



Reference: 21079

8 July 2021

Vasu Singla
Environmental Project Planner
James Golsworthy Consulting
P.O. Box 1650
Mildura Victoria 3502

Dear Vasu,

**RE: ABORIGINAL CULTURAL HERITAGE DUE DILIGENCE ADVICE FOR
HAPPY VALLEY LANDING, HAPPY VALLEY, NEW SOUTH WALES**

Austral Archaeology Pty Ltd (Austral) has been engaged by James Golsworthy Consulting to provide Aboriginal Cultural Heritage Due Diligence Advice (ACHDDA) for the proposed pump site at Happy Valley Landing, Happy Valley, New South Wales (NSW) [the study area]. This advice is intended to assist James Golsworthy Consulting in determining their obligations with regard to the *National Parks and Wildlife Act 1974* (NPW Act) and to determine whether the project will involve activities that may harm Aboriginal objects or places.

The study area is approximately 0.208 hectares in area, and the proposed development is the installation of a pontoon and gantry pumping structure below the high water mark on the Victorian side of the Murray River, however, due to being below the high water mark of the river is spatially situated in New South Wales. As part of the proposed development, piles for anchoring will be installed in the study area, which will support the pontoon and the gantry pumping structure. As this ACHDDA will only focus on the developments below the high water mark, no advice is provided for the pipelines that will extend into Victoria.

Section 87 of the NPW Act makes it a strict liability offence to knowingly or unknowingly harm Aboriginal objects or declared Aboriginal places without an AHIP. Harm is defined under the NPW Act as “*any act or omission that destroys, defaces or damages the object or place or in relation to an object, moves the object from the land on which it had been situated*”. The NPW Act allows for a person or organisation to exercise due diligence in determining whether their actions will or are likely to impact upon Aboriginal objects or places. Any person or organisation who can demonstrate that they have exercised due diligence has a defence against prosecution under the strict liability provisions of the NPW Act. Where an activity is likely to harm Aboriginal objects or places, consent in the form of an Aboriginal Heritage Impact Permit (AHIP) is required

The *National Parks and Wildlife Regulation 2009* (NPW Regulation) adopted the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010a) (the Code). The Code sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

- Identify whether Aboriginal objects are, or are likely to be, present within the study area.
- If Aboriginal objects are, or are likely to be present, determine whether their activities are likely to cause harm.
- Determine whether further assessment or an AHIP application is required for the activity to proceed.

This advice has been formulated to provide a robust assessment that will identify whether Aboriginal objects or places are present or are likely to be present within the study area. This has been achieved through the completion of a desktop review and archaeological survey of the study area. The Code provides a series of questions that clarify whether it is applicable to a proposed project. These questions are addressed in Table 1.

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Table 1 Applicability of the Code to the proposed activity

Question	