

Cultural Heritage Desktop Assessment Brompton Lodge PSP (Lot 6 and Lot 8), Cranbourne–Frankston Road, Cranbourne South



Sponsor: Metropolitan Planning Authority
Cultural Heritage Advisor: Catherine Webb
Author: Catherine Webb and Andrew Orr
Date: April 2015

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EXECUTIVE SUMMARY

TerraCulture Pty Ltd was commissioned by the Metropolitan Planning Authority (MPA) to prepare a desktop heritage assessment for two parcels of land (Lots 6 and 8) in the Brompton Lodge PSP area on Cranbourne-Frankston Road, Cranbourne South. TerraCulture has previously completed an approved CHMP for the greater part of the Brompton Lodge area (CHMP 12398, Orr 2014), excluding the two parcels Lot 6 and Lot 8. This current assessment will provide background information and heritage advice for the PSP process. CHMPs are not required for this level of planning.

Given that an approved and recent CHMP is in place for the majority of the PSP area, this report will rely heavily on CHMP 12398 for background information.

Subdivision of the land for residential development is proposed under the PSP. This will disturb the current land surface and possible buried former land surfaces during construction of the subdivision and any other earthworks. The activity therefore has the potential to impact on any Aboriginal or historical heritage in surface and sub surface contexts.

Desktop Assessment

The following heritage registers were accessed for this desktop assessment: ACHRIS (OAAV on-line register), Heritage Victoria Site Inventory, Victorian Heritage Register, Australian Heritage Database (Register of the National Estate), Register of the National Trust (Victoria), and the City of Casey Planning Scheme. There are no cultural heritage places listed on any of these registers within the activity area, however one registered site along the Cranbourne-Frankston Road is less than 50 metres from Lot 8.

The Activity Area is in a region that has been subject to a relatively high number of archaeological assessments when compared with other parts of Victoria. These assessments have largely been in response to residential development and the provision of roads and services associated with the urbanisation of previously rural land. Of greatest relevance is the CHMP prepared of surrounding areas by Orr (2014).

Orr prepared a CHMP for the bulk of the Brompton Lodge PSP area, excluding only the two parcels (Lot 6 and 8) that are the subject of this report. The CHMP included desktop, standard and complex assessments, during which widespread ground disturbance was noted. Nevertheless, seven Aboriginal places were identified: three of these were recorded as stone artefact scatters found subsurface, and four recorded as Low Density Artefact Distributions in both surface and subsurface contexts. As with previous assessments, the Aboriginal cultural heritage was identified only in sediments from the Cranbourne Sands. Of the three landforms identified during the assessment;

- The floodplains were found to have been drained and sometimes subject to soil stripping, with no artefacts identified

- Rises and low rises were not always natural, but in the less disturbed areas, all of the artefacts were found on this landform
- Hills were found to consist of basalt and clay, lacking any sand veneer. No artefacts were found in the hills.

Conclusion of the Desktop

The desktop assessment indicates that there are no previously recorded Aboriginal Places within the activity area, but there is one Place closely bordering Lot 8.

Assessments on other properties in the region have encountered a landscape of sandy rises with low-lying, often inundated, ground in-between. Stone artefacts have been clearly associated with the sandy rise landform with an absence of archaeological material in the low-lying swamp deposits. Similarly, the Brompton Lodge CHMP (Orr 2014) indicates that the greatest potential for sites within the current activity area is the low rises, with no Aboriginal cultural heritage expected within the lowlying drained wetlands.

The following predictive model is proposed for the Activity Area:

- Aboriginal Places containing stone artefacts are the most likely site-type.
- Scarred trees may be present if/where mature indigenous trees have survived.
- There is potential for buried former ground surface(s) and occupation deposits.
- Sandy rises have a very high potential to contain artefact scatters.
- Artefact Scatters are likely to be found in association with sandy soils with lower layers very likely to be culturally sterile
- Hills have an inferred high potential to contain artefact scatters, but none have been found in their shallow deposits.
- With high levels of disturbance, the survival of *in situ* archaeological sites is extremely unlikely.
- It is likely that Aboriginal cultural heritage is present within the Activity Area.

Aboriginal Heritage

Both lots are currently within an area of cultural heritage sensitivity. Almost all of Lot 6 is within the Cranbourne Sands (r. 38 sand sheets); Lot 8 is within 50 metres of a registered cultural heritage place (r. 22 (2)).

In summary, for the residential subdivision and construction of urban housing, the Aboriginal Heritage Regulations require the mandatory preparation of a CHMP under the *Aboriginal Heritage Act 2006* for both lots 6 and 8.

Recommendation 1

A CHMP must be prepared prior to the subdivision or carrying out of other high impact activities specified in the Aboriginal Heritage Regulations. This CHMP may be prepared for the lots independently or jointly. Given the poor surface visibility and the demonstrated occurrence of subsurface artefacts in the surrounding areas, the CHMP should consist of desktop, standard and complex assessments. The desktop could be based on the current report but would need to include updated register searches.

Historical Heritage

The *Heritage Act* 1995 provides protection for historical archaeological sites and it is an offence to disturb such a site without Consent from Heritage Victoria. There are no known sites within the proposed development area that are protected by the Heritage Act.

Recommendation 2

A survey for historical heritage should be conducted to identify if there are any significant elements associated with the rural or drainage history of the places. This assessment can be conducted in conjunction with the CHMP standard assessment, but will require a separate report.

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1. Introduction

1.1 Preamble

TerraCulture Pty Ltd was commissioned by the Metropolitan Planning Authority (MPA) to prepare a desktop heritage assessment for two parcels of land (Lots 6 and 8) in the Brompton Lodge PSP area on Cranbourne-Frankston Road, Cranbourne South. TerraCulture has previously completed an approved CHMP for the greater part of the Brompton Lodge area (CHMP 12398, Orr 2014), excluding the two parcels Lot 6 and Lot 8. This current assessment will provide background information and heritage advice for the PSP process. CHMPs are not required for this level of planning.

Given that an approved and recent CHMP is in place for the majority of the PSP area, this report will rely heavily on CHMP 12398 for background information.

1.2 The Name of the Sponsor

The Sponsor of this report is: Metropolitan Planning Authority

Contact: Anna Batters
Senior Precinct Structure Planner
Level 29, 35 Collins Street, Melbourne 3000

1.3 Cultural Heritage Advisor

The Cultural Heritage Advisor is Catherine Webb. Catherine holds a PhD from the School of Archaeology at La Trobe University (1996) and a Bachelor of Arts (Honours) (La Trobe University, 1987) majoring in archaeology. Catherine has 20 years experience as an archaeologist, working both as a private consultant and as a state archaeologist with AAV.

CHMP 12398, on which this report is largely based, was prepared by Andrew Orr. Andrew has a Bachelor of Arts (Honours) degree, a Master of Arts degree in archaeology and over 14 years experience as an archaeologist, with the last seven spent working as an archaeologist in NSW, the ACT and Victoria.

1.4 Registered Aboriginal Party with Responsibility for the Activity Area

There are no Registered Aboriginal Parties (RAPs) registered under the State act. There have been two previous applications for RAP status covering the activity area, the Boon Wurrung Foundation and the Bunurong Land Council Aboriginal Corporation. The Aboriginal Heritage Council on 27 August 2009 recognised both groups as representing traditional owners of the land and expected that the groups would continue to be consulted regarding cultural heritage in the area.

2. Activity Description

2.1 Description of the Proposed Activity Area

The following description is based primarily on maps and aerial photography, as well as a brief site inspection. The inspection was undertaken on 17 February 2015 by Catherine Webb and Brendan Marshall (TerraCulture). Lots 6 and 8 were not accessed, and the Activity Area was viewed from adjacent roads and driveways (which were usually fenced) only and was not inspected on foot.

2.1.1 Existing Conditions

Lots 6 and 8 consist largely of grassed open paddocks used for pasture. The paddocks have been cleared as there appears to be little native vegetation. Trees have been planted along property boundaries and also grow along local drainage lines. The ground is mostly covered in introduced grasses and other herbaceous weeds.

The topography of the activity area is variable. Lot 6 consists mostly of low-lying floodplain. Heading northeast the elevations increase steadily to form a prominent well formed hill in Lot 8. Lot 6 is drained by a built drainage channel in the southwest paddocks and running along the adjacent section of Cranbourne-Frankston Road. Lot 8 also appears to have an artificial drain which feeds a dam; which may be stormwater discharge from the large shed on this lot.

There are several buildings on both lots; residential and farming related in the case of Lot 6 whereas Lot 8, along the Ballarto Road extension, contains a number of warehouse buildings and large truck parking area. This depot at the north eastern corner has resulted in the disturbance or total destruction of all sediments in this part of the site.

