packenham parish plan. The Lecky family estate in the period ca1860–ca1929 is marked in red with the homestead site starred (Department of Sustainability and Environment, 2002).

1884–1929 Robert and James (Junior) Lecky, 'Cardinia Park'

James Lecky Senior's sons James and Robert ran the property after his death. They established a light-horse stud and owned the famous sire Starlight. Horses they had bred had frequent successes at the races (Billis & Kenyon 1935; *South Bourke & Mornington Journal*, 19 December 1888:3; 18 December 1889:2). In stud advertisements in 1885 they still referred to the property as the "Cardinia Creek Stud Farm" (*South Bourke & Mornington Journal*, 21 October 1885:4). The property is referred to as "their Cardinia creek stud farm" in an 1887 advertisement (*South Bourke & Mornington Journal*, 17 August 1887:2). The

name 'Cardinia Park Stud Farm' in reference to this property is first found in newspapers in 1888 (*South Bourke & Mornington Journal*, 26 September 1888:2). James Lecky Junior married Maggie Duff in 1889 (*Age*, 7 September 1889:5; BDM Event No.5682/1889). Their son James was born at Cardinia Park in 1890 (*Age*, 10 July 1890:1; BDM Event No.19908/1890). William Mervyn was born at Cardinia Park in 1895 (*Argus*, 20 April 1895:1; BDM Event No.9651/1895). William and James were killed in the World War 1 (*Age*, 1 September 1919:1).

James Lecky Junior was running the property without his brother Robert by the turn of the century. In 1898 he was reported to have lost 1000 acres of grass in a bushfire (*South Bourke & Mornington Journal*, 19 January 1898:2). In 1916 he bought 841 acres on the west side of Cardinia Creek, including Portion 61 Parish of Cranbourne and part of Portion 74 Parish of Cranbourne (the Cardinia Creek Pre-emptive Right) (*Argus*, 14 March 1916:2; *South Bourke & Mornington Journal*, 13 April 1916:2).

In 1920 James Lecky Junior had a clearing sale of stock, plant and furniture. He had sold "the homestead portion of the estate" and was planning to leave the district. Also for sale was the stock of J.F. Ryan of Echuca, who had been leasing Lecky's grazing land (*Argus*, 13 May 1920:2). It is possible Ryan's stock had been brought here due to the 1918-1920 drought. James and his wife and daughters went to live in Glen Iris/Malvern (*South Bourke & Mornington Journal*, 26 August 1920:4; *Argus*, 15 February 1939:5).

ca1929–1936 Cloak family

The Cloak family purchased Cardinia park in ca1920. In 1929 W.F. Cloak sold fat sheep from the property (*Age*, 11 December 1929:8). In 1931 Cardinia Park Estate, 703 acres, was offered for sale. The "fine" homestead contained 7 main rooms, exclusive of pantries, bathroom, servants' quarters etc. Outbuildings included stables, barn, motor garage, implement and shearing shed, drafting yards and dip (*Argus*, 7 November 1931:3). William F. Cloak died in 1932 (VPRS 28/P3 Unit 2333 Item 249/379).

The executors held a sale of the Cardinia Park Estate, 703 acres, in 1936. There was a brick and weatherboard house of 7 rooms. New buildings included a dairy and a milking shed. The property was carrying 1000 sheep and a dairy herd of 80 (*Argus*, 9 May 1936:3). By February 1937 the property had been sold and a clearing sale was held (*Dandenong Journal*, 25 February 1937:4).

1937–1970s Dodson family

The Dodson family from Leeton NSW purchased the "homestead portion" of the property, 703 acres, in 1937. The property had been carrying 1,400 ewes and lambs and 50 head of cattle (*Argus*, 23 January 1937:24) George Dodson died in 1976 and his wife Elizabeth continued on the farm (Graeme Butler & Ass., Vol.3 p.322).

ca1858–1870 The Murray family at 'Gin Gin Ben'

James Murray took over (some of) the remaining parts of the Gin Gin Bean grazing license in ca1858 (Billis & Kenyon 1932, p.102). His homestead and stock yard on Allotment 24 were established by 1859 (Department of Crown Lands & Survey, 1859).

Figure 4 Murray's homestead (red circle) on Allotment 24 Parish of Pakenham shown on an 1859 plan (Department of Crown Lands & Survey, 1859).

It appears that in 1863 there were buildings on both Allotments 24 and 25, as when these allotments were offered at a Crown-land sale they included improvements of £107 and £145 respectively (*Age*, 21 March 1863:5). The grazing license for the Ghin Ghin Bean run, 1528 acres, was advertised in December 1863 and was purchased by James Murray (*Age*, 30 December 1863:8; *Argus*, 16 January 1864:6).

In 1866 James Murray obtained freehold to Allotments 26 and 27. Allotment 25 had been sold to Thomas Mullane and Allotment 22 had been sold at Crown land sales to Charles Cochran, both at a date unknown (Pakenham Parish Plan; Nelson & Alves, p.75). In 1868 Murray offered his three paddocks, 1300 acres, for agistment of stock, with Mr William Kerwin, presumably the property manager, in charge (*Argus*, 25 April 1868:7). Allotment 24 was still Crown land in 1870, when it was for sale and described as being "at the site of Mr James Murray's homestead, on the Cardinia Creek, immediately north of Leckey's pre-emptive section", 131 acres with a valuation of £141 (*Argus*, 18 April 1870:3).

In June 1870 Murray offered for sale his "well established freehold and leasehold grazing paddocks" together with his town property in Berwick. The freehold grazing land was 700 acres bounded on the east by Mr Henty's land (Thomas Henty had purchased Dr Bathe's Toomah Run (*Australasian*, 8 February 1930:6)), on the south by Mr Leckey's and on the west by Cardinia Creek. Murray was also selling his "right and interest in about 600 acres Government land adjoining", probably the remaining leasehold grazing land of the original Gin Gin Bean squatting run. Murray was leaving for Ireland (*Argus*, 8 June 1870:3).

In November 1870 "Murray's well-established pastoral freehold property and estate" was offered for sale again. It comprised Lots 21, 22, 23, 26, and 27, 695 acres all up. Lot 22 must have been acquired by Murray in the interim. The overall property was "bounded by the Cardinia Creek, where the water is always plentiful, and abutting upon the great line of road

between Melbourne and Gippsland, it intercepts the daily mobs of horses and cattle coming in for agistment, and the returns therefrom are something respectable". Also included in the sale was a "pre-emptive" lot (under a grazing lease) of 131 acres 3 roods lease – i.e. Allotment 24 (*Argus*, 3 November 1870:2).

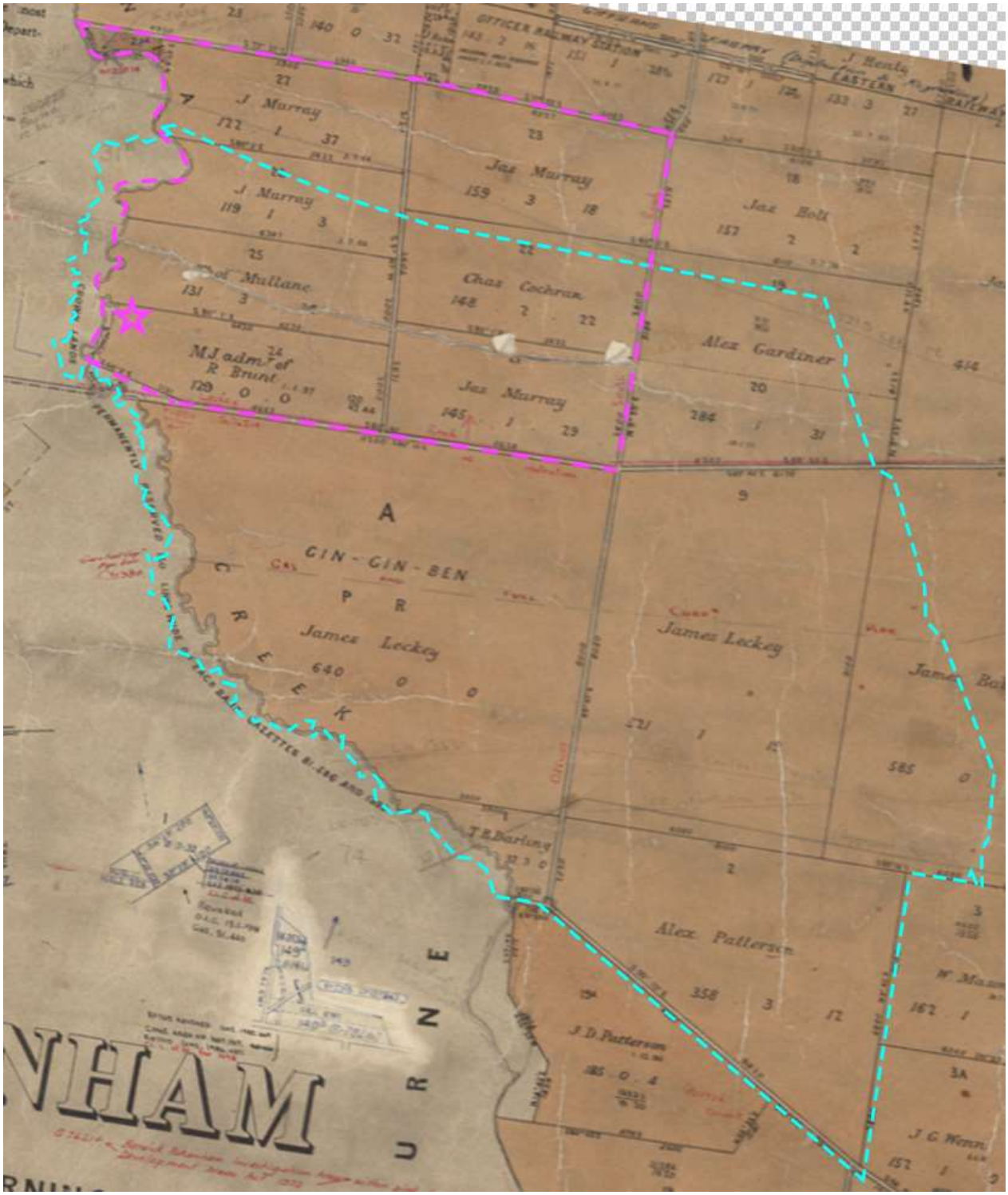


Figure 5 Outline of study area in blue over the Packenham parish plan. The 'Gin Gin Ben' estate in the period ca1870–ca1890 is marked in pink, with the position of the homestead starred (Department of Sustainability and Environment, 2002).

ca1870–1924 The Brunt family on 'Ghin Ghin Bean'

Ralph Brunt purchased Murray's land in 1870 and continued the agistment business (*Argus*, 22 March 1871:8). He held a clearing sale of his stock on his farm in Berwick in 1875 due to the expiration of a lease (*Australasian*, 20 March 1875:27). The Mornington Farmers' Society held regular ploughing matches on Ralph Brunt's farm in the 1880s (*South Bourke & Mornington Journal*, 17 May 1882:2; 1 April 1885:2; *Advocate*, 12 July 1884:21). In 1887 Brunt had a clearing sale of his Ayrshire cattle, again owing to expiration of a lease (*Argus*, 15 March 1887:3).

When Ralph Brunt died aged 58 in 1889, the inventory in his probate papers revealed he owned Allotments 21, 22, 23, 25, 26 and 27, totalling 823 acres. Allotment 24, 129 acres, was still held under a "grazing area license", which by this time was under Section 42 of the Land Act 1884 (see below). He owned 50 head of cattle. No house was mentioned, perhaps because it was on the leasehold Allotment 24, but he owned furniture and linen and a buggy, indicating a house somewhere (Ralph Brunt probate papers, 1889; *Age*, 14 March 1889:1).

Ralph's wife Mary Jane (Brunsten) Brunt took over running "Ghin Ghin Bean" after her husband's death. By 1897 the estate of Ralph Brunt had gained freehold title to Allotment 24 under Sections 42 and 44 of the Land Act 1884, which enabled holders of grazing leases to apply for licenses to occupy 320 acres of their leases for agricultural purposes. After 6 years these selectors could apply for a Crown grant for the land at a price of 14 shillings per acre (BDM Event No.11067:1860; Department of Sustainability and Environment, 2002; Nelson & Alves, pp.255-6).

Mrs Brunt of "Ghin Ghin Bean" had a clearing sale of her dairy herd in 1900. She was selling 300 cattle and going in for sheep (*South Bourke & Mornington Journal*, 18 April 1900:2; *Warragul Guardian*, 10 April 1900:2). Her sons Andrew and George Brunt were named as the proprietors of Ghin Ghin Bean at sheep and lamb sales in 1900 (*Age*, 13 June 1900:4).

1902 Subdivision of Gin Gin Bean

Mary Jane Brunt combined the various titles of Gin Gin Bean into one in 1902, and then subdivided the 959-acre property between six of her family members. William Brunt became the owner of 79 acres, Parts of Lots 22 and 23. Margaret Jane Wauchope became the owner of 140 acres, most of Lot 23. Rebecca Stevens became the owner of 236 acres, Lot 21 and the southern 2/3 of Lot 22. Elizabeth Brunt became the owner of 169 acres, Lot 24 and the eastern 1/3 of Lot 25, which contained the original Murray homestead site. George Brunt took 283 acres, the eastern 1/2 of Lot 27, Lot 26 and the western 2/3 of Lot 25. Andrew Edgar Brunt took 55 acres, the western half of Lot 27 (CT 2865/858).

The 1924 topographic map shows a house on the on the east side of Allotment 22, in the area of land transferred to Rebecca Stevens in 1902. The eastern half of Rebecca's land was sold Martha Gardiner in 1921, and this is probably when the house was built on Lot 22 (CT 2899/749). This house is no longer extant but was located in the area of current properties numbered 190/200/210 Officer South Road (Australian Section Imperial General Staff, 1924).

In 1909 a fire destroyed the residence of Mrs Ralph Brunt (*South Bourke & Mornington Journal*, 12 May 1909:2). The 1924 topographic map shows a house on Lot 26, part of George Brunt's acquisition in 1902, approached by a track from the north (Australian Section Imperial General Staff, 1924). A large house with tiled roof now on this site is now approached from the east via Handford Lane, probably due to the construction of the freeway. This may be 'Koonara'. George Brunt was selling stock from Ghin Ghin Bean from c1909 to 1916 (*Maffra Spectator*, 8 April 1909:3; *Weekly Times*, 8 July 1916:35). By July 1916 he was selling stock from Koonara, Officer (*Weekly Times*, 8 July 1916:5). Koonara was in Brunt Road, which was the northern road approach to the property before the freeway (*Argus*, 1 January 1949:8).

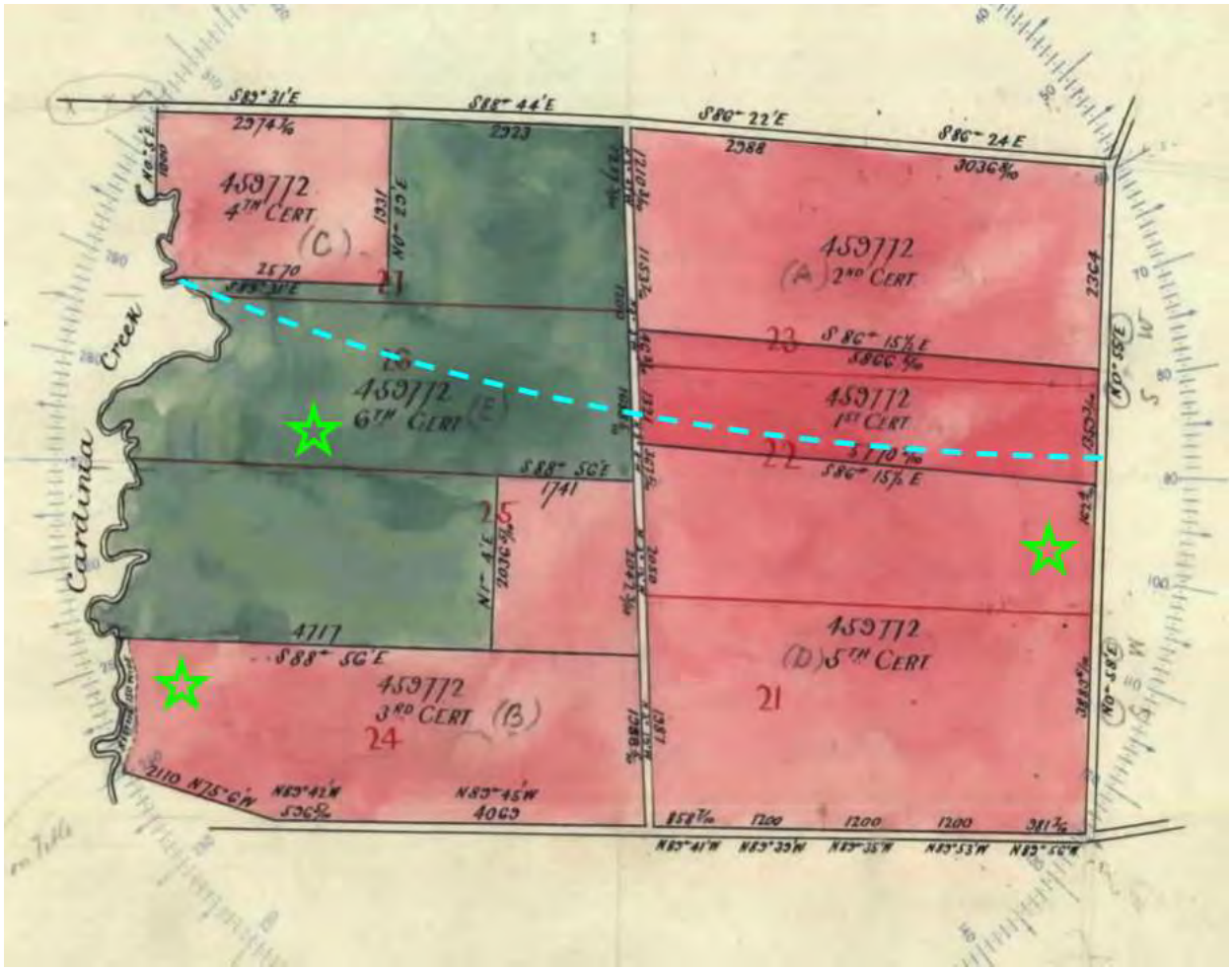


Figure 6 The 1902 subdivision of Gin Gin Ben, with house positions from the 1924 topographic map and boundary of study area in light blue (CT 2865/858; Australian Section Imperial General Staff, 1924).

1924–1954 Mr G.E.R. Jones and Mrs Ivy Stella (Brunt) Jones at 'Ghin Ghin Bin'

Mary Jane Brunt died in 1924 at the age of 95 (*Argus*, 3 May 1924:17). It appears that despite the subdivision, much of the old property continued to be run by the Brunt family members. For instance, Elizabeth Brunt's address when she married Herbert Crouch in 1921 was Gin Gin Ben. She then moved to Auburn (*Argus*, 3 June 1921:1; 3 May 1924:17). Ivy Stella (Brunt) and husband George Edward Redvers Jones were running the property called Ghin Ghin Bin from ca1927. Ivy was Mary Jane Brunt's granddaughter, born in 1895 to William and Sarah (Buckland) Brunt (BDM Event No.15194/1895). Ivy married George Edward

Redvers Jones in 1922 (*Argus*, 30 December 1922:1). In 1927 G.E.R. Jones held a sale of cattle, horses, implements and furniture at Ghin Ghin Bean (*South Bourke & Mornington Journal*, 6 January 1927:4).

In 1947 the Jones family decided to give up dairying and held a clearing sale at Ghin Ghin Bin, including all of the dairy herd, horses and plant (*Argus*, 18 October 1947:13). Trevor Neil Jones became the owner of the George Brunt's 283 acres, Lot 26 and parts of lots 25 and 27, in 1950 after George died in 1948 (CT 2899/750). In 1951 a weatherboard home of 2,700sq.ft. was offered for sale for removal from Ghin Ghin Bin. The sale was successful (*Dandenong Journal*, 30 May 1951:16).

When Ghin Ghin Bin was offered for sale by the Jones family in 1953-54 it included a weatherboard homestead of 5 rooms and sleepout, as well as a garage, implement shed, dairy, woolshed, sheep yards and plunge dip. The advertisement described a "grazing, fattening and/or dairying property" which had been held by the same family since "selection" in 1871. (No connection has been found between the Murrays and Brunts). The 450 acres sold for £56 per acre (*Argus*, 26 December 1953:18; *Dandenong Journal*, 13 January 1954:3; 27 January 1954:10; *Weekly Times*, 6 January 1954:47). The 450-acre area appears to correspond to an amalgamation of lots 24, 25, 26 and half of lot 27, the two areas gained by George and Elizabeth Brunt in 1902.

1954–1956 The Cooney family and the Handford family

Albert and Lilian Cooney became the owners of the 283 acres in 1954. Both had died by 1966 and Phyllis and Wilfrid Handford had "Ghin Gain Bin" by 1969. Land was acquired by the Roads Corporation for the freeway in 1986 (CT 2899/750).

1860s–present Allotments (18) 19 & 20 Parish of Packenham

The study area includes part of Allotments 19 and 20, parish of Pakenham. Alex Gardiner gained freehold title to these allotments in January 1877 after he selected them under Sections 19 and 20 of the Land Act 1869 (Department of Sustainability and Environment, 2002). Gardiner offered 450 acres in the Parish of Pakenham for sale in 1876, as he was moving to NSW. The land was "well grassed, securely fenced, and subdivided, with house, stockyard and waterholes". It adjoined the properties of Thomas Henty and William Holt and was close to the main Gippsland Road (*Argus*, 16 November 1876:2).

Gardiner's 450 acres was probably Allotments 18, 19 and 20. James Holt had selected Allotment 18 in 1870 and gained title in 1876 (*Argus*, 6 July 1870:1; Department of Sustainability and Environment, 2002). Gardiner may have purchased at that point. When Allotments 18, 19 and 20 were offered for sale in 1888, they were described as grazing paddocks which also contained large deposits of good quality brick clay (*Age*, 27 July 1888:2).

George Brown, Berwick storekeeper, owned these three allotments among much other land in the parishes of Berwick and Packenham, when he died in 1896. The inventory in his probate papers does not indicate there were any houses or other buildings on this land (George Brown probate papers, 1896). The 441-acre property, Allotments 18, 19 and 20, was offered for sale by the estate of George Brown in 1897, when it was described as "well fenced" and "fairly clear", but no house was mentioned (*Age*, 7 August 1897:2).

No residence is shown on Allotments 18, 19 or 20 on the 1924 topographic map (Australian Section Imperial General Staff, 1924).

Figure 7 Outline of study area in blue over the Packenham parish plan. Allotments 18, 19 and 20 are outlined in red (Department of Sustainability and Environment, 2002).

1848–present The Pattersons at 'Jesmond Dene', 425 Officer South Road
Cardinia Shire Heritage Overlay HO92

Alexander Patterson on St Germaine's Station

Alexander Patterson was born in Berwickshire and arrived in South Australia in 1839 and in Victoria in 1842. He was an overseer and manager of sheep stations in the Western District before taking up St Germaine's Station on the southwest side of Cardinia Creek in 1848. Following government surveys, he managed to purchase over 3000 acres of the run (*South Bourke & Mornington Journal*, 30 December 1896:3). Among the land Alexander Patterson purchased from the Crown before 1863 was Allotment 2 Parish of Pakenham (Department of Sustainability and Environment, 2002).

Alexander Patterson selected Allotment 19 Section A1 Parish of Pakenham, 308 acres, under Sections 19 and 20 of the Land Act 1869 and gained freehold in 1888. His son John D. Patterson selected Allotment 19A Section A1 Parish of Pakenham under Sections 19 and 20 and gained freehold in 1890 (Department of Sustainability and Environment, 2002).

When Alexander Patterson died in 1896 he owned 2675 acres in the Parish of Cranbourne and 716 acres in the Parish of Pakenham. Alexander had occupied part of this land himself and leased the rest to a tenant for grazing. There was a house of 10 rooms and outbuildings, presumably the original St Germaine's homestead on the land in the Parish of Cranbourne on the southwest side of Cardinia Creek (Alexander Patterson probate papers, 1896).

