



**Aboriginal Heritage Due Diligence Report
Proposed Treetop Ropes Course Development, Eaglemont**

**Heritage Advisor: Shannah Anderson
Heritage Insight P/L**

Date: September 19, 2018

Report prepared for Ecoline Pty Ltd

Conclusion: It is the opinion of Heritage Insight that a CHMP is NOT required for this activity, as the activity area has demonstrably undergone significant ground disturbance as defined in the Aboriginal Heritage Regulations 2018.

I certify that the information contained in this report is correct to the best of my knowledge.

If you have any questions about this assessment, please don't hesitate to contact Heritage Insight P/L on (03) 9376 6569.

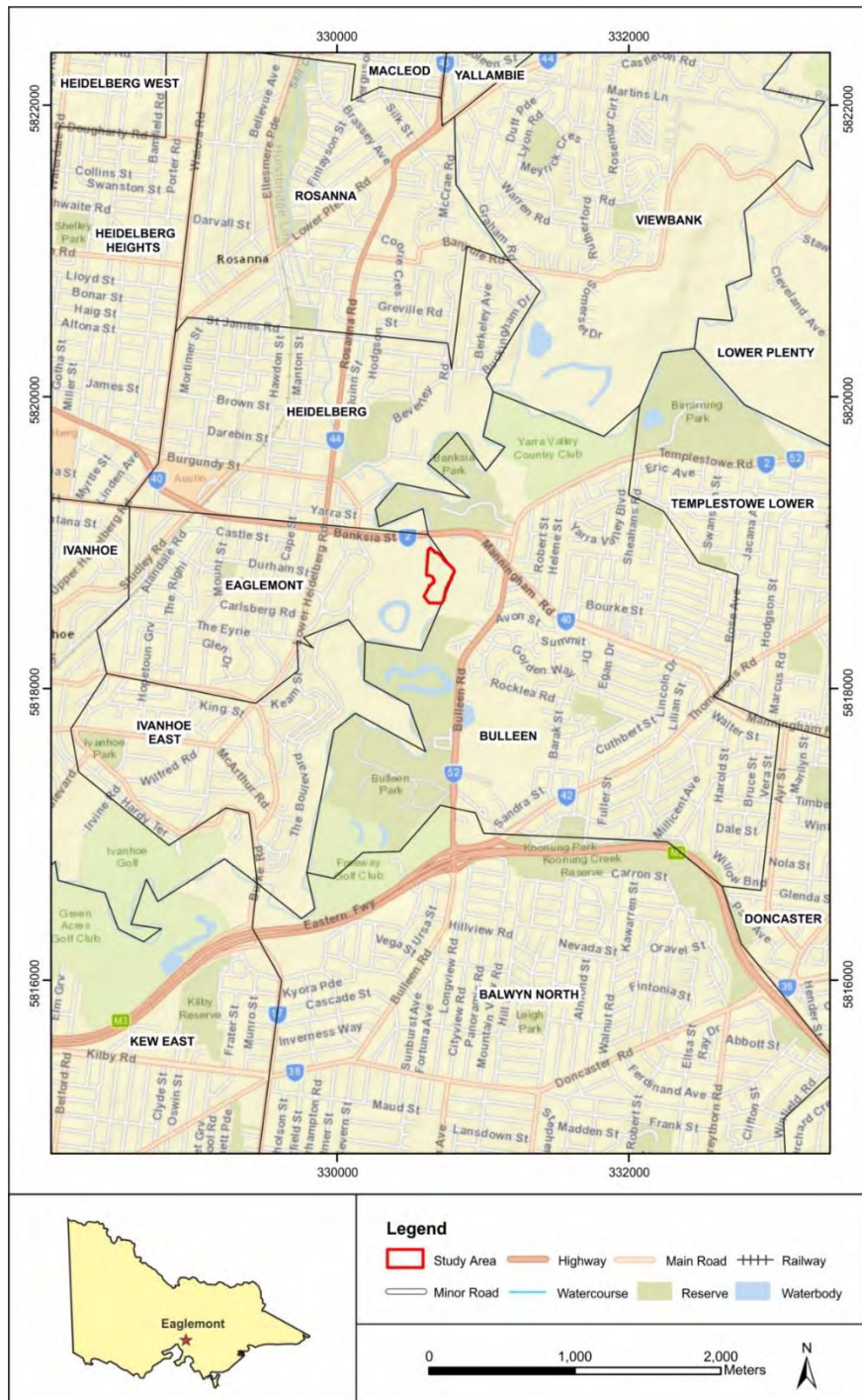
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Report approved by Bianca Di Fazio, BA (Hons), MA, Executive Archaeologist Heritage Insight P/L



Aboriginal Heritage Due Diligence Report Proposed Treetop Ropes Course Development

Lot(s): 2E\PP2856, 2H\PP2856	Parish: Keelbundora
LGA: Banyule City Council	Address: Yarra Flats Park, Eaglemont
Land Area: 46,000m ²	Current Use: Open park reserve



Map 1: Location of the activity area



Statutory Requirements: *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2018*

1. Is any part of the activity in an area of cultural heritage sensitivity, as defined in the Regulations?

Yes

The entire activity area lies within an area of cultural heritage sensitivity, as defined in Regulation 26 of the *Aboriginal Heritage Regulations 2018*, (1) subject to subregulation (2), a waterway or land within 200 metres of a waterway, is an area of cultural heritage sensitivity.

2. Is or would the proposed activity carried out on the land be a high impact activity, as defined in the Regulations?

Yes

The proposed activity is for installation of a high ropes adventure park. The installation of a high ropes adventure park is defined as a high impact activity in *Regulation 46* (1)(a)(b)(xv)- a minor sports and recreation facility.

The proposed works will include the installation of non-invasive footings, which originally included the use of screw piles to a maximum depth of 1.2 m, however the Sponsor is now looking into a new hybrid form of footing that will create even less ground impact. The footings will provide a stable platform for a shipping container that will act as the administrative building. Additional works include installation of the above ground ropes course, application of mulch to existing pathways, and filling existing sinkholes along Yarra Flats Park Entry Road with bitumen.

Although the proposed works as described above are considered a high impact activity as defined in the *Aboriginal Heritage Regulations 2018* they will have a low physical impact on the study area.

3. Can significant ground disturbance be established?

Yes

Regulation 26 (2) states that “if part of a waterway or part of the land within 200 metres of a waterway, has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity”.

Significant ground disturbance needs to be established for the whole of the area of cultural heritage sensitivity within the activity area for this exemption to apply. In this case, significant ground disturbance must be established for the whole activity area as it lies entirely within an area of cultural heritage sensitivity. It is the opinion of the consultants that significant ground disturbance is present across the entire activity area and has been caused by excavation and landfill activities associated with land use history that has occurred within the activity area (please see sections 4-9).

4: Is a CHMP required for the proposed activity?

No

It is the opinion of the consultant that a mandatory CHMP is not required for the proposed activity as significant ground disturbance can be established for the entire activity area. See the discussion on pages 36-38 for details relating to the assessment of significant ground disturbance.

5: Is there a Registered Aboriginal Party (RAP) for the activity area?

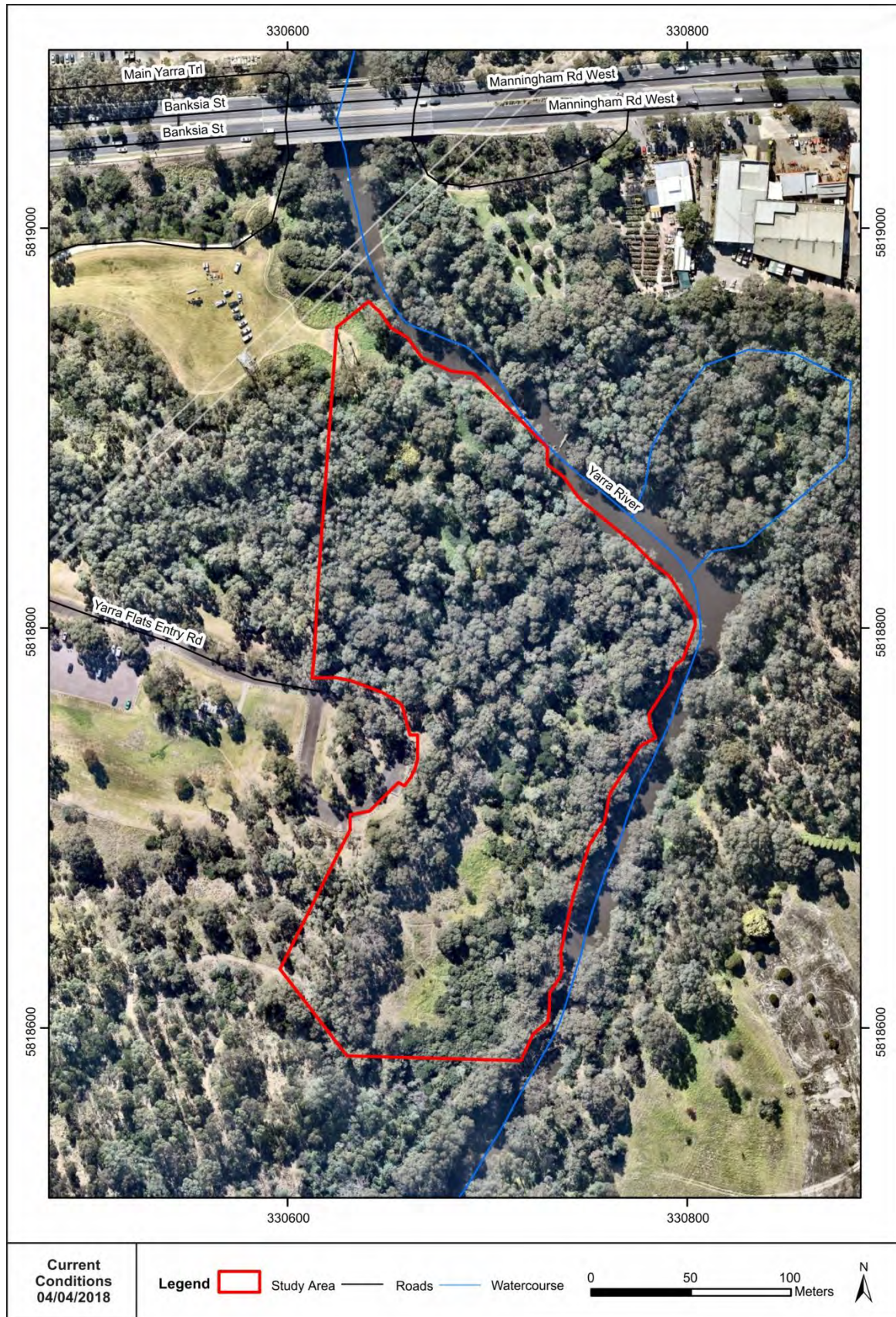
Yes

Wurundjeri Land and Compensation Cultural Heritage Council Aboriginal Corporation (Wurundjeri Council) is the Registered Aboriginal Party for the area.



Section 1: Existing Conditions

The activity area is bordered by Yarra River to the north and east, Yarra Flats Entry Road along the south western section and open parkland to the west and south. The activity area is approximately 10 km north east of the Melbourne CBD (Map 2). The activity area measures approximately 46,000 m² and comprises gently undulating land with large excavated gullies between the Yarra Flats Entry Road and the Yarra River, and steep sloping embankments along the river edge. Numerous dense patches of native and European vegetation, including large river Red Gums, Blackwood and smaller understory shrubs, grasses and weeds cover the landscape, as well as several sink holes along the edge of the car park and Yarra Flats Entry Road.