The flatness of the ground and drainage within Lot 6 indicates that the area is subject to inundation and was probably a part of a larger ephemeral wetland prior to drainage works. This would be a likely former landscape given the broader regional context of the Cranbourne area. There was abundant evidence of drains, particularly at the end of Lot 6, including the formal drains of the late nineteenth and early twentieth century's, and less formal internal drainage. This provides evidence for localised disturbance at and around these drains, and also indicates that these areas remain subject to periodic inundation and prior to the massive drainage works of a century ago, would have been swampland.

In contrast, much of Lot 8 is the aforementioned hill. Elevated ground adjacent to a former swamp or wetland has been demonstrated to be sensitive for Aboriginal heritage and in this instance, the current rural use of both lots is likely to have been low in its impact and there is a strong probability of archaeological remains.

2.2 Proposed Activity

The Activity consists of planning for a subdivision of land for a residential development. The subdivision will provide for, at a minimum:

- Residential lots;
- Roads;
- Drainage corridors;
- Provision of services, including electricity, telecommunications, water, sewers and gas.

Land shaping may include but is not limited to:

- Cut or fill to develop road network;
- Trenching to lay utilities and service infrastructure;
- Mechanical excavation of watercourse pipes and mechanical re-shaping of watercourses;
- Reshaping (by mechanical means) the surface land to achieve suitable gradients for development of buildings and open space;
- Modification of land to facilitate effective stormwater runoff; and,
- Filling of lots to bring above any potential flood levels.

2.2.1 Possible Impact on Aboriginal Cultural Heritage

The activity will disturb the current land surface and possible buried former land surfaces during the construction of the subdivision and any other earthworks. The activity therefore has the potential to impact on any Aboriginal heritage in surface and sub surface contexts.

3. Extent of the Activity Area

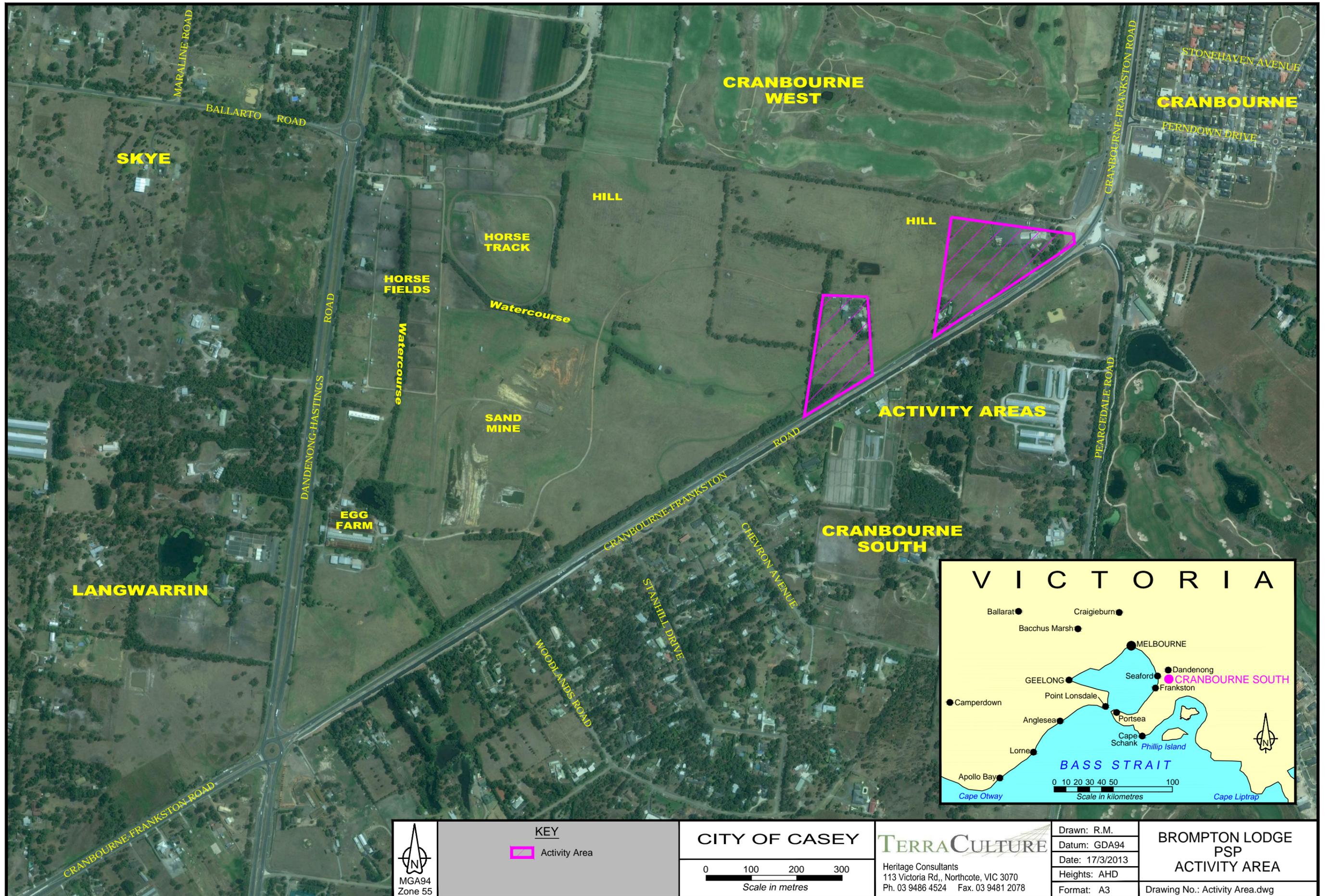
The extent of the Activity Area is shown in Map 1 outlined in yellow. The adjacent land outlined in red indicates the extent of CHMP 12398.

The Activity Area consists of the parcels of land described below:

Land Parcel	Lot/Plan or Crown Description
Lot 6	Lot 1 TP329796
Lot 8	Lot 5 PS613876 Lot 1 LB86054

Table 1 - *Cadastral details of the activity area*

The Activity Area is in the City of Casey. It is currently zoned Urban Growth (UGZ).



KEY	
	Activity Area

CITY OF CASEY			
0	100	200	300
Scale in metres			

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Drawn: R.M.
Datum: GDA94
Date: 17/3/2013
Heights: AHD
Format: A3

BROMPTON LODGE PSP ACTIVITY AREA
Drawing No.: Activity Area.dwg

MAP 1: Extent of Activity Area.

4. Documentation of Consultation

4.1 Consultation in Relation to the Assessment

Registered Aboriginal Parties

The Activity Area is not within the boundary of any Registered Aboriginal Party (RAP). There was no consultation with the interested Aboriginal parties, the Boon Wurrung Foundation and the Bunurong Land Council Aboriginal Corporation, as it is not required for this level of assessment. Relevant consultation with the Aboriginal communities was undertaken during the preparation of CHMP 12398, outlined in Section 4 of that CHMP (Orr 2014).

Office of Aboriginal Affairs

The Office of Aboriginal Affairs Victoria (OAAV) administers the *Aboriginal Heritage Act 2006*. They were notified of the project during an application to access ACHRIS, the online Victorian Aboriginal Heritage Register (VAHR).

Heritage Victoria

Heritage Victoria administers the *Heritage Act 1995*. They have not been notified of this project as there was no need or legal requirement to do so.

5. Cultural Heritage Assessment

The Geographic Region

The relevant Geographic Region for Aboriginal heritage is the Geomorphic unit “Coastal Plains with ridges and dunefields (Brighton, Cranbourne)”. For the purposes of this report, an area covering all land within 2km of the Activity Area has been chosen as this provides a representative sample of previously recorded Places relevant to the Activity Area, as well as relevant elements of the natural environment that may have influenced past human behaviour and archaeological site formation processes.

For historical sites, only Places within or directly adjacent to the Activity Area have been considered.

5.1 Aboriginal Cultural Heritage Places

Existing Registrations

AAV maintains the Victorian Aboriginal Heritage Register (VAHR), a register of all known Aboriginal heritage places, and a library of all published and unpublished reports describing investigations of Aboriginal heritage in Victoria.