The executor of Alexander's estate, his eldest son Thomas, offered 1286 acres of the St Germains estate for sale in 1903. Around half of that acreage was on the east side of Cardinia Creek in the Parish of Pakenham, consisting of Allotments 2 and 19 (of Section 1A), 666 acres. No houses or other buildings were mentioned (*Age*, 30 April 1903:2). (John D. Patterson's Allotment 19A was not included.) It appears this sale did not go ahead.

John Denholm Patterson at Jesmond Dene

In 1906 the executors of Alexander Patterson's will offered 'St Germains' for sale again, consisting of 2548 acres on the southwest side of Cardinia Creek in the Parish of Cranbourne, including a "modern brick house" of 16 rooms – i.e. the St Germain's homestead (*Australasian*, 10 November 1906:55). Presumably 'Jesmond Dene' was being set up concurrently on the east side of Cardinia Creek under John D. Patterson. The first mention of the property name 'Jesmond Dene' in the newspapers is in 1907 with John D. Patterson selling lambs from the property (*Age*, 4 December 1907:10). John Denham Patterson married Isabel Louise Baxter, daughter of Joseph Baxter of 'Lakomai', South Yarra, in 1903 (*Punch*, 14 May 1903:27). The Edwardian house on the property was probably built ca1906. J.D. Patterson held a sale of his dairy herd, horses and plan at Jesmond Dene in 1911 (*South Bourke & Mornington Journal*, 23 November 1911:2).

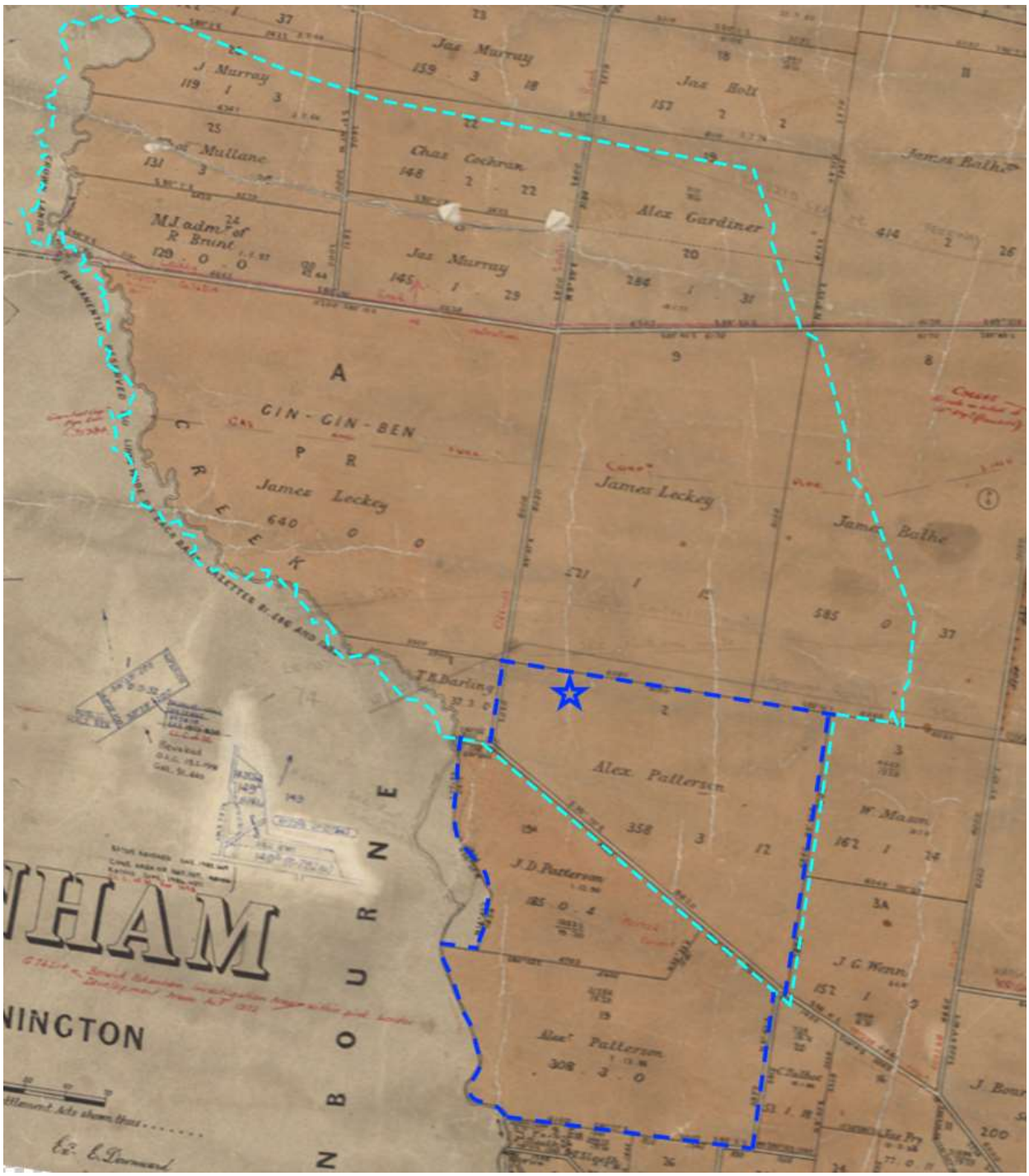


Figure 8 Outline of study area in light blue over the Packenham parish plan. Jesmond Dene ca1907 outlined in dark blue, ca1907 homestead starred (Department of Sustainability and Environment, 2002).

ca1930–ca1970 Joseph Alexander Patterson at Jesmond Dene

By ca1930 John Denham's son Joseph Alexander Patterson was running Jesmond Dene, with his name attached to sales of sheep at the markets (*Age*, 28 May 1930:8). John Denham Patterson died in 1943 and was survived by Alice Marion Patterson, Joseph Alexander Patterson and Elizabeth Denham Stringer (*Argus*, 9 November 1943:11). In 1945 J.A. Patterson' was issued a council permit for timber dwelling at 'Jesmond Dene worth £931 (*Dandenong Journal*, 22 August 1945:2). In 1950 Jeff Patterson had sheep at sale

from Jesmond Dene (*Argus*, 21 July 1950:10). David Twig Patterson was at Jesmond Dene in 1965 (*Age*, 8 April 1965:18). A 1976 sale advertisement stated that the property, being sold by Gawith, had only changed hands once since 1848, so presumably the Pattersons stayed on the property until c1970 (*Age*, 24 April 1976:46).

ca1970–present

Later owners included MLC Charles Gawith from as early as 1970 (*Age*, 8 October 1970:28). Gawith kept racehorses and built the 1800m training track (*Age*, 5 March 1994:43; Graeme Butler & Ass., p.319). The property was 190ha (470 acres) in extent when it was advertised in 1976. There were four staff/family residences in addition to the "fully restored Victorian" homestead (*Age*, 24 April 1976:46). The property was only 88ha (217 acres) in extent when it was offered for sale in 1984. It included a "gracious old stable complex" (*Age*, 10 November 1984:147). In 1994 the property was offered as a whole 80ha, or with a 36ha homestead lot and the remainder as a lot with the manager's residence (*Age*, 12 March 1994:80).

1912-present 'Kaduna Park' Allotment 8 Parish of Pakenham
Cardinia Shire Heritage Overlay HO90

The southwest part of Allotment 8 Parish of Pakenham is within the study area.

Allotments 8 and 11 of the former Gin Gin Ben run were purchased by Dr James Bathe in the 1850s. In 1850 Bathe had established Packenham Park on the homestead section of the Toomah run. In 1854 he purchased the pre-emptive section of the Toomah Run, to the northwest on the other side of Toomuc creek from Allotment 8. He moved to the Panty Gurn Gurn run in 1865 (Graeme Butler & Ass., 1996, Vol.3 p.99; Department of Sustainability and Environment, 2002).

James Henty purchased the fifteen Crown allotments of Pakenham Park in 1866, including Allotment 8. James' properties passed to his son Thomas in the 1880s (Graeme Butler & Ass., 1996, Vol.3 p.99). 380 acres of Allotment 8 were sold in 1913, at which point there was a "very superior residence of 8 rooms [and] men's cottage of 4 rooms" (*Argus*, 2 August 1913:2). William Mason & Sons were then associated with the property (Graeme Butler & Ass., 1996, Vol.3 p.99). The 1924 topographic map shows these two residences on the northeast corner of Allotment 8 (Australian Section Imperial General Staff, 1924).

Between 1929 and 1969 the property was under the Naylors, who ran the "AIS Stud". A newer house was built before 1969. The property name 'Kaduna 'Park' does not appear in newspapers until the 1940 (Graeme Butler & Ass., 1996, Vol.3 p.99; *Dandenong Journal*, 20 January 1943:3). There is a new shed in the middle of the section of Allotment 8 which is within the study area.

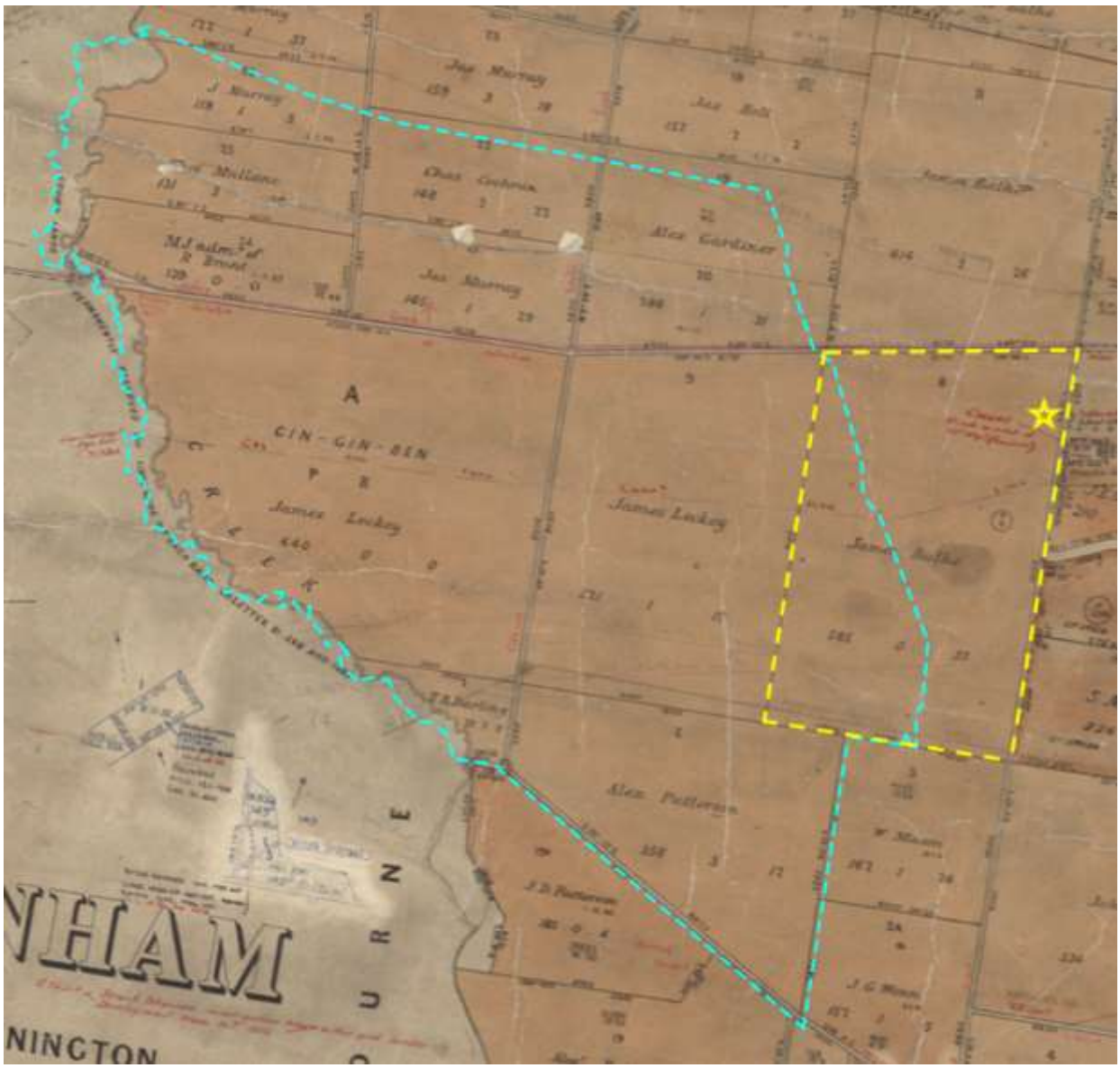


Figure 9 Outline of study area in blue over the Packenham parish plan. Allotment 8 (Kaduna Park) outlined in yellow, c1912 homestead starred (Department of Sustainability and Environment, 2002).

Crossings of Cardinia Creek

The 1924 topographic map indicates two crossings of Cardinia Creek adjacent to the study area (Australian Section Imperial General Staff, 1924). 1½ chains on either side of the Creek were permanently reserved as Crown land (Department of Lands & Survey, 1948). One crossing, which was marked as a ford on the 1924 topographic map, connected the surveyed roads that are now Grice's Road and Lecky Road. This may have given easier access to Cranbourne for the Murrays, Brunts and other owners on the east side of the Creek.

The other crossing was a wooden bridge which connected an unmade road from the Cardinia Park homestead to the laneway between the Cardinia Creek Reserve and the Cardinia Creek Run pre-emptive right block, Allotment 74 Parish of Cranbourne. It appears from current aerial photography that this bridge may still be in place. The track through the Cardinia Park property was in common use as a means of getting from Packenham to

Cranbourne in 1905, when James Lecky shut his gates to stop traffic (*South Bourke & Mornington Journal*, 20 September 1905:3). The bridge may have been built by James Lecky when he acquired parts of Allotment 74 and Allotment 61 Parish of Cranbourne, to give him access to his new property (*Argus*, 14 March 1916:2; *South Bourke & Mornington Journal*, 13 April 1916:2).

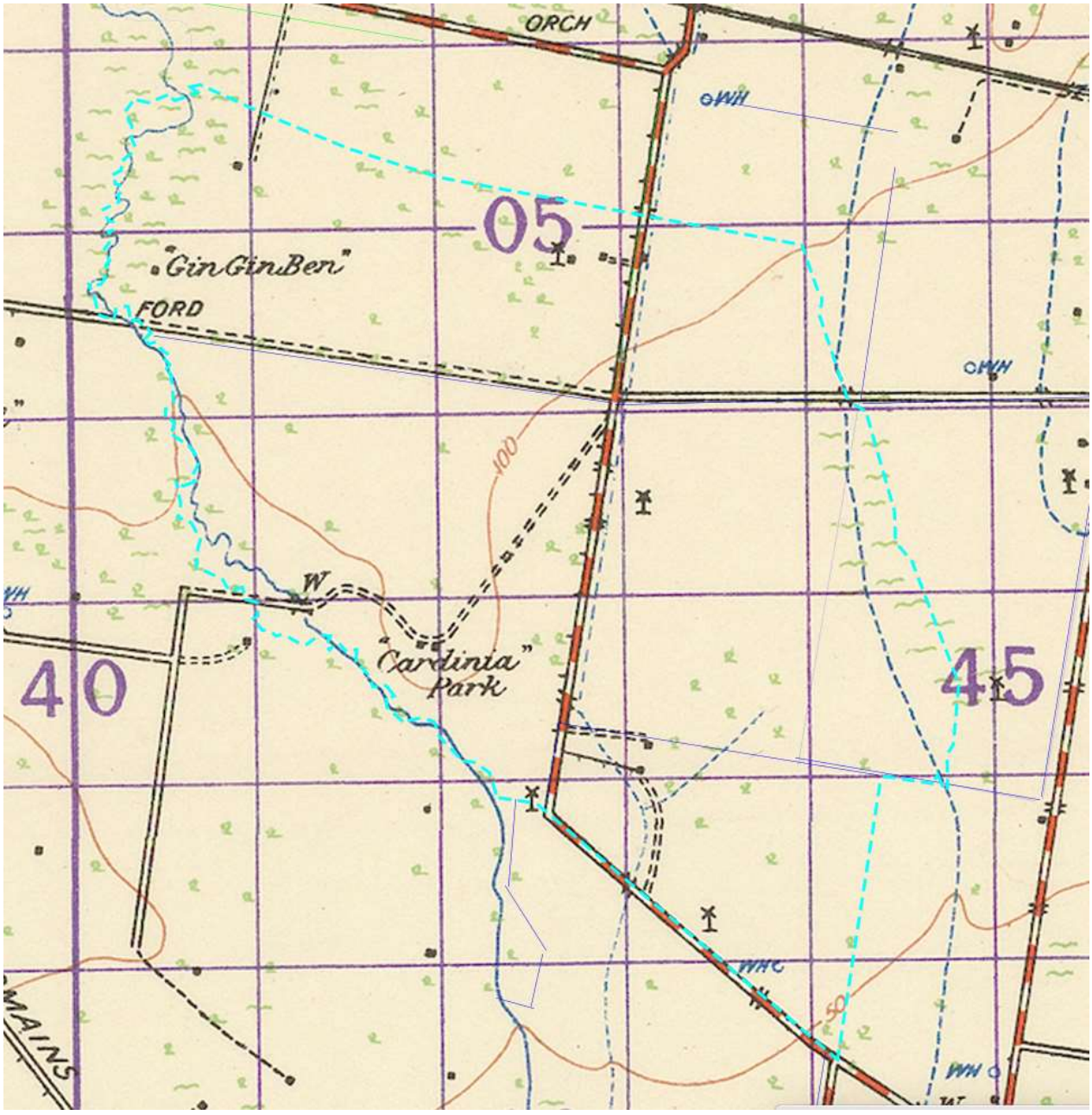


Figure 10 Detail of 1924 topographic map with study area marked in blue (Australian Section Imperial General Staff, 1924, 'Victoria Cranbourne' [cartographic material], SLV map collection).

Figure 11 Historical estates over current aerial imagery, with study area outlined in light blue. Kaduna Park here refers to the historical estate, not to the current development (Google Earth).

6.3 European Historical Archaeological Values

Kaduna Park (HO90), Cardinia Park (HO91) and Jesmond Dene (HO92) are registered Heritage Places as per the Cardinia Shire Council Planning Scheme (Heritage Overlay). As such permits are required from the Cardinia Shire Council to manage these places prior to works commencing at those locations.

At present, no Heritage Overlay exists for the GinGin Ben historical estate. There is potential for historic archaeological material to be present at the location of the Murray Homestead (c.1859) adjacent to Cardinia Creek (at land parcel 4\PS446665).

There is also potential for historic archaeological material to be present at the two historic crossings of Cardinia Creek. The ford connecting Grice's Road and Lecky Road, and the wooden bridge within the Cardinia Park homestead should be reinspected for historic values prior to construction of modern creek crossings.

6.4 Potential Impact of Previous Land Use History

European historic land use across the Officer South PSP area has primarily been the utilisation of land for grazing livestock. This is largely due to the low-lying nature of the land, which would have proved unsuitable for orchards (dominant north of the Princes Highway). Grazing livestock requires extensive land clearance, which was done initially by horse and implement, then post 1930s by tractor. Grazing also requires improved pastures, achieved through repeated ploughing and sowing. Across the PSP low-lying plains were historically subject to flooding during winter months and the excavation of numerous shallow earthen drains (including Lower Gum Scrub Creek) was undertaken across the region to mitigate flooding. Topsoils across the PSP area have largely been impacted by these agricultural practices. Topsoil is not defined in the Regulations and has its ordinary meaning. It is not a geological term, but a common name used in a gardening context. The definition and reference for 'topsoil' used here is as follows (Murphy & Murphy 2000: 70-82):

> A1 horizon is the surface soil and is generally referred to as topsoil. It has an accumulation of organic matter, a darker colour and maximum biological activity relative to other horizons. This is usually the most useful part of the soil for plant growth and re-vegetation. It is typically from 5 to 30cm thick.

The agricultural practices necessary to support grazing across the PSP are likely to have undermined the integrity of any existing surface stone artefact scatters or isolated artefact deposits within topsoils. In situ archaeological deposits across the low-lying plains are unlikely to exist. However, stone artefacts can be found on any landform in Victoria and low numbers of stone artefacts may still be present in disturbed contexts.

Previous studies within the Cardinia Creek corridor have identified the terrace of Cardinia Creek as the landform with the highest archaeological potential in the region (Murphy *et al.* 2007; Murphy & Rymer 2012, 2017; Murphy *et al.* 2015; Rymer & Stammers 2019). Murphy *et al.* (2007) conducted sub-surface excavations on the terrace of Cardinia Creek where a bridge for the Pakenham Bypass was to be constructed. Three medium density and one low density sub-surface stone artefact scatters were recorded. The majority of artefacts across these places were identified to a depth of 35cm within dark loam/loamy clay. Murphy *et al.* (2007) identified stone artefacts with both primary and secondary flaking, indicating the terrace of Cardinia Creek was a site of intensive stone tool manufacture. It was considered likely that Aboriginal people would have camped along the terrace while exploiting the rich resources within the creek corridor.

Land immediately adjacent to Cardinia Creek and its associated anabranches is therefore likely to be the only landform within the PSP where archaeological sites exist with any integrity, with the exception of deep sand deposits.

7 LANDFORM AND GEOMORPHOLOGY

7.1 Geology

Geological unit: Alluvium (Qa1)
Age: Pleistocene to Holocene (2.6-0.0001 Ma BP)

The activity area is dominated by Pleistocene - Holocene age alluvium consisting of gravel, sand and silt deposited along the low terraces and floodplains of Cardinia Creek (Figure 12) (Welch *et al.* 2011). Although this alluvium is described as featuring clasts of gravel and sand and silt-sized particles, the preferred size of sediments within alluvium is typically determined by the composition of the weathered material from which it was derived. Cardinia Creek has transported, and redeposited sediment eroded from the weathered Lysterfield Granodiorite upstream to the north, so the activity area alluvium is most probably dominated by sand and silt-sized particles. Over time, the continuous deposition of these sediments by Cardinia Creek has led to a moderately thick accumulation of sand and silt up to 50 m thick. The soils that have developed on the alluvium deposited by Cardinia Creek are typically thin (~30 cm) due to the young age of the surface sediments, and consist of grey silty A horizons, in which the A2 horizon often features yellow mottling, overlying a grey clay with yellow mottles (Figure 13) (Cupper *et al*. 2003; Northcote *et al*. 1975).

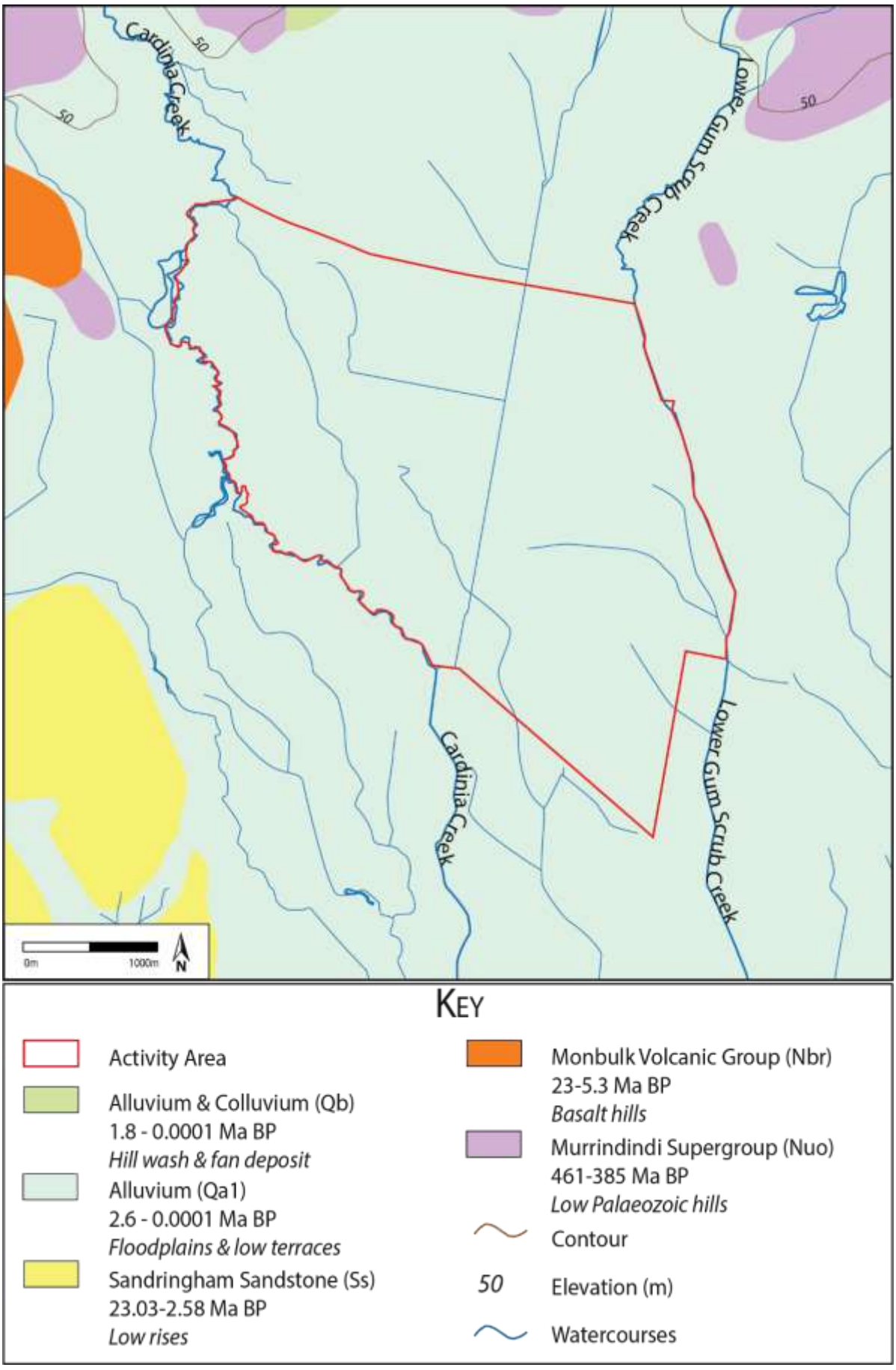


Figure 12 Landscape and Geology of Activity Area (Welch *et al.* 2011).