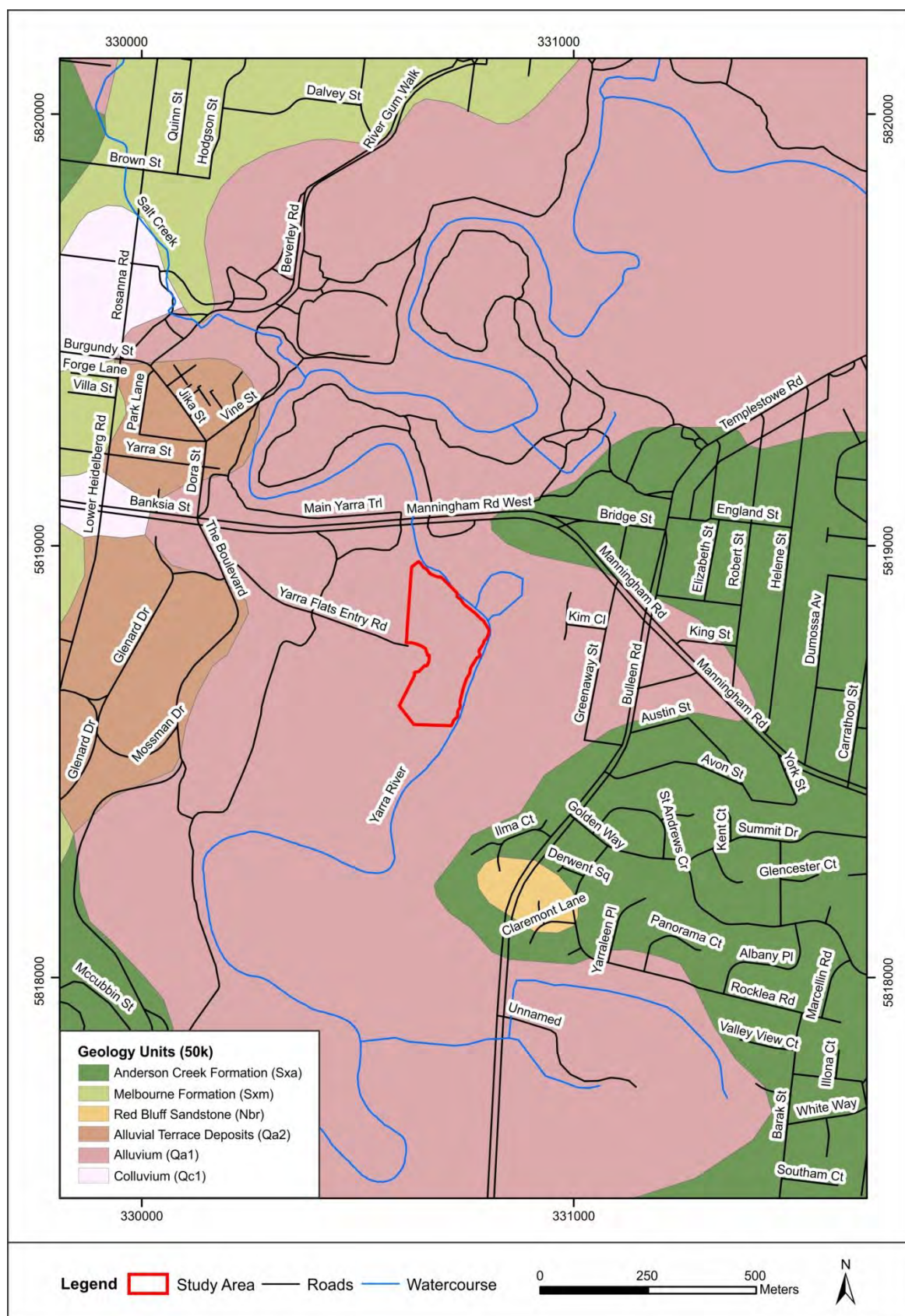
Map 2: Existing conditions in the activity area



Section 2: Geology

Geological units within the activity area are described as alluvium (Qa1), formed through channelled fluvial environments dating between the Pleistocene to Holocene period (Map 3). The alluvial deposits (Qa1) comprise gravel, sand and silt with various rounded grain sizes, which are usually unconsolidated in consistency (Department of Economic Development, Jobs, Transport and Resources: GeoVic3, accessed 15/08/2018). These alluvial unconsolidated deposits typically characterise low terraces and alluvial floodplains (Department of Economic Development, Jobs, Transport and Resources: GeoVic3, accessed 15/08/2018). The underlying lithology comprises fine textured unconsolidated deposits.

Overlying the alluvial deposits (Qa1) within the activity area is the geomorphic unit known as the East Victorian Dissected Uplands, which is part of the larger geomorphic unit known as the Central Victorian Uplands, which extends from Melbourne towards Bendigo and stretches across the eastern side of Victoria past Bairnsdale all the way to Mallacoota and the New South Wales border (Rowan, Russell & Ransom 2000, p.37). The East Victorian Dissected Uplands were formed after an extensive period of erosion that created large low-lying flat land surface areas. After the period of erosion these low lying areas were uplifted at different rates and caused slow running streams to become fast flowing rivers that cut into valleys and underlying rocks. These new alluvial streams are often associated with alluvial flats and alluvial fans within the valley sides (Rowan, Russell & Ransom 2000, p.37). The current study area is located within a plain above flood level (relative relief <9m), with the Yarra River incised along the northern and eastern boundary of the property. The soils located along the alluvial fans comprise thin, gradational and stony soils characteristic of slow movement, while valley floors typically comprise deeper accumulations of alluvial material deposited during flood or erosion events over time (Rowan, Russell & Ransom 2000, p.37). The current study area is comprised of moderately compacted dark clays, loams and duplex soils (Department of Economic Development, Jobs, Transport and Resources: GeoVic3, accessed 15/08/2018).



Map 3: Geological deposits within the activity area



Section 2: Resources Available

Pre-European vegetation within the study area is shown in Map 6. The area to the east and west of the Yarra River was dominated by EVC 56, which is described as floodplain riparian woodland, dominated by open woodlands with tall River Red gums (*Eucalyptus carnaldulensis*) and Swamp Gum (*Eucalyptus ovata*) along the river banks. Along the floodplains where wetland communities and period flooding occurs medium shrubs such as Tree Everlasting (*Ozothamnus ferrugineus*) and Sweet Bursaia (*Bursaria spinose ssp. Spinose*), large herbs such as Scrub Nettle (*Urtica incisa*), and Hairy Knotweed (*Persicaria subsessilis*) are common. Smaller graminoids would include Common Reed (*Phragmites australis*) and Common Spike-sedge (*Eleocharis acuta*) (Department of Environment, Land, Water and Planning – Bioregions and EVC Benchmarks, accessed 16/08/2018). Plants were extensively exploited by Aboriginal people for food, medicine and fibres for weaving. Plant components utilised would have included berries, fungi, roots, tubers, bulbs, leaves, pith from fleshy plants, seeds and sap. Gum was also collected from wattle and stored in known locations for seasons when food was less abundant (Zola & Gott 1992).

Fauna Resources

The Yarra River, wetlands, billabongs and surrounding areas would have provided a rich supply of fauna for Aboriginal people. The river and surrounding area would attract an array of mammal species as they come to the various water sources for food, water and shelter. Such mammals would include platypus, possums, kangaroos, swamp wallaby's, echidnas and bats. Common birds most likely located around this area would include reed warblers, parrots, wedge-tailed eagles, and egrets. Other likely fauna would include eels, snakes, lizards and river blackfish (Atlas of Living Australia, accessed 16/08/2018). The native fauna in the geographic region is significantly diminished in modern times, largely as a result of the loss of habitat, with many animal species once present now locally or regionally extinct.

Water Resources

The Yarra River is the main water source in proximity to the study area. On the eastern and western plains of the river are a series of billabongs, wetlands and other water bodies that would have provided not only fresh water for Aboriginal people, but also support a diverse range of flora and fauna that would have provided food, clothing and material use for Aboriginal people.



Section 4: Land Use History

Eaglemont is located approximately 10 kilometres north east of the Melbourne CBD and was originally part of Ivanhoe. It is thought that Eaglemont was named after a crown grant property called Mount Eagle owned by Thomas Walker in 1838. Thomas Walker was a representative of the Port Phillip District elected to the New South Wales Legislative Council in 1843. By 1851 the majority of the Yarra Flats area had been cleared of vegetation and billabongs for farming practices (Friends of Banyule - History of the Yarra Flats, accessed 16/08/2018). In the early to mid-1900s Eaglemont comprised large estates and scattered houses, which became largely empty due to the Depression. Railway access to the area was possible in 1888 due to the extension of the Heidelberg line, later connecting directly to Melbourne in 1901. Rapid residential subdivision occurred prior to World War I, with Eaglemont becoming increasingly desired as a country retreat. By 1912 a tennis club was formed, and finally its own railway station in 1926 and a post office in 1929 (Victorian Places – Eaglemont, accessed 15/08/2018). Prior to the use of public pools, the Yarra River was a popular swimming destination for locals who utilised the sand banks and tied ropes to the trees to form rope swings into the river. Numerous fish, eel and bird species were noted within the river, billabongs and surrounding areas, enticing fishermen and birdwatching enthusiasts to the area. The area was also known to flood more frequently prior to the construction of the Upper Yarra Dam (Friends of Banyule - History of the Yarra Flats, accessed 16/08/2018).

The largest flood recorded along the Yarra River was in December 1934 which described homes, roads, parks, farms and businesses being swept away by raging flood waters leaving substantial damage to property and leaving many homeless. One newspaper records Chinese gardeners rescued near Banksia Street from a large willow tree after they had become stranded overnight (*The Argus (Melbourne, Vic.: 1848 - 1957)* 1934). According to John Williams, the Parks Victoria ranger of the Lower Yarra Parklands (pers. Comms 03/09/2018), the activity area had been subject to periodic flooding over the years, with the most recent flood recorded in 2010. Mr. Williams described the flood waters during this time as covering the entire activity area, with only the land to the west and north above the flood level. Mr. Williams also noted the area had been subject to cattle grazing in the past.

A parish map that was added to in 1972 shows the activity area as located within a parks and recreation reserve that runs along the edge of the Yarra River. The small loop on the eastern section of the Yarra River has been crossed off, indicating that by 1972 the Yarra River had diverted past this loop. The property to the south was owned by E. M. Flemming. This was likely bought in 1946. There does not appear extensive residential subdivision during this time despite main thoroughfare roads already established. The large area to the west of The Boulevard was owned by Thomas Walker and was the location of Eaglemont estate.

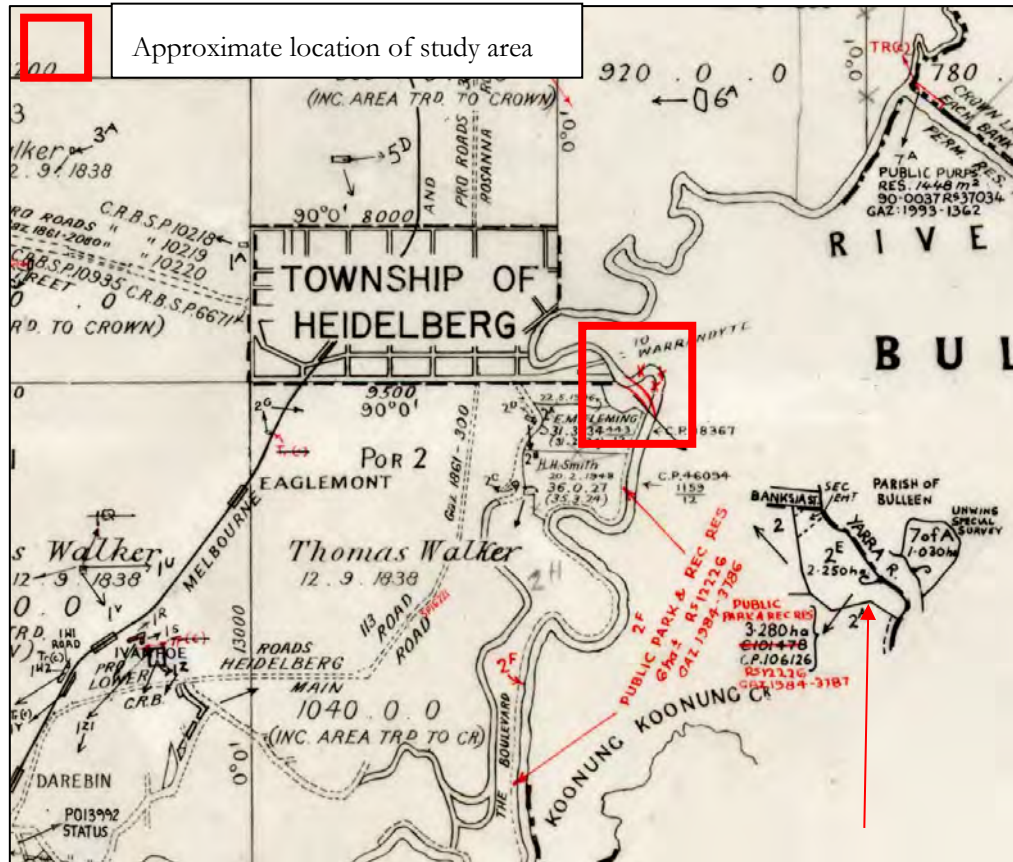


Figure 1: Parish map showing the location of the activity area in 1972 (Trove)