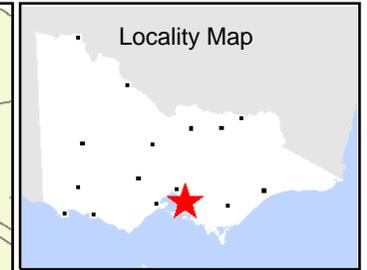
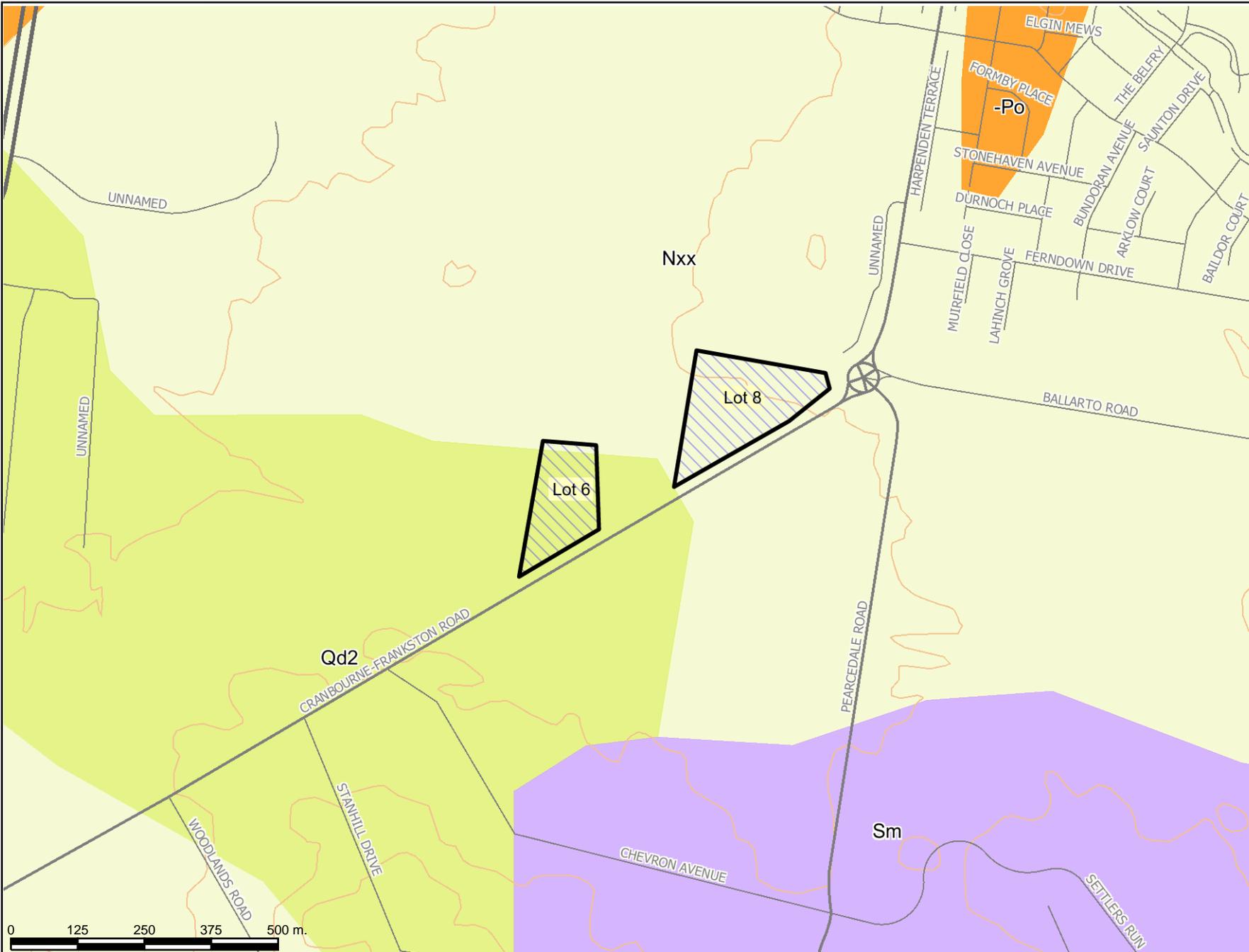
A search of the VAHR was undertaken by Catherine Webb on the 6th of February 2015. This search indicates that the Activity Area has been part of or adjacent to several prior archaeological investigations; linear investigations adjacent to surrounding roads. There are however, no registered Aboriginal cultural heritage places located within the subject land, although one Place (VAHR 7921-0821) is located very close to the boundary of Lot 8.

Areas of Cultural Heritage Sensitivity

The Aboriginal Heritage Regulations (2007) identify areas of sensitivity for Aboriginal cultural heritage that are used in conjunction with specified high impact activities to determine whether a Cultural Heritage Management Plan (CHMP) is required for a particular activity. Geologically, most of Lot 6 is Cranbourne Sands (refer Figure 1, which shows Lot 6 principally within the geological polygon of Qd2, unnamed dune deposits), a landform listed in the Aboriginal Heritage Regulations as an area of sensitivity. Lot 8, while outside of the Cranbourne Sands, has a registered Aboriginal Place within 50m of its boundary, which identifies this also as an area of sensitivity for Aboriginal cultural heritage (see Map 2).

Figure 1. Landform Features

Department of Primary Industries



Legend

Towns (25K)

Roads (vmtrans)



Contours (vmelev)



Contact Metamorphism Zones 250K

Geological Polygons 250K

- Qc3 Unnamed slump deposits
- Qd1 Unnamed coastal dune deposits
- Qdi Unnamed inland dune deposits
- Ql Unnamed lunette deposits
- Qm1 Unnamed swamp and lake deposits
- Qxy Yamba Formation
- Qxb Blanchetown Clay
- Qxo Lowan Sand

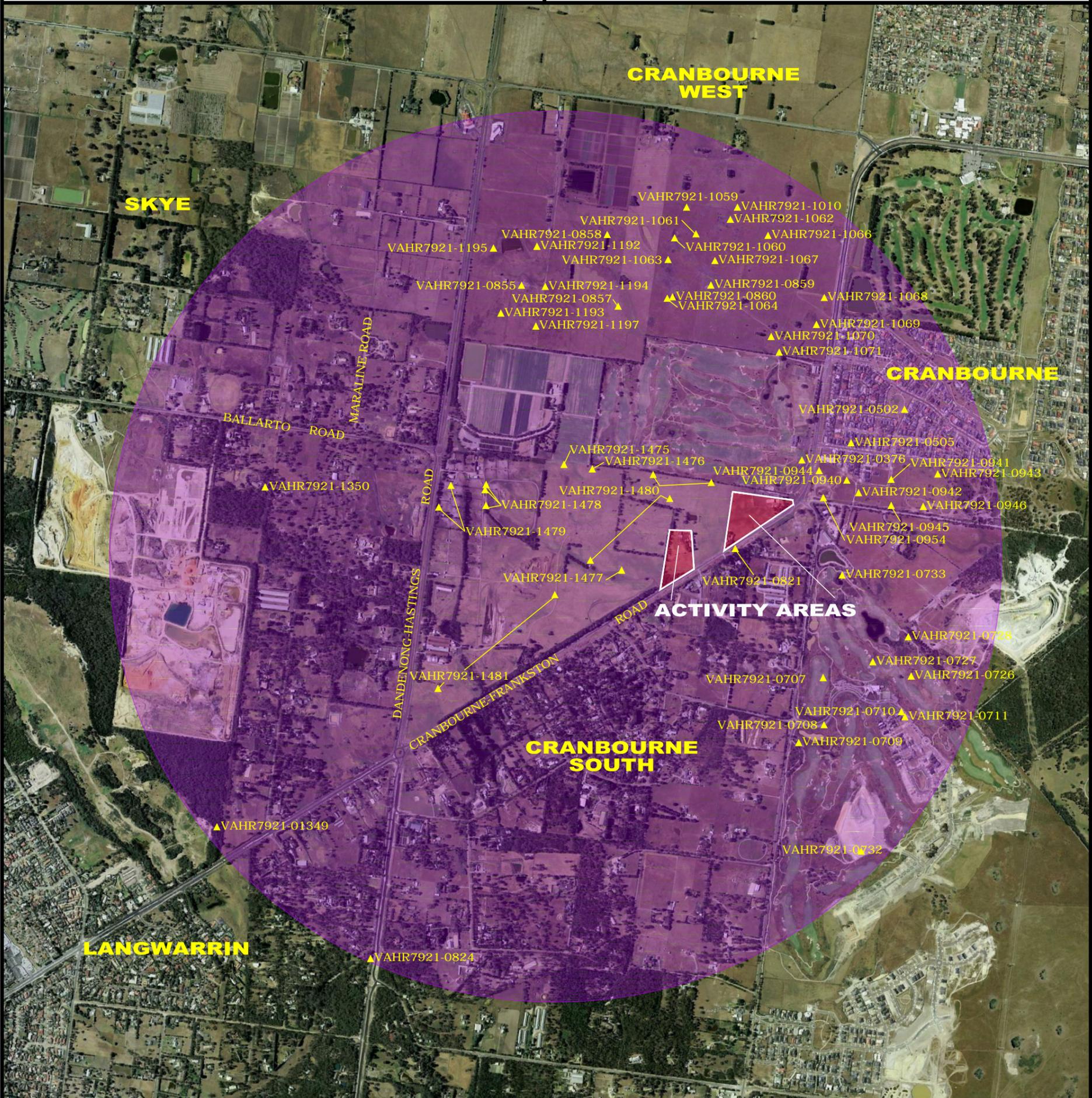
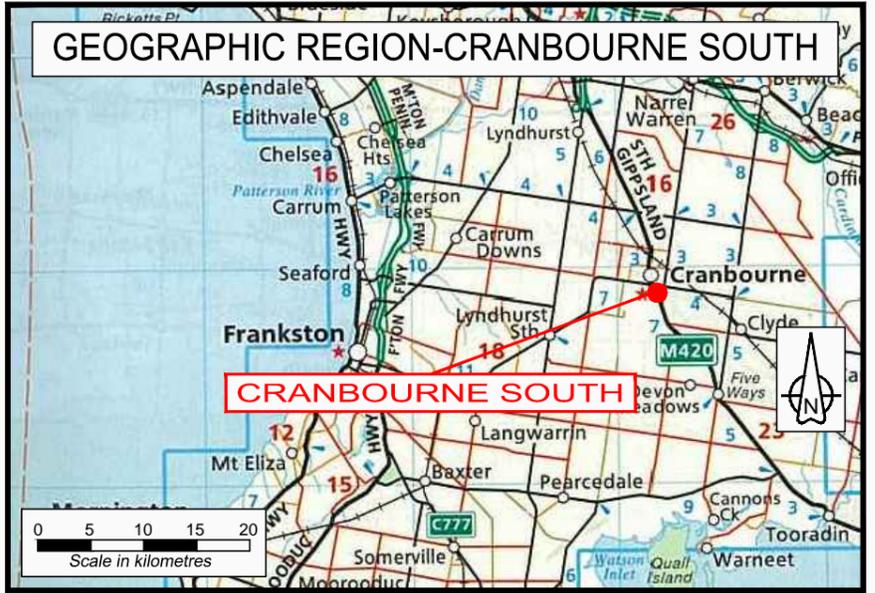
Disclaimer: This map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