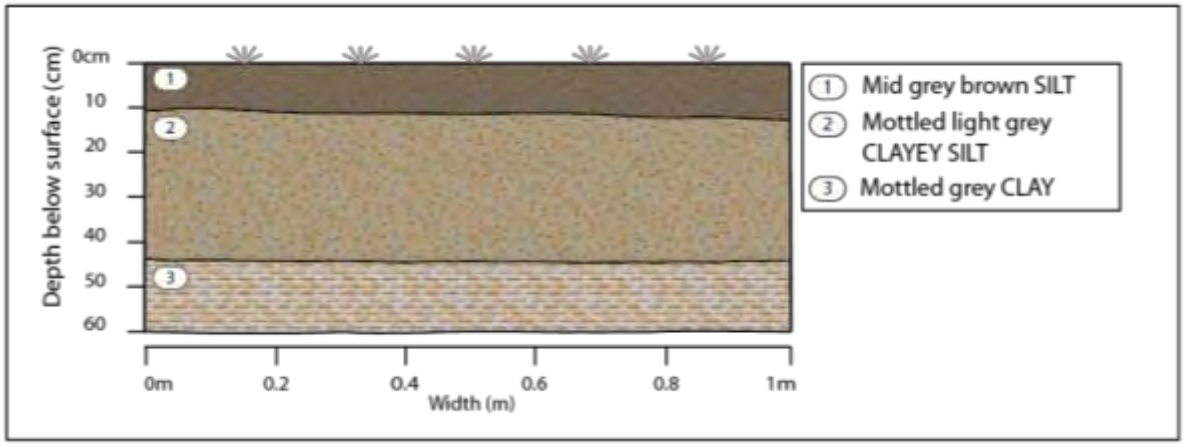


Figure 13 Stratigraphic Expression of the Soil Profile of the Activity Area (Northcote *et al.* 1975).

7.2 Geomorphology & Landform

The activity area lies within the Eastern Plains geomorphic region in Victoria, within the low-relief alluvial plains of the eastern areas of the Central Sunklands (Figure 14) (Joyce *et al.* 2003). The Central Sunklands region consists of two downthrown, low-lying areas (the Port Phillip Sunkland to the west and the Westernport Sunkland to the east), divided by an upthrown, higher-relief fault block forming the Mornington Peninsula. The activity area resides within the Westernport Sunkland, atop a largely-flat landscape with minor ridges developed from the alluvial sediments deposited by local streams. The area is largely influenced by the present Gippsland floodplain usually transporting fine textured and unconsolidated sediments (Welch et al. 2011).

Streams of the region exhibit a dendritic drainage pattern and drain the landscape towards the ocean to the south. Almost all of the streams collect eroded sediment from the higher-relief Eastern Uplands to the north and transport it southwards across the flat alluvial plains. These streams originally flowed into swamps and lagoons that had developed on the plains; however, these have since been drained, and stream flow is now confined by drains that have since been constructed (VRO 2020). Due to the low-elevation of these plains and their closeness to the sea, streams can meander about the landscape, and this is particularly evident within streams near the activity area. The closest stream to the activity area is Cardinia Creek, which flows southwards across the western border of the activity area. Cardinia Creek is a low-gradient stream with a shallow creek channel, and would have been initially surrounded by swampy woodland that was seasonally very wet in winter. On the opposing border of the activity area, running down the eastern side is Lower Gum Scrub Creek, which with Lang Lang river fed the former Tobin Yallock Swamp (Welch et al. 2011; VRO 2020). Small, unnamed lakes and waterways have formed adjacent to the two creeks.

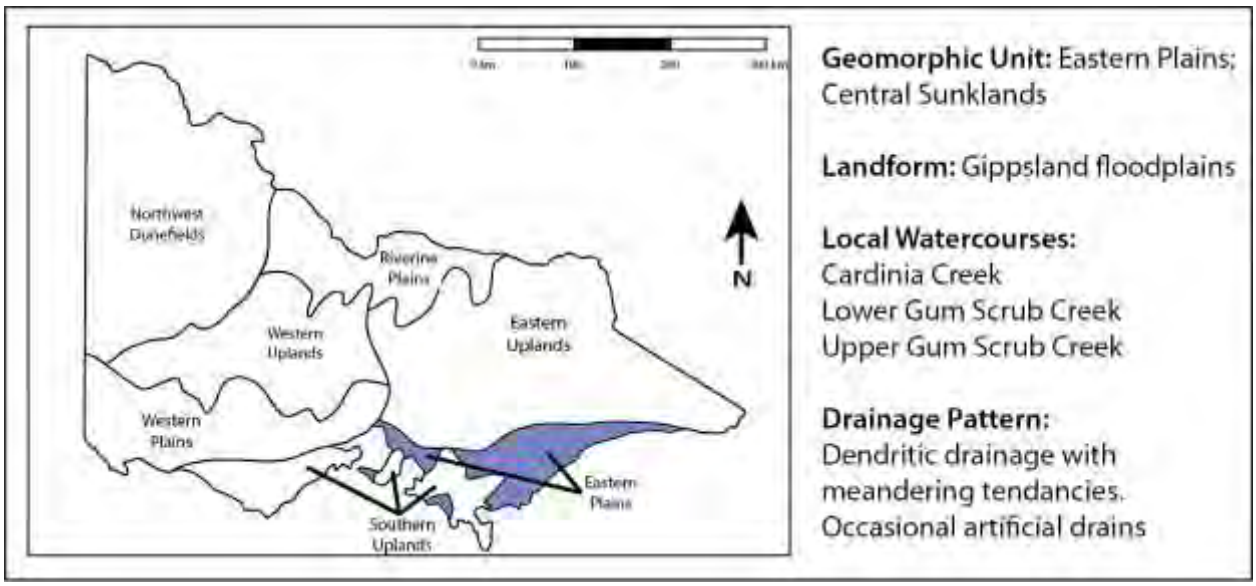


Figure 14 Activity area geomorphological information (Joyce *et al*. 2003)

7.3 Geomorphological History

Table 8 Geomorphological history for activity area (Cupper *et al.* 2003; Dodson & Mooney 2002; Holdgate & Gallagher 2003; Joyce *et al.* 2003; White & Mitchell 2003)

Time period	Geological event/Environmental conditions	Effect
Early – Late Pleistocene (2.6 Ma – 20 Ka)	- Sea level rise and fall - Last Glacial Period (LGM)	Glacial-interglacial cycles driven by variations in Earth's orbit (Milankovic Cycles) raised and lowered sea levels due to the formation of ice around the planet. During glacial periods, sea levels would drop significantly, but rise again during the proceeding warming interglacial period. During times of higher sea levels, streams deposited sediments along their floodplains; however, during glacial periods where sea levels dropped, stream deposition slowed and stream incision rates increased. After the Last Interglacial beginning at ~128 Ka, sea levels retreated from approximately 3-4 m above current levels. Following this, southeastern Australia experienced a long period of climatic variability in the lead up to Last Glacial Maximum at 20-16 Ka BP. During this period, climates became cool & dry in southeastern Australia. Vegetation cover decreased, allowing for increased river discharge and erosion. Destabilisation of the landscape also mobilised large amounts of sand, resulting in the creation of widespread dunefields. At its lowest extent, sea level was approximately 100-120 m lower than present, causing streams to incise into the landscape

Early – Mid Holocene (10-6 Ka BP)	- Holocene Climatic Optimum (HCO)	Following the end of the LGM, sea levels increased to 1-3m above present levels & climates became warmer and wetter than present. Stream deposition rates increased due to an increase in base-level, and swamps expanded in size
Middle-Late Holocene (5-0.02 Ka BP)	- Arid expansion	At the end of the HCO, aridification of the environment occurred, with a concomitant lowering of sea level to present levels. Erosion and river incision increased in response to climatic and sea-level processes
Recent (0.2 Ka BP-Present)	- European settlement	Erosion and coupled sedimentation in response to clearing increased dramatically compared to pre-Contact levels. Fire regimes, drainage patterns & soil organic content also changed substantially as agriculture expanded across the landscape. Efforts to make the land productive for agriculture resulted in the excavation of many drainage channels where ephemeral streams once flowed or where swamps occurred

7.4 Stone Sources

Common stone sources available for lithic tool production in the region include silcrete, quartz, quartzite, & hornfels (Table 9). Vein quartz and quartzite can potentially be sourced from nearby exposures of Siluro-Ordovician sedimentary rocks, particularly to the north and south within the Eastern and Southern Uplands respectively. Hornfels is present as resistant ranges to the west of the activity area, and formed through the alteration of Palaeozoic sediments via heat emanating from the Devonian (420-358 Ma) Lysterfield Granodiorite. Silcrete may be sourced from areas where erosion has exposed sub-basaltic sediments underneath the Older Volcanics flows of the Monbulk Volcanic Group to the east and north-west. Weathering processes have the potential to form silcrete nodules within the sediments underlying the basalt flows, and these sediments represent a possible source of silcrete because of this (Webb 1995; Webb & Golding 1998). Silicification of Palaeozoic sedimentary rocks within nearby outcrops could also constitute another source of silcrete within the local area.

Table 9 Stone sources – original locations and geological units (Vandenberg *et al* 2000; Welch *et al* 2011)

Stone source	Geological unit	Location in relation to activity area
Quartz (vein quartz & crystal quartz)	Palaeozoic metasedimentary units	382 m+ to N, NE, NW, E & W of activity area; Eastern Plains & Eastern Uplands regions Clyde North area Officer area Pakenham area
Quartzite	Palaeozoic metasedimentary units	382 m+ to N, NE, NW, E & W of activity area; Eastern Plains & Eastern Uplands regions Clyde North area Officer area Pakenham area

Hornfels	Contact-metamorphosed Palaeozoic sediments surrounding granites	5.56 km+ W & N of activity area; Eastern Uplands region Beaconsfield Upper area Pakenham area Nar Nar Goon North area
Silcrete	Palaeozoic metasedimentary units Sub-basaltic sediments	382 m+ to N, NE, NW, E & W of activity area; Eastern Plains & Eastern Uplands regions Clyde North area Officer area Pakenham area

7.5 Strategic Values

A discussion of stratigraphic values in the activity area and the surrounding region is important because variations in stratigraphic values likely influenced Aboriginal cultural heritage place location and visitation frequency (Walsh 1987). Strategic values include strategic resources (e.g. portable water, flora, fauna, stone sources), routes of movement (e.g. along waterways and ridgelines) and vantage points (e.g. prominent hills above plains or waterways). In general, stratigraphic values were likely of greater importance to Aboriginal people rather than landform or soil type, that is, Aboriginal groups generally would have chosen long term campsites close to the richest and most diverse resources within the activity area region. Information about strategic values provides insight into Aboriginal cultural heritage place patterning and informs directly on the desktop model presented in Section 8.

Hydrology

The activity area is bound to the west by Cardinia Creek, which would have provided permanent potable water for Aboriginal groups in the region. Ethnographic information indicates that Aboriginal groups typically camped at waterholes along Cardinia Creek. Two former waterholes were identified in a previous desktop assessment (Wheeler et al 2011: 79, Figure 11 – red arrows, see Figure 15 below) one of which is located inside the current activity area; however, they may only be alternative branches of the watercourse. An unnamed anabranch of Cardinia Creek runs parallel to the creek, close to the western boundary of the activity area. On ACHRIS there is an 'unnamed lake' mapped in the north-western section of the activity area, this is more likely a former anabranch of Cardinia Creek that has been modified in the post-Contact era.

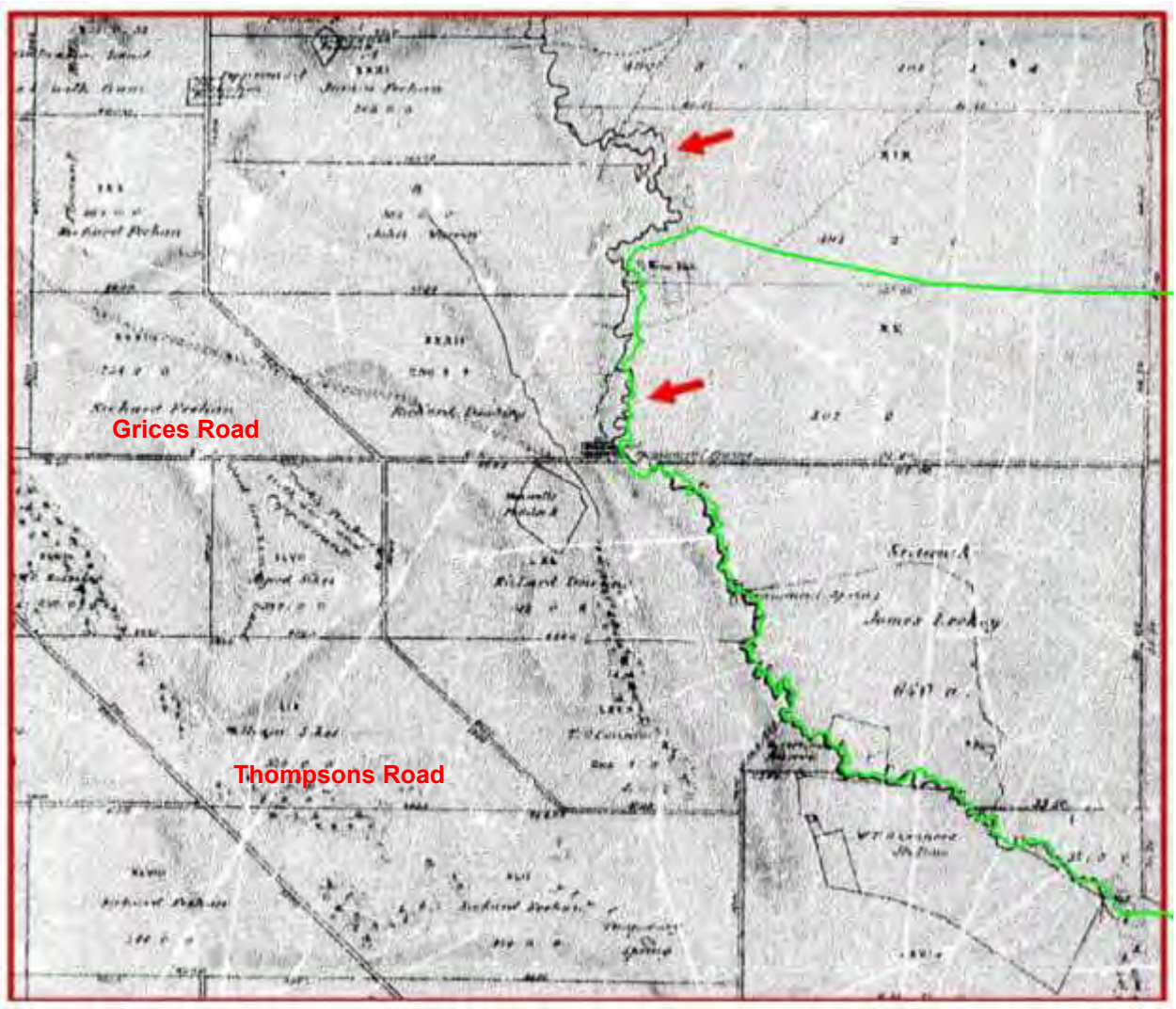


Figure 15 Location of Former Waterholes (Wheeler et al 2011: 79, Figure 11)

The activity area is bound to the east by Lower Gum Scrub Creek. Prior to European settlement, Lower Gum Scrub Creek was likely a swamp, which would have been an area exploited by Aboriginal people for a range of resources. An early parish map showing 'Gum Scrub' supports this assessment of the area as a poorly defined swamp (Figure 16).

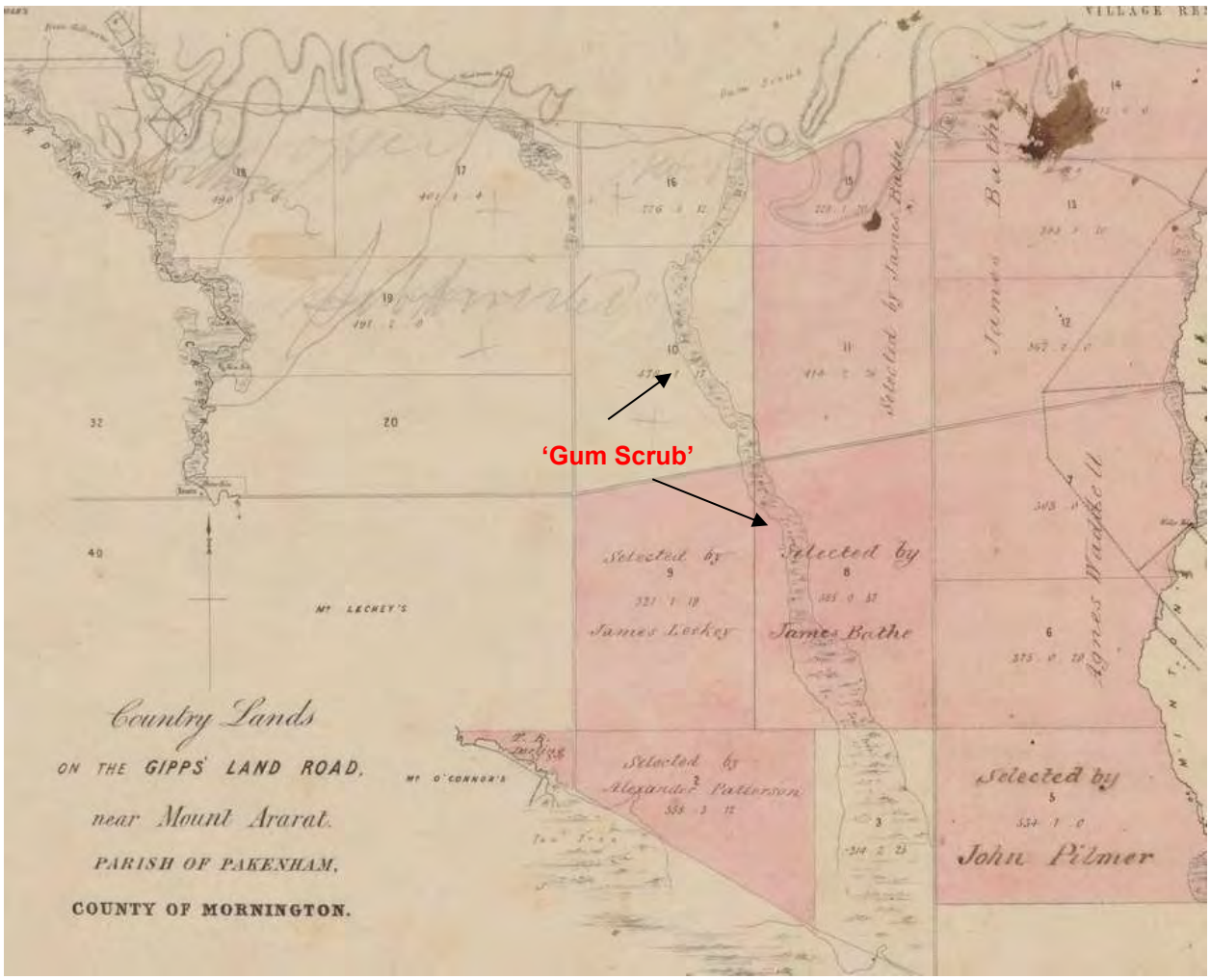


Figure 16 Surveyor General's Office 1856 Pakenham

Documentation regarding the drainage of Lower Gum Scrub Creek is limited, however it is most likely that Lower Gum Scrub Creek was channelised as part of the drainage works program for the Koo Wee Rup swamp which began in 1876. Rhodes & Bell (2004, 19) noted:

> there have been numerous other drainage works on private land, which have drained swamps and smaller creeks into the drains of the Cardinia and Koo Wee Rup schemes. Gum Scrub Creek is now a drain south of the Princes Highway, sections of Toomuc Creek north and south of the Princes Highway have been diverted through drains and Deep Creek has been largely channelised south of the Princes Highway.

On a parish map from 1885 there is no reference to Lower Gum Scrub Creek as a defined waterway, Cardinia Creek is the only waterway of note within the PSP at this time (Figure 17). Aerial imagery from 2019 illustrates the straight and channelised nature of the drain as it exists today (Figure 18).

There are currently no Statutory Areas of Aboriginal Cultural Heritage Sensitivity attached to Lower Gum Scrub Creek within the PSP activity area. A mandatory CHMP would therefore not be triggered within 200m of Lower Gum Scrub Creek if future works are high impact activities.

Figure 17 Department of Crown Lands Survey 1885 Pakenham

Figure 18 Aerial Photograph: Courtesy of DPI Website 2019 (12/04/2019)

Routes of Movement

Cardinia Creek was a likely major route travelling north and south between the Dandenong Ranges and Koo Wee Rup Swamp and then onto the coast following elevated land adjacent to the waterway. Major campsites are likely to be located adjacent to permanent waterholes. Travel routes likely met and crossed at waterholes along Cardinia Creek (see above). European travel routes are shown on the subdivision plan, as highlighted by AHMS (Figure 5), and these travel routes often followed Aboriginal ones.

Vantage Points

There is a small rise located in the south-west of the activity area, between Cardinia Creek and Officer South Rd. Good vantage is likely afforded over the immediate area toward Cardinia Creek from this rise. However, this location was unlikely a permanent campsite, with better accommodation afforded closer to Cardinia Creek.

Flora and Fauna

Prior to European settlement the activity area was dominated by the Plains Grassland / Plains Grassy Woodland Ecological Vegetation Class (EVC 897). Plants known to have been exploited in this EVC by Aboriginal groups for food, medicinal and ceremonial purposes include Black Wattle, Blackwood, Black Sheoak, Small-Leaved Clematis, Prickly Currant Bush, River Red Gum, Spiny Headed Mat Rush, Large Tussock Grass and Kangaroo Grass. The majority of these species are found throughout the region in other EVCs. The margins of Cardinia Creek were dominated by Swampy Riparian Woodland (EVC83) and to a lesser extent Swampy Woodland (EVC937). Plants known to have been exploited in these EVCs include Messmate, Blackwood, Prickly Currant Bush, Common Reed, Kangaroo Grass and Austral Bracken. There would have been abundant flora along Cardinia Creek and the hinterland for Aboriginal people to utilise.

Thomas noted that Aboriginal people would congregate around swamps to spear eels (Gaughwin 1981: 75). Eels were noted by Thomas as being an important food and allowed people to stay at one camp spot for extended periods (Gaughwin & Sullivan 1984: 89-90). Lyrebirds, wombats, wallabies and other animals were hunted in forests during summer (Snoek 1987: 7).