For further information

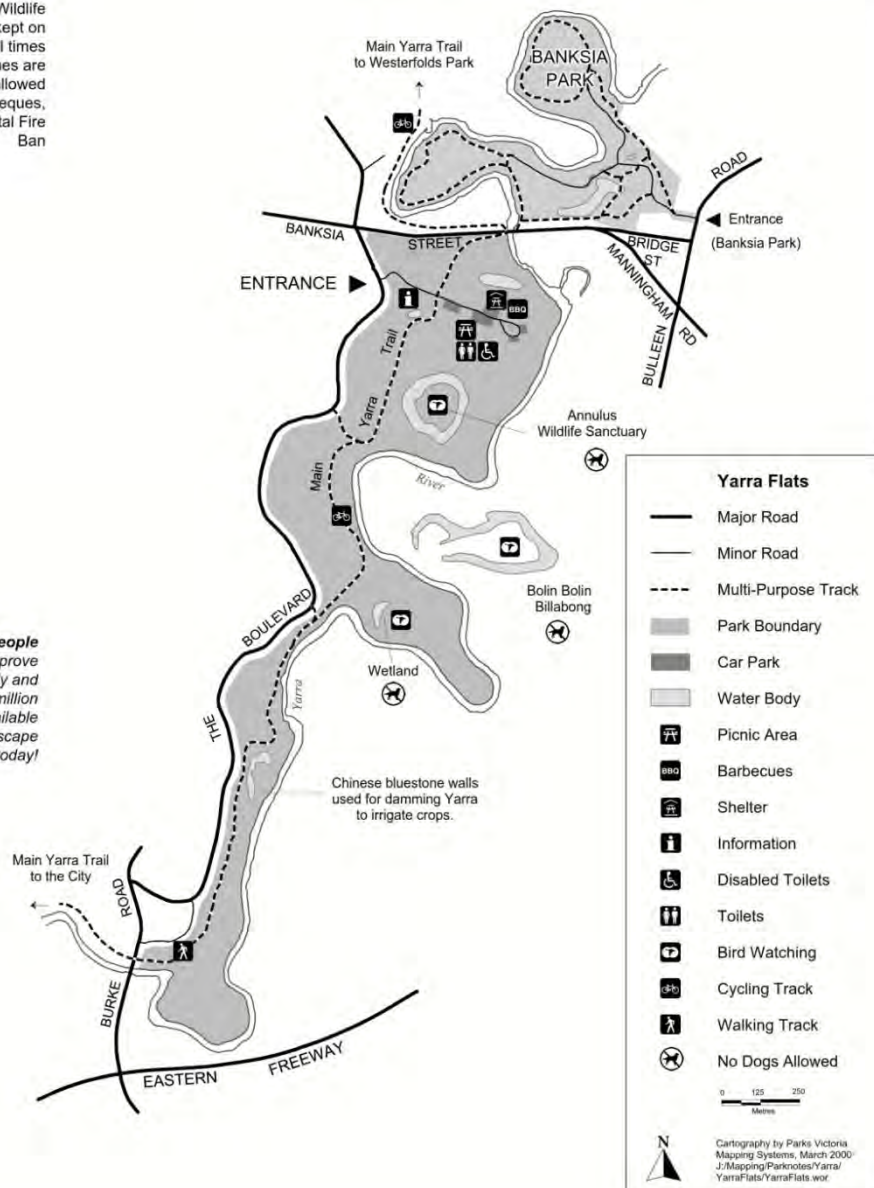
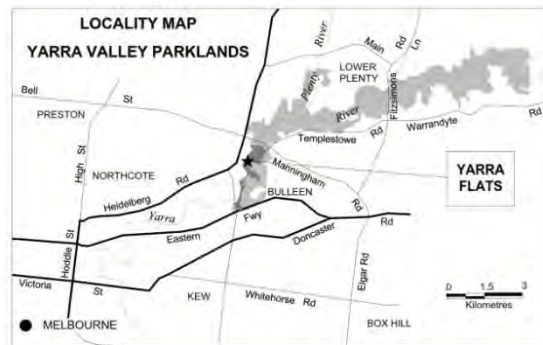
Parks Victoria
Information Centre
Call 13 1963
or visit the
Parks Victoria website
www.parkweb.vic.gov.au

Caring for the
environment

Help us look after your park
by following these guidelines:
Please take rubbish away with
you for recycling & disposal
All native plants & animals
are protected by law.
Please do not disturb them
in any way

Dogs are permitted in the park
(except the Annulus Wildlife
Sanctuary), but must be kept on
a leash at all times
Portable gas barbecues are
allowed

No fires, including barbecues,
may be lit on a day of Total Fire
Ban



Healthy Parks Healthy People

Visiting a park can improve
your health, mind, body and
soul. So, with over four million
hectares of parkland available
to Victorians, why not escape
to a park today!

Map 4: Waterbodies within proximity to the study area (Parks Victoria 2011)



Historical aerial imagery from 1945 (Figure 2) shows the study area as open parkland with dispersed tree coverage and open grass areas throughout. A large section of the Yarra River extends from the main river and bends towards the west before looping back towards the main river, intersecting the current study area to the north and south. The Yarra River also loops to the east before continuing south. The large Annulus wetland is clearly visible to the south of the study area as well as minor water mark areas along the western bank of the Yarra River.

Historical aerial photography from 1963 (Figure 3) shows the study area as open parkland with clustered and dispersed tree coverage and open grass areas throughout the section of the Yarra River that looped towards the west has dried up with only remnants of the southern section still visible. The eastern section of the Yarra River also shows signs of sediment build up as the river diverts past the small loop and continues south. The large ring Annulus wetland to the south as well as other distinct water body wetlands towards the current study area is visible.

Historical aerial photography from 1971 (Figure 4) shows the entire study area as flooded with only minor sections of higher land and tree tops visible above the flood waters. The flood extends further towards the west and south along the Yarra River and surrounding low lying land. This flood would have caused increased movement of sediment and potential river embankment collapse.

Historical aerial photography from 1984 (Figure 5) shows the study area as open parkland with some dispersed trees and open grass areas. Trees appear concentrated along the river banks and some potential revegetation works are occurring along the south eastern section of the study area. The large ring Annulus wetland to the south as well as other distinct water body wetlands towards the current study area is visible. This indicates the area is likely low lying with underground water sources running throughout.

Aerial photography from 2009 (Figure 6) shows the study area similar to today as open parkland with numerous trees and shrubs, small pathways and occasional open grass areas.

Aerial photography from 2011 (Figure 7) shows the study area similar to 2009, however several waterlogged areas extend into the northern section from the west. There also appears one waterlogged area to the south of the study area, indicating the low lying nature of the study area and the dense clayey nature of the soils.

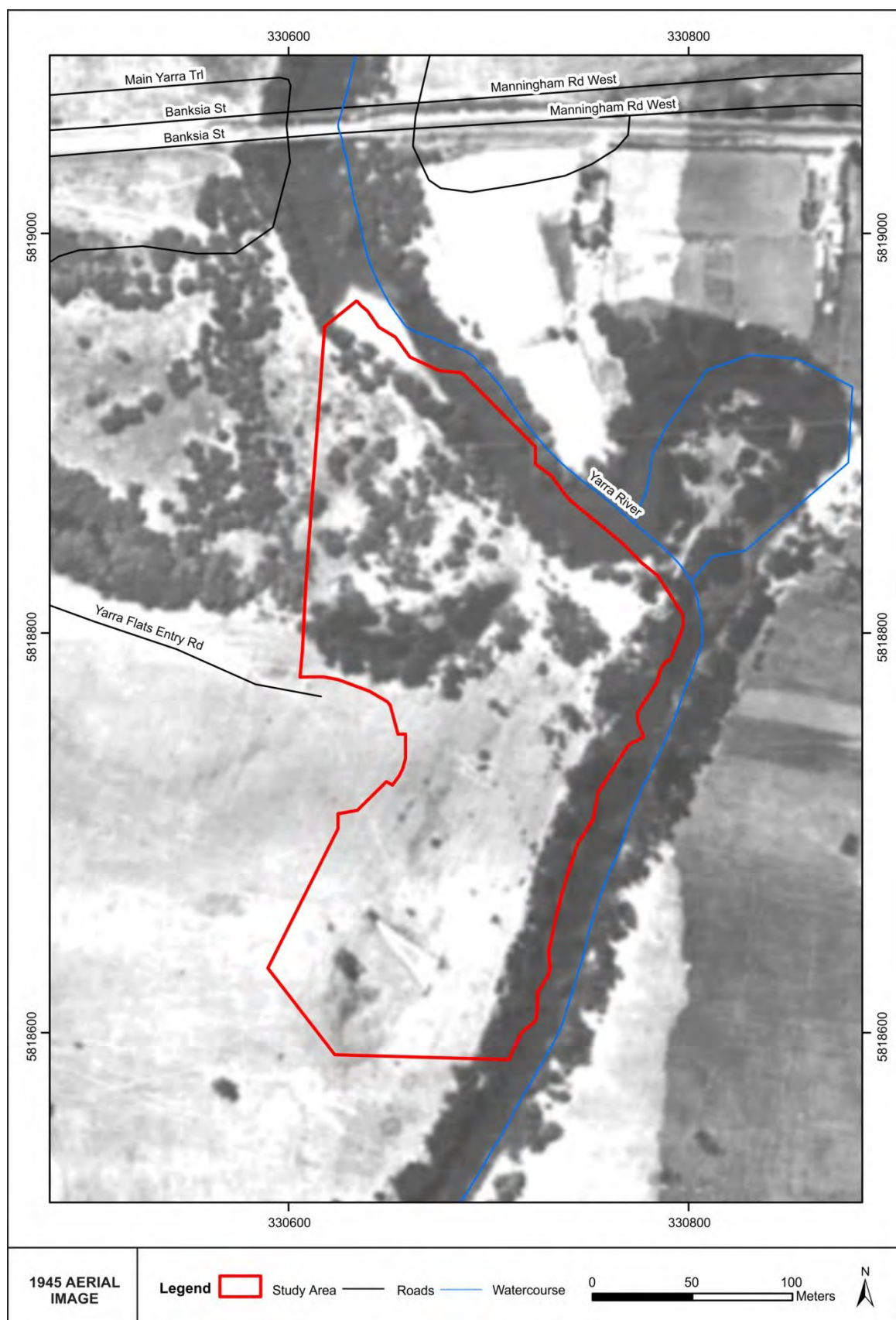


Figure 2: 1945 aerial photograph (Landata)

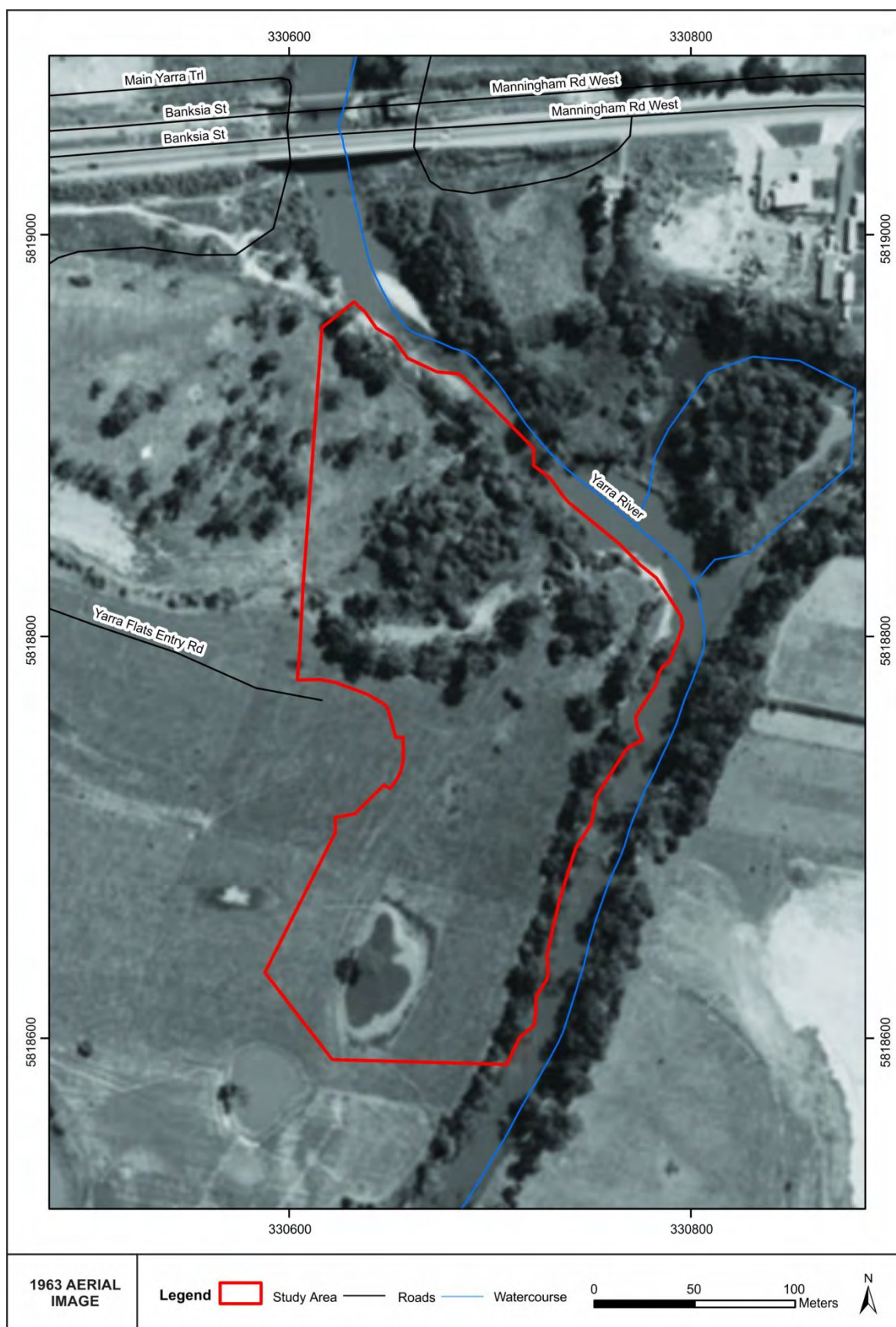


Figure 3: 1963 aerial photograph (Landata)