© The State of Victoria Department of Primary Industries 2007

Map Scale 1:10,000
NOT FOR NAVIGATION

Printed on 20 April 2015 10:35:08





	KEY Activity Area Geographic Region Registered Aboriginal Cultural Heritage Place	CITY OF CASEY Scale in metres: 0 250 500 750	 Heritage Consultants 113 Victoria Rd, Northcote, 3078 VICTORIA Ph. 03 9486 4524 Fax. 03 9481 2078	Drawn: R.M. Datum: GDA94 Date: 17/3/2014 Heights: AHD Format: A3	BROMPTON LODGE PSP GEOGRAPHIC REGION Drawing No.: Geographic Region.dwg

MAP 2: Geographic Region including the Activity Area and Registered Aboriginal Cultural Heritage Places.

Aboriginal Places in the Geographic Region

As mentioned, there are no previously registered Aboriginal Cultural Heritage Places within the Activity Area, although one was recorded adjacent to the southern boundary of Lot 8 (VAHR 7921-0821). The Desktop Assessment identified a large number of other Aboriginal Cultural Heritage Places within 2km of Brompton Lodge (see Map 2). Within a 1 km radius, there are 23 places; most of these are stone artefact scatters and Low Density Artefact Distributions (LDAD's), with a single scarred tree. These sites and their proximity to the activity area are described below in Table 2.

VAHR No	Aboriginal Place Name	MGA94 (Zone 55) Easting	MGA94 (Zone 55) Northing	Component Type	~ Proximity To Activity Area
7921-0376	Ranfurlie Artefact Scatter	346531	5779147	Artefact Scatter	200m N of Lot 8
7921-0505	Binnap 6	346751	5779224	Artefact Scatter	350m NE of Lot 8
7921-0707	Settlers Run 1	346626	5778170	Artefact Scatter	750m SE of Lot 6
7921-0708	Settlers Run 2	346630	5777958	Artefact Scatter	950m SE of Lot 6
7921-0709	Settlers Run 3	346517	5777878	Artefact Scatter	950m SE of Lot 6
7921-0727	Settlers Run 7	346849	5778241	Artefact Scatter	900m E of Lot 6
7921-0728	Settlers Run 9	347008	5778353	Artefact Scatter	1000m E of lot 6
7921-0733	Settlers Run 14	346711	5778630	Artefact Scatter	400m E of Lot 6
7921-0821	CF 1	346232	5778749	Artefact Scatter	SE border of Lot 8
7921-0940	Brookland Greens 2	346732	5779056	Artefact Scatter	250m NE of Lot 8
7921-0941	Brookland Greens 4	346931	5779060	Artefact Scatter	450m E of Lot 8
7921-0942	Brookland Greens 5	346785	5779000	Artefact Scatter	300m E of Lot 8
7921-0944	Brookland Greens 3	346608	5779099	Artefact Scatter	200m NE of Lot 8
7921-0945	Brookland Greens 7	346931	5778943	Artefact Scatter	450m E of Lot 8
7921-0946	Brookland Greens 8	347075	5778938	Artefact Scatter	550m E of Lot 8
7921-0954	Brookland Greens 1	346627	5778978	Artefact Scatter	100m E of Lot 8
7921-1071	Cranbourne West Scarred Tree	346429	5779631	Scarred Tree	700m N of lot 8
7921-1475	Cranbourne West 112	345477	5779123	Artefact Scatter	450m NW of Lot 6
7921-1476	Cranbourne West 113	345563	5779114	Artefact Scatter	500m NW of Lot 6
7921-1477	Cranbourne West 114	345725	5778643	Artefact Scatter	150m W of Lot 6

7921-1478	Cranbourne West 115	345259	5779055	LDAD	800m W of lot 6
7921-1480	Cranbourne West 117	345864	5779080	LDAD	100m W of Lot 8 and N of Lot 6
7921-1481	Cranbourne West 118	344899	5778122	LDAD	450m W of Lot 6

Table 2 - Registered Aboriginal cultural heritage places within the relevant geographic region

* LDAD = Low Density Artefact Distribution

5.2 Previous Heritage Assessments in the Geographic Region

The Activity Area is in a region that has been subject to a relatively high number of archaeological assessments when compared with other parts of Victoria. These assessments have largely been in response to residential development and the provision of roads and services associated with the urbanisation of previously rural land. Most of these assessments have been carried out within the last 10 years and have included sub-surface investigations as well as pedestrian surveys.

A review of relevant studies is presented below.

In addition to the reports mentioned below, a previous survey was carried out in 2006 by TerraCulture. This report was not finalised and site cards were not submitted. Three artefact sites (seven quartz artefacts in total) and a scarred tree were noted as having been present. The locations given for artefacts and the scarred tree were inspected in detail during the current assessment (survey) but no Aboriginal cultural heritage material or evidence of cultural scarring was visible.

5.2.1 Regional Aboriginal Heritage Studies

Rhodes and Rawoteea 2007

Rhodes and Rawoteea (2007) prepared a desktop assessment of Aboriginal heritage for 795 ha of land at Cranbourne West as part of an Urban Growth Plan for the City of Casey. It did not include the current activity area which did not form part of the Growth Area at the time but has subsequently been included. Too few archaeological sites had been found within the study area to propose a pattern for past indigenous activity.

Marshall 1998

This assessment of Aboriginal heritage within the City of Frankston was a combination of a search of the register and the literature for previously recorded sites, combined with a brief survey to assess the potential for Aboriginal archaeological sites within the City boundaries. No new sites were located during the survey but the areas of remnant vegetation east of McClelland Drive along the Cranbourne-Frankston Road were identified as being of potential archaeological significance, being situated on the Pleistocene dune system (Marshall 1998: Appendix 3).

5.2.2 Local Surveys

George and Murphy 2002

This report outlined the assessment of a section of Cranbourne-Frankston Rd duplication, Langwarrin, located approximately 40km south east of Melbourne. The study area included 2.7km of gently sloping land adjacent to Cranbourne-Frankston Rd, between Warrandyte Rd and Homestead Rd, Langwarrin. A site survey was undertaken and no Aboriginal sites were identified. Prior activities adjacent to the study area corridor such as road construction and upgrades were speculated to have contributed to the lack of archaeological evidence within the study area. The vegetation within the study area comprised regrowth dating to the establishment of the road which resulted in ground surface visibility being very poor due to thick grass coverage. The areas of highest Aboriginal lithic potential were the banks of Boggy Creek tributary (dissected by Cranbourne-Frankston Rd) to the east of Union Rd, and particularly the area south of Cranbourne-Frankston Rd. It was recommended that any construction activities in this area should be monitored.