8 SITE PREDICTION MODEL

Areas of Aboriginal cultural heritage potential, as determined by the desktop assessment, are as follows (Map 5):

,

- Land immediately adjacent to Cardinia Creek (bank and terrace);
- Land immediately adjacent to anabranches of Cardinia Creek;
- Margins of swamps (unnamed swamp and Lower Gum Scrub Creek);
- Prominent sandy rises located near a waterway.

Aboriginal site types and contents that are likely to be present within the activity area are:

- Surface and subsurface stone artefact scatters, scarred trees and freshwater shell middens are the most likely site types to be located within the activity area;
    - Artefacts are most likely to be located in a subsurface context, and may be present up to 120cm;
    - Artefact types will most likely consist of flakes, tools, angular fragments and cores;
    - Artefact materials will consist of mainly silcrete and quartz with smaller quantities of crystal quartz, quartzite, chert, flint, basalt, trachylite, rhyolite, hornfels, mudstone and glass;
    - Surface artefacts scatters are only likely to be detected in areas of previous ground disturbance where there is good ground surface visibility;
    - It is likely that artefacts will be located on the surface, where ground surface visibility is sufficient;
- Aboriginal scarring is only likely to occur on native trees >200 years old;
- Shell middens may be present along the bank and terrace of Cardinia Creek as freshwater mussels of the Velesunio species may exist in the waterway;
- Aboriginal ancestral remains are only likely to be present in deep sand deposits;
- It is unlikely that caves, rock shelters or cave entrances will be located within the activity area.

The site prediction model is summarised in Table 10 below.

Table 10 Desktop Summary of Aboriginal Cultural Heritage within the Activity Area (Map 5)

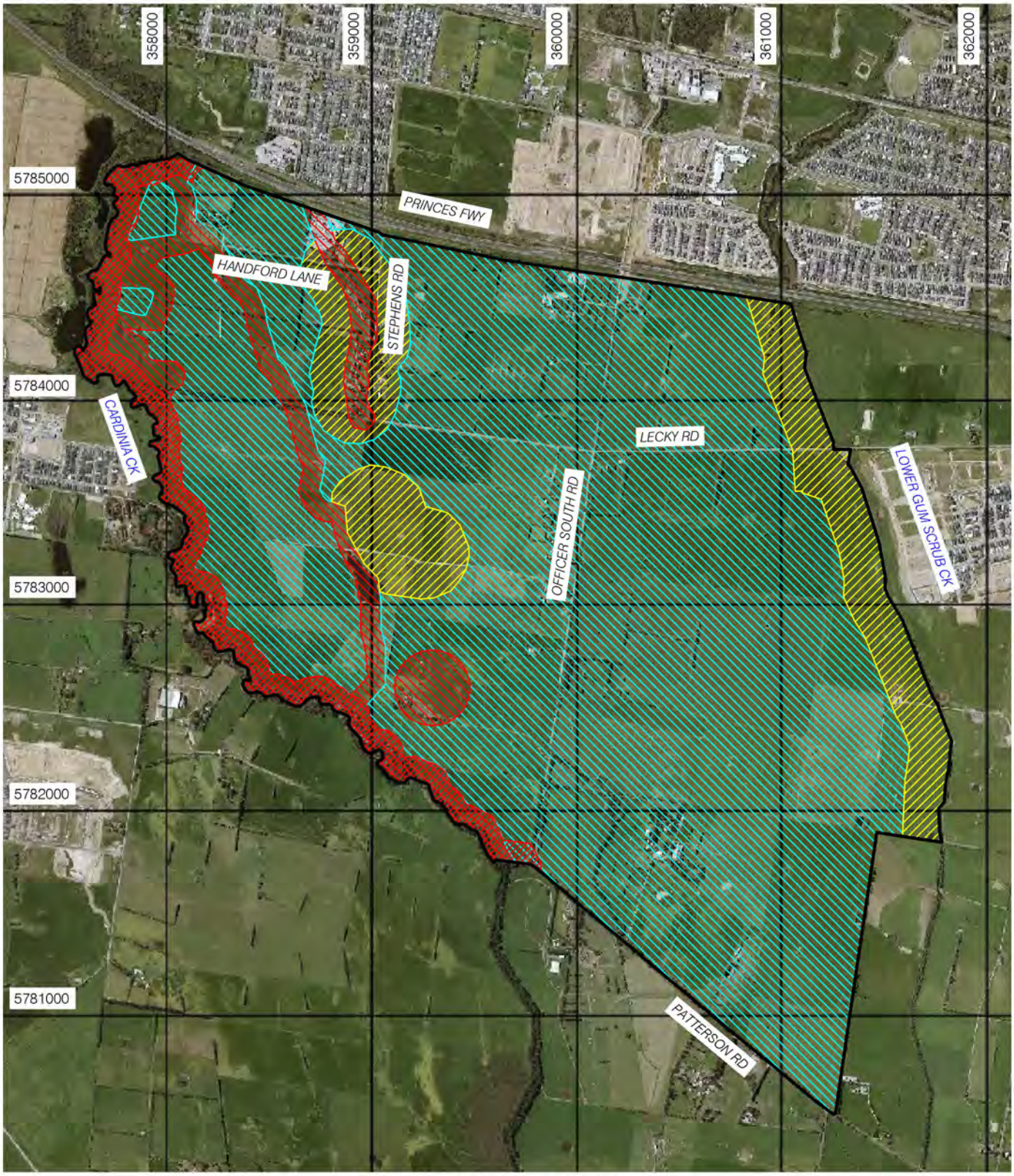
Place / Location	Aboriginal Cultural Heritage	Sensitivity
Cardinia Creek (Bank and Terrace)	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores– located 0-120cm beneath the ground surface – medium to high density.	High
	Scarred Trees – Mature native trees (>200 years old)	High
	Shell Middens- comprising freshwater mussels of the Velesunio species	High
	All Other Place Types	Low
Anabranches of Cardinia Creek (Bank and Terrace)	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores– located 0-120cm beneath the ground surface – medium to high density.	High
	Scarred Trees – Mature native trees (>200 years old)	High
	All Other Place Types	Low
Low-Lying Plain	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores– located 0-120cm beneath the ground surface	Low
	Scarred Trees – Mature native trees (>200 years old)	Low
	All Other Place Types	Low
Margins of Swamps	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores– located 0-120cm beneath the ground surface – low density.	Moderate
	Scarred Trees – Mature native trees (>200 years old)	Low
	All Other Place Types	Low
Prominent Sandy Rises Located Near a Waterway	Subsurface and surface artefact scatters – comprising silcrete and quartz flakes, tools, angular fragments and cores– located 0-120cm beneath the ground surface – medium to high density.	High
	Scarred Trees – Mature native trees (>200 years old)	Moderate
	Aboriginal ancestral remains	Moderate
	All Other Place Types	Low

8.1 Discussion

The activity area for the Officer South Employment PSP has three statutory triggers for future heritage management within this PSP: Cardinia Creek, an unnamed lake (likely former anabranch of Cardinia Creek), an unnamed swamp/wetland (land within 200 meters), and 23 previously registered Aboriginal places (land within 50 meters of these previously registered Aboriginal places, see Section 2.2, Map 2). Any high impact activities, as defined in Division 5 or Part 2 of the *Aboriginal Heritage Regulations 2018*, that are located within the above-mentioned areas of sensitivity, will require the preparation of a mandatory cultural heritage management plan (CHMP) before the commencement of the activity (see Section 2.3).

Aboriginal cultural heritage present within the Officer South Employment PSP is likely to be in the form of surface, and subsurface stone artefact scatters in moderate to high densities along the creek lines and anabranches, in low densities across the low-lying plains, in high densities on elevated sand deposits, and in moderate to high densities on swamp margins within the activity area.

Artefact scatters will comprise mainly silcrete and quartz flakes, tools, angular fragments and cores and will be located between the surface and 120cm beneath the ground surface. Indigenous mature trees with Aboriginal cultural heritage scarring may be present within remnant stands of gum. If deep sand deposits are present within the activity area, there is potential for Aboriginal ancestral remains to be present. It is possible that shell middens may be present on the banks of Cardinia Creek, as freshwater mussels (*Velesunio* species) can be found within the waterway. All other Aboriginal places, such as caves and rock art, are not likely to be present within the activity area.



Aerial Photograph: Courtesy of DPI Website 2019

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Scale of Metres

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Contour Line
- Areas of High Aboriginal Cultural Heritage Sensitivity
- Areas of Moderate Aboriginal Cultural Heritage Sensitivity
- Areas of Low Aboriginal Cultural Heritage Sensitivity

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Map 5 Desktop Areas of Archaeological Potential

9 SITE INSPECTION

The specific aims of the site inspection are to identify and investigate the following:

- Areas of high ground surface visibility for targeted detailed surface inspection;
- Levels of ground disturbance;
- Any surface or obtrusive cultural heritage places, if present;
- Areas of archaeological potential;
- Landform patterns and elements; and
- Test the site prediction model generated by the desktop assessment (Table 10).

9.1 Fieldwork Participants

The site inspection was conducted on 15th, 16th and 17th September 2020 by Jessica Earl (supervising archaeologist, AAT), Willie Pepper (BLaSC), Eric Edwards (BLCAC), Malcom Hoye (WWWCHAC) and Naomi Zukanovic (WWWCHAC).

9.2 Methodology

Ground surface visibility throughout the majority of the activity area was very poor (<5%) due to thick pasture grasses. Therefore, an opportunistic (judgement) survey of stratified units selected upon levels of good visibility was adopted (Burke & Smith 2004: 66-68; Banning 2002: 115-116; Richards 2008: 555). These areas were then subject to systematic pedestrian survey by between three and four surveyors walking 5m apart (Map 8). This methodology surveyed all exposed ground within the activity area, such as creek banks, dams, tracks, and areas of cattle disturbance.

To identify differing landforms within the activity area a stratified random sample utilising farmers paddocks as sample units was adopted (Map 6)(Burke & Smith 2004: 66-68; Banning 2002: 115-116; Richards 2008: 555). Surveyors either walked across paddocks or drove along public roads identifying survey units which are considered to have archaeological potential. High potential units identified throughout the activity area included low rises within the floodplains, land adjacent to Cardinia Creek, and land adjacent to anabranches and former swamps. Landforms of low archaeological potential were identified as low-lying floodplain areas. Where land access was given, the activity area was inspected to identify areas of good visibility and landform.

Detailed notes were taken including description of landform elements, ground surface visibility, ground surface disturbance, geology, geomorphology, vegetation, water sources and potential Aboriginal cultural heritage sensitivity (Burke & Smith 2004: 69-80). These features were photographed using a standard scale with 20cm divisions.

9.3 Mature Trees, Caves, Rock Shelters or Cave Entrances

A small number of mature indigenous trees were present within the study area and all were inspected for cultural scarring. There was no cultural scarring identified on any of the mature indigenous trees. No caves, rock shelters or cave entrances were identified.

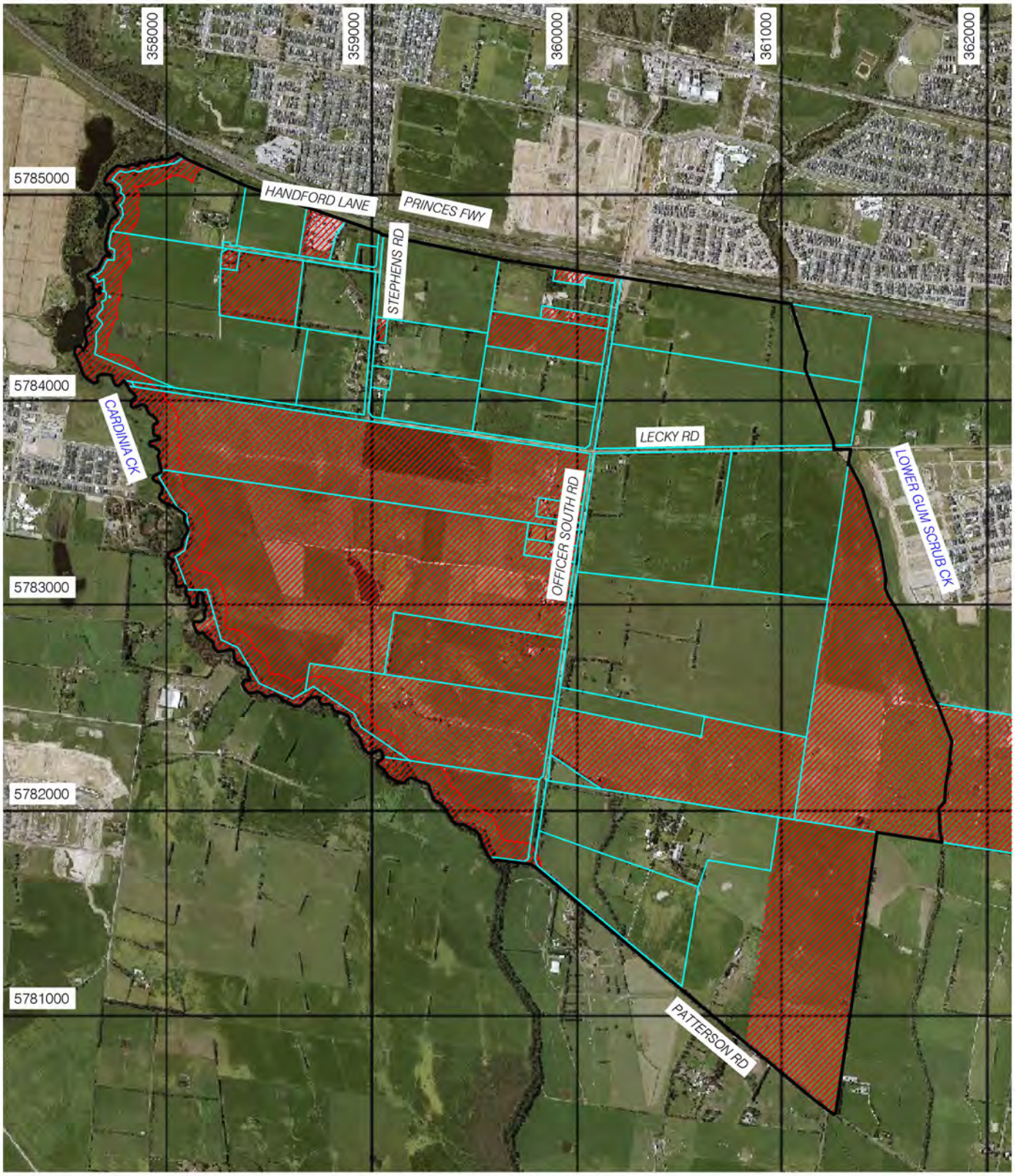
9.4 Obstacles

Land access was not possible to a number of properties within the PSP activity area, due to land access not being granted by owner/occupiers or land not being accessible from public roads (Section 9.5, Table 11 & Map 7). It was therefore not possible to undertake a pedestrian inspection across these parcels, and assessment was limited to a brief roadside inspection. This roadside inspection was limited in nature as many of these properties extended beyond the road and their boundaries were not viewable. This roadside inspection is discussed in Section 9.5, however these land parcels are excluded from any detailed discussions regarding the activity area.

Where land access was possible, introduced pasture grasses covered the majority of the activity area, however, occasional patches of bare ground were observable around dams, gates, fence lines, and resulting from stock movement. In these areas, visibility was excellent, however they were small and few in number. Across the majority of the activity area ground surface visibility constrained the potential identification of surface stone artefacts.

Unfortunately, it is often the case that highly visible archaeological sites are also often highly disturbed. High ground surface visibility is therefore often related to the amount of disturbance that has occurred. This disturbance may be manmade (such as drainage lines, vehicle tracks), by stock (overgrazing, tracks), or due to natural processes (erosion by wind or water).

No other obstacles, physical or otherwise, were encountered during the site inspection.



Aerial Photograph: Courtesy of DPI Website 2019

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Scale of Metres

Legend:

Activity Area Boundary
1,068 hectares (approx)

Lot Boundary

Land Access Not Possible

Balance Unshaded Land Access Possible

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Map 7 Land Access for Site Inspection

9.5 Properties for Which Land Access was Not Possible

A number of properties within the PSP activity area were not inspected by pedestrian survey due to land access not being granted by owner/occupiers or land not being accessible from public roads (Map 7). Assessment of these land parcels was restricted to a brief roadside inspection. This roadside inspection was limited in nature as many of these properties extended beyond the road and their far boundaries were not viewable.

The desktop assessment identified these land parcels as including areas of archaeological potential such as land within 200m of Cardinia Creek, swamp margins, unnamed lake margins, and sandy rises adjacent to Cardinia Creek.

There are no Statutory Areas of Aboriginal Cultural Heritage Sensitivity at land parcels (Property ID) 9, 10, 22, 28, 32, 33, 34, 36, 48, 47. All of the remaining inaccessible properties have Statutory Areas of Aboriginal Cultural Heritage Sensitivity and therefore will trigger mandatory CHMPs if future PSP works include high impact activities.

Landform and modern disturbances were noted from the public roadside (Table 11). Where areas of archaeological potential were noted these generally supported the site prediction model in the desktop assessment, with only a small number of properties being reassessed (Table 10). Property 4 was reassessed as having moderate (rather than high) archaeological potential due to disturbance to most of the parcel by the construction of a service station. Properties 40 and 47 were considered to have moderate (rather than low) archaeological potential due to the land being undulating with low rises.

Table 11 Roadside Assessment of Inaccessible Parcels

Property ID	Area of Archaeological Potential (Desktop)	Archaeological Potential (Roadside Inspection)	Landform (Roadside Inspection)	Disturbance (Roadside Inspection)
4	Unnamed Lake (former anabranch) Margins	Moderate	Undulating Land	Service Station
13	Anabranch of Cardinia Creek	Unknown	Unknown- Windrow Obstructed View	Unknown- Windrow Obstructed View
14	Unnamed Lake (former anabranch) Margins; Anabranch of Cardinia Creek	Unknown	Unknown- Windrow Obstructed View	Unknown- Windrow Obstructed View
17	Unnamed Lake (former anabranch) Margin	Low	Low-Lying Flat Floodplain	Livestock
9	None	Unknown	Unknown- South East Water Facility, Obstructed View	South East Water Facility
10	None	Low	Low-Lying Flat Floodplain	Livestock

22	None	Low	Low-Lying Flat Floodplain	None Visible
27	Unnamed Lake (former anabranch) Margins, Unnamed Swamp Margins, Anabranch of Cardinia Creek, Previously Recorded Aboriginal Place	High	Low-Lying Flat Floodplain; Low Rise	House; Outbuildings; Livestock
28	None	Low	Low-Lying Flat Floodplain	House; Livestock
32 & 33	None	Low	Low-Lying Flat Floodplain	House; Livestock
31	Unnamed Swamp and Margins, Anabranch of Cardinia Creek; Previously Recorded Aboriginal Places	High	Low-Lying Flat Floodplain (Sandy soil identified on dam bank)	High Pressure Gas Pipeline and Pressure Station; Livestock; House; Outbuildings; Drainage Line; Dam
34	Rise Adjacent to Cardinia Creek	High	Rise; Undulating Land with Numerous Low Rises	House; Livestock
36	None	Unknown	Not viewable from road as set back from Cardinia Rd	Unknown
37	Cardinia Creek	High	Not viewable from road, access from private properties	Unknown
38	Within 200m of Cardinia Creek, Within 50m of Previously Registered Aboriginal Place; Anabranch of Cardinia Creek; Rise; Potential for Historic wooden bridge crossing Cardinia Creek	High	Rise; Undulating Land with Numerous Low Rises	Livestock; Overhead Powerlines
40	None	Moderate	Land slopes gently up towards the East	Livestock; Overhead Powerlines

44	Cardinia Creek; Within 50m of Previously Registered Aboriginal Place	High	Land slopes gently up towards the North-West (to the rise in property 39); Undulating Land with Numerous Low Rises	Livestock, Overhead Powerlines
47	None	Moderate	Undulating Land	Livestock

The above notes taken during site inspection should be considered limited in value, as no pedestrian assessment of the parcels was possible. These land parcels will require further investigation if future PSP works are to be high impact activities.

9.6 Results and Discussion: Survey Units, Ground Surface Visibility and Effective Survey Coverage (Map 8)

Archaeological visibility refers to the amount of ground surface that is clearly visible for inspection. The greater the ground surface visibility (GSV), the more effective are surface surveys. Examples of high surface visibility are vehicular and pedestrian tracks, and sand dune blow outs (100% per ha); examples of poor visibility are areas of heavy vegetation cover (0-10% per ha).

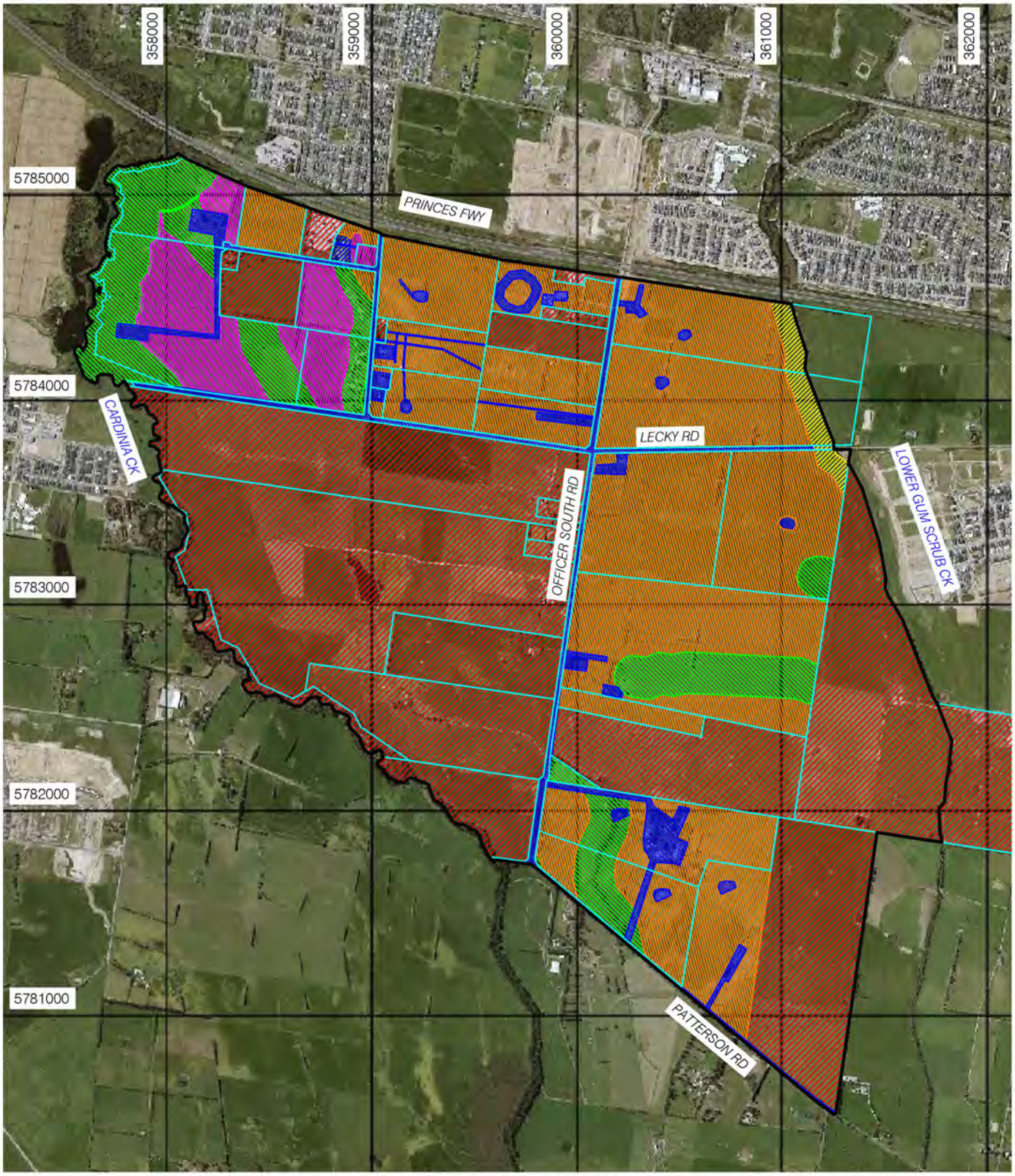
The level of ground surface visibility is typically assessed as follows:

0%	No visible ground surface
0 – 10%	Very poor
10 – 30%	Poor
30 – 50%	Fair
50 – 70%	Good
70 – 90%	Very good
90 – 100%	Excellent

The activity area consisted of five survey units (Map 8, Table 12). Typically GSV across the activity area was constrained by thick pasture grasses and was very poor (<5%). Very good ground surface visibility (70%) was limited to areas of disturbance including drainage lines, vehicle tracks, overgrazed areas, tracks and blow outs. The overall effective survey coverage was 0.058% per ha (Map 8).