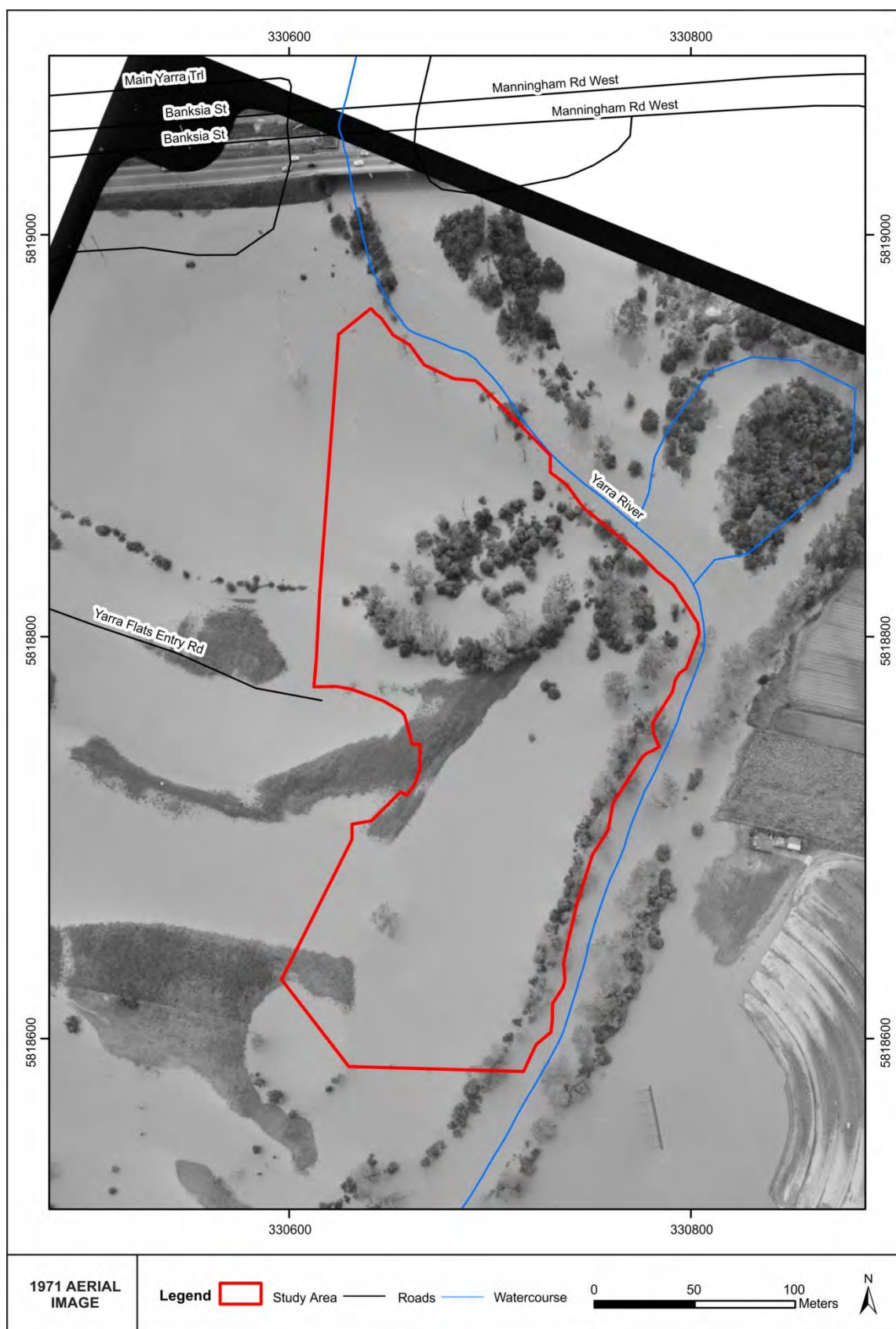


Figure 4: 1971 aerial photograph (Landata)

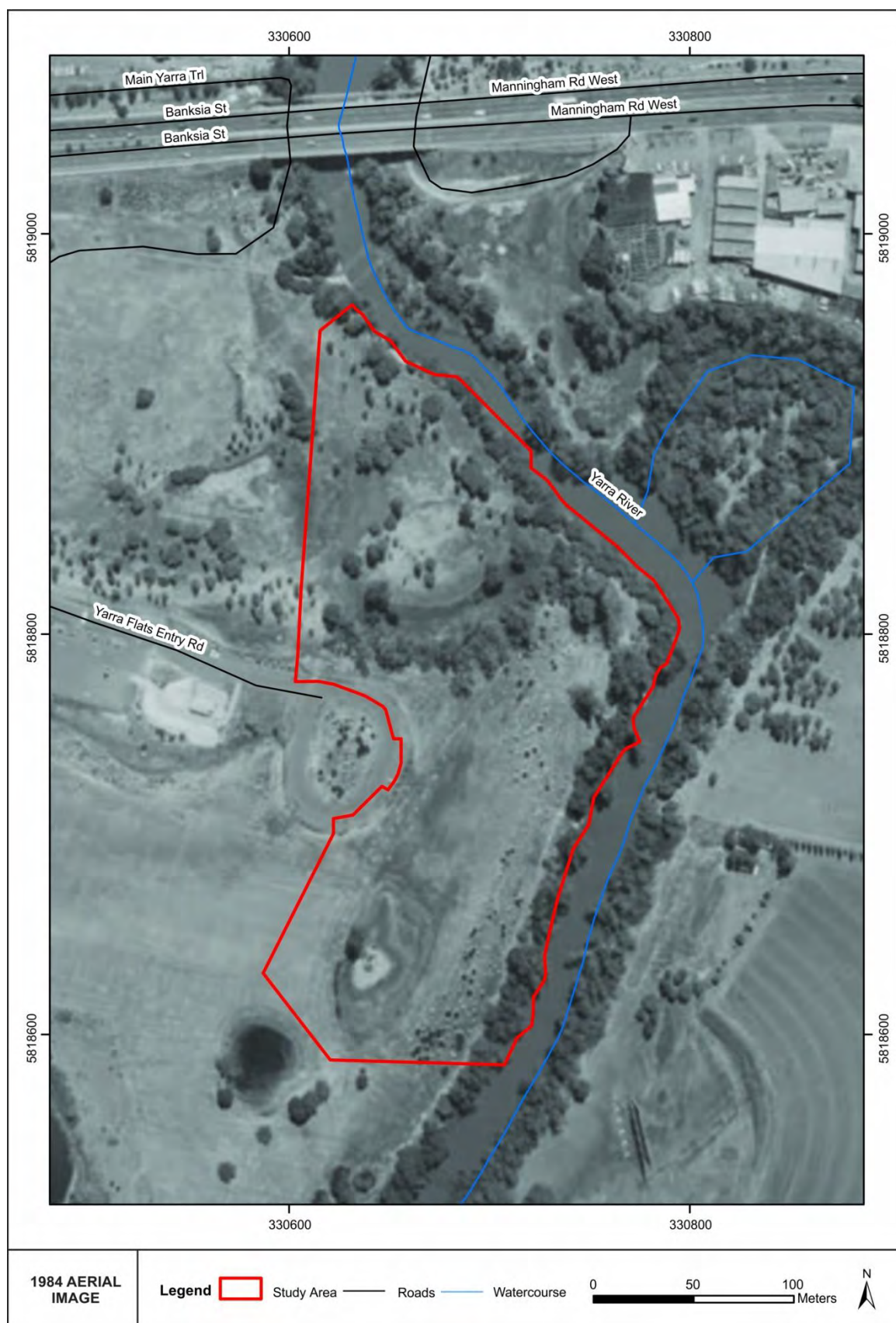


Figure 5: 1984 aerial photograph (Landata)

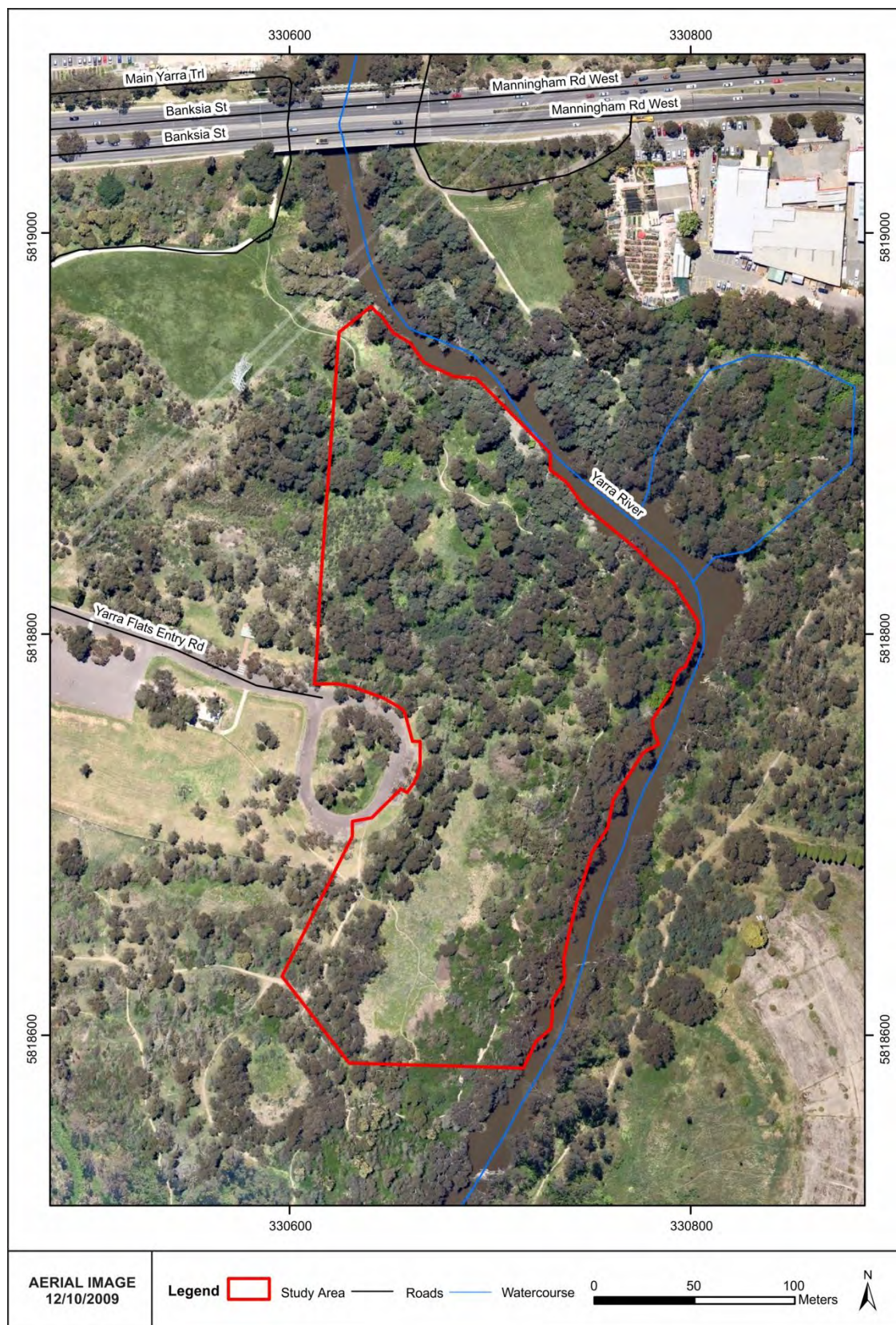


Figure 6: 2009 aerial photograph (Nearmap)