Hyett 2002

In 2002 an archaeological survey was undertaken of Cranbourne-Frankston Rd between McClelland Drive and Warrandyte Road in Langwarrin. One Aboriginal site was identified at the corner of Cranbourne-Frankston Road and Veronica Street. The site comprised two clear (crystal) quartz artefacts and was assessed to be of low archaeological significance. The artefacts were identified as a broken blade and a flake with edge damage.

Murphy 2006

Tardis Enterprises Pty Ltd was commissioned to conduct an archaeological investigation of a proposed rising main along Brown's, Pearcedale and Cranbourne-Frankston roads, Cranbourne. A systematic ground survey was conducted over the study area, targeting areas of recent ground disturbance and road cuttings. Ground surface visibility was assessed to be generally poor. No Aboriginal or non-Aboriginal (historical) archaeological sites were recorded during the survey.

Murphy, Rymer, Porter and Barker 2006

Tardis Enterprises Pty Ltd was engaged by Medallist Projects Pty Ltd to undertake an archaeological subsurface testing program of the Settlers Run Estate, directly to the southeast of the subject land. Forty seven mechanically excavated transects of varying lengths were investigated with twelve yielding a total of 293 stone artefacts. Eight new Aboriginal archaeological sites and one previously recorded Aboriginal archaeological site were identified during the field investigation.

A zone of high archaeological sensitivity was defined for areas within 300 metres of the wetland (northwest of the study area). The twelve mechanically excavated transects that contained stone artefacts were associated with several landforms: hill tops/crests overlooking wetland,

sandy banks/rises overlooking wetland, undulating hill tops and ridgelines. Over 78% of the total stone artefact assemblage was comprised of silcrete; the remaining raw material comprising quartz, quartzite, hornfels, crystal quartz and ironstone. Silcrete does not generally occur within the 'Cranbourne Sands' landform, the closest known sources occur in the southern portions of the Mornington Peninsula (see Sullivan 1981: 9-10).

Murphy and Dugay-Grist 2007a

This was an archaeological assessment of a road widening for Cranbourne-Frankston Road (between Potts Rd and Westernport Highway) in Langwarrin. A single Aboriginal site was identified during the survey, located on the southern side of Cranbourne-Frankston Road on an unsealed vehicle track on a dune deposit. The dune deposit was identified as a sensitive landform. The site consisted of silcrete artefacts and possibly human remains. Subsurface investigation was recommended of the study area prior to the commencement of works.

Murphy and Dugay-Grist 2007b

This report details the subsurface investigation of the Cranbourne-Frankston Road between Kelvin Grove and Homestead Road, Langwarrin. The subsurface investigations involved the mechanical excavation of four transects within areas of sensitivity; dune deposits on the south eastern portion of the study area. The depth of the investigation reached between 1.5 and 2.7 metres. A total of 149 artefacts were identified as a result of the excavations and were located within a light grey deposit between 30 and 60cm in depth. It was likely to have represented a specific area of activity with small groups of people utilising the area for base camps. The investigation determined that artefacts occurred in low quantities and that prior land use activity may have affected the site but not significantly disturbed the contents. Murphy predicted that additional material is likely to be located on the top and upper slope of the dune. The assemblage comprised a variety of tools and flakes and reflects both the process of artefact manufacture and discard of no longer useable artefacts.

Matic 2006

Biosis Research Pty Ltd was commissioned by VicRoads Eastern Projects to conduct an archaeological survey of a section of the Westernport Highway proposed for duplication between Cranbourne-Frankston Road and North Road in Cranbourne. One Aboriginal archaeological site was recorded, an isolated artefact (VAHR 7921-0784) located in a disturbed context (associated with drainage installation). It was located on the edge of a sandy dune but had no contextual integrity.

Barker 2007

Heritage Insight was commissioned by VicRoads to undertake archaeological subsurface investigations of the study area for the proposed duplication of Westernport Highway in Cranbourne South. The investigation was restricted to three study areas along the proposed road alignment and two new Aboriginal Places were identified; VAHR 7921-0824 and -0825. Site 7921/0824 was identified on an area of flat land with clay fill and was assessed to be highly

disturbed. Site 7921/0825 was identified on a sand dune north of McKays Road. On this dune deposit two hand excavated elongated trenches contained three artefacts from a grey sandy deposit at a depth of up to 600mm. Site 7921/0824 was located to the south of McKays Road and comprised a single artefact in a sandy deposit. Barker concluded that the study area had further potential for in situ archaeological material and that additional subsurface testing should take place. Seven areas of archaeological sensitivity were identified and testing was recommended.

5.2.3 CHMPs

Griffin, Canning, Ricardi and Thiele (2009)

A CHMP was prepared for a proposed 645 lot subdivision located 600m to the north of the current study area. Desktop assessment identified two previously recorded Aboriginal Places within the activity area consisting of six artefacts in total. A scarred tree and two additional artefacts were identified during the surface survey, along with areas of archaeological potential.

Complex assessment commenced with the manual excavation of 1x1m Test Pits to establish the stratigraphy as well as providing opportunities for geomorphological assessment and OSL dating. In Test Pits, over half of all artefacts were found at depths of between 40cm and 50cm.

An important conclusion of the Complex Assessment was that all artefacts were identified within Aeolian sand deposits (Cranbourne Sands) and no artefacts were found in any other geological unit (Griffin et al 2009: 55)

Sampling of quartz sand gave a date range of 11-13 thousand years ago (late Pleistocene) for the initial sand dune formation. Further dating at a depth of 90cm gave a range of 6,600 BP +/- 600 years. This Holocene date was assessed as being the most likely date range for the deposition of the artefacts discovered.

The subsequent shovel test pit program utilised a systematic random sampling strategy involving the excavation of 0.5m x 0.5m pits at the intersection points of a 50m grid placed over the study area. In total, thirteen Aboriginal Places (VAHR 7921-1059 to -1071) were found to be present within the activity area, with eleven to be impacted by the proposed activity. Sub - surface testing established that all archaeological deposits were associated with sand dune landforms and that artefact densities ranged between 4 artefacts/m³ and 106 artefacts/m³. The use of a random sampling method for the subsurface testing program also categorically demonstrated that there was no subsurface archaeology present within the low-lying swales landform anywhere within the activity area. The likelihood of encountering archaeological materials within the extensive inter-dune swales was assessed as being extremely low.

Murphy, Leeson & Reeve (2008)

This CHMP is for the duplication of the Cranbourne-Frankston Road which runs along the south-eastern boundary of the current study area. As such, their study area included a strip of

land within, and on the edge of, the current study area. Desktop assessment identified that there had been three Aboriginal Places previously recorded within 50m of the activity area; VAHR 7921-0376, VAHR 7921-0505 and VAHR 7921-0714. One additional Place, VAHR 7921-082, was recorded on the opposite side of the Cranbourne-Frankston Road during surface survey. No additional Aboriginal Places or cultural material was identified during sub-surface testing.

Howell-Meurs (2008)

A CHMP was prepared for a residential subdivision fronting Ballarto Road, immediately to the northeast of the current activity area. Six new Aboriginal places were recorded during the surface survey (VAHR 7921-0940 to 0944 and VAHR 7921-0954). One test pit and seventeen transects of shovel test pits were excavated during the first phase of testing, with an additional 50 shovel test pits excavated radially during the second phase to assist in defining the extent of artefact scatters. At the completion of assessment, nine Aboriginal Places were known from the activity area, consisting of eight isolated artefacts and one artefact scatter associated with a sandy rise in the north east of the property.

Di Fazio (2010)

Di Fazio prepared a CHMP for a proposed 20 ha subdivision at Hall Road, 1.2km to the north of the current activity area. No Aboriginal Places had previously been recorded from within the activity area and no Aboriginal Cultural Heritage was identified during the surface survey. Sub-surface testing consisted of manual test pits, auger transects and shovel probes and led to the identification of two Aboriginal Places; eleven stone artefacts at VAHR 7921-1010 and one artefact at VAHR 7921-1167. All artefacts were in a sub-surface context and were identified in association with sand deposits.

Di Fazio and Schell (2010)

This CHMP is for a proposed 33.25 ha residential subdivision on Hall Road, located 1km north of the current study area. During complex assessment, 158 artefacts were identified in 45 shovel test pits and defined as four separate artefact scatters (VAHR 7921-0855, VAHR 7921-1193, VAHR 7921-1196 and VAHR 7921-1197). Artefacts occurred in three sandy rises at depths of between 200mm and 800mm, within Aeolian sand deposits which themselves extend to a maximum depth of 1300mm below current ground surface. Due to a change in the nature of the activity, an additional CHMP (**Schell 2010**) was also prepared to the level of desktop assessment for this same housing subdivision.