Table 12 Survey Units, Ground Surface Visibility & Effective Survey Coverage

Survey Unit	Description	Ground Surface Visibility	Effective Survey Coverage
Survey Unit 1 Low Lying Former Floodplains 33% of the activity area 353.4ha	Land greater than 200m from present or former stream courses, currently utilised for grazing. Modern drainage lines have largely drained the area.	<5% <17.67ha	<1.65%
Survey Unit 2 Undulating Land 5% of the activity area 48.35ha	Undulating land with low rises above the surrounding former floodplain.	<5% <2.4ha	<0.25%
Survey Unit 3 Former Swamp Margins 1% of the activity area 9.4ha	Prior to drainage, Lower Gum Scrub Creek was most likely a poorly defined swamp. The surrounding land within 200m today is low-lying.	10% 0.94ha	0.1%
Survey Unit 4 Land within 200m of a Watercourse 3% of the activity area 31.45ha	Cardinia Creek, anabranches of Cardinia Creek and natural drainage lines.	20% 6.29ha	0.6%
Survey Unit 5 Developed Land 4% of the activity area 46.9ha	Significantly disturbed land associated with residential and pastoral buildings and infrastructure, e.g. driveways, artificial channels, dams and sheds.	70% 32.83ha	2.8%
TOTAL		60.13ha	5.4%



Aerial Photograph: Courtesy of DPI Website 2019

0 500 1000
Scale of Metres

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Land Access Not Possible
- Lot Boundary
- Survey Unit 1 Low Lying Former Floodplains
- Survey Unit 2 Undulating Land
- Survey Unit 3 Former Swamp Margins
- Survey Unit 4 Land within 200m of a Watercourse
- Survey Unit 5 Developed Land

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Map 8 Survey Area, Survey Units and Effective Survey Coverage

Survey Unit 1: Low Lying Former Floodplains

Survey Unit 1 is comprised of generally flat low lying former floodplains (Photo 1). These former floodplains have been subject to extensive drainage works, with modern drainage lines criss-crossing the Survey Unit to drain the waterlogged paddocks (Photo 2). Where modern drains have not been installed, the land is extremely waterlogged and water pools in low points (Photo 3). Typically GSV in Survey Unit 1 was very poor due to thick pasture grasses (<5%)(Photo 4) with few areas of excellent GSV on dams, along windrows and in areas of cattle disturbance (Photos 5, 6 & 7). The low-lying floodplains are utilised predominantly for grazing.

This Survey Unit has low potential to contain Aboriginal cultural heritage, as the low lying, inundated nature of the land would not have provided favourable campsite locations nor routes of movement for pre-Contact Aboriginal people. If any Aboriginal cultural heritage is present it is unlikely to be in situ given the disturbance of the land by cattle grazing across the inundated ground surface.

No Aboriginal cultural heritage was identified during the ground survey in Survey Unit 1. One previously registered place, VAHR 7921-1225 was reinspected. The two stone artefacts comprising VAHR 7921-1225 had previously been collected, and no additional Aboriginal cultural heritage was identified at the location.

Photo 1

Survey Unit 1

Low lying former floodplain, Property ID 21 facing west

Photo 2

Survey Unit 1

Modern Drainage Lines to drain water from horse paddocks, Property ID 18 facing north

Photo 3

Survey Unit 1

Low point where water pools on the poorly drained former floodplain, Property ID 23 facing west

Photo 4

Survey Unit 1

Typical poor GSV (<5%) due to exotic grasses

Photo 5

Survey Unit 1

Area of high GSV (90-100%) on dam bank, Property ID 19

Photo 6

Survey Unit 1

Area of high GSV (90-100%) along windrow on right, Property ID 46 facing W

Photo 7

Survey Unit 1

Area of high GSV (90-100%) in areas of cattle disturbance, Property ID 23 facing N

Survey Unit 2: Undulating Land

Survey Unit 2 comprises undulating land with rises overlooking the former floodplains (Photos 8-10). Where land is elevated, the rises provide relief from the waterlogged floodplain. Typically GSV in Survey Unit 2 was very poor due to thick pasture grasses (<5%)(Photo 11). The low rises are currently used for cattle grazing and the only areas of good GSV in Survey Unit 2 were in patches of cattle disturbance (Photo 12).

There is likely moderate archaeological potential on the rises. Sandy soil profiles were observed across some of these rises, however complex assessment would be required to confirm the presence of such soil profiles across all rises.

No Aboriginal cultural heritage was identified during the ground survey in Survey Unit 2.

Photo 8

Survey Unit 2

Low Rise, Property ID 16 facing north-east

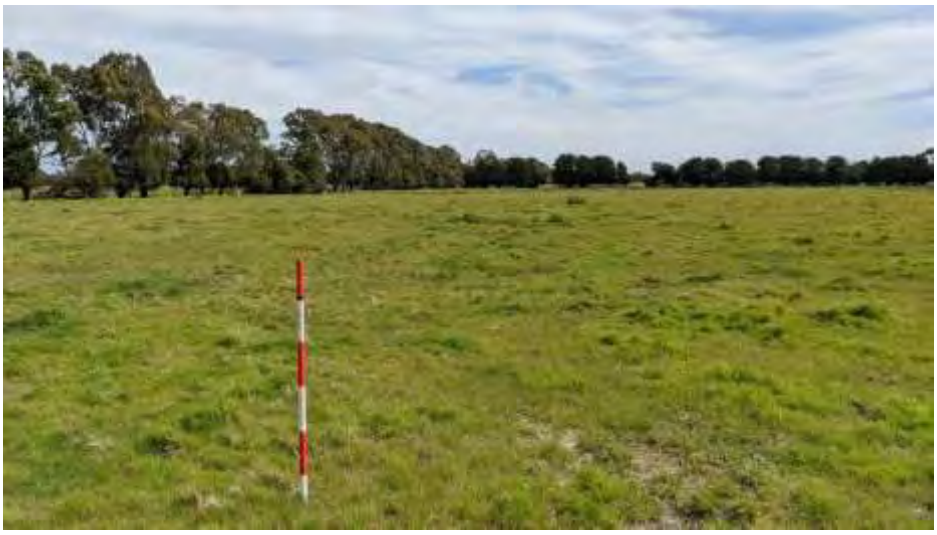


Photo 9

Survey Unit 2

Low Rise, Property ID 15 facing west

Photo 10

Survey Unit 2

Rise in background, Property ID 2 facing south-east

Photo 11

Survey Unit 2

Typical poor GSV (<5%) due to exotic grasses

Photo 12

Survey Unit 2

Area of high GSV (90-100%) in areas of cattle disturbance

Survey Unit 3: Former Swamp Margins

Survey Unit 3 includes land along the former margin of what was Lower Gum Scrub Creek, a poorly defined swamp. The land today is utilized for cattle grazing and the chanelisation of Lower Gum Scrub Creek has caused obvious ground disturbance (Photos 13-16). GSV in Survey Unit 3 was typically very poor due to thick exotic grasses (<5%), but was very good (90%) in areas of cattle disturbance and on the banks of the drainage line.

Although the margin of the former swamp is no longer visible, land within 200m of Gum Scrub Creek has moderate potential to contain Aboriginal heritage, however, due to levels of previous ground disturbance, the significance of these sites will likely be low.

No Aboriginal cultural heritage was identified during the ground survey in Survey Unit 3.

Photo 13

Survey Unit 3

Cattle disturbance around channelised Lower Gum Scrub Creek, Property ID 25 facing north

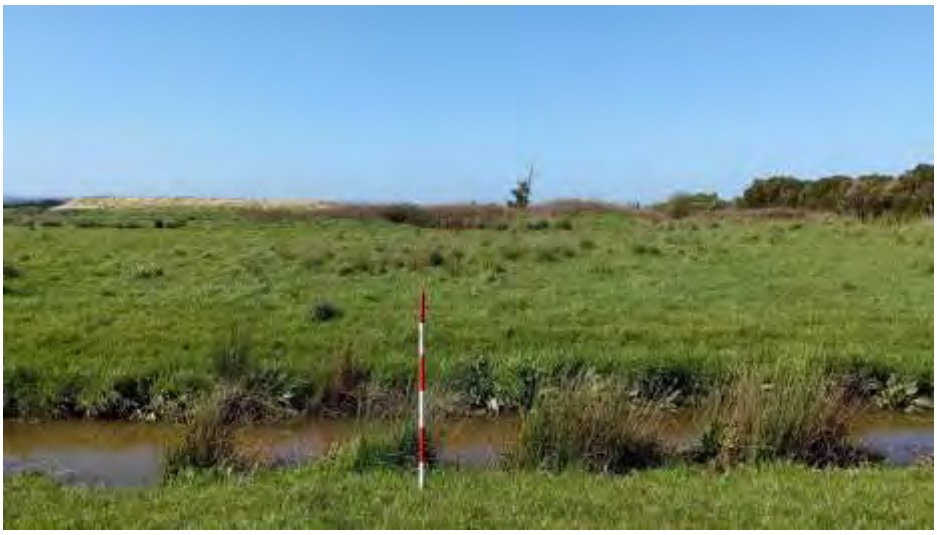


Photo 14

Survey Unit 3

Channelised Lower Gum Scrub Creek, Property ID 25 facing east

Photo 15

Survey Unit 3

Channelised Lower Gum Scrub Creek, Property ID 11 facing north

Photo 16

Survey Unit 3

Former swamp margin, Lower Gum Scrub Creek alignment on left, Property ID 30 facing south-east

Survey Unit 4: Land Within 200m of a Watercourse

Survey Unit 4 includes land within 200m of watercourses. Within the activity area watercourses include Cardinia Creek, an unnamed 'lake', an anabranch of Cardinia Creek and a number of small natural drainage lines. Landforms within this survey unit include creek banks, alluvial terraces, floodplains and rises.

Land adjacent to Cardinia Creek was surveyed in Property IDs 2, 12 and 26. There is a large alluvial terrace located in Property ID 2 adjacent to the current creek line (Photo 17). The land adjacent to Cardinia Creek is undulating, with a number of large rises overlooking the creek interspersed with very low lying wet areas (Photo 19). Where exposed, sandy soils were identified on the creek terrace.

The anabranch which is mapped as running along the western boundary of the activity area has been modified in places, and does not exist today as a singular alignment. Sections have been dammed and modern drainage lines intersect what is likely the original alignment (Photo 20).

An area mapped on ACHRIS as an 'unnamed lake' is most likely a former anabranch of Cardinia Creek which has been modified in the post-Contact era. (Photos 21-24). The waterway today stretches across two properties, ID 15 and 16 and has been obviously modified in places. Personal communication with the tenant on Property 16 indicated the waterway banks may have been mined for sand by the previous owner (Photo 23). The water bodies in properties ID 4 & 5 may once have been part of this anabranch alignment also, but have since been modified and appear today as small separate ponds (Photo 24). Where exposed, the former anabranch banks have sandy soil profiles.

Two previously recorded Aboriginal places, VAHR 7921-0189 and 7921-1727 were located in Survey Unit 4 and were reinspected during ground survey. No additional Aboriginal cultural heritage was identified at VAHR 7921-1727. VAHR 7921-0189 is located adjacent to Cardinia Creek and additional stone artefacts associated with this place were recorded during the survey (see below). Given the large site extent of VAHR 7921-1727 and the presence of sandy terrace soils observed in the area, is likely further Aboriginal cultural heritage is present in a sub-surface context across the terrace in Property ID 2.

A total of 15 stone artefacts were identified across three locations within Survey Unit 4: on two terrace blow outs adjacent to Cardinia Creek in Property IDs 2 & 12, and on the banks of the modified former anabranch in Property ID 16 (Photo 18). These stone artefacts have been registered as two Aboriginal places, an extension of previously registered artefact scatter Cardinia Creek 2 (VAHR 7921-0189) and Officer South LDAD (VAHR 7921-1843) respectively. Sub-surface excavations are beyond the scope of this report, however future assessment should include sub-surface testing at Officer South AS1 to further define the place extent.

Land adjacent to watercourses is traditionally considered to have higher potential to contain deposits of Aboriginal artefacts. Although it is highly unlikely that the anabranches and drainages lines follow their pre-Contact routes, land within 200m of all watercourses has high potential to contain Aboriginal cultural heritage. However, due to levels of previous ground disturbance (cattle grazing, rabbit damage, land clearance, drainage and damming), the significance of these sites will likely be low.

Photo 17

Survey Unit 4

Alluvial terrace, Cardinia Creek to the right, facing south in Property ID 2

Photo 18

Survey Unit 4

Blowout on Cardinia Creek terrace where Officer South AS1 stone artefacts identified, facing east in Property ID 2

Photo 19

Survey Unit 3

Low swamp in foreground and rise adjacent to Cardinia Creek in background, facing north-west in Property ID 2

Photo 20

Survey Unit 3

Anabranch now dammed in background, facing southeast in Property ID 2

Photo 21

Survey Unit 3

'Lake', facing north-west in Property ID 15

Photo 22

Survey Unit 3

'Lake', facing north-east in Property ID 16

Photo 23

Survey Unit 3

Possible excavated 'Lake' widening-sandy soil on banks, facing north in Property 16

Photo 24

Survey Unit 3

Pond in Property ID 5, facing north-east

Survey Unit 5: Developed Land

Survey Unit 5 includes developed land. A range of extant domestic and rural structures exist within the activity area. These include houses, sheds, stables, artificial channels, drains, made roads and dams (Photos 25-29). The current alignment of Lower Gum Scrub Creek has been highly channelised, and extensive excavation has occurred adjacent to the Princes Freeway (Photo 30).

Developed land has extremely low potential to contain Aboriginal archaeological heritage, due mainly to large scale disturbance and soil removal.

Two previously registered Aboriginal places, VAHR 7921-0079 and 7921-0800, are located within Survey Unit 5 on Lecky Road. Both of these places were reinspected; however no additional Aboriginal cultural heritage was identified and these places were both destroyed by the construction of Lecky Road.

Photo 25

Survey Unit 5

Typical house, Property ID 20 facing east

Photo 26

Survey Unit 5

Large stables, Property ID 8 facing south

Photo 27

Survey Unit 5

Typical dam, Property ID 7 facing north-east

Photo 28

Survey Unit 5

Typical sheds, Property ID 3, facing south

Photo 29

Survey Unit 5

Typical drainage line, Property ID 21 facing north

Photo 30

Survey Unit 5

Spoil heaps from channelisation of Lower Gum Scrub Creek, Property ID 11 facing north-east

9.7 Aboriginal Cultural Heritage in the Activity Area

A total of 15 stone artefacts were identified during the site inspection. These were registered as an extension of previously registered stone artefact scatter Cardinia Creek 2 (VAHR 7921-0189) and low density artefact distribution Officer South LDAD (VAHR 7921-1843).

Cardinia Creek 2 (VAHR 7921-0189)

Twelve stone artefacts were located and are associated with previously registered place (artefact scatter) Cardinia Creek 2 (VAHR 7921-0189) (a selection of the stone artefacts in Photos 31 & 32). The dominant primary raw stone material is quartz (n=5, 42%), followed by silcrete (n=4, 33%) with minor quantities of crystal quartz (n=2, 17%) and quartzite (n=1, 8%). Primary form is dominated by flakes (n=11, 92%) with only one blade in the assemblage (n=1, 8%).

Photo 31

VAHR 7921-0189

Quartz flake

Photo 32

VAHR 7921-0189

Silcrete flake

This place was identified on the alluvial terrace of Cardinia Creek in a blow out (**Photos 33 & 34**). The place has been subject to disturbance by stock trampling and rabbit damage. It is currently in very poor condition and is eroding.

Photo 33

Officer South AS 1

Location facing south-east

Photo 34

General location of artefacts associated with VAHR 7921-0189

Location facing north

Officer South LDAD (VAHR 7921-1843)

A total of three silcrete flakes comprise Officer South LDAD (Photos 35-37). These stone artefacts were identified across two properties (Property IDs 12 & 16). There were two stone artefacts identified on a terrace blow out adjacent to Cardinia Creek in Property ID 12 (Photo 38), and one stone artefact on the bank of the modified former anabranch in Property ID 16 (Photo 39). The terrace in Property ID 12 has been subject to disturbance by stock trampling and rabbit damage. The modified former anabranch in Property ID 16 has likely been subject to artificial widening, and this is unlikely to be the natural bank.

Photo 35

Officer South LDAD

Silcrete flake

Photo 36

Officer South
LDAD

Silcrete flake

Photo 37

Officer South
LDAD

Silcrete flake

Photo 38

Officer South
LDAD

Location of silcrete flakes on terrace blow out in Property ID 12, facing east

Photo 39

Officer South
LDAD

Location of silcrete flake on bank of modified former anabranch in Property ID 16, facing south-west

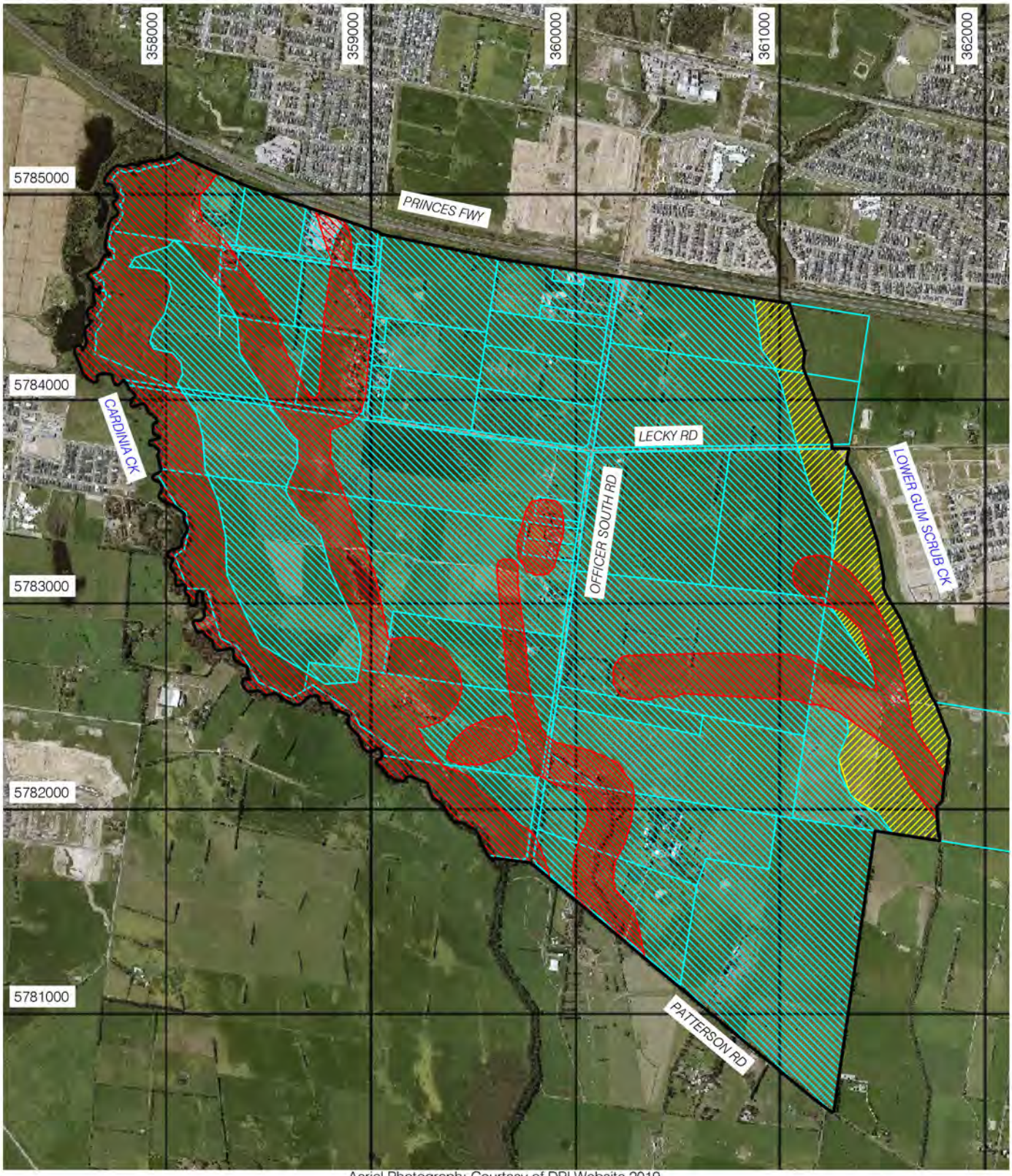
9.8 Site Prediction Model & Areas of Archaeological Potential (Table 13; Map 9)

The results of the site inspection support the Site Prediction Model. Land within close proximity of Cardinia Creek, associated anabranches, natural drainage lines and on rises were considered to be of high archaeological potential. The low-lying plain was considered to have low archaeological potential. The margins of swamps were considered to have moderate archaeological potential.

For the properties for which land access was not possible during the site inspection, areas of archaeological potential have been inferred by considering the site prediction model (Section 8), roadside observations and LIDAR mapping for the activity area.

Table 13 Site Inspection Areas of Archaeological Potential (Map 9)

Place / Location	Archaeological Potential	Details
Low Lying Former Floodplains	Low Stone Artefacts, Scarred Trees	The low lying former floodplains would have been seasonally inundated with water prior to modern drainage. This area is unlikely to have been frequented by Aboriginal people, who would have favoured more resource-rich locations nearby. Since Contact, the land has been disturbed by stock grazing and the excavation of drainage lines.
Former Swamp Margins	Moderate Stone Artefacts	The margins of swamps typically have moderate archaeological potential, though Lower Gum Scrub Creek has been highly modified in the post-Contact era. There is moderate potential for stone artefacts to be present, albeit in disturbed contexts.
Rises	High Stone Artefacts, Aboriginal Ancestral Remains	Where rises are present overlooking the former floodplains or in close proximity to waterways, these may have provided Aboriginal people relief from the surrounding waterlogged plains. There is therefore high potential for stone artefacts to be present on the rises. Where rises are prominent, near a waterway and soil profiles are deep sands, there is potential for Aboriginal ancestral remains to be present.
Land adjacent to permanent waterways (Cardinia Creek)	High Stone Artefacts, Aboriginal Ancestral Remains, Shell Middens, Scarred Trees	Land adjacent to waterways is traditionally considered to have high potential to contain deposits of Aboriginal artefacts. Land within 200m of Cardinia Creek has high potential to contain stone artefacts, shell middens, scarred trees (where mature native trees remain), and Aboriginal ancestral remains (where deep sand deposits are present).
Land adjacent to ephemeral waterways (anabranches of Cardinia Creek and natural drainage lines)	High Stone Artefacts	Land adjacent to waterways is traditionally considered to have high potential to contain deposits of Aboriginal artefacts. Land within 200m of all ephemeral waterways in the activity area has high potential to contain stone artefacts.
Entire Activity Area	None Earth features, stone features, quarries, rock art	All other place types are unlikely to be present.