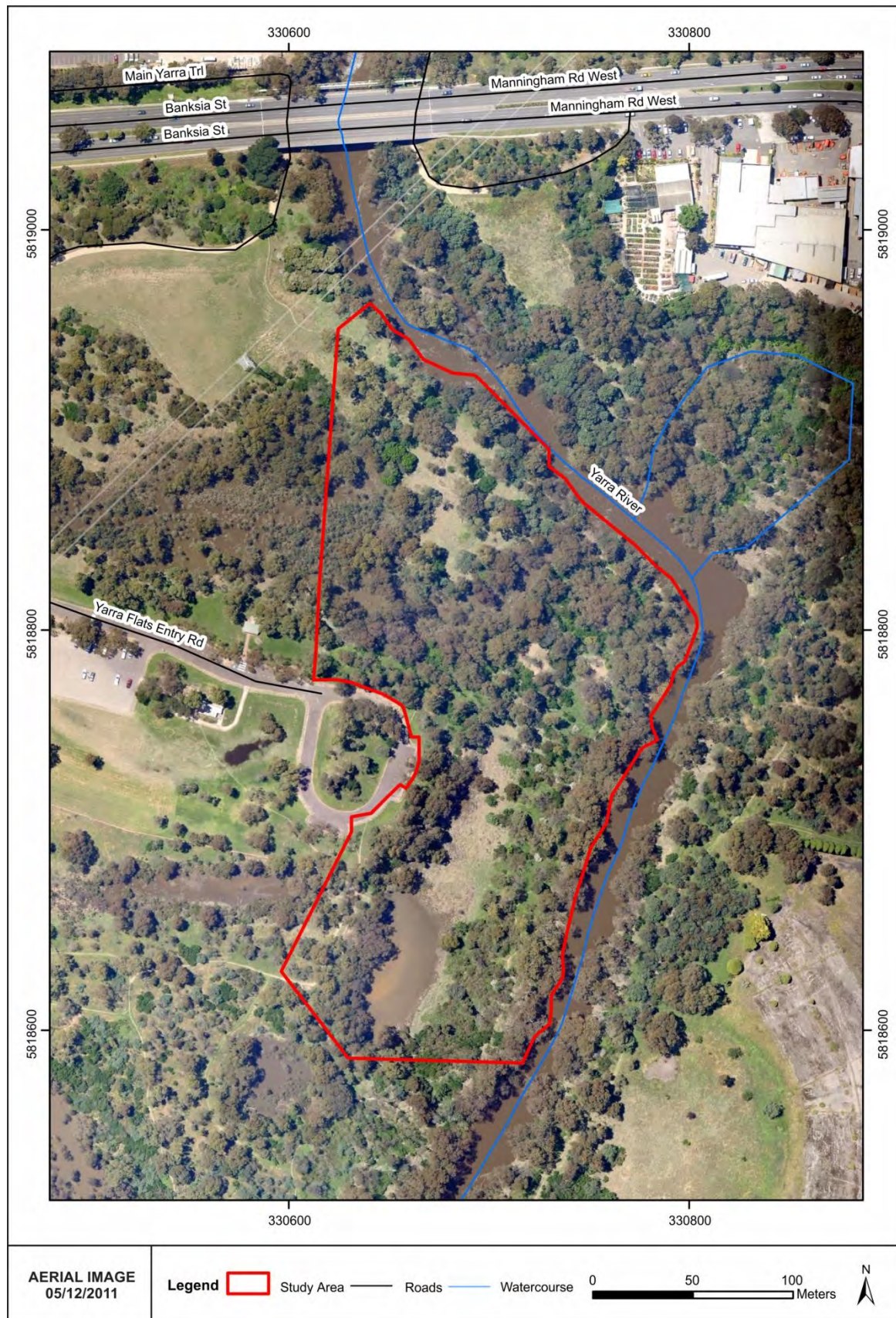
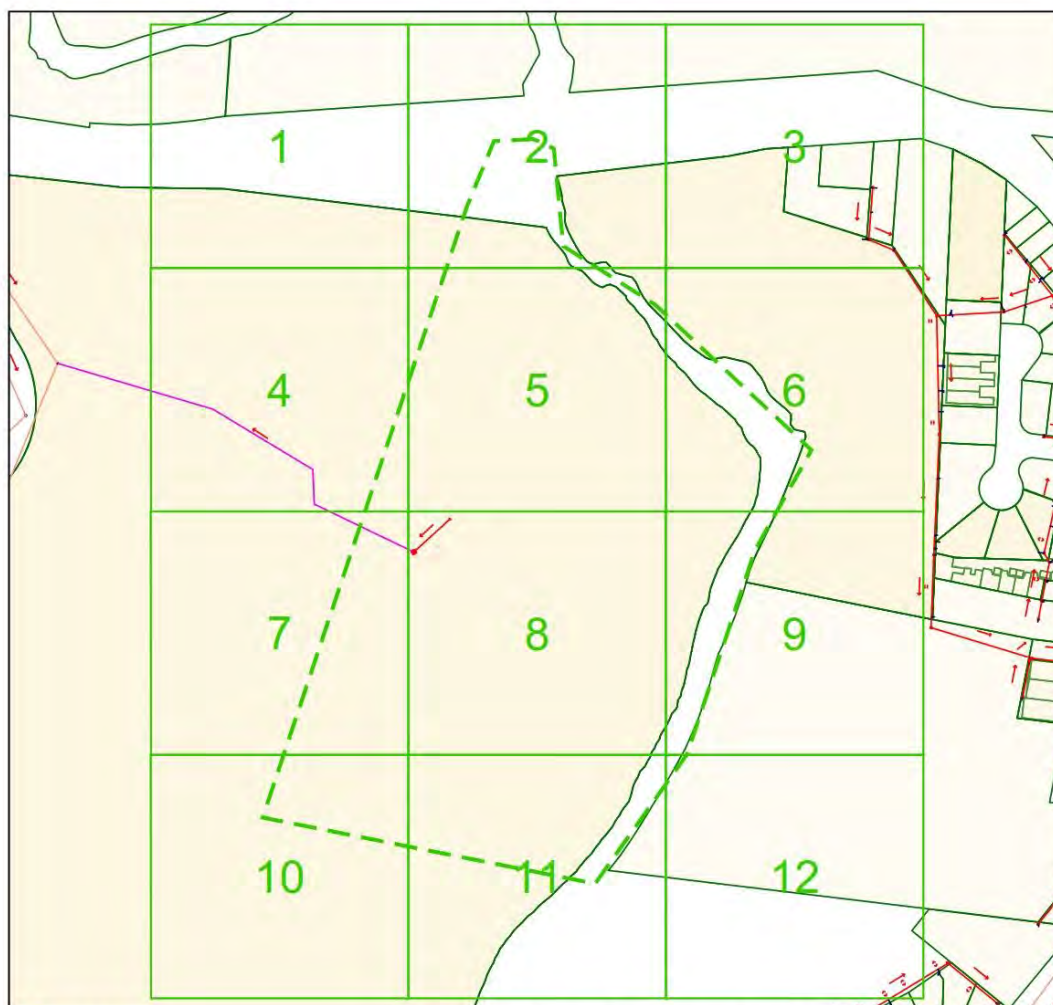


Figure 7: 2011 aerial photograph (Nearmap)



Section 5: Dial Before You Dig

DBYD information was requested for underground utilities and services within proximity of the activity area. This search noted that a sewer line extends northwards from the eastern section of Yarra Flats Entry Road, and then continues along the road westwards towards The Boulevard. Other assets that are located in proximity to the study area include transmission lines extending from the north towards the south west, as well as water and drainage pipes and gas lines towards the north. Installation of these underground services and others that may have not been revealed during the DBYD search would have required trenching along the service alignment, impacting upon the area of cultural heritage sensitivity.



Sewer Asset Information

Sequence No. 74501044

Job No. 14756568

Address Yarra Flats Entry Road, Eaglemont VIC 30

Melway Ref. 32C5,32C6,32C7,32D6,

Date 15/08/2018

Scale Not To Scale



Existing Title



Proposed Title



Existing Sewer



Asbestos Sewer



Offset Distance



Circular Access Point



Junction



Gas Check Manhole



Square Manhole



Change of Grade



Inspection Shaft



End of Pipe



Maintenance Shaft



Ventilation



Chambered Manhole



Warning – This plan is issued solely for the purpose of assisting you in identifying Yarra Valley Water's specified assets through further investigation only. It's not to be used for any other purpose, including to identify any other assets, property boundaries or dimensions. Accordingly, the location of all assets should be proven by hand on site prior to the commencement of any work. Please refer to the attached letter for further details.

Yarra Valley Water ABN: 93 066 902 501 WEB: www.yvw.com.au

Figure 8: Gas utility services within the activity area (DBYD)



Section 6: Results of Aboriginal Victoria Site Registry Searches

A search of Aboriginal Victoria's site registry, Victorian Aboriginal Heritage Register (VAHR), via the Aboriginal Cultural Heritage Register and Information System (ACHRIS) was carried out on August 22, 2018. The results of the search showed that the entire activity area is within an area of cultural heritage sensitivity (Map 4) with no previously registered Aboriginal Places located within it.

A total of 19 registered Aboriginal Places comprising 76 components are located within two kilometres of the activity area. The most common Aboriginal Place types are low density artefact distributions, comprising 84% of the total registered Places. There are also six artefact scatters and six scarred trees. The historical overlay for Yarra Flats notes the presence of scarred trees within the park land, however the closest registered scarred tree is located approximately 1.1 km south of the current activity area. The closest Aboriginal Places are located approximately 250 m to the north on the eastern side of the Yarra River (VAHR 7922-0052), and 240 m south on the eastern side of the Yarra River (VAHR 7922-0255). The Aboriginal Places located within two kilometres of the activity area appear in proximity to the Yarra River and associated waterways, wetlands and billabongs. Some Aboriginal Places are located further from the Yarra River, however, these are primarily scarred trees or historical places and have likely avoided destruction from residential and commercial development.

VAHR 7922-0052 was registered as a surface artefact scatter in 1977 during a survey of the Yarra Valley area (Witter & Upcher 1977). No details of the content of the Place were recorded on the site card, however the survey noted its poor condition (Witter & Upcher 1977, p.13). A subsequent place inspection conducted in 2008 reported the Place as unable to be relocated due to poor conditions of original Place location. VAHR 7922-0255 was registered as a surface artefact scatter in 1990 during another survey of the Yarra River area (Ellender 1991). The Place was recorded as severely eroded due to cattle trampling with fine grained stone flakes. No raw stone material was listed on the site card, however the survey noted a total of 43 quartz and 43 silcrete flakes and tools, which may have been part of a larger campsite (Ellender 1991, pp.37–38).

One historical reference is located approximately 400 m to the south of the current activity area. This historic Place was recorded as Bulleen Lagoon, known currently as Bolin Bolin Billabong, which is located on the western side of the Yarra River. Historically this area was visited by the Yarra tribes each year to fish for eels and fish.

As such, the density of Places within the geographic region reflects the significance of the area to Aboriginal people in the past. Both historical and cultural evidence has demonstrated this area along the Yarra River was utilised by Aboriginal people due to its rich flora, fauna and water resources that would have promoted camping, fishing and hunting activities. The lack of registered Places further away from the river is likely attributable to the heavily urbanised landscape dating from the late nineteenth century, which has no doubt impacted on Aboriginal cultural deposits.

A number of archaeological investigations have been carried out within the geographic region. The results of relevant regional and localised studies are presented in Table 2.



Section 7: Results of Historic Databases Searches

Yarra Flats parkland is approximately 85 hectares and is listed within the Banyule Heritage Register (HO134) as a place of historic, aesthetic and social value to the City of Banyule. The Yarra Flats parkland comprise remnant evidence from successive land use with plantings of hawthorn hedgerows, oaks and cypresses from old historic estates, as well as bluestone water channels from Chinese market gardens, and open grass areas cleared for grazing and agriculture. These areas are all located south of the current study area (See Map 4).

The area was also the location of inspiration for many artists associated with the Heidelberg School or artists, and is currently associated with the Riverlands Conservation Society who have been dedicated to its revegetation over the last 40 years. The historic report also describes the park with billabongs, wetlands and scarred trees, all of which are located to the south of the current activity area, and which demonstrate the early use of the land by Aboriginal people. As part of the management of the heritage overlay for the Yarra Flats parkland tree controls apply. Section 43.01-1 Heritage Overlay requires written authorisation from of the responsible authority to be obtained prior to “Removing, destroying or lopping a tree if the schedule to this overlay specifies the heritage place as one where tree controls apply” (Banyule ordinance 478).

The Yarra Flats parkland is not listed on any additional heritage overlay or register.

Directly to the west of Yarra Flats Entry Road are the Glenard Estate and Mount Eagle Estates. The Glenard Estate is listed on the Victorian Heritage Register (H2103) and the Banyule Heritage Register (HO1) as an historical example of Walter Burley Griffin’s suburban design and example of Victorian town planning in 1915. Similarly Mount Eagle Estate is listed on the Victorian Heritage Register (H2104) and the Banyule Heritage Register (HO2) due to its historical significance in relation to garden suburb planning and residential subdivision designed by Burley Griffin in 1914 that took account of the natural topography of the landscape and vegetation. These two estates do not extend across the current activity area.



Section 8: Results of Previous Archaeological Investigations

In general, previous archaeological reports in proximity to the activity area relate to residential and commercial development as well as environmental development along the Yarra River and surrounding area. All the reports determined that the area around the Yarra River is a low lying flood plain with higher terraces to the north and south of the current activity area. Historically these lower terraces have been subject to periodic flooding, soil extraction, introduction of fill material, market gardening and grazing activities since the 1950s. This disturbance to soil deposits has reduced the potential for locating surface and subsurface Aboriginal cultural material.