Di Fazio, Schell and Collins (2010)

Di Fazio et al. prepared a CHMP for additional stages of the residential subdivision on Hall Road referred to immediately above. As part of the assessment, a geomorphic assessment of the activity area found that the sandy rises occurred on Aeolian quartz sand derived from Cranbourne Sands and local sand bodies with slight variations in sand profile. In total, 278 artefacts were found and defined on the basis of landform to consist of four sites; VAHR 7921-0855, VAHR 7921-1192, VAHR 7921-1194 and VAHR 7921-1197. Complex Assessment results showed that artefacts occurred in close association with sandy rises and that the rises contain very high densities of artefacts in localised areas. Low-mid rises and floodplain were found not to contain artefacts.

Murphy & Morris (2009)

This is a CHMP for a Gas Pipeline on Ballarto Road in Lyndhurst and Skye. The southern extent of this alignment is located 800m west of the current activity area. Desktop assessment identified a number of areas of archaeological potential within the alignment. An Aboriginal scarred tree (VAHR 7921-1155) was identified during the standard assessment. No Aboriginal artefacts were identified during the complex assessment.

Day (2010)

Day prepared a CHMP for a proposed subdivision within a former quarry fronting Cranbourne-Frankston Road, 1km south west of the current activity area. Desktop assessment indicated that no Aboriginal places had been recorded previously from within the activity area; however it was noted that a large low-density scatter had been recorded from the same dune system approximately 50m to the south. Three artefacts were recorded during surface survey, with an additional thirteen identified during sub-surface testing. Together, these were recorded as five Places – VAHR 7921-1187 to -1189, VAHR 7921-1206 and a re-defined previously recorded VAHR 7921-0823.

Murphy & Morris (2011)

This is a CHMP for a Gas Pipeline between Skye and Langwarrin. At its closest, the alignment passes within 750 metres of the activity area, to the west. Desktop assessment indicated that one Aboriginal Place had previously been recorded within 50m of the study area (VAHR 7921-0823). One Aboriginal Place (VAHR 7921-1350) was identified during the surface survey, which was hampered by low ground surface visibility. In total, ten new Places had been identified within the sandy rise/dune landform at the completion of sub-surface testing (VAHR 7921-1348 to -1356 and -1359), all consisting of low to very low density artefact scatters.

Houghton, Schultz and Donati (2012)

This voluntary CHMP is for the construction of a honey processing shed. The activity area is located on the opposite side of Cranbourne-Frankston Road, near the south of the current study area. No Aboriginal Places were identified during desktop, standard and complex

assessment. This accorded with the low likelihood ascribed in the desktop assessment due to the location of waterlogged deposit over much of the assessment area.

Dugay-Grist, L. and A. Cowled (2013)

CHMP 12638 was prepared for a residential subdivision to the southwest of the Brompton Lodge PSP area at 160 Potts Road, Langwarrin. The 90ha Activity Area comprises Cranbourne Sands, parts of which had been subject to sand quarrying. The Activity Area included 50ha of remnant vegetated sand dune, which was retained as a conservation area and not fully investigated. The remaining developable land had largely been denuded of its vegetation and sand cover, stripped to coffee rock, although two small sand dune remnants survived. Two sites; a Low Density Artefact Distribution (7921-1484) and a surface and subsurface stone artefact scatter (7921-1485) were found on the remnant dunes.

Orr, A. (2014)

Orr prepared a CHMP for the bulk of the Brompton Lodge PSP area, excluding only the two parcels (Lot 6 and 8) that are the subject of this report. The desktop assessment indicated that it was likely that Aboriginal cultural heritage would occur within the activity area, however the standard assessment identified significant ground disturbance throughout the property, although 11 stone artefacts were recovered from the surface. Widespread ground disturbance had resulted from the use of the property as a quarry, an egg farm, a horse training complex, as well as more general disturbance caused by recent land use practices such as soil stripping. The Complex assessment confirmed the widespread ground disturbance; however seven Aboriginal places were identified. Three of these sites (VAHR 7921-1475, 1476 and 1477) were recorded as stone artefact scatters found subsurface; the remaining four (VAHR 7921-1478, 1479, 1480 and 1481) were recorded as Low Density Artefact Distributions in both surface and subsurface contexts.

As with previous assessments, the Aboriginal cultural heritage was identified only in sediments from the Cranbourne Sands. Of the three landforms identified during the assessment;

- The floodplains were found to have been drained and sometimes subject to soil stripping, with no artefacts identified
- Rises and low rises were not always natural, but in the less disturbed areas, all of the artefacts were found on this landform
- Hills were found to consist of basalt and clay, lacking any sand veneer. No artefacts were found in the hills.

5.3 Historical Cultural Heritage Places

The following heritage registers were accessed by Catherine Webb on the 6th February 2015: Heritage Victoria Site Inventory, Victorian Heritage Register, Australian Heritage Database

(Register of the National Estate), Register of the National Trust (Victoria), and the City of Casey Planning Scheme.

There are no cultural heritage places listed on any of these registers within the activity area. The nearest site is identified on Heritage Victoria's Site Inventory, but is D-listed – D7921-0071, Cranbourne Swamp House Site, is located at 565 Cranbourne-Hastings Road, near the corner of Dandenong-Hastings Road, a short distance from the southwestern edge of the Brompton Lodge PSP area. The site is in poor condition and includes the remains of a timber house, fence lines, brick well, stock yards, driveway, mature trees including fruit trees, a dam and troughs. Its D listing indicates that Heritage Victoria do not provide legislative protection for the site.

5.4 Historical and Ethno-Historical accounts in the Geographic Region

The following section presents a brief historical account of the former Aboriginal and European settlement of the study area. Its purpose is to provide a historical context for the archaeological investigation. Melbourne was one of the major locations from where Europeans colonised much of Victoria, with early records including written and illustrated text on the Aboriginal people of the area. Europeans made first written observations on the Aboriginal people of Port Phillip from 1802, when explorers began to chart the entrance to Port Phillip Bay. However, most of the text relates to 1835 onwards when there was a permanent European presence.

The primary sources of this ethnohistory have been collated by Clark (1990) in his reconstruction of traditional language boundaries in Victoria. These sources include journal entries and government correspondence produced by explorers such as Matthew Flinders and Charles Grimes, as well as settlers, missionaries and government officials, particularly George Robinson and William Thomas.

By at least 40,000 years BP all parts of the Australian continent (Sahul) had been colonised by Aboriginal people. This colonisation included the south-eastern corner of the continent. In Victoria, there are few Aboriginal archaeological sites south of the Great Dividing Range with late Pleistocene dates. There are no radiocarbon dates for local archaeological sites and little chance that any of the known sites relate to the earliest periods of Aboriginal settlement in this area – any such sites would either be deeply buried or destroyed.

Without a more detailed chronology and other palaeo-environmental and archaeological evidence, it is not possible to reconstruct how the Bun wurrung (see below) and their ancestors adapted to climatic changes during the late Pleistocene and Holocene periods. Certainly, these changes would have affected the demography of Aboriginal groups and the timing, duration and reasons for occupying the volcanic plains to the north of Port Phillip Bay. Some aspects of the local landscape may have remained constant, such as the local hydrology and by extension, the importance of major creeks as the principal sources of potable water. Other features like vegetation would have evolved and changed with changes in climate and sea levels.

5.4.1 Ethnohistory

The traditional inhabitants of the subject land were the Bunurong/*Bun wurrung* (Clark 1990). The Bunurong form part of the East Kulin Language area, which covered central Victoria from Bass Strait to the Murray River (Clark 1990: 363, 364, Table 20). The *Bun wurrung* language group was divided into at least six clans. Clark defines the clan as the 'land owning, land renewing and land-sustaining unit of Aboriginal society' (Clark, 1990: 4). Similarly, Barwick defines the term as 'a named localised patrilineal descent group ... whose members had an historical, religious and genealogical identity' (Barwick 1984: 106). She notes that 'Clan territories were defined by ritual and economic responsibilities. Clan names were distinguished by the suffixes *-balluk* or *-bulluck* meaning a number of people, and *-(w)illam*...meaning dwelling place' (Barwick 1984: 106). Barwick continues her discussion on clan organisation noting that:

'Clan lands were exploited by residential groups (now termed bands) whose membership changed over time as nuclear families formed, aged and were replaced, and over the course of each year because the families and individuals instilled to make use of a specific clan estate were sometimes together (and) sometimes dispersed' (Barwick 1984: 106).

Whilst the composition of a clan was fluid during an individual's lifetime, 'clan membership was fixed at birth as these were inherited from a person's father and retained ... until death' (Barwick 1984: 106).