Aerial Photograph: Courtesy of DPI Website 2019

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Lot Boundary
- High Archaeological Potential
- Moderate Archaeological Potential
- Low Archaeological Potential

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Scale of Metres

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Map 9 Areas of Archaeological Potential

9.8 Conclusions from the Site Inspection

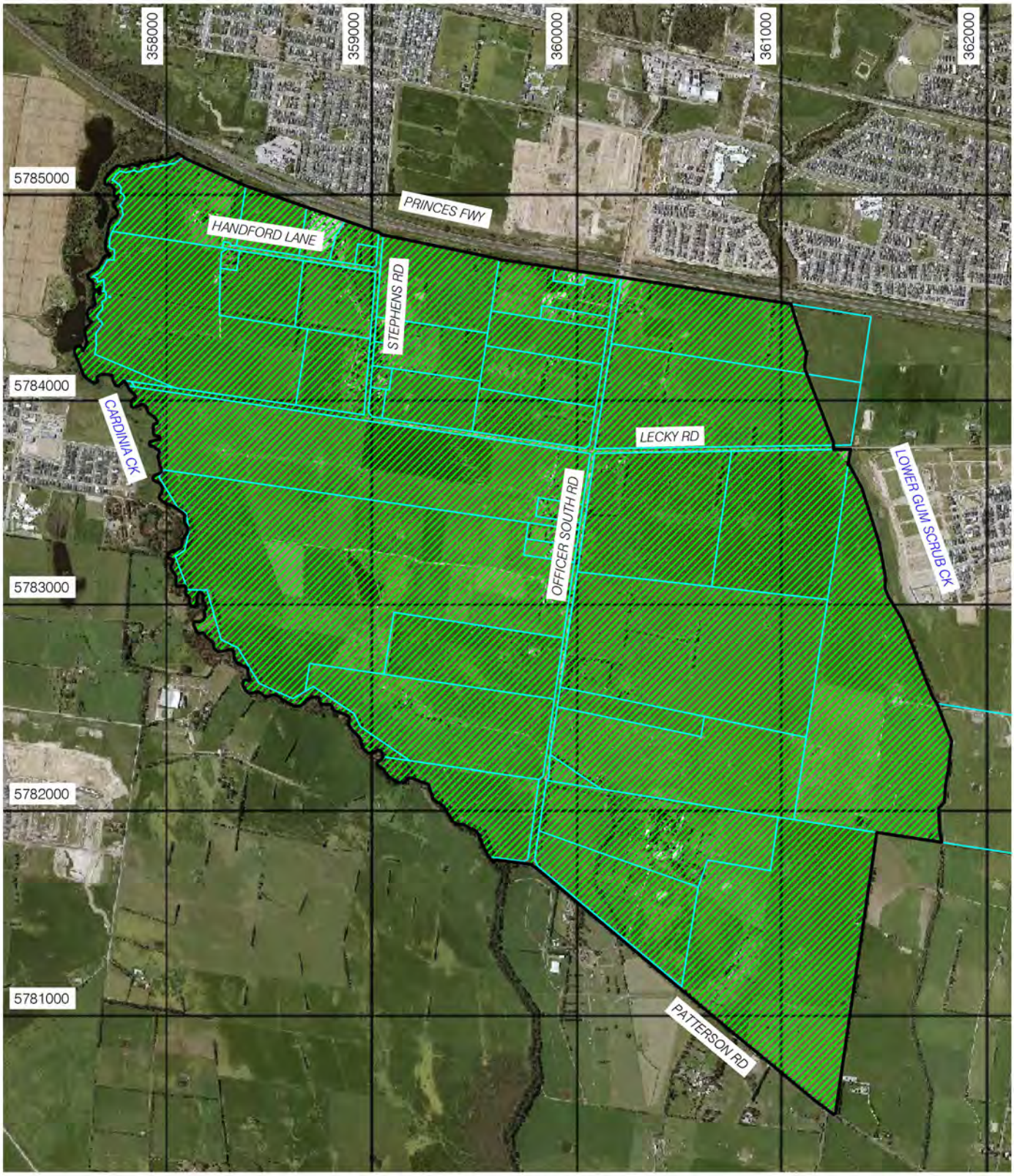
The site inspection has demonstrated that in relation to the activity area:

- The activity area was subject to an opportunistic (judgement) survey of stratified units selected upon levels of good visibility (Burke & Smith 2004: 66-68; Banning 2002: 115-116; Richards 2008: 555);
- The site inspection was constrained by land access not being granted to several properties (Map 7);
- For the majority of the activity area ground surface visibility was very poor (<5%), and total effective survey coverage was 5.4% (Map 8).
- Previously registered Aboriginal places VAHR 7921-0189, 7921-1727, 7921-1225, 7921-0789 and 7921-0800 were reinspected,
- Additional artefacts associated with VAHR 7921-0189 were located. No additional cultural heritage was identified in association with any other place;
- The other registered Aboriginal places within the activity area could not be reinspected due to limited land access (VAHR 7921-0194, 7921-0229, 7921-2330, 7921-0231, 7921-0232, 7921-0233, 7921-0234, 7921-0866, 7921-1225, 7921-1626 and 7921-1727);
- Aboriginal cultural heritage was identified within the activity area, 12 stone artefacts were located and were associated with previouely registered place VAHR 7921-0189, and three stone artefacts were registered as VAHR 7921-1843;
- No caves, rockshelters, grinding grooves, quarry sites or shell middens were identified during the ground surface survey of the activity area.
- All mature old growth native vegetation which had the potential to exhibit cultural scarring within the activity area were inspected. Of these, none exhibited cultural scarring;
- The site inspection revealed five survey units within the activity area; former low lying former floodplains (Survey Unit 1), undulating land (Survey Unit 2), former swamp margins (Survey Unit 3), land within 200m of a watercourse (Survey Unit 4), and developed land (Survey Unit 5);
- Areas of archaeological potential include rises within the gently undulating floodplains (Survey Unit 2), the margins of former swamps (Survey Unit 3), and land within 200m of a watercourse particularly where there are terraces, rises and sand deposits (Survey Unit 4)(Map 9);
- Previous ground disturbance across the activity area includes the construction of the domestic dwellings, sheds, stables, artificial channels, drains, roads and dams;
- Aboriginal field representatives participating in the site inspection indicated that all land within 100m of Cardinia Creek, the terrace in the north-west of Property ID 2, and land along the western boundary of Property IDs 43 and 44 were of high archaeological potential and should be subject to complex assessment during preparation of any future CHMPs;
- The desktop assessment and site inspection have shown that Aboriginal cultural heritage is present within the activity area and there is also potential for additional Aboriginal cultural heritage to be present.

10 CULTURAL VALUES ASSESSMENT

A Cultural Values Assessment will be undertaken with representatives from the WWWCHAC, BLCAC and BLaSC at a date to be determined. An addendum to this report will be prepared once this component is complete.

WWWCHAC, BLCAC and BLaSC consider the entire activity area to be of high Cultural heritage significance (Map 10).



Aerial Photograph: Courtesy of DPI Website 2019

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Scale of Metres

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Contour Line
- Lot Boundary
- High Cultural Heritage Sensitivity as considered by WWWCHAC, BLaSC and BLCAC

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Map 10 WWWCHAC, BLaSC and BLCAC Areas of Cultural Heritage Sensitivity

11 RECOMMENDATIONS

11.1 Recommendation 1 – Mandatory Cultural Heritage Management Plans

Mandatory CHMPs will be required in the following locations if a high impact activity, as listed in Division 5 of the *Aboriginal Heritage Regulations 2018*, is undertaken (Map 11):

- Land within 200 meters of Cardinia Creek;
- Land within 200 meters of an unnamed lake and an unnamed swamp/wetland area; and
- Land including Registered Aboriginal places and land within 50 meters of Registered Aboriginal places.

Land within 200 meters of Cardinia Creek and two unnamed water bodies areas of statutory Aboriginal cultural heritage sensitivity under Section 46 of the *Aboriginal Heritage Act 2006* and the *Aboriginal Cultural Heritage Regulations 2018*. Therefore, any high impact activities, listed under Division 5 of the *Aboriginal Heritage Regulation 2018,* undertaken within 200 meters of these waterways will require the preparation of a mandatory Cultural Heritage Management Plan.

Land immediately adjacent to Cardinia Creek is likely to contain surface and subsurface Aboriginal stone artefact scatters, and has the potential to contain freshwater shell middens and Aboriginal ancestral remains in deep sand deposits. Therefore, land immediately adjacent to Cardinia Creek would be best suited for minimum impact activities, such as parkland or open space within the structure plan to preserve Aboriginal cultural heritage within these areas. Where possible harm should be minimised to these areas.

A previous land use investigation (Section 6.2) and site inspection has not indicated that significant ground disturbance has occurred within these areas of statutory Aboriginal cultural heritage sensitivity; therefore, these areas will still trigger the preparation of a mandatory Cultural Heritage Management Plan.

11.2 Recommendation 2 – Voluntary Cultural Heritage Management Plans

Voluntary CHMPs should be undertaken at all locations where mandatory CHMPs are not required if a high impact activity, as listed in Division 5 of the *Aboriginal Heritage Regulations 2018*, is undertaken (Map 12)

The entire activity area is considered by the TOGs to be of high Aboriginal cultural heritage sensitivity, and the proponent should consider undertaking a voluntary Cultural Heritage Management Plan for the areas outlined in Map 12 to ensure that future works do not encounter lengthy delays if Aboriginal cultural heritage is identified during development. A voluntary CHMP will provide certainty to the proponent for the proposed works and will mitigate any risks that may be encountered. A voluntary CHMP will provide the proponent with statutory authorisation to harm Aboriginal cultural heritage for these areas.

11.3 Recommendation 3 – Consultation

The Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC), Bunurong Land Council Aboriginal Corporation (BLCAC) and the Boonwurrung Land and

Sea Council (BLaSC) should be consulted during the preparation of any future Cultural Heritage Management Plans.

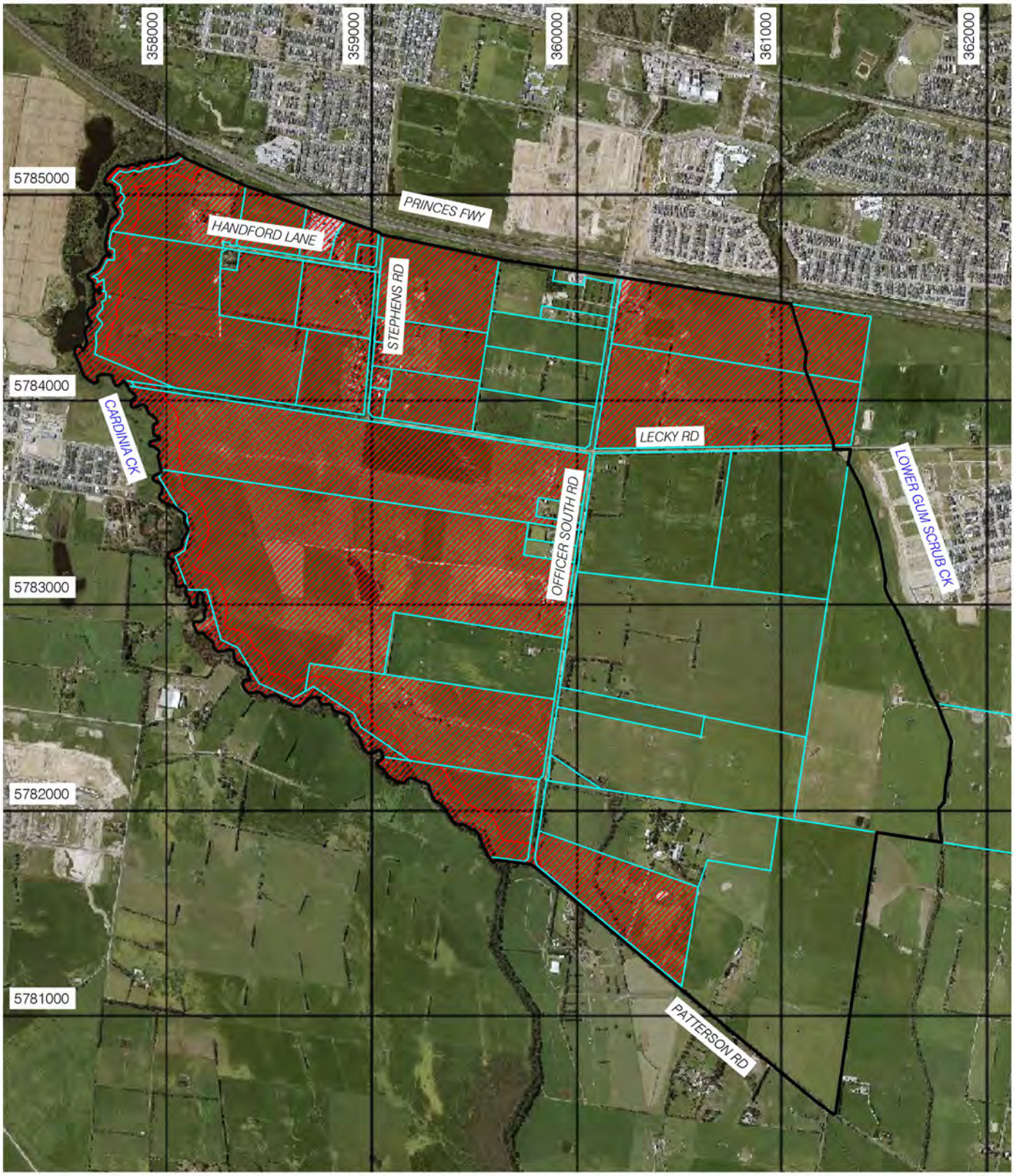
11.4 Recommendation 4 – Conservation Zone

A conservation zone extending 100 meters from Cardinia Creek would protect the significant archaeological deposits immediately adjacent to the creek and would provide an opportunity to enhance the cultural landscape by revegetation of the area with Indigenous species. A conservation zone would permit passive recreational use of the land while protecting the Aboriginal cultural heritage present in these areas (Map 13).

An area of high archaeological potential which should also be included in the conservation zone is a section of the Cardinia Creek terrace in the northwest of Property ID 2 (Figure 19: highlighted in red). Including this section of the terrace within the conservation zone would likely protect what may be a significant archaeological sub-surface deposit at that location.

Conclusions drawn within this report may be modified after the completion of the Cultural Values Assessment.

Figure 19 Section of Cardinia Creek terrace to include in conservation zone



Aerial Photograph: Courtesy of DPI Website 2019

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Scale of Metres

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Lot Boundary
- Contour Line
- Lots Requiring a Mandatory CHMP

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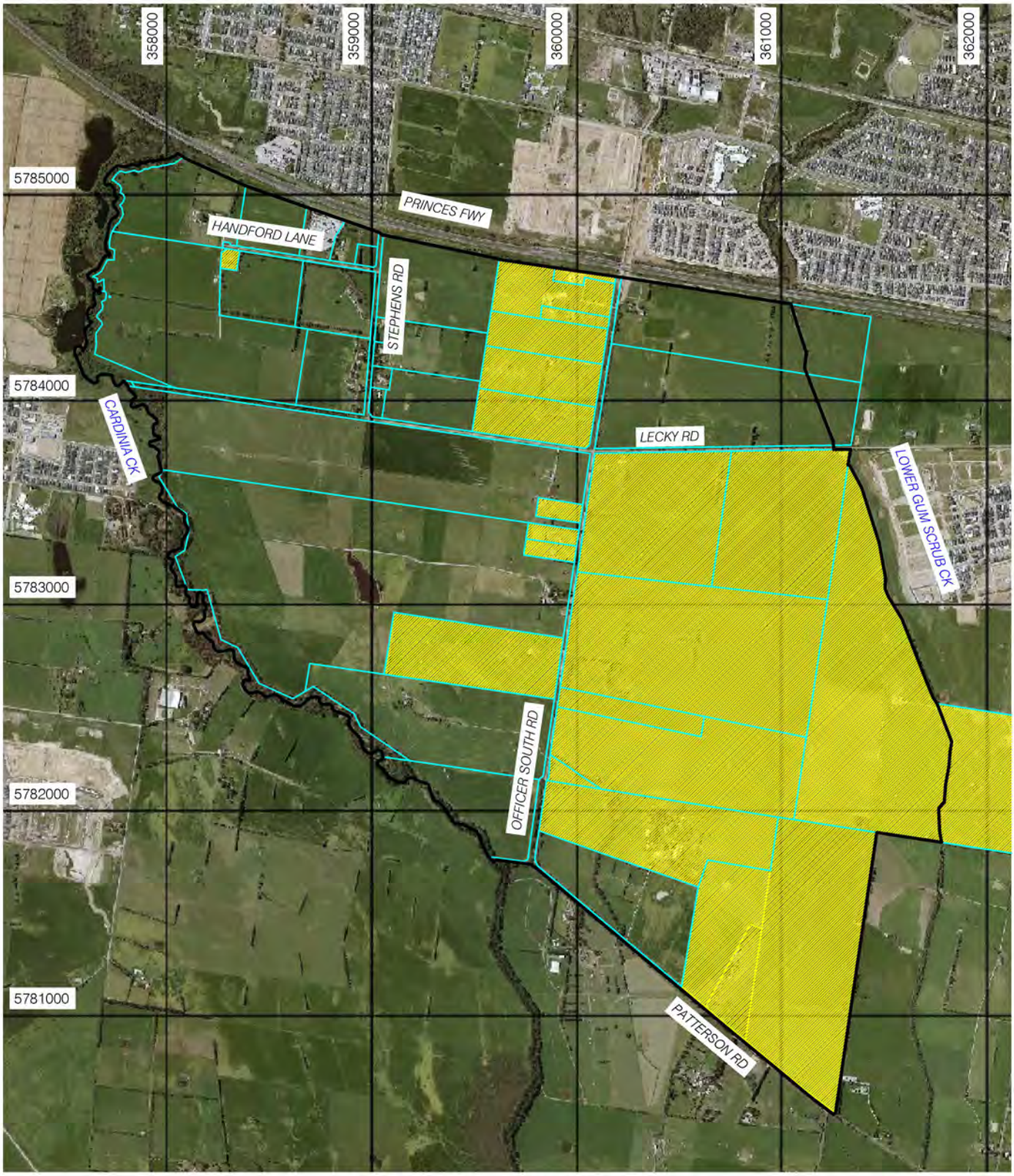
Map 11 Locations Requiring a Mandatory CHMP



Aerial Photograph: Courtesy of DPI Website 2019

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Scale of Metres

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Contour Line
- Lot Boundary
- Lots Where Voluntary CHMP is Advisable

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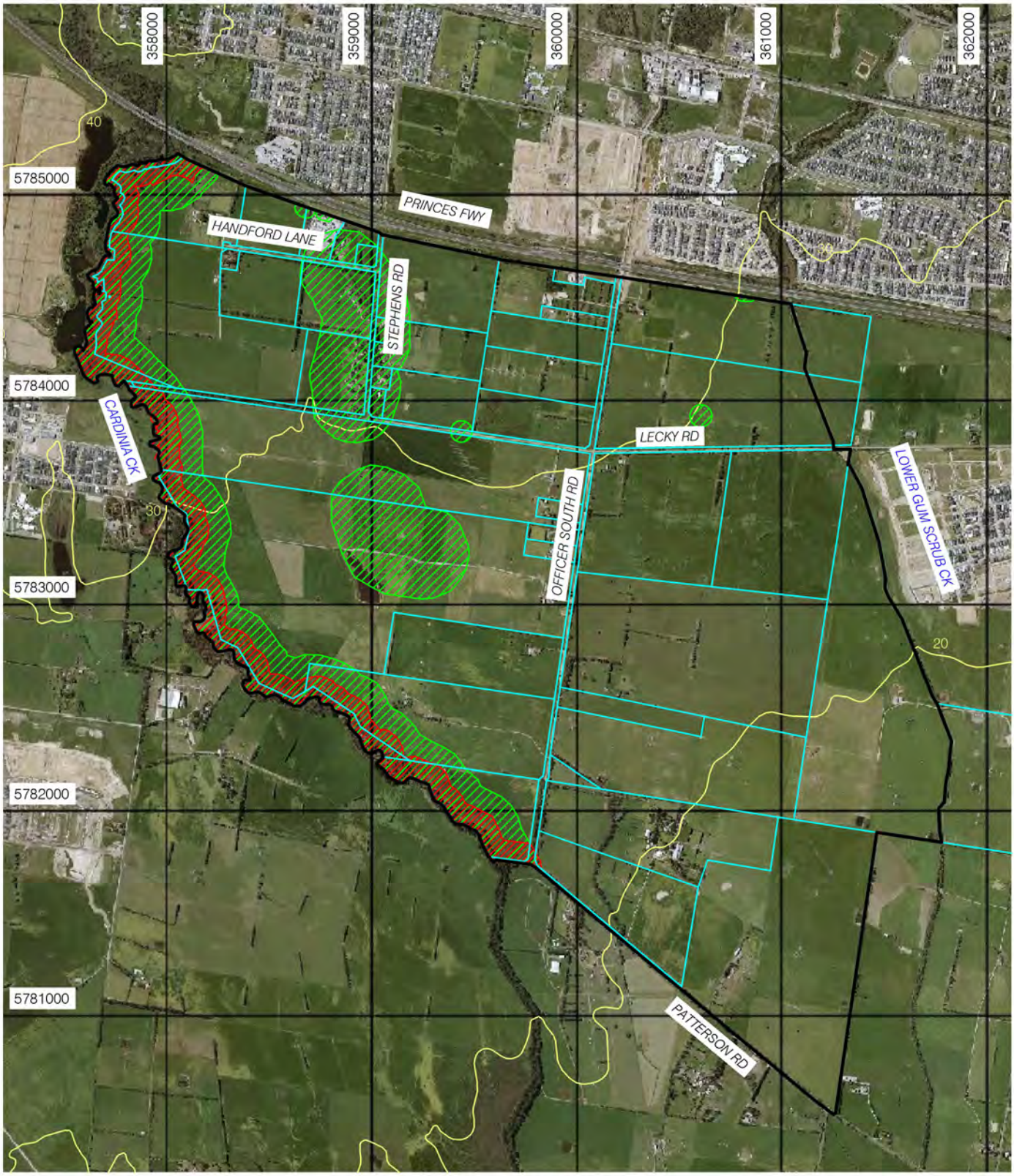
Map 12 Locations Where a Voluntary CHMP is Advisable



Aerial Photograph: Courtesy of DPI Website 2019

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Scale of Metres

Legend:

- Activity Area Boundary 1,068 hectares (approx)
- Lot Boundary
- Contour Line
- Recommendation 5- Conservation Zone
- Statutory Areas of Aboriginal Cultural Heritage Sensitivity

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Map 13 Recommended Conservation Zone

REFERENCES

Advocate (Melbourne)	as cited.	
The Age (Melbourne	as cited.	
Alexander Patterson probate papers	1897	VPRS 28/P2 Unit 453 Item 63/719.
The Argus (Melbourne)	as cited.	
The Australasian (Melbourne)	as cited.	
Australian Section Imperial General Staff	1924	'Victoria Cranbourne' [cartographic material], SLV map collection.
Banning EB	2002	Archaeological Survey. Kluwer Academic/Plenum Publishers: New York.
Barwick DE	1984	Mapping the Past: An Atlas of Victorian Clans 1835-1904 Part 1. *Aboriginal History* 8(1-2): 101-131.
Beaumont N & J James, F Curren, R Hughes	1979	*Early Days of Berwick Surrounding Districts*. Impress Printing, Dandenong.
Bell J	2002	An Archaeological Survey Clyde Five Ways, Cranbourne. Prepared by TerraCulture Pty Ltd for VicRoads. ACHRIS Report 2326.
Billis R.V. & A.S. Keyon	1935	'Pastoral Pioneers: James Leckey No.77', *Australasian* (Melbourne), 8 June 1935:4).
	1932	*Pastoral Pioneers of Port Phillip*, Macmillan & Co Ltd, Melbourne.
Bird C	1993	Archaeology of the Central Highlands Background Study: Draft. Prepared for Aboriginal Affairs Victoria. ACHRIS Report No. 971.
Births Deaths Marriages Victoria (BDM)	as cited.	
BPHS	1982	*In the Wake of the Pack Tracks*. Berwick-Pakenham Historic Society.

Burch J	2016	Residential Development, 225 Rix Road, Officer, Victoria. Approved CHMP 14625 prepared by Jem Archaeology for Carolyn Payne.
Burke H & C Smith	2004	The Archaeologists Field Handbook. Allen & Unwin, NSW.
Certificates of Title (CT)	as cited.	
Chamberlain M	2016	Proposed Subdivision 20 Smiths Lane, Clyde North. Approved CHMP 13801 prepared by Heritage Insight Pty Ltd for Keystone Design and Build Pty Ltd.
Clark C & S Janson	2019	110 Smiths Lane Clyde North Road Upgrade. Approved CHMP 16081 prepared by Extent Heritage Pty Ltd for Mirvac Victoria Pty Ltd.
Clark ID	1990	Aboriginal Languages and Clans. An Historical Atlas of Western and Central Victoria. *Monash Publications in Geography* No 37.
Costello C & O Nicolson, C Timewell	1998	Flora, Fauna, Archaeological and Heritage Survey, Pakenham Bypass, Victoria. A report by Biosis Research Pty Ltd to VicRoads. ACHRIS Report 1365.
Cummins D & B Ward	2014	Preliminary Cultural Heritage Study: Proposed reconfiguration of CREP and Gum Scrub Creek and the proposed Taylors Road Alignments. Prepared by Ecology and Heritage Partners Pty Ltd for MacroPlan Dimasi. ACHRIS Report 4776.
Cupper M L, White S & Neilson J L	2003	Quaternary: ice ages – environments of change. In: *Geology of Victoria*. Edited by Birch W D. Sydney: Geological Society of Australia (Victorian Division), Geological Society of Australia, Special Publication 23, 337-360.
Dandenong Journal	as cited.	
Department of Crown Lands & Survey	1859	'Country lots, Parishes of Pakenham and Nar-Nar-Goon, County of Mornington' [cartographic material] M. Callanan Asst. Surveyor 9th Nov. 59, lithographed at the Crown Lands Office, Melbourne, SLV map collection.
Department of Lands & Survey	1948	'Cranbourne County of Mornington' [cartographic material], Department of Lands & Survey Melbourne, SLV map collection.