Table 1 contains a summary of previous archaeological reports in proximity to the activity area.

Previous Archaeological reports in relation to the activity area

Proposed Banksia Street Wetland, Heidelberg Cultural Heritage Management Plan (Stone 2008)

This CHMP (10533) was conducted for the construction of four separate basins with battered sloping walls and drainage pipes and weirs to be installed at 1.5 m depth and backfilled for a wetland on the floodplain of the Yarra River that crosses into the current activity area on the western side. The desktop revealed elevated terraces above modern floodplains were located further north, however, no such terraces existed within the activity area, which comprised a single low-lying floodplain that has been disturbed by flooding and introduction of landfill. It was also determined that the area was previously a wetland and thus not likely an area for campsite locations (Stone 2008, p.7). The surrounding areas, including the current activity area have also been affected by these processes. After European occupation the area was cleared and drained for market gardens and grazing. Numerous trees were cut down for building material and fuel, which only aided flooding of the area until the 1950s when upstream dam works prevented further flooding events. More recent recollections from Parks Victoria land managers recall that in the 1960s the area directly to the south (approximately 100 m) was a nine-hole golf course with landscaped fairways and tees. Land managers further recall the area during the 1970s as quarried for silty loam to be used for garden soil and landscaping, which left large depressions and extraction areas as shown in Figure 7. Fill was introduced to the area for waste disposal and for the construction of the entrance road to Yarra Flats park during the 1980s (Stone 2008, pp.7–8). The excavation and removal of original floodplain surfaces and the dumping of clean fill in these excavated areas and subsequent reburial by earthworks or overbank silt has likely extended into the current activity area.

Geotechnical soil testing was conducted across the activity area (see Figure 7, Appendix 1) (Stone 2008, pp.8–9). Geotechnical testing in 1990 excavated a total of five auger holes to depths ranging between 0.5-0.9 m with soils revealing shallow topsoils overlying stiff to very stiff gravelly sand clay fill with rock, rubble and brick fragments to depth of excavation. Additional geotechnical soil testing was conducted in 2007 with a total of 14 mechanical auger probes excavated to a depth of two metres. Soils revealed stiff, moist, grey brown clayey silt overlying silty clay with gravel and sand inclusions and increasing compaction to base of excavation. While only representative auger logs were included within the report, the silty clay and clay fill was recorded to depth in all auger probes. The location of these probes in close proximity to the current activity area likely indicates that such land disturbance processes have undergone across the larger area, thus impacting on the soils within the current activity area.



A standard assessment noted areas of ground disturbance such as the construction of roadways and verges along Banksia Street, The Boulevard and the entrance road to Yarra Flats. No new Aboriginal Places were located as part of the standard assessment. Due to the previous ground disturbance within the activity area it was determined no complex assessment was necessary.

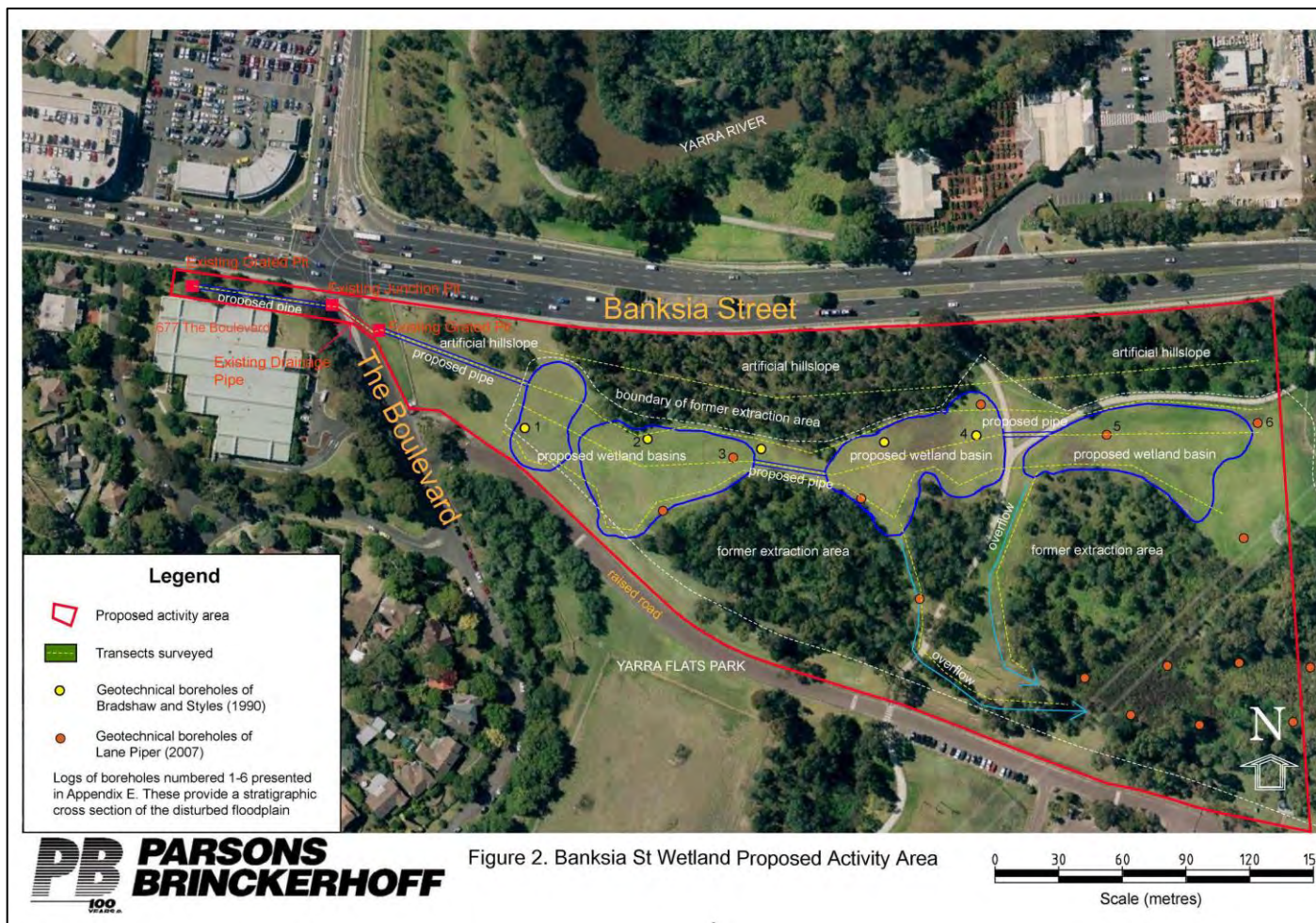


Figure 9: Wetland location, with boreholes and areas of disturbance (Stone 2008, p.3)



Table 1: Relevant previous archaeological surveys within 2km of the activity area

Report Title	Relevant Results
<p>An Archaeological Survey Yarra Valley Area, Melbourne</p> <p>(Witter & Upcher 1977)</p>	<p>This report (30) was conducted to survey and provide advice regarding Aboriginal Places that would be affected by the works associated with the Yarra Valley Metropolitan Park extending between Burke Road bridge, Ivanhoe and Pound Bend, Warrandyte. A total of 25 Aboriginal Places were located as part of this project. The Yarra Valley park was divided into five different landforms, the river channel, the flood plains, the terraces, the valley slopes, and the upland hills. The current activity area is located within the flood plains and was described as highly disturbed from regular flood events and introduction of land fill. It was considered likely that native vegetation for this area would include riparian red gum woodlands, however current vegetation was noted as grass coverage with land fill and flood scoured land. One Aboriginal Place was located in proximity to the current activity area (VAHR 7922-0052). This Place was recorded as in poor condition with little research potential. No further details were listed. It was concluded that the Places located during the survey related to temporary camping activities for small groups of tribesmen.</p>
<p>The City of Doncaster and Templestowe. The Archaeological survey of Aboriginal Sites</p> <p>(Ellender 1991)</p>	<p>This report (460) was conducted for the Middle Yarra Concept Plan which aimed to review the area and any changes that may have occurred since European occupation. A total of 15 Aboriginal Places were recorded, including five artefact scatters, eight scarred trees and two isolated artefacts. Three landforms were identified during the survey including river flats, steep dissected country and gentle undulating country. The geological formation of the Yarra River and tributary channels comprise marine Silurian and Devonian sedimentary rocks of bedded and weathered sandstone, siltstone and mudstone. River flats were identified as the most sensitive landform, especially the immediate river banks for scarred trees and small terraces for artefact scatters. One Aboriginal Place (VAHR 7922-0255) was registered in proximity to the current activity area. the Place was recorded as a surface artefact scatter with 43 quartz and 43 silcrete flakes and tools, which may have been part of a larger campsite.</p>
<p>Yarra River – Kew & Heidelberg. A Cultural Heritage Investigation and Monitoring Program</p> <p>(Murphy 2000)</p>	<p>This report (1612) was conducted for an archaeological monitoring program along the Yarra River at Kew and Heidelberg. During the survey no Aboriginal Places were located at either location, while only one historic bridge site (H 7922-0210) in Heidelberg. Previous survey by Witter and Upcher (1997) had located a surface artefact scatter on the east side of the Yarra River (7922-0052) just outside the boundary for this project. Murphy concluded that the most common Place type to be located within the activity area would be scarred trees, isolated artefacts, as well as surface and sub-surface artefact scatters. These artefact Places are unlikely to be <i>in situ</i> as most of the current activity area was formally a low-lying wetland. Despite the low number of registered Places at the time of the survey, Murphy determined this was due to the low number of previous survey coverage.</p>



Report Title	Relevant Results
<p>An Archaeological Survey of a Proposed Track Upgrade, Bolin Bolin Billabong, Bulleen, Victoria</p> <p>(Cekalovic 2005)</p>	<p>This report (3306) was conducted for an upgrade of a two kilometre section of a track along the Yarra River south of the current activity area. The background information determined that the area had been subject to previous ground disturbance through flooding, vegetation clearance, grazing, introduction of landfill and agricultural activities. The survey had good surface visibility and determined that the majority of the alignment had been previously disturbed or was located within areas containing landfill. No cultural material was located during the survey. Monitoring of any excavation works was recommended.</p>
<p>Banyule City Council Aboriginal Heritage Study</p> <p>(Marshall 1999)</p>	<p>This report (4619) was conducted to assess previously recorded cultural heritage located within the city of Banyule and the implications to future works. At the time of the report, residential development was low in Banyule and was considered a favourable area for the preservation of Aboriginal Places. The most common Place types located within Banyule are isolated stone artefacts, surface artefact scatters and scarred trees, with the potential for fresh water shell middens, burials and post contact Places. Geological mapping for the Yarra River determined that the area comprised low alluvium and beach sands woven through interbedded Silurian siltstones, sandstones and shales. The deposition of alluvial deposits has likely buried, preserved or destroyed archaeological deposits. As a generalisation, Aboriginal Places within Banyule are likely to be located within floodplains and hills/plains compared to rivers/creeks. During the survey previous recorded Aboriginal Places (7922-0256, 7922-0266 and 7922-0267) were relocated within the current activity area. All three Places are scarred trees. No new Aboriginal Places were recorded as part of the survey.</p>