Mayune balug

Figure 13 and Table 17 in Clark (1990: 364, 365) indicates that the clan that occupied the subject land was most likely the *Mayune balug* (literally 'Mayune people'). This clan occupied land around the Carrum Swamp, the 'Mayune' Station, the upper portion of the Mornington Peninsula and the head of Westernport Bay. Burrenun was an influential healer who was married to the daughter of Billibellary, clan head of one of the *Wurundjeri willam* clan groups, of the *Woi wurrung*, and signatory to the Batman 'treaty' (Clark 1990: 367).

The social organisation of the *Bun wurrung* is based on a moiety system that recognised clans and the individuals within them as belonging to one of two moieties; *Waa* (Crow) or *Bunjil* (Eaglehawk). The marriage system was based on these moieties and determined possible partners, which could only be of opposite moieties. In this way each generation of a clan married outside that clan (often to other language groups), reaffirming the religious, trade and social links between the separate groups. The *Mayune Balug* belongs to the *Bunjil* moiety (Clark 1990: 367).

Hunting and Gathering

Ethnographic accounts of the economy of the *Bun wurrung* people are limited due to a number of factors. By the time of permanent official European settlement within *Bun wurrung* country traditional ways of life had already been severely disrupted. The intrusion of sealers into the

area, possibly prior to 1800 and certainly by 1812, led to competition for resources and the exclusion of *Bun wurrung* control over Phillip Island and French Island. The granting of grazing leases in 1837 and the introduction of hooved animals led to a rapid and dramatic decline in plant foods. By the time Thomas, whose accounts are the main source of ethnographic observations on the *Bun wurrung*, was appointed in 1839, the *Murnong* or yam had all but disappeared, leading to a decline in population, hunger and a forced reliance on European society for food (Gaughwin and Sullivan 1984: 82-84).

Gaughwin and Sullivan (1984) have, to a degree, been able to reconstruct the economy of the *Bun wurrung* from the extensive notes and diaries of Thomas who, as Assistant Protector, travelled with the *Bun wurrung* as they moved around their land from 1839 to 1843, along with other historical sources. Most of his travels appear to have been with a clan whose base was the Mornington Peninsula, but who travelled through the territory of other clans. It is not known whether this use of other clan territory was traditional or whether a response to Thomas' presence and European settlement. Thomas only comments in general terms on the types of food obtained during these movements around the land and historical documents generally tend to overemphasize the use of land mammals as a food source, possibly as the result of their higher profile as a food source exploited by the men of the clan and a gender bias of the observer.

What can be gathered is that the *Bun wurrung* moved around their country at regular intervals along known pathways, exploiting land mammals, plant food, eels, birds and shellfish as food sources. Some of this movement appears to have been in response to seasonal factors, the gathering of eels during the late summer, hunting of lyrebirds in the ranges during winter (though this may have been heavily influenced by the fact that tail feathers were being sold to Europeans) and the report that 'in former times' French Island had been accessed by canoe to gather eggs during the nesting season. The use of canoes for transport or fishing in Westernport Bay, and Port Phillip Bay, was not observed during the early years of European settlement, the use of canoes being restricted to use on rivers.

There was a gender bias in the collection of food, and probably in the consumption of the food gathered, with the men hunting land based mammals such as the kangaroo and possums, while women and children gathered smaller mammals, reptiles, grubs, small birds and plant food in various forms. As well, eels and shellfish were exploited as food sources.

5.4.2 Land Use History of the Activity Area

The activity area was part of the Tomoque (or Tomaque) pastoral run (Spreadborough and Anderson 1983). The run was leased to the Ruffy brothers, who arrived from Tasmania in 1836-37, and squatted in the Tomoque Run until 1850. The activity area then became Crown Portions 29, 29A and 29B of the Longwarrin Parish. Allotments 29 A and B were granted to farmer Patrick Savage in 1880 and 1886 respectively (Figure 2). Savage built a dwelling with four rooms within the allotments, and leased the house to Thomas H Archdall, a local farmer.

He remained the property owner until his death in 1905 (PROV, VPRS 28, file 95/080). Allotment 29, which consists of most of the activity area, was granted to farmer Fredrick Hall on 24 February 1888. He owned the land until his death in 1896 (PROV VPRS 28, file 63/286).

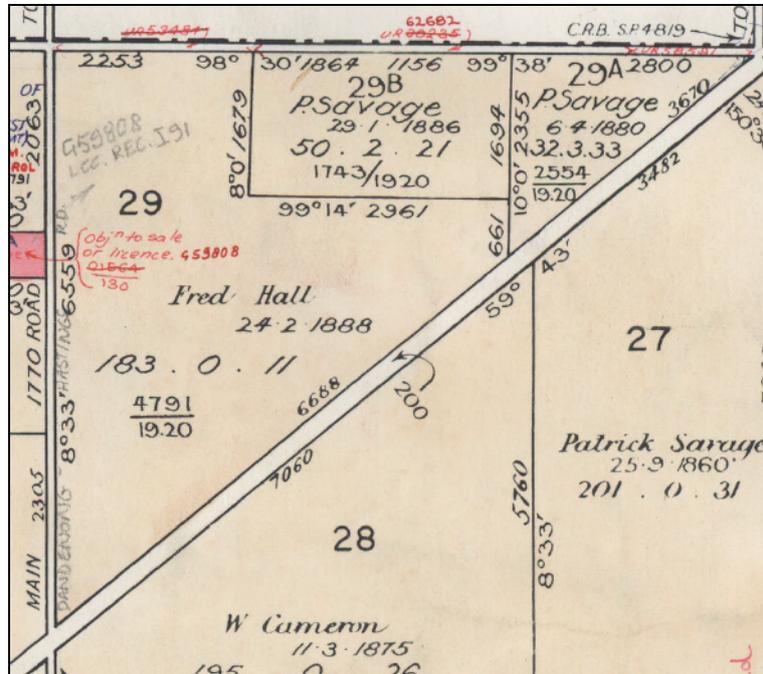


Figure 2 Parish of Langwarrin (1972). Public Records Office of Victoria Digital collection

Regarding the broader Brompton Lodge PSP area, Coffey Environments (2012: 4) prepared phase 1 of an environmental assessment which includes a review of aerial imagery. The authors conclude the following:

- The site was mainly forested and grazing land with evidence of minor sand mining activities persisting onsite until recently (sand pits are still present, however sand extraction is no longer occurring).
- Other land uses occurring onsite apart from grazing include horse agistment, a horse track and poultry farming which have been evident since the 1960s and 1970s.
- Off-site changes have included a gradual change from mainly grazing land and minor sand extraction activities to low density residential properties, turf manufacturer and a golf course to the north of the site.

These disturbances have affected the ground integrity, vegetation, hydrology and wider environment of the subject land and in the process will have had an adverse effect on the survival and intactness of Aboriginal archaeological sites that may occur within the survey area.

5.5 Landforms and Geomorphology of the Activity Area

The activity area lies within a broad scale Geomorphic unit of Coastal Plains with ridges and dune fields, which covers a large irregular area extending from Cranbourne to Carrum Downs in the west and extending along the north of Westernport Bay towards Lang Lang as well as further inland eastwards towards Bunyip (ACHRIS website).

Geologically, Lot 6 is indicated on mapping as representing unnamed Quaternary dune deposits ('Cranbourne Sands'), while Lot 8 comprises Miocene – Pliocene sedimentary deposits of the 'Baxter Sandstone' (see Figure 1).

The '*Cranbourne Sands*', Aeolian dune deposits consisting of sand, clay and calcareous sand, are likely to overlie the Tertiary-aged '*Baxter Sandstone*', a non-marine (fluvial) sedimentary and poorly-sorted rock formation comprising sandstone, conglomerate, siltstone and ironstone (Abele 1977: 43; Vandenberg 1997, GSV 1:250 000 Mapsheet SJ55-9 Queenscliff). Dune sands have been quarried and used in the production of glass and in the manufacture of building materials in the region (Cochrane *et al.* 1991: 183) and there are sand extraction sites in the study area, including in adjacent sections of the Brompton Lodge PSP area.

Flakeable stone material such as silcrete is not generally associated with the Cranbourne Sands. Localised outcropping basalt was visible at a small number of locations during the survey for the CHMP (Orr 2014). Reef quartz may have been quarried from areas on the Mornington Peninsula including Devilbend (Rhodes 2002), while Ellender (1991: 10) noted that it occurred naturally in sands at the Botanical Gardens in Cranbourne – adjacent to the current subject land. Mudstone, claystone, sandstone and hornfels could be attained east of Clyde Road where sedimentary deposits interface with intrusive volcanics (granite), chert could be found at Devilbend, and sandstone and slate could be found at Baxter on the Mornington Peninsula (Weaver 1992; Rhodes 2002). Marine chert in the form of nodules is found washed up along the Bass Strait coastline (Sullivan 1981: 9-10).