Department of Sustainability and Environment	2002	Pakenham Parish Plan, Regional Land Office Parish and Township and Digitised Reference set, VPRS 16171/P1 item Plans Ne-R, record Pakenham(Psh)LOImpP3363.pdf
Dodson J R & Mooney S D	2002	An assessment of historic human impact on south-eastern Australian environmental systems, using late Holocene rates of environmental change. *Australian Journal of Botany*. 50, 455-464.
Du Cros H & Rhodes D	1998	Aboriginal Archaeological Sensitivities Study of the Water Ways and Flood Plains Greater Melbourne. Biosis Research Pty Ltd. For Melbourne Water Corporation. ACHRIS Report No. 1320.
Feldman R & A Long	2006	Melbourne 2030: Casey-Cardinia Growth Area: Aboriginal Archaeological Desktop Report. Prepared by Andrew Long & Associates Pty Ltd for the Built Environment Group, Department of Sustainability & Environment. ACHRIS Report 3883.
Gaughwin D	1981	Sites of Archaeological Significance in the Western Port Catchment. Prepared by the Division of Prehistory, La Trobe University for the Environmental Studies Division, Ministry for Conservation, Victoria. ACHRIS Report 4.
Gaughwin D & M Sullivan	1984	Aboriginal Boundaries and Movements in Western Port, Victoria. *Aboriginal History* 8(1): 80-98.
George Brown probate papers	1896	VPRS 28/P2 Unit 451 Item 63/479.
Graeme Butler & Associates,	1996	'Cardinia Shire Heritage Study 1996', Vols 2 and 3, Cardinia Shire.
Green M	2011	240 Rix Road, Officer, Residential Subdivision. Approved CHMP 11833 prepared by Andrew Long & Associates Pty Ltd for A & J Johnston Excavations Pty Ltd.
Green T	2019	Desktop Preliminary Cultural Heritage Study: Officer South Project, 185 Officer South Road, Officer, Victoria. Draft prepared by Ecology & Heritage Partners Pty Ltd for Development Victoria.
Goulding M	1988	Aboriginal Occupation of the Melbourne Area, District 2. Prepared for the Land Conservation Council. ACHRIS Report 271.
Hiscock P and V Attenbrow	1998	Early Holocene Backed Artefacts from Australia. *Archaeology in Oceania*. 35(2): 49 – 62.

Hislop K & J Young, M Barker, L Prossor	2013	Proposed Residential Development, 2100 Thompsons Road and 1425 Pound Road, Clyde North. Approved CHMP 11869 prepared by Heritage Insight Pty Ltd for Campbell Park Property Developments Pty Ltd.
Hislop K	2014	St Germain Mixed Use Development, Clyde North. Approved CHMP 13239 prepared by Heritage Insight Pty Ltd for St Germain Village.
Hislop K	2015	St Germain Mixed Use Development: Revised Activity Area. Approved CHMP 13478 prepared by Heritage Insight Pty Ltd for St Germain Village.
Holdgate G R & Gallagher S J	2003	Tertiary: a period of transition to marine basin environments. In: *Geology of Victoria*. Edited by Birch W D. Sydney: Geological Society of Australia (Victorian Division), Geological Society of Australia, Special Publication 23, 289-335.
Howell-Muers J & A Long	2006	Pakenham Bypass Sections 1 and 3: Archaeological Subsurface Testing Program. Prepared by Andrew Long and Associates Pty Ltd for VicRoads – South Eastern Projects. ACHRIS Report 3466.
James Lecky probate papers	1884	VPRS 28/P2 Unit 161 Item 27/327.
Jenkins R & R Reid, S Paterson, J Hill	2010	Pakenham-Narre Warren Sewerage Transfer Scheme, Southeast Melbourne, Victoria. Indigenous Cultural Heritage Salvage Report. Prepared by Sinclair Knight Merz Pty Ltd for South East Water Limited. ACHRIS Report 4283.
Jenkins R & S Paterson	2009	Pakenham – Narre Warren Sewerage Transfer Scheme, Southeast Melbourne, Victoria. Approved CHMP 10636 prepared by SKM Pty Ltd for South East Water
Joyce E B, Webb J A, Dahlhaus P G, Grimes K G, Hill S M, Kotsonis A, Martin J, Mitchell M M, Neilson J L, Orr M L, Peterson J A, Rosengren N J, Rowan J N, Rowe R K, Sargeant I, Stone T, Smith B L & White S (with material by the late Jenkin J J)	2003	Geomorphology: the evolution of Victorian landscapes. In: *Geology of Victoria.* Edited by Birch W D. Sydney: Geological Society of Australia (Victorian Division), Geological Society of Australia, Special Publication 23, 533-561.

Kapteinis K, K Whitewood & M Dowdell	2018	Monash Freeway Upgrade Narre Warren to Officer. Approved CHMP 15501 prepared by Ochre Imprints Pty Ltd for Major Road Projects Authority.
Kennedy S & A Burrow, E Foley	2012	Clyde Creek (PSP 54) and Thompsons Road (PSP 53) Precinct Structure Plans: Aboriginal Cultural Heritage Assessment. Prepared by AHMS for Growth Areas Authority. ACHRIS Report 4505.
Maffra Spectator	as cited.	
Massola, A	1959	*History of the Coast Tribe*. The Victorian Naturalist, Vol. 76 No. 7, November 1959.
McBryde	1984	'Exchange on south eastern Australia: an ethnohistorical perspective', Aboriginal History 8: 132- 152.
McNiven I	2000	Backed to the Pleistocene. *Archaeology in Oceania*. 35(3): 48 – 52.
Muir S & OE Nicolson	2002	A Desktop Archaeological Survey of Land at Officer, Victoria. Prepared by Biosis Research Pty Ltd for Urban and Regional Land Corporation. ACHRIS Report 3373.
Murphy A	1992	A Subsurface Investigation of Terraces Affected by Cardinia Creek Bypass, Officer, Victoria. Prepared by du Cros & Associates Pty Ltd for VicRoads. ACHRIS Report 485.
Murphy A	2004	62 Rix Road, Officer: Cultural Heritage Assessment. Prepared by Tardis Enterprises Pty Ltd for Maranatha Christian School. ACHRIS Report 2961.
Murphy A & S Kennedy	2009	Clyde North & C21 Precinct Structure Plan. Prepared by Tardis Enterprises Pty Ltd for Australand Holdings Ltd. ACHRIS Report 4667.
Murphy A & A Morris	2012	Cardinia Road Employment Precent Structure Plan, Officer South. Approved CHMP 10656 prepared by Archaeology at Tardis Pty Ltd for Cardinia Shire Council.
Murphy A & T Rymer	2007	Officer South Rising Main, Officer: Cultural Heritage Assessment. Prepared by Tardis Enterprises Pty Ltd for GHD Pty Ltd. ACHRIS Report 3919.
Murphy A & T Rymer	2008	Sewer Rising Main, Officer South. Approved CHMP 10045 prepared by Tardis Enterprises Pty Ltd for South East Water Ltd.

Murphy A & T Rymer	2009	Residential Subdivision, Lots 2 & 3 Rix Road, Officer. Approved CHMP 10939 prepared by Tardis Enterprises Pty Ltd for National Pacific Properties Pty Ltd.
Murphy A & T Rymer	2012	Subdivision of Land, 335 Grices Road, Clyde North. Approved CHMP 12096 prepared by Archaeology At Tardis Pty Ltd for Moremac Property Group Pty Ltd.
Murphy A & T Rymer	2016	Subdivision of Land and Development, Minta Farm, Berwick. Draft CHMP 11318 prepared by Archaeology At Tardis Pty Ltd for Mutual Trust Pty Ltd.
Murphy A & T Rymer	2017	Cardinia Creek Corridor Landscape Masterplan. Approved CHMP 14930 prepared by Archaeology at Tardis Pty Ltd for Melbourne Water Corporation.
Murphy A, T Rymer & M Dowdell	2015	Subdivision of Land, 490 Soldiers Road, Clyde North. Approved CHMP 13457 prepared by Archaeology At Tardis Pty Ltd for Frontlink Pty Ltd.
Murphy A, T Rymer & R Stammers	2019	Subdivision of Land & Development Stockland, Minta Farm West, Berwick. Amended CHMP 15150 prepared by Archaeology at Tardis Pty Ltd for Stockland Development Pty Ltd.
Murphy A & S Thomson, T Rymer	2007	Pakenham Bypass Cardinia Creek Excavations. Prepared by Tardis Enterprises Pty Ltd for Abigroup Contractors Pty Ltd. ACHRIS Report 4052.
Murphy BW & CL Murphy	2000	'The Soil Profile.' In PEV Chapman & BW Murphy eds. *Soils: Their Properties and Management*. 2nd Edition. Oxford University Press: 79-82.
National Native Title Tribunal	2020	Application Details: Boonwurung People (VC2020/001) <http://www.nntt.gov.au/searchRegApps/NativeTitleClaims/Pages/details.aspx?NTDA_Fileno=VC2020/001>, accessed 02/07/2020.
Nelson, P & L Alves	2009	*Lands Guide: A guide to finding records of Crown land at Public Record Office Victoria*, Public Record Office Victoria Melbourne.
Northcote K H, Hubble G D, Isbell R F, Thompson C H & Bettenay E	1975	*A Description of Australian Soils*. CSIRO, Australia.

Presland G	1983	An Archaeological Survey of the Melbourne Metropolitan Area. *Victoria Archaeological Survey Occasional Report Series* No 15. ACHRIS Report 20 prepared by Victoria Archaeological Survey.
	1994	*Aboriginal Melbourne. The Lost Land of the Kulin People*. McPhee Gribble Publishers, Victoria.
Power R & S Beaton, W Hernandez	2015	Residential Subdivision, 185 Rix Road, Officer, Victoria. Approved CHMP 13664 prepared by Ecology and Heritage Partners Pty Ltd for AA Holdings Pty Ltd.
Punch (Melbourne)	as cited.	
Ralph Brunt probate papers	1889	VPRS 28/P0 Unit 485 Item 39/394.
Rhoads JW	1994	Central Highlands Aboriginal Archaeological Heritage: National Estate Threshold Analysis. Prepared by Aboriginal Affairs Victoria. ACHRIS Report 774.
Rhodes D	2006	Report on the Results of Archaeological Subsurface Testing at the 'Greenhills' Property, Pakenham. Prepared by Heritage Insight Pty Ltd for Southeast Business Park Pty Ltd. ACHRIS Report 3465.
Rhodes D & J Bell	2004	Shire of Cardinia Urban Growth Corridor Aboriginal Heritage Study. Report to the Shire of Cardinia. ACHRIS Report 2772.
Rhodes D & M Chamberlain	2016	Proposed Residential Development 195 Rix Road Officer. Approved CHMP 13931 prepared by Heritage Insight Pty Ltd for Patterson Cheney Investments Pty Ltd.
Richards T	2008	Survey Strategies in Landscape Archaeology. In B. David and J Thomas eds, Handbook of Landscape Archaeology. World Archaeology Congress. Pp. 551-561.
Robertson G, V Attenbrow and P Hiscock	2009	Multiple uses for Australian backed artefacts. *Antiquity* 83: 296 – 308.
Rymer T & R Stammers	2019	Subdivision of Land & Development Stockland, Minta Farm East, Berwick. Approved CHMP 16170 prepared by Archaeology at Tardis Pty Ltd for Stockland Development Pty Ltd.

Rymer T	2017	Kilora Estate, 335 Grices Road Clyde North VAHR 7921-1416 Salvage Excavation. Prepared by Archaeology at Tardis Pty Ltd for Moremac Property Group Pty Ltd. ACHRIS Report 4835.
Rymer T	2019	VAHR 7921-1226 [Kara 2] Archaeological Salvage. Prepared by Archaeology at Tardis Pty Ltd for VicUrban. ACHRIS Report 5029.
Slack MJ, RLK Fullagar, JH Field and A Border	2004	New Pleistocene ages for backed artefact technology in Australia. *Archaeology in Oceania* 39(3): 131 – 137.
Smith L	1989	The Berwick-Pakenham Corridor. The Archaeological Survey of Aboriginal Sites. Prepared for the Victoria Archaeological Survey, Ministry for Planning and Development. ACHRIS Report 232.
	1991	Berwick-Pakenham Corridor Aboriginal Archaeology. Occasional Report Number 45 Victorian Archaeology Society & Department of Conservation & Environment. ACHRIS Report 232/439.
Snoek W	1987	Archaeological Survey of Dandenong Creek and Police Paddocks. A report for the Dandenong Valley Authority and the Victoria Archaeological Survey.
South Bourke & Mornington Journal	As cited	
Stevens J & G Vines	2011	VicUrban@Officer Mixed Use Development, Officer. Approved CHMP 11091 prepared by Biosis Research Pty Ltd for VicUrban.
Stock and Land (Melbourne)	As cited	
Stone T	2002	The Archaeological Sensitivity of the Gum Scrub Creek and Officer Drain Catchments near Berwick, Victoria. Prepared for Hyder Consulting. ACHRIS Report 2365.
Sullivan H	1981	An Archaeological Survey of the Mornington Peninsula, Victoria. Ministry for Conservation, Victoria.
Sutton S & S Crocker, J Wheeler, J Tunn	2015	McPherson Precinct Structure Plan. Prepared by AHMS Pty Ltd for the Metropolitan Planning Authority. ACHRIS Report 4672.

Thomas W	1838-67	William Thomas Papers, 1838-67. Uncatalogued manuscripts, Set 214, Items 1-24. Mitchell Library, Sydney.
	nd	ML Private Papers, 16 volumes and 8 boxes of papers, journals, letterbooks, reports, etc.
	nd	PRO Official Reports, original manuscripts, two papers. Public Records Office, Melbourne, Victoria.
Thomson M & S Muir	2005	Stage 2: Aboriginal Archaeological Subsurface Investigations for the Proposed Officer Development Project, Officer, Victoria. Prepared by Biosis Research Pty Ltd for VicUrban. ACHRIS Report 3375.
Thomson M & O Nicolson	2005	Stage 1: Aboriginal Archaeological Assessment for the Proposed Officer Development Project, Officer, Victoria. Prepared by Biosis Research Pty Ltd for VicUrban. ACHRIS Report 3374.
Tulloch J	2001	A Cultural Heritage Survey of the Proposed Pakenham Bypass of the Princes Freeway from Beaconsfield to Nar Nar Goon, Victoria. Prepared by Biosis Research Pty Ltd for VicRoads. ACHRIS Report 1930.
Tunn J & L Foley	2016	110 Smiths Lane, Clyde North, Residential Subdivision. Approved CHMP 12430 prepared by AHMS for Mirvac Victoria Pty Ltd.
Tunn J & L Welsh	2015	Smiths Lane Road Reserve Upgrade, Clyde North. Approved CHMP 13800 prepared by AHMS Pty Ltd for Mirvac Victoria Pty Ltd.
VandenBerg A H M, Willman C E, Maher S, Simons B A, Cayley R A, Taylor D H, Morand V J, Moore D H, Radojkovic A	2000	*The Tasman Fold Belt System in Victoria*. Geological Survey of Victoria Special Publication.
Victoria Government Gazette (VGG)	As cited.	
Victoria. Surveyor General's Office	1856	Country lands, on the Gipps'Land Road near Mount Ararat, Parish of Pakenham, County of Mornington [cartographic material] / A. Permien, Assist. Surveyor ; lithographed at the Surveyor General's Office, Melbourne July 15th 1856 by E. Gilks. Melbourne: Surveyor General's Office.

Victoria. Department of Crown Lands Survey	1885	Pakenham, County Mornington [cartographic material] / Photo-lithographed at the Department of Lands and Survey, Melbourne. 2nd issue., Melbourne: Department of Lands and Survey.
Victorian Resources Online (VRO)	2020	7.1.3 Former swamps and lagoonal deposits (Koo-Wee-Rup, Tobin Yallock, Bass River Delta, Carrum Downs). Accessed at: http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_geomorphological_framework_7.1.3 on: 1st July, 2020.
Vines G & J Fiddian, M Thomson, A Cooper, K Niland, M Lawler	2008	VicUrban's Residential Subdivision Project at Officer, Victoria, Cardinia Road Precinct. Approved CHMP 10130 prepared by Biosis Research Pty Ltd for VicUrban.
Walsh F J	1987	The Influence of the Spatial and Temporal Distribution of Plant Food Resources on Traditional Martujarra Subsistence Strategies. *Australian Archaeology* 25: 88-101.
Warragul Guardian	As cited	
Webb C	1995	*Identification and documentation of silcrete quarries*. Heritage Services Branch, Aboriginal Affairs Victoria. Victorian Government Department of Health and Community Services.
Webb J A & Golding S D	1998	Geochemical mass-balance and oxygen-isotope constraints on silcrete formation and its paleoclimatic implications in southeastern Australia. *Journal of Sedimentary Research*. 68, 981-993.
Weekly Times (Melbourne)	As cited	
Welch S I, Higgins D V & Callaway G A	2011	*Surface geology of Victoria 1:250,000*. Geological Survey of Victoria.
Wheeler J & E Walther, S Lane, G Wilson	2011	Minta Farm Precinct Structure Plan, Berwick. Draft CHMP 11319 prepared by AHMS Pty Ltd for the Growth Areas Authority.
White K, B Grinter & M O'Reilly	2019	Proposed Princes Freeway Ramps, Officer South. Approved CHMP 16632 prepared by Biosis Pty Ltd for Satterley Property Group Pty Ltd (Melbourne).

White S & Mitchell M M 2003 Palaeoclimates: the influence of continental drift and latitude change on climate. In: *Geology of Victoria*. Edited by Birch W D. Sydney: Geological Society of Australia (Victorian Division), Geological Society of Australia, Special Publication 23, 563-571.

Appendix 1 – Summary CV's

Jessica Earl

Archaeologist

jessica@tardisarchaeology.com.au | 03 9676 9009

Qualifications

Bachelor of Arts (Honours in Australian Indigenous Archaeology) - Monash University

Memberships & Training

First Aid
White Card
AACAI Historic Materials Workshop 2016

Role Responsibilities

Artefact Management and Repatriation
Heritage Advisor
Site Excavation for Aboriginal and Historic Cultural Heritage

Career Summary

Jessica Earl is an Archaeologist with qualifications and experience pertaining to Indigenous and historic cultural heritage management, including archaeological surveys and excavations, artefact analysis and background research. Her role in the company includes post-CHMP management of artefacts. This involves arranging repatriation or reburial with Traditional Owner Groups, Registered Aboriginal Parties and Native Title Claimants. She is frequently involved in conducting archaeological excavations from small to large sized, having worked on a number of major Australian Cultural Heritage projects across Victoria.

Relevant Experience

Residential Subdivision, McCrae (2017)
Heritage Advisor managing the preparation of the CHMP. Duties included the preparation of a desktop assessment, supervising sub-surface testing in the field and CHMP preparation.

Waste Recycling Plant, Carisbrook (2016)
Field supervisor responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving the repatriation of artefacts to the Registered Aboriginal Party (RAP).

Bushfire Powerline Replacement Project- Chaplins Creasy (2016)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation.

Woondella Park, Residential Subdivision (2016)
Post-CHMP management of Aboriginal cultural heritage, involving the repatriation of artefacts to the Registered Aboriginal Party (RAP). Field supervisor responsible for conducting reburial of artefacts with representatives of the Registered Aboriginal Party (RAP).

Eastlink, Mitcham- Frankston Freeway (2016)
Post Cultural Heritage Assessment management of Aboriginal cultural heritage, involving the repatriation of artefacts to the relevant Traditional Owner Groups.

Stockyard Hill Wind Farm (2016)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving management of artefacts according to the recommendations in the relevant CHMPs.

English Street, Donnybrook (2016)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving management of artefacts according to the recommendations in the CHMP.

Ballarto Road, Clyde (2016)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving the repatriation of artefacts to the Traditional Owner Groups.

Ballarto Road, Botanic Ridge (2016)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving the repatriation of artefacts to the Traditional Owner Groups.

Dundonnell Wind Farm (2015)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving the repatriation of artefacts to the Registered Aboriginal Party and Native Title Claimant.

APA Group- Victorian Northern Interconnect Gas Pipeline (2015)
Field assistant responsible for completing field testing. The project involved a desktop assessment, sub-surface testing and CHMP preparation. Post-CHMP management of Aboriginal cultural heritage, involving the repatriation of artefacts to the Traditional Owner Groups and Registered Aboriginal Parties.

Cassia Paragnani

Geomorphologist

cassiap@tardisenterprises.com.au 0499621765

Qualifications

- Bachelor of Science (Honours) Biotechnology/Palaeontology, Swinburne University of Technology (2018)
- Bachelor of Science (Geoscience & Zoology), Monash University (2016)

Role Responsibilities

- Geomorphological Landscape Assessments
- Small Cultural Heritage Assessments
- Geoarchaeological Assessments
- Soil Disturbance Assessments

Career Summary

Cassia Paragnani is a palaeontologist and geomorphologist having graduated with an Honours degree in Sciences from Swinburne University of Technology in 2018. Cassia has headed many projects for her university to understand the soils of the Inverloch and Otways area in Victoria. Her Honours project was on the description of a new species of Crocodylomorph from the Mesozoic period (~113 million years ago). The overlying sediments were crucial to understanding the habitat these creatures once lived in and why they are found no where else in Victoria at the time.

Cassia assists in determining whether significant ground disturbance has occurred in the landscape. By using standard geomorphological assessment techniques, a comparison between the expected natural soil profile and geomorphology can be made with the observed landscape and soil expression.

Relevant Experience

Angling Snowy River, Buchan Project (2015)
Geomorphologist responsible for completing soil disturbance investigation. This project involved a geomorphological site inspection and a soil disturbance report.

Dinosaur Cove Soils, Victoria (2018)
Geomorphologist responsible for completing soil disturbance investigation. This project involved a desktop heritage assessment, a geomorphological site inspection and a soil disturbance report.

Inverloch, Victoria (2018)
Geomorphologist responsible for completing soil disturbance investigation. This project involved a desktop heritage assessment, a geomorphological site inspection and a soil disturbance report.

Dr Peter Mills
Historian

Qualifications
PhD, School of Philosophical, Historical & International Studies, Monash University
Master of Arts in Public History, Monash University
Bachelor of Architecture (Honours), University of Canberra

Memberships
Member Professional Historian Association (Vic)
Member Australian Historical Association

Role Responsibilities Historian

Career Summary
Peter Mills has been working in the heritage field since being employed by Peter Freeman & Partners during and after completing his Architecture degree in Canberra. He moved to Melbourne for his Masters degree and subsequently worked for Heritage Victoria in the assessments group, before a stint writing conservation management plans for heritage architects Helen Lardner Conservation and Design.

Peter commenced his own consulting work while undertaking his PhD, undertaking assessments of heritage places for Heritage Victoria. Since 2010 the majority of his work has been sub-consulting to heritage architects/consultants, preparing histories of places for conservation/heritage management plans and Heritage Overlay citations. Histories have been prepared for a very wide variety of rural, industrial and urban sites, from the smallest cottage to large scale rural and industrial sites.

Peter has developed a facility for quickly accessing the various primary and secondary sources required, including layering of historical maps and plans. Peter is particularly adept at establishing the connections between this historical information and the remaining physical fabric on the site.