Report Title	Relevant Results
<p>Water Treatment, Harvesting & Redistribution Project at the Bolin Bolin Billabong and Wetlands – 191 Bulleen road, Bulleen, Victoria: Cultural Heritage Management Plan</p> <p>(Freeman et al. 2012)</p>	<p>This CHMP (11713) was conducted for the installation of a pipeline for water treatment, harvesting and redistribution from the Bolin Bolin Billabong, south of the current activity area. The desktop assessment noted that the activity area is a low lying floodplain that has been disturbed by past flooding and landfill activities. The closest Aboriginal Place is VAHR 7922-0266, a scarred tree located 50 m north of the irrigation pipeline. The standard assessment noted that part of the activity area is located above the flood level, and thus may maintain some sensitivity for cultural material preservation. A single surface artefact was located near the south of the activity area and thus complex assessment was required. Geotechnical testing revealed dark brown silty clay with fine grained sand to depths ranging between 1.3 to 5.5 m with underlying sandy gravel layer. This was interpreted as alluvial clays likely subject to flooding and erosion, with only the underlying sand contexts likely to contain any <i>in situ</i> cultural material. The complex assessment included the excavation of a 1x1 m test pit to a depth of 580 mm, four auger probes, four shovel probes measuring 0.4x0.4 m, and two mechanical trenches measuring 2x1 m to a maximum depth of 1.8 m. Soils revealed clayey silt with small basalt rock inclusions overlying silty clay with increasing moisture. One new Aboriginal Place was located during the complex assessment. VAHR 7922-1300 comprised 12 subsurface silcrete and one tachylite flakes from test pit 1 at approximately 130-210 mm depth. The soils revealed silty clay that had been disturbed by previous land use history. No cultural material was located within the billabong area, however it remains ethnographically significant. The surface artefact was recorded as VAHR 7922-1299, an isolated quartz artefact found on the surface of an alluvial terrace, while VAHR 7922-1300 was recorded as a subsurface artefact scatter of silcrete material. Salvage of VAHR 7922-1300 was recommended.</p>
<p>Yarra Valley Country Club redevelopment Bulleen: Cultural Heritage Management Plan</p> <p>(Berelov & Vines 2016)</p>	<p>This CHMP (13793) was conducted for a residential and commercial development with landscaping works at the former Yarra Valley Country Club northeast of the current activity area. The desktop assessment noted that the activity area was located on plains and slopes above the Yarra River and that much of the area had been subject to previous ground disturbance from excavation for golf fairways, roads, buildings, landscaping and utility services, and the introduction of fill soils. Some areas were considered potentially undisturbed and thus were considered of more significance. Two previously recorded Aboriginal Places are located within 200 m, VAHR 7922-0826 which comprised two artefacts located in overlying fill material direction to the south, and VAHR 7922-0028 which was a scarred tree south of the activity area. Geotechnical soil investigations was conducted along the golf course area and revealed fill material of clay and silt with crushed rock and gravel up to 0.8 m depth, overlying clayey silt, silty sandy clay and clayey sandy silt to a maximum depth of three metres. Additional geotechnical soil testing was conducted in proximity to the clubhouse and Sonoco factory and revealed clay fill to a depth ranging between 0.5-3.0 m, averaging around two metres. A standard assessment noted areas of potentially undisturbed surfaces. Complex assessment included six test pits measuring 1x1 m, 48 shovel test pits were excavated revealing friable silts with quartz pebble inclusions overlying mottled silty clay. One new Aboriginal Place (7922-1446) was located during the complex assessment with five subsurface artefacts located between 30-200 mm depth in disturbed friable silt contexts within the alluvial floodplain.</p>



Section 9: Results of Field Inspection

A field inspection was undertaken of the activity area on September 3, 2018 by Shannah Anderson and Lana Tranter-Edwards (Heritage Insight Pty Ltd). The purpose of the site visit was to inspect the trees within the activity area for signs of cultural scarring, as well as examine the activity area in order to further assess whether there was any likelihood of significant ground disturbance across the activity area.

The site visit comprised a pedestrian survey of the activity area (Plates 1-28) and the hand excavation of one auger probe measuring 50mm in diameter to reveal the soil profile (Table 2; Map 4). The auger probe was backfilled as per Heritage Insights OH&S policy. Extensive notes detailing the nature of the activity area, the level of ground surface visibility and the level of disturbance were taken, as well as photographs of the entire activity area and all features within it.

Site Inspection

The activity area is an irregularly shaped section of the Yarra Flats Parkland and is bordered by the Yarra River to the north and east, Yarra Flats Entry Road to the south west and open parkland to the west and south. The area along Yarra Flats Entry Road appears relatively flat with wooden post and rail fencing and several visible sinkholes revealing disturbed soil profiles and numerous debris (Plates 1-5). The area between Yarra Flats Entry Road and the Yarra River comprises gently undulating low lying floodplains with excavated gullies throughout (Plates 6-9). The northern and eastern edges of the activity area along the Yarra River is characterised by steep embankments. Numerous sections of dense native and European vegetation cover the landscape, including river Red Gums, Blackwood, low understory shrubs, grasses and weeds (Plates 10-12). Several small dirt tracks pathways wind through the activity area (Plates 13-14), and a large remnant windmill is located near the north eastern corner of the activity area (Plates 15-16).



**Plate 1: View of Yarra Flats Entry Road facing east
(photo by S. Anderson 03/09/2018)**



**Plate 2: View of Yarra Flats Entry Road facing west
(photo by S. Anderson 03/09/2018)**



Plate 3: View of Yarra Flats Entry Road facing north west (photo by S. Anderson 03/09/2018)



Plate 4: View of sinkhole along northern edge of Yarra Flats Entry Road (photo by S. Anderson 03/09/2018)



Plate 5: View of sinkhole along northern edge of Yarra Flats Entry Road (photo by S. Anderson 03/09/2018)



Plate 6: View of undulating landscape with grass coverage facing north (photo by S. Anderson 03/09/2018)



Plate 7: View of undulating landscape and vegetation coverage facing north west (photo by S. Anderson 03/09/2018)



Plate 8: View of excavated gullies facing east (photo by S. Anderson 03/09/2018)



03/09/2018)



Plate 9: View of excavated open gullies facing east
(photo by S. Anderson 03/09/2018)



Plate 10: View of vegetation coverage across
landscape facing south (photo by S. Anderson
03/09/2018)



Plate 11: View of dense vegetation coverage facing
west (photo by S. Anderson 03/09/2018)



Plate 12: View of dense vegetation coverage facing
west (photo by S. Anderson 03/09/2018)



Plate 13: View of dirt track through activity area
facing north (photo by S. Anderson 03/09/2018)

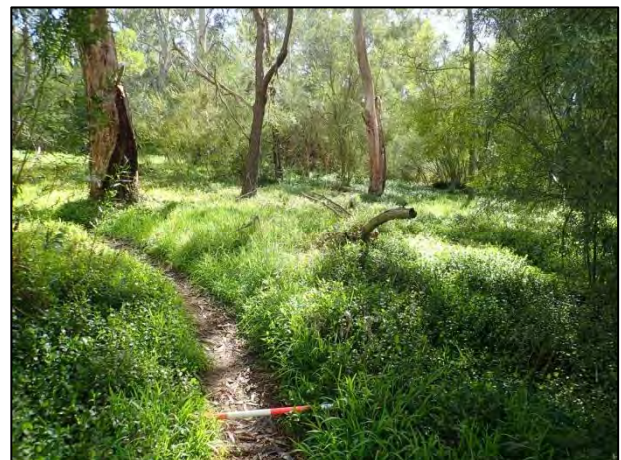


Plate 14: View of dirt track facing north west (photo
by S. Anderson 03/09/2018)



Plate 15: View of large remnant windmill facing south east (photo by S. Anderson 03/09/2018)



Plate 16: View of remnant windmill facing east (photo by S. Anderson 03/09/2018)



Auger Probes

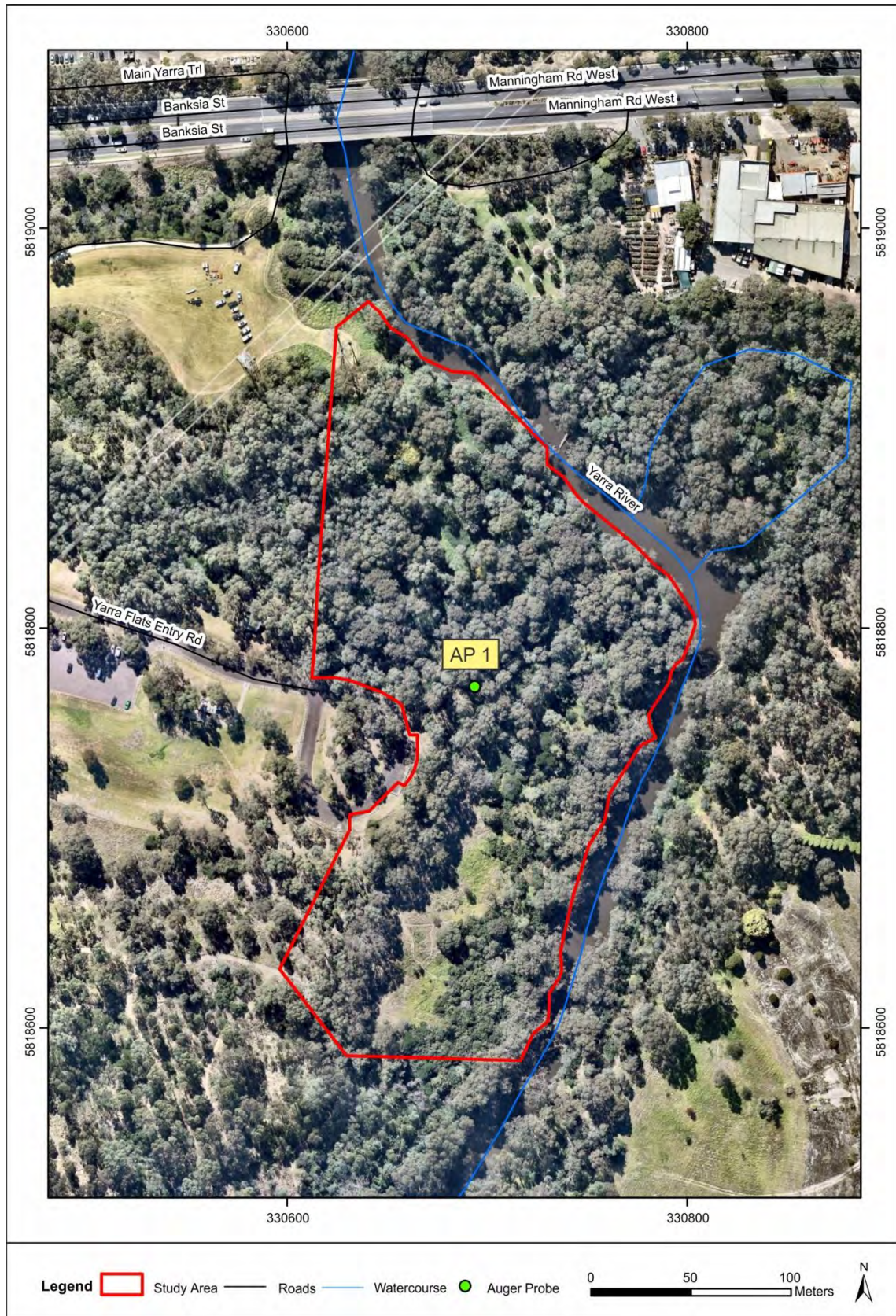
One auger probe, with a diameter of 50 mm, was excavated to investigate the presence of previous ground disturbance within the area of cultural heritage sensitivity within the activity area (Map 5; Table 2).

Auger Probe 1 was located to the north east of the end of Yarra Flats Entry Road, at the approximate location where the screw piles for the proposed administrative building will be located. The soil profile revealed dry, compacted light brown silt with no inclusions (Munsell: 10YR 4/3- Brown; pH: 6.5) to a maximum depth of 570 mm before excavation ceased due to auger refusal.

Table 2: Auger probe details (photos by S. Anderson 03/09/2018)

Auger Probe	Location	Soil
AP 1		

The results of the auger probe investigation indicate that natural soils are no longer present within the area of proposed impact within the activity area. The compacted dry silt with no inclusions does not comply with the proposed soil profile for the area, which was recorded as gradational and stony soils with dark clays, loams and duplex soils that are characteristic of fluvial environments (See Section 2).



Map 5: Auger probe location



Section 10: Discussion of Results

Historically, Yarra Flats Park has been subject to substantial ground disturbance prior to the 1850s due to land and vegetation clearance for farming practices. Since then Yarra Flats Park and the Yarra River was a popular swimming destination for locals, while the numerous fish, bird and eel species also attracted fishermen to the area. The area was also subject to periodic flooding which resulted in the inundation of the area, covering the entire activity area and subjecting it to the fast moving river waters that likely washed away and deposited soil deposits. From 1945 historical aerial photography depicts the activity area as subject to flooding and dry periods, including the drying up and construction over the wetland that extended along the current day Yarra Flats Entry Road.

A previous archaeological report (Stone 2008) conducted directly to the west and extending into the western edge of the activity area revealed the activity area as a low-lying floodplain that has been subject to vegetation clearance and drained for market gardens and grazing, and by the 1970s was quarried for silty loam for garden soils and landscaping leaving large depressions in the area. Since then clean fill material was introduced for waste disposal and the construction of the Yarra Valley Flats Entry Road. Numerous geotechnical testing boreholes were excavated to a maximum depth of two metres as part of this report and revealed silty clay and clay fill to depth. The location of these probes in close proximity to the current activity area likely indicates that such land disturbance processes have undergone across the larger area, thus impacting on the soils within the current activity area.

The results of the auger probe confirmed these findings with dry, compacted brown silt with no inclusions to a maximum depth of 570 mm before reaching auger refusal. The compacted dry silt with no inclusions does not conform with the proposed soil profile for the area, which was recorded as gradational and stony soils with dark clays, loams and duplex soils that are characteristic of fluvial environments.

In conclusion, the land use history provides evidence of significant ground disturbance through land and vegetation clearance, agricultural and pastoral activities, periodic flooding, soil quarrying and finally the introduction of clean fill. The auger probe results and nearby geotechnical borehole testing confirms the removal of natural soils and replacement with clean fill.