Landforms

Previous assessments in the local area describe a landscape of sandy rises/dunes, between which inundated swampy deposits are encountered (eg. Griffin *et al* 2009; Di Fazio 2010). Similarly, the ground assessment of CHMP 12368 of Brompton Lodge (Orr 2014) confirmed that the landforms in this adjacent area are hills, rises / low rises, floodplains / swamps and water courses / drains; the specific landforms associated with the current desktop are hills, rises and low rises, and swamps. Contours shown on Figure 1 demonstrate the generally low topography of the activity area, and also the hills at the northern end of Lot 8.

Hydrology

The nearest natural drainage line flows east west to the south of Lot 6. This has been formalised close to Lot 6 as a drain, which extends along Cranbourne-Frankston Road. Lot 6

contains other shallow drainage lines and represents a swampy depression between rises resulting from a slow movement of surface water through the landscape across flat, lower lying ground. Lot 8 is more elevated and sloping, and natural runoff would occur to the lower ground below.

Monitoring of bores during a time of high water table (July 2011) recorded water levels varying between the surface and a maximum depth of 1.9m below current ground surface. (Leonard 2011: 47)

Climate and Rainfall

As with the rest of Victoria, weather systems in the region move from west to east producing a cycle of weather from cool, through to warm, to rapidly becoming cool again.

Mean daily maximum temperatures vary between 13.3 degrees in July to around 25.4 degrees in February, whilst mean annual rainfall is approximately 740 mm (BOM Website climate averages).

Cranbourne's current climate would have provided no constraints to the Aboriginal settlement of the area in terms of the seasonal movement of people or the location of habitation sites.

Flora and Fauna

The ecology of the study area forms part of the 'Gippsland Plain Bioregion'. According to the DSE Biodiversity mapping of pre-1750s Ecological Vegetation Classes (EVCs), both lots 6 and 8 may have been characterised by 'Grassy Woodland' (EVC 175). In line with the regional geology, the grassy woodland may have included large trees such as *Eucalyptus radiata* (Narrow-leaf Peppermint) and *Allocasuarina verticillata* (Drooping Sheoak). The understorey may have comprised various shrubs, herbs and graminoid species.

The study area may have supported a wide range of animals available for exploitation by *Bun wurrung* people. Examples of terrestrial, aquatic and marine fauna traditionally exploited by the *Bun wurrung* people are presented in Table 3 (Overleaf).

Fauna Type	Uses
Mammals	Most mammals hunted – Eastern Grey Kangaroo, Black Wallaby, Possum, Echidna particularly. Used for food, skins, echidna quills used for necklaces
Birds	Many species of marine and terrestrial birds trapped and eaten. Their eggs were also gathered and eaten. Brush bird traps were common.
Shellfish	Marine shellfish, predominantly rock platform sp., were abundant and regularly exploited.
Fish (freshwater and marine)	Fish were often speared or caught in nets set in stone or brush fishtraps on freshwater streams

Table 3 - *Examples of Traditional Resources likely to have been available to Bunurong people in and around the study area (Sullivan 1981; Zola and Gott 1990).*

6. Conclusions from the Desktop Assessment

The desktop assessment indicates that there are no previously recorded Aboriginal Places within the activity area. However, with the exception of a narrow strip adjoining the current alignment of Cranbourne-Frankston Road, the activity area has not been subject to previous detailed assessment and no archaeological excavation has previously taken place.

Assessments on other properties in the region have encountered a landscape of sandy rises with low-lying, often inundated, ground in-between. A clear picture emerges from the results of previous investigations, with stone artefacts clearly associated with the sandy rise landform and an absence of archaeological material associated with the low-lying swamp deposits. Hills are an unusual landform within the surrounding area, but these were tested during CHMP12398 of the greater Brompton Lodge PSP area and were found to be devoid of artefacts in very shallow soils.

An important conclusion of a comprehensive subsurface archaeological investigation carried out 600m to the north of the current Activity Area was that all artefacts were identified within Aeolian sand deposits (Cranbourne Sands) and no artefacts were found in any other geological unit (Griffin et al 2009: 55).

Further important consideration should be made with the assessment of the bulk of the Brompton Lodge PSP area, which was undertaken during a CHMP (Orr 2014). During the standard assessment (surface survey), and despite high levels of ground disturbance, artefacts were only found within the north of the activity area, associated with quartz sands. Sub-surface investigations carried out during the Complex assessment located artefacts on the low sandy rises, with the greatest densities of artefact located in more intact areas where sand quarrying had not taken place. Hills were found to consist of basalt/clay with very thin soil cover and no veneer of sand and no identified Aboriginal cultural heritage material. Floodplain represents swamp deposits which have largely been drained and subject to soil stripping. No cultural material was identified on this landform. This indicates the greatest potential for sites within the current activity area to be within the low rises, with no Aboriginal cultural heritage expected within the low-lying drained wetlands.

For the hill that extends into Lot 8, nearby investigations have shown that these landforms have not been sensitive for Aboriginal Places. Nevertheless, the elevated nature would have provided a dry area for encampments, valuable views over the surrounding countryside, and access to the resources that would have been contained within the nearby swamps. Given this, the hill is considered to retain potential for Aboriginal heritage in the form of stone artefact scatters in shallow deposits.

Past land-use activities are likely to have had varying impacts over the activity area. The sand quarrying and soil stripping are likely to have removed artefact-bearing deposits off site. In addition, ploughing and cropping are likely to have dispersed archaeological material such as stone artefacts that may have previously occurred in more bounded distributions, but not

resulted in the total removal of this material. Aboriginal archaeological sites that occur beneath the plough zone may have survived previous land uses and may have intact and *in situ* components.

The following predictive model is proposed for the Activity Area:

- Aboriginal Places containing stone artefacts are the most likely site-types to be present within the activity area.
- The survival of obtrusive sites such as scarred trees is unlikely due to prior clearance of native vegetation; however scarred trees may be present if/where mature indigenous trees have survived.
- There is the potential for buried former ground surface(s) and associated occupation deposits.
- Sandy rises have a proven very high potential to contain artefact scatters.
- Artefact Scatters are likely to be found in association with sandy soils known as “Cranbourne Sands”. Layers below Cranbourne Sands are very likely to be culturally sterile in accordance with the findings of previous investigations in the region (e.g. Griffin et al 2009).
- Hills have an inferred high potential to contain artefact scatters as they provide a vantage point for viewing the surrounding landscape.
- Where high levels of disturbance are present the survival of *in situ* archaeological sites is extremely unlikely.
- It is likely that Aboriginal cultural heritage is present within the Activity Area.

7. Recommendations

7.1 Aboriginal heritage

It is an offence under the *Aboriginal Heritage Act 2006* (the Act) to harm Aboriginal cultural heritage (Part 3 Division 1).

Division 2 of the Act states that a cultural heritage management plan is required for a proposed activity if the regulations require the preparation of the plan for the activity. Part 2 Division 1 Regulation 6 of the Aboriginal Heritage Regulations 2007 states that 'A cultural heritage management plan 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.'

Division 5 of the Regulations specifies High Impact Activities and the following regulations identify relevant high impact activities:

- Regulation 45(1) – the construction of three or more dwellings on an allotment.
- Regulation 46(1) – the subdivision of land into three or more lots...if—
 - (a) the planning scheme that applies to the activity area in which the land to be subdivided is located provides that at least three of the lots 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 each of at least three of the lots is less than eight hectares.

Both lots are currently within an area of cultural heritage sensitivity. Lot 6 is within the Cranbourne Sands (r. 38 sand sheets); Lot 8 is within 50 metres of a registered cultural heritage place (r. 22 (2)).

In summary, for the residential subdivision and construction of urban housing, the Aboriginal Heritage Regulations require the mandatory preparation of a CHMP under the *Aboriginal Heritage Act 2006* for both lots 6 and 8.

Recommendation 1

A CHMP must be prepared prior to the subdivision or carrying out of other high impact activities specified in the Aboriginal Heritage Regulations. This CHMP may be prepared for the lots independently or jointly. Given the poor surface visibility and the demonstrated occurrence of subsurface artefacts in the surrounding areas, the CHMP should consist of desktop, standard and complex assessments.

7.2 Historical Heritage

The *Heritage Act 1995* provides protection for historical archaeological sites and it is an offence to disturb such a site without Consent from Heritage Victoria. There are no known sites within the proposed development area that are protected by the Heritage Act.

Recommendation 2

A survey for historical heritage should be conducted to identify if there are any significant elements associated with the rural or drainage history of the places. This assessment can be conducted in conjunction with the CHMP standard assessment, but will require a separate report.

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