Relevant Experience

Heritage Register assessments for Heritage Victoria 2005-2010
Including Ford factory Geelong; Ford headquarters Campbellfield; WWII RAAF flying boat base at Lake Boga; Brambuk Cultural Heritage Centre at Halls Gap, National Heritage List assessment for Murtoa No1 Grain Store, Murrindal timber truss bridge, Masters Hut Gunbower Island and Inglewood Eucalyptus distillery.

Consulting to Nillumbik Shire Council with Samantha Westbrooke Architect 2010-2020
Preparation of histories for citations for over 60 existing and potential heritage overlay sites in Nillumbik Shire including sites on private property, Crown land and Council owned land and covering the full expanse of the Shire. Contextual histories for localities accompanied the site histories. Also prepared a Revised Thematic Environmental History for the Nillumbik Shire Heritage Study.

Sub-consulting to Ray Tonkin Architect 2015-2018
Histories for a range of rural sites including Mernda township, sites in Whittlesea and Mitchell Shires and at Clyde North and Yarrambat.

Dr Peter Mills
Historian

Sub-consulting to Michael Taylor Architects 2014-2020
Histories for CMP for sites including Kyneton Town Hall, Kilmore Town Hall and Whitburgh Cottage Kilmore. Histories for overlay sites including Yarram Park farm Southern Grampians, Glenferrie Rifle Range, Broadford Hotel, Reedy Creek Post Office, former Beehive Store Bendigo and Sandringham Masonic Lodge.

Sub-consulting to Context 2018-2019
Site histories, contextual histories and comparative analyses for heritage Overlay citations for over 40 urban and suburban sites in the City of Boroondara.

Sub-consulting to Helen Lardner Conservation & Design 2017-2020
Histories for Industrial sites including Holden factory, Government Aircraft Factory, Commonwealth Aircraft Factory, Former Kraft Factory, all at Fishermens Bend. History for Conservation Management Plan for Swan Inn Fyansford.

Post-contact histories for archaeological reports on development sites for Archaeology at Tardis 2019-2020
Included sites in Clyde, Officer, Wollert, Terang, Parwan, Bulla and Sparrowvale.

Appendix 2 – Owner / Occupier Cadastre

Appendix 3 – Boonwurrung People Native Title Application

National Native Title Tribunal

Extract from Schedule of Native Title Applications

Application Reference:	Federal Court number: VID363/2020 NNTT number: VC2020/001
Application Name:	Carolyn Maria Briggs & Anor on behalf of the Boonwurrung People and State of Victoria (Boonwurrung People)
Application Type:	Claimant
Application filed with:	Federal Court of Australia
Date application filed:	29/05/2020
Current stage(s):	Currently identified for registration decision, Pre-notification
Registration information:	Please refer to the Register of Native Title Claims/National Native Title Register (as appropriate) for registered details of this application. **Registration decision status:** Currently identified for Reg. Decision **Registration history:** -
Applicants:	Carolyn Maria Briggs, Sylvia Fay Muir
Address(es) for Service:	Jason A Briggs Lawyers Level 6 607 Bourke Street Melbourne VIC 3000 **Phone:** 03 9982 6321

Additional Information

Not applicable

Persons claiming to hold native title:

1. The native title claim group consists of the people known as the Boonwurrung People, being those Aboriginal people whose traditional land and waters are situated generally in the coastal district of

Melbourne and the south east coast encompassing and inclusive of Wilson's Promontory) in the State of Victoria and are identified by the Map attached to Schedule C.

2. The individuals who comprise the Boonwurrung People's native title claim group are the biological descendants of the following apical ancestors:

Louisa Briggs (circa 1832 -1925)
Ann Munrow (circa 1824-1884)

Native title rights and interests claimed:

1. Over areas where a claim to exclusive possession can be recognised (such as areas where there has been no prior extinguishment of native title or where s. 238 applies), the Boonwurrung People claim the right to possess, occupy, use and enjoy the lands and waters covered by the application (the application area) as against the whole world.

2. Over areas where a claim to exclusive possession cannot be recognised, the Boonwurrung People claim the following rights and interests:
The customary rights and interests possessed under traditional laws and customs that are able to be and should be recognised by the common law of Australia being the (non-exclusive) rights to:
- have access to, remain on and use the land and waters;
- access and take the resources of the land and waters;
- protect places areas and things of traditional significance on the land and waters
- the right to camp and engage in recreation activities on the application area
- the right to erect shelters on the application area
- the right to prepare and provide food on the application area
- the right to live on the application area
- the right to move about the application area
- the right to hold meetings on the application area
- the right to hunt on the application area
- the right to fish on the application area
- the right to conduct ceremonies on the application area
- the right to participate in cultural activities on the application area
- the right to control access to, and use of, the application area by other Aboriginal People or Torres Strait Islanders who seek access to or use of the lands and waters in accordance with traditional laws and customs

3. The native title rights are subject to:
a. the valid laws of the State of Victoria and the Commonwealth of Australia including the common law;
b. the rights (past or present) conferred upon persons pursuant to the laws of the Commonwealth and the laws of the State; and
c. the traditional laws and customs of the native title claim group.

"Resources" does not include such minerals, petroleum or gas, if any, as are, under the laws of the Commonwealth or the State of Victoria, including the common law, as at the date of this application, wholly owned by the Crown.

Application Area:

State/Territory: Victoria
Brief Location: Southern coast of Victoria, generally in the coastal district of Melbourne and including Wilson's Promontory
Primary RATSIB Area: Victoria
Approximate size: 13077.2741 sq km
(Note: There may be areas within the external boundary of the application that are not claimed.)
Does Area Include Sea: Yes

Area covered by the claim (as detailed in the application):

1. The boundaries of the area of land and waters covered by the application are shown on the map attached and marked as Attachment C and are as described in the document entitled 'Description of Boundaries' which is annexed as Attachment B.

2. Subject to (3) and (4) below, the areas of land and waters within the boundaries referred to in (1) above that are not covered by the application are:
a) Any area that is, or was, subject to any of the following acts as defined in the *Native Title Act 1993* (Cth) or any area that is, or was, subject to any of the following acts as defined in the *Native Title Act 1993* (Cth) or the *Land Titles Validation Act 1994* (Vic),
I. Category A past act;
II. Category A intermediate period act;
III. Category B past act that is wholly inconsistent with the continued existence, enjoyment or exercise of any native title rights or interests;
IV. Category B intermediate period act that is wholly inconsistent with the continued existence, enjoyment or exercise of any native title rights or interests;
V. previous exclusive possession act,
b) Any other area in relation to which native title rights and interest have otherwise been wholly extinguished;
c) Any area for which there is an approved determination of native title, as defined in the Native Title Act.

3. Notwithstanding anything contained elsewhere in this application, the area covered by the application includes any area in relation to which the non-extinguishment principle (as defined in section 238 of the Native Title Act) applies, including any area to which section 47, 47A or 47B of the Native Title Act applies. Particulars of these areas will be provided prior to the hearing but any area as may be listed in Schedule L is included in the area covered by the application.

4. Where there is any discrepancy between the map provided at Attachment C and the written description contained in this schedule and in Attachment B, the latter prevails.

Attachments:

1. Description of boundaries, Attachment B of the application, 9 pages - A4, 29/05/2020
2. Map of the claim area, Attachment C of the application, 2 pages - A4, 29/05/2020

NNTT Contact Details

Address:
National Native Title Tribunal
Sydney Office
Level 17, Law Courts
Queens Square
SYDNEY NSW 2000

GPO Box 9973
SYDNEY NSW 2001

Telephone: +61 2 9227 4000
Freecall: 1800 640 501
Fax: +61 8 9425 1193
Web Page: www.nntt.gov.au

End of Extract

Schedule Extract attachment: VID363/2020 (VC2020/001)
Description of boundaries, Attachment B of the application
Page 1 of 9, A4, 29/05/2020

SCHEDULE B

ATTACHMENT B

DESCRIPTION OF BOUNDARIES

ATTACHMENT B

DESCRIPTION OF BOUNDARIES

The boundary of the claim includes all the areas included in the map at Attachment C, shown below.

The description of Boundaries, has been provided in two parts and is set out below – labelled Part A and Part B.

Schedule Extract attachment: VID363/2020 (VC2020/001)
Description of boundaries, Attachment B of the application
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ATTACHMENT B

PART A

Area A:

Commencing at the northern bank of the mouth of the Werribee River and proceeding generally south easterly and north easterly to the centreline of the Princes Freeway at Latitude 38.130709° South, passing through the following coordinates:

Longitude° (East)	Latitude° (South)
144.716681	37.981798
144.834112	38.012804
145.020880	38.056566
145.130316	38.079699
145.142279	38.082689
145.191290	38.093188
145.240484	38.101977
145.262091	38.105273
145.277533	38.107287
145.286322	38.112597

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ATTACHMENT B

145.310736	38.126391
145.349127	38.146166
145.388495	38.164171
145.426336	38.179308
145.464911	38.192797
145.484320	38.198778
145.511725	38.198412
145.561529	38.194567
145.614325	38.188586
145.654486	38.182665
145.688299	38.176684
145.728094	38.168505
145.794684	38.151964
145.833685	38.140673
145.848700	38.135973
145.857306	38.134569
145.863287	38.134814

Then generally south easterly along the centrelines of the Princes Freeway, Princes Way and Queens Street to the intersection with Alfred Street in Warragul; then generally southerly and south westerly along the centrelines of Alfred Street, Howitt Street and the Korumburra-Warragul Road to an unnamed road reserve at Latitude 38.277534° South; then easterly along the centreline of that road reserve to the western boundary of Lot 1 on Plan TP23814; then continuing easterly for about 120 metres to the centreline of Grand Ridge Road at Latitude 38.280689° South; then generally north easterly along the centreline of the that Road and McDonalds Track to the western boundary of the Parish of Allambee East, also being a point on the external boundary of the VID6007/1998, VID482/2009 Gunai/Kurnai People (VCD2010/001) native title determination; then generally southerly and south easterly along the external boundary of that determination to Longitude 146.513169° East; then south

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easterly to a point three nautical miles seaward of the coastline at Latitude 38.829655° East, also being a point on the Victorian coastal waters three nautical mile limit; then generally south westerly and generally north westerly along that three nautical mile limit to Longitude 144.568915° East; then generally north easterly passing through the mid-point of the entrance of Port Phillip Bay to the northernmost point of Mud Island, then generally northerly back to the commencement point .

Exclusions

Any area subject to Tasmanian coastal waters or limits of coastal waters that are established from islands that fall within the jurisdiction of Tasmania are excluded from the application area.

Note

Data Reference and source

- Application boundary compiled by National Native Title Tribunal based on information or instructions provided by the applicants.
- Native title determination VID6007/1998, VID482/2009 Gunai/Kurnai People (VCD2010/001) as determined on 22 October 2010.
- Parish and Cadastre data sourced from DELWP (VIC), October 2019.
- Maritime boundaries data sourced from the Commonwealth of Australia (Geoscience Australia) 2006. AMB 6th Edition released in February 2006.
- Roads and Rivers, where not identified as reserves within cadastre, sourced from 1:25K topographic data sourced from DELWP (VIC), October 2019. Reference to road centrelines refers to the centreline of the road reserve.

Reference datum

Geographical coordinates have been provided by the NNTT Geospatial Services and are referenced to the Geocentric Datum of Australia 2020 (GDA2020), in decimal degrees and are based on the spatial reference data acquired from the various custodians at the time

Use of Coordinates

Where coordinates are used within the description to represent cadastral or topographical boundaries or the intersection with such, they are intended as a guide only. As an outcome of the custodians of cadastral and topographic data continuously recalculating the geographic

ATTACHMENT B

position of their data based on improved survey and data maintenance procedures, it is not possible to accurately define such a position other than by detailed ground survey.

The above information was prepared by Geospatial Services, National Native Title Tribunal (16 March 2020)

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ATTACHMENT B

PART B

External boundary description

The application area covers all the land and waters within the external boundary described as:

Commencing on the northern bank of the mouth of the Werribee River and proceeding to the centreline at the mouth of that river, being a point on the eastern boundary of the Wathaurung Aboriginal Corporation Registered Aboriginal Party (RAP) area; then proceeding generally north westerly, northerly, easterly and south easterly along that RAP boundary and the southern boundary of the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation RAP area to the intersection of the Yarra Junction – Noojee Road and the centreline of Savin Creek; then continuing generally easterly along the Yarra Junction – Noojee Road to the Main Neerim Road; then generally southerly along that road and generally southerly along Bloomfield Road to a northern boundary of the Gunaikurnai Land and Waters Aboriginal Corporation RAP area; then generally westerly along that RAP boundary to its westernmost corner at the centreline of the Princes Freeway at Drouin; then generally westerly and north westerly through the following coordinated points back to the commencement point:

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Schedule Extract attachment: VID363/2020 (VC2020/001)
Description of boundaries, Attachment B of the application
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ATTACHMENT B

Longitude* (East)	Latitude* (South)
145.863287	38.134814
145.857306	38.134569
145.848700	38.135973
145.833685	38.140673
145.794684	38.151964
145.728094	38.168505
145.688299	38.176684
145.654486	38.182665
145.614325	38.188586
145.561529	38.194567
145.511725	38.198412
145.484320	38.198778
145.464911	38.192797
145.426336	38.179308
145.388495	38.164171
145.349127	38.146166
145.310736	38.126391
145.286322	38.112597
145.277533	38.107287
145.262091	38.105273
145.240484	38.101977
145.191290	38.093188
145.142279	38.082689
145.130316	38.079699
145.020880	38.056566
144.834112	38.012804
144.716681	37.981798

ATTACHMENT B

Note

Data Reference and source

- Application boundary compiled by National Native Title Tribunal based on information or instructions provided by the applicants.
- Registered Aboriginal Parties (RAP) data sourced from the Office of Aboriginal Affairs Victoria, Department of Premier and Cabinet, VIC (December 2018). The 'Wurundjeri Tribe Land and compensation Cultural Heritage Council Aboriginal Corporation' changed its name to the 'Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation' after the date data was sourced.
- Roads and Rivers, where not identified as reserves within cadastre, sourced from 1:25K topographic data from DELWP (VIC), October 2019. Reference to roads and road centrelines refers to the centreline of the road reserve.

Reference datum

Geographical coordinates have been provided by the NNTT Geospatial Services and are referenced to the Geocentric Datum of Australia 2020 (GDA2020), in decimal degrees and are based on the spatial reference data acquired from the various custodians at the time.

Use of Coordinates

Where coordinates are used within the description to represent cadastral or topographical boundaries or the intersection with such, they are intended as a guide only. As an outcome of the custodians of cadastral and topographic data continuously recalculating the geographic position of their data based on improved survey and data maintenance procedures, it is not possible to accurately define such a position other than by detailed ground survey.

The above information was prepared by Geospatial Services, National Native Title Tribunal (20 April 2020).

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Schedule Extract attachment: VID363/2020 (VC2020/001)
Map of the claim area, Attachment C of the application
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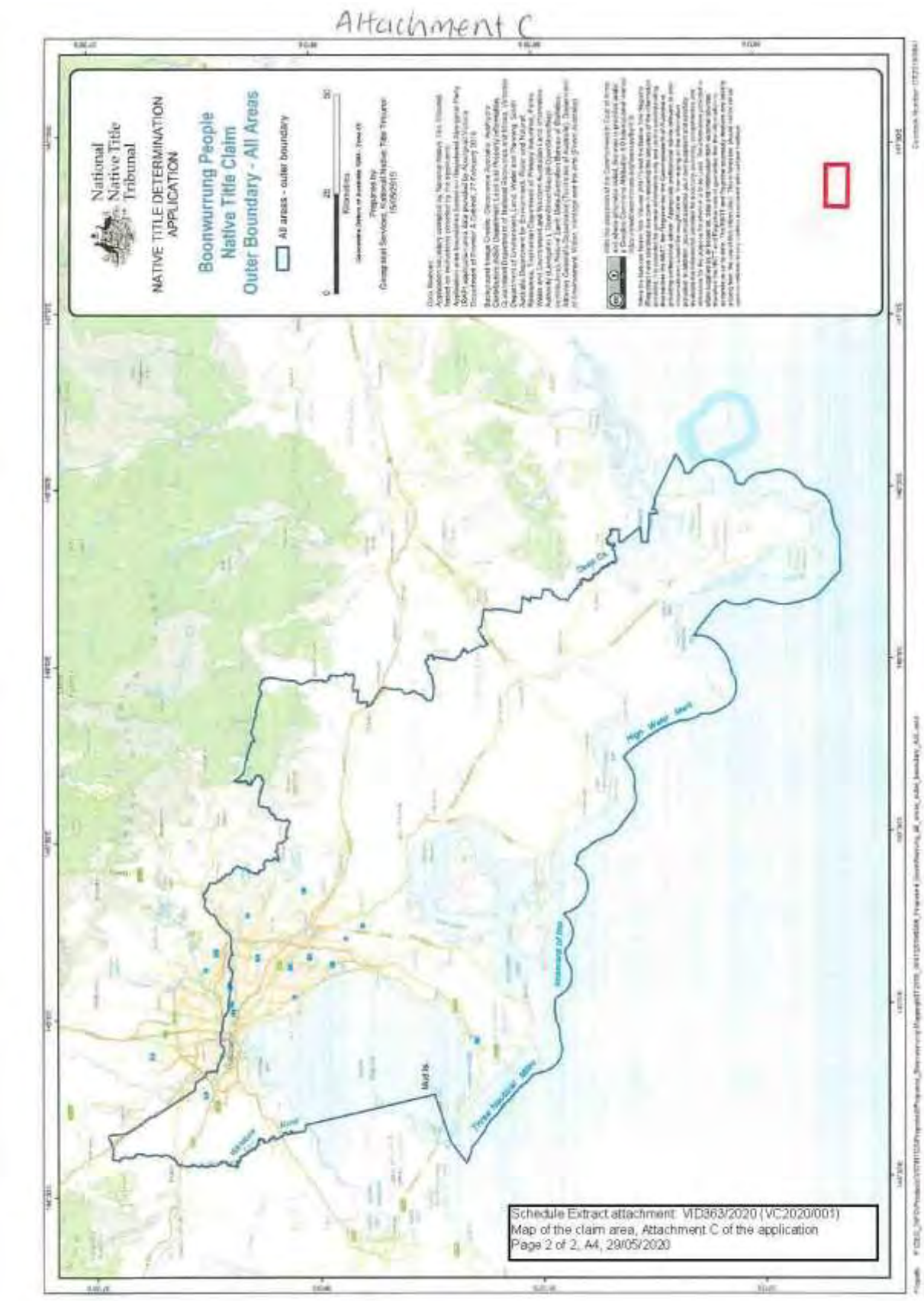
SCHEDULE C

ATTACHMENT C

MAP SHOWING BOUNDARIES OF THE AREA


Attachment C
National Native Title Tribunal
NATIVE TITLE DETERMINATION APPLICATION
Boonwurrung People Native Title Claim
Outer Boundary - All Areas
All areas - outer boundary
Schedule Extract attachment: VID363/2020 (VC2020/001)
Map of the claim area, Attachment C of the application
Page 2 of 2, A4, 29/05/2020

Appendix 4 – Notice of Intention

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

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

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

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

Applicant (*natural person or body corporate seeking to carry out survey*):	Archaeology at Tardis		
ABN/ACN:	12 151 540 662		
Contact name:	Jessica Earl		
Postal Address:	PO Box 776, Beaconsfield VIC 3807		
Telephone Number:	(03) 9676 9009	Fax number:	
Mobile:	0401 871 488		
Email Address:	jessicae@tardisenterprises.com.au		

SECTION 2 –Survey supervisor

Name: Jessica Earl

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

Jessica Earl is suitably qualified to supervise a survey for Aboriginal cultural heritage. Jessica holds a Bachelor of Arts (Honours in Australian Indigenous Archaeology) from Monash University. Jessica is an Archaeologist with qualifications and experience pertaining to Indigenous and historic cultural heritage management, including archaeological surveys and excavations, artefact analysis and background research. She is frequently involved in conducting archaeological excavations from small to large sized, having worked on a number of major Australian Cultural Heritage projects across Victoria.

SECTION 3 – Description of proposed activity and Survey location

Project Name: Officer Sth Employment PSP

List the relevant municipal district/s (ie. Local Council or Shire): Cardinia Shire Council

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

Aboriginal Cultural Heritage Impact Assessment

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

The location encompasses a total of 1,069ha. The area includes land bounded by Cardinia Creek to the west, Princess Freeway to the north, Lower Gum Scrub Creek to the east and the Urban Growth Boundary to the south (at Pattersons Rd).

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

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

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Officer South Employment PSP - Aboriginal Cultural Heritage Impact Assessment

Map 3 Extent of Activity Area

Archaeology At Tardis *heritage advisors*

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SECTION 4 – Expected start and finish date for the survey

Start date 15 / 9 / 2020 *Finish date* 17 / 9 / 2020

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

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

SECTION 6 – Signature of applicant

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

Signed: *Date:* 23/7/2020

[applicant]

SECTION 7 – Notification checklist

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

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

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

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

Notes:

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

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Gmail Jessica Earl <jessicae@tardisenterprises.com.au>

OFFICIAL: Notice of Intent to carry out a survey received

3 messages

VAHR (DPC) <vahr@dpc.vic.gov.au> 23 July 2020 at 17:31
To: "jessicae@tardisenterprises.com.au" <jessicae@tardisenterprises.com.au>
Cc: "David.Portelli@vpa.vic.gov.au" <David.Portelli@vpa.vic.gov.au>

To whom it may concern,

This is a formal automated response indicating that, on 23-Jul-2020, the Secretary, Department of Premier and Cabinet received a Notice of Intent to carry out a survey for:

The location encompasses a total of 1.069ha. The area includes land bounded by Cardinia Creek to the west, Princess Freeway to the north, Lower Gum Scrub Creek to the east and the Urban Growth Boundary to the south (at Pattersons Rd).

The notification has been allocated the AV Survey Number: 83

Please quote this number when making any future enquiries to AV regarding this project.

If your activity lies within the boundaries of a registered Aboriginal party you must also notify this organisation of your intention to prepare the survey (if you have not already done so). Further information about registered Aboriginal parties can be found at:

http://www.dpc.vic.gov.au/index.php/aboriginal-affairs/registered-aboriginal-parties

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Please consider the environment before printing this email
Notice: This email and any attachments may be confidential and may contain copyright or privileged material. You must not copy, disclose, distribute, store or otherwise use this material without permission. Any personal information in this email must be handled in accordance with the Privacy and Data Protection Act 2014 (Vic) and applicable laws. If you are not the intended recipient, please notify the sender immediately and destroy all copies of this email and any attachments. Unless otherwise stated, this email and any attachment do not represent government policy or constitute official government correspondence. The State does not accept liability in connection with computer viruses, data corruption, delay, interruption, unauthorised access or use.

Jessica Earl <jessicae@tardisenterprises.com.au> 27 August 2020 at 10:18
To: "VAHR (DPC)" <vahr@dpc.vic.gov.au>

Please be advised that the proposed survey dates for AV Survey Number: 83 have changed. The survey will now be carried out over 3 days from Sep 15-17 2020.

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Kind Regards,
Jessica Earl

Archaeology At Tardis
Office: A3, 6 Rogers Street, Port Melbourne VIC 3207
Postal: PO Box 776, Beaconsfield Vic 3807
(03) 9676 9009 | 0401 871 488
www.aatardis.com.au

Due to the current situation regarding COVID-19 and the Victorian Government's recent announcement of a State of Emergency, we have elected to minimise face-to-face contact in an effort to slow transmission rate, and will be working remotely until further notice.

Please feel free to contact me regarding your project via this email or my mobile number 0401 871 488.

Thank you for your understanding.

VAHR (DPC) <vahr@dpc.vic.gov.au> 27 August 2020 at 11:04
To: Jessica Earl <jessicae@tardisenterprises.com.au>

I have updated our database.

Thanks

Boheme

Boheme Rawoteea

Heritage Project Officer | Heritage Services

Aboriginal Victoria | Department of Premier & Cabinet

Level 3, 1 Treasury Place, East Melbourne VIC 3002

Email: vahr@dpc.vic.gov.au 0429 616 554

ABORIGINAL VICTORIA

We acknowledge the traditional Aboriginal owners of country throughout Victoria and pay our respect to them, their culture and their Elders past, present and future.

Please note: Most AV staff are currently working from home to support a community-wide effort to minimise the impact of COVID-19. Please contact me and other staff on our mobile numbers, via email or Skype. Take care and stay healthy.

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