As such the activity area has undergone significant ground disturbance as defined by the *Aboriginal Heritage Regulations 2018*:

“disturbance of -

- (a) the topsoil or surface rock layer of the ground; or
- (b) a waterway –

by machinery in the course of grading, excavating, digging, dredging or deep ripping, but does not include ploughing other than deep ripping”

In addition, although the installation of a high ropes adventure park is a high impact activity under Section 46 (xv) of the *Regulations* – construction of a minor sports and recreation facility, the minimal ground disturbance that will occur from the installation of screw piles for the construction of a timber deck that will support a shipping container that will act as an administrative building indicates that proposed works will not cause significant ground disturbance.



For these reasons it is the opinion of Heritage Insight that a mandatory Cultural Heritage Management Plan (CHMP) pursuant to the *Aboriginal Heritage Act 2006* is therefore not required for the proposed installation of this high ropes adventure park. A voluntary CHMP is not warranted as there is a very low to negligible likelihood that any Aboriginal cultural material will be found within the activity area.

Although a mandatory CHMP is not required for the activity area, the client should be aware that the *Aboriginal Heritage Act 2006* provides blanket protection for Aboriginal cultural heritage. In the event that suspected archaeological sites are found during the works within the activity area the following protocol should be followed to ensure compliance with the Act.

If any suspected Aboriginal cultural material is located during works within the activity area, the following steps MUST be undertaken:

- All works within 25m of the relevant discovery area must cease immediately and if necessary protective fencing erected around the relevant area;
- The person making the discovery shall immediately notify the AV and a Heritage Advisor;
- While works are suspended the nominated project delegates and the Heritage Advisor must evaluate the Aboriginal cultural heritage.
- An appropriately qualified Heritage Advisor must be engaged to record the findings and advise on possible management strategies.

In terms of historic heritage the site inspection has shown that the proposed project will not impact on any historic features or elements listed within the Banyule Heritage Register for Yarra Flats (HO134), and that therefore there are no historic heritage constraints on the project. As stated in Section 7 written authorisation from the responsible authority is to be obtained prior to “Removing, destroying or lopping a tree if the schedule to this overlay specifies the heritage place as one where tree controls apply.”

The client should also be aware that the *Heritage Act 2017* provides blanket protection for all historical archaeological relics and deposits including any artefact, remains or material evidence associated with an archaeological deposit, both registered and unregistered, listed and unlisted. It is an offence to knowingly or negligently deface, damage or interfere with a relic or archaeological place except in the event that a Consent has been granted to disturb (Regulation 123 (1)).

The *Heritage Act 2017* includes definitions for both “archaeological sites” and “archaeological artefacts” and the assessment of historic cultural heritage must be undertaken with reference to these definitions:

Archaeological site means a place (other than a shipwreck) which —

- (a) contains an artefact, deposit or feature which is 75 or more years old; and
- (b) provides information of past activity in the State; and
- (c) requires archaeological methods to reveal information about the settlement, development or use of the place; and
- (d) is not associated only with Aboriginal occupation of the place.

Archaeological artefact means an object (other than a shipwreck artefact) which provides information of past activity in the State and —



- (a) is associated with an archaeological site; or
- (b) is associated with a registered archaeological place; or
- (c) is associated with an approved site of archaeological value; or
- (d) is associated with a place that was an archaeological site, registered archaeological place or approved site of archaeological value;

If you have any questions about this assessment, please don't hesitate to contact Heritage Insight P/L on (03) 9376 6569

Regards,

A handwritten signature in black ink, appearing to read 'Shannah'.

Shannah Anderson
Project Archaeologist
Heritage Insight P/L



References

Legislation

Aboriginal Heritage Act 2006

Aboriginal Heritage Regulations 2018

Internet Resources

Department of Economic Development, Jobs, Transport and Resources – GeoVic3
(<http://www.energyandresources.vic.gov.au/earth-resources/maps-reports-and-data/geovic>)

Department of Premier and Cabinet – ACHRIS
(<https://applications.vic.gov.au/apps/achris/public/>)

Dial Before You Dig
(<https://www.1100.com.au/#>)

Friends of Banyule – History of the Yarra Flats
(<http://www.friendsofbanyule.org/virtualtour/history-of-the-yarra-flats.aspx>)

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(<https://www.landata.vic.gov.au/>)

National Library of Australia – Trove
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NearMap
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Appendix 1: Geotechnical Bore Logs within Stone 2008



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TEST No. 10


LOGGED By : P. Styles

DATE : 15.8.90

PROJECT : YARRA FLATS PARK WETLANDS AREA

LOCATION : BANKSIA ST., HEIDELBERG

CIVIL-ENGINEERING and
GEOTECHNICAL SERVICES BRANCH
Soils Engineering and Testing Section

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DATE : 15.8.90

PROJECT : YARRA FLATS PARK WETLANDS AREA

LOCATION : BANKSIA ST., HEIDELBERG

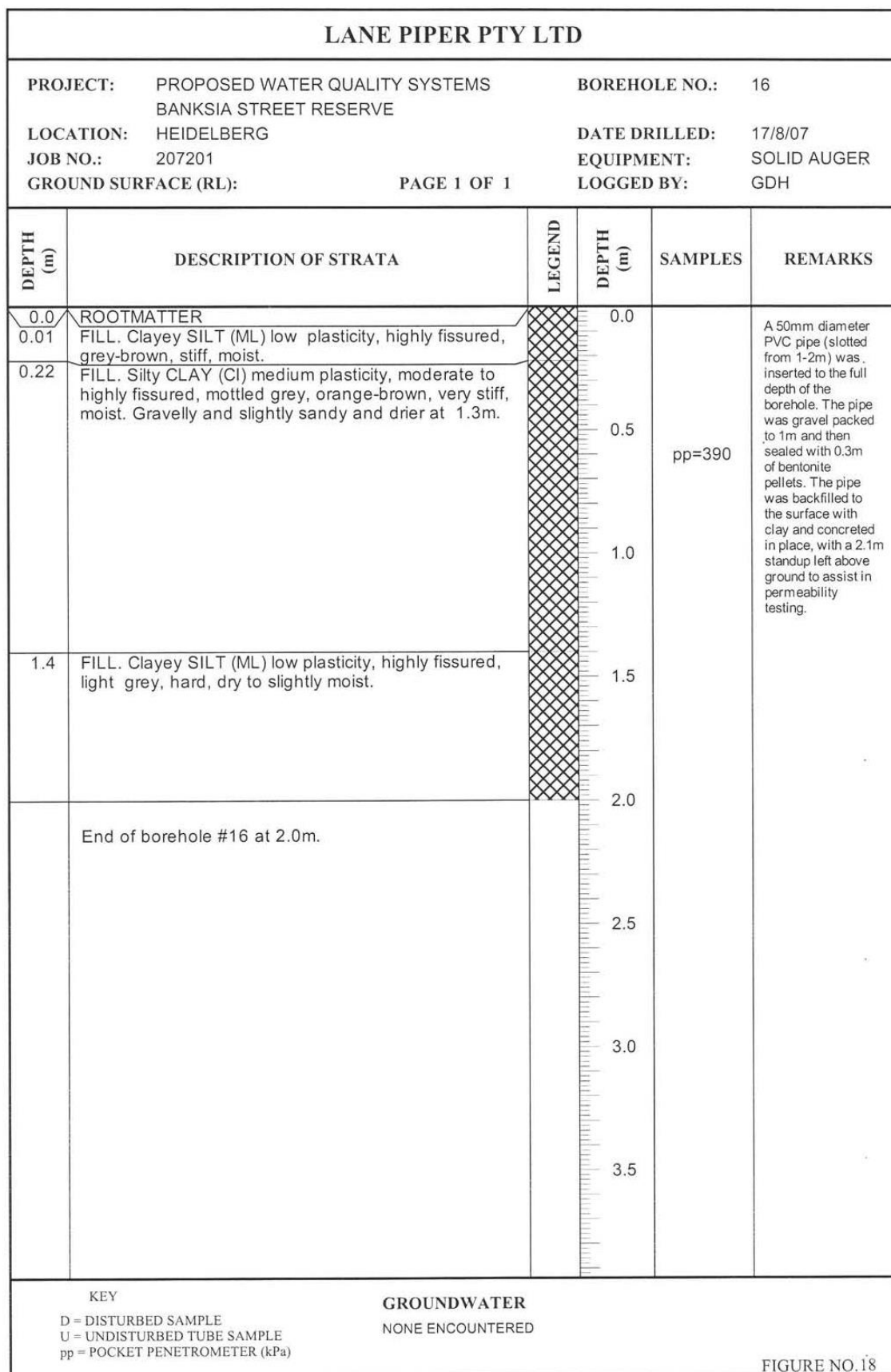
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Soils Engineering and Testing Section

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TEST No. 6

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DATE : 15.8.90

PROJECT : YARRA FLATS PARK WETLANDS AREA

LOCATION: BANKSIA ST., HEIDELBERG

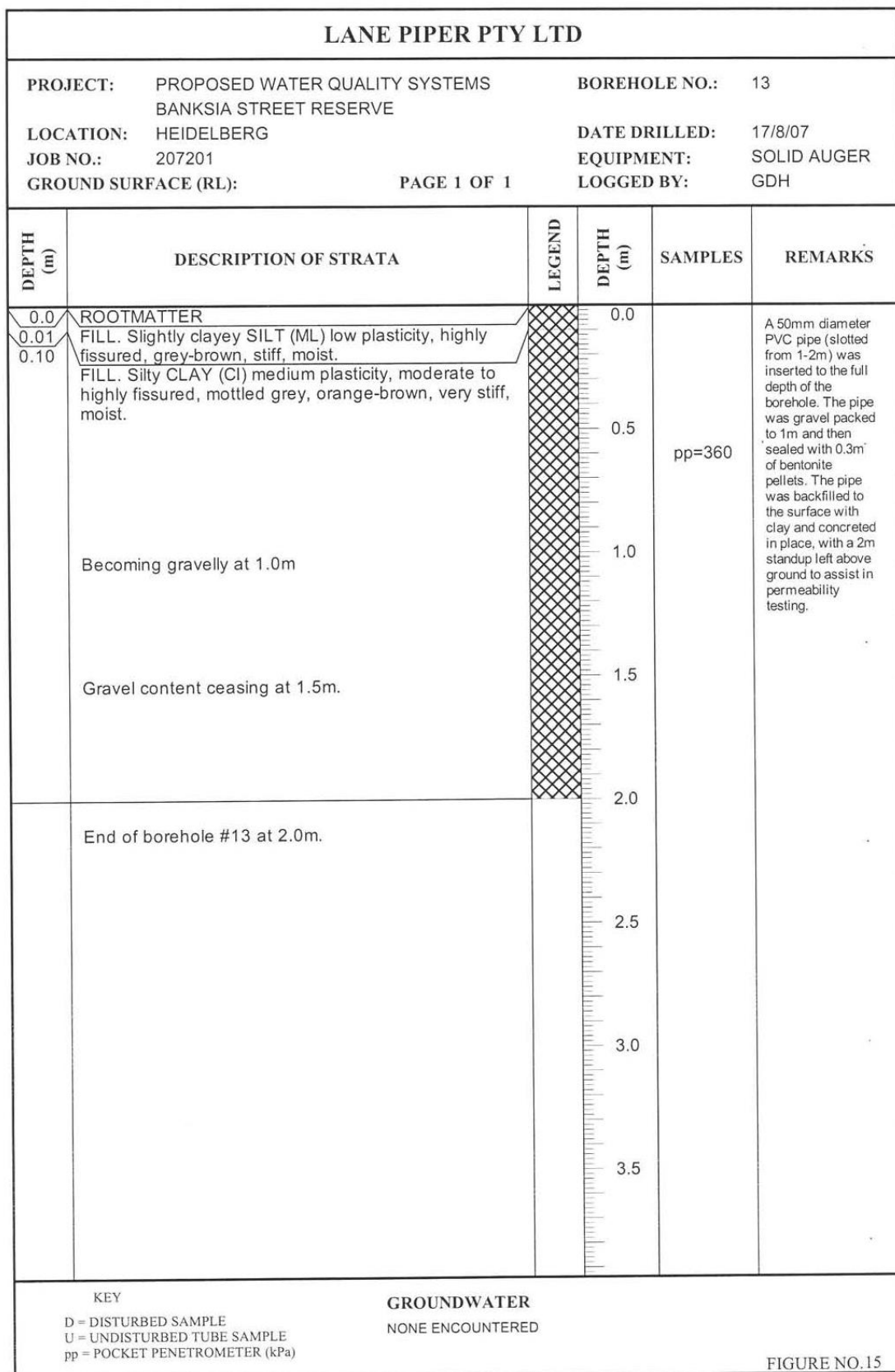
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GEOTECHNICAL SERVICES BRANCH

Soils Engineering and Testing Section

NOTES samples taken, etc.	GRAPHIC LOG	CLASS SYMBOL	AUGERHOLE LOG: Soil type, plasticity, colour, secondary & minor components and consistency.	DEPTH mm	MOISTURE CONTENT %					DYNAMIC CONE PENETROMETER: mm/blow																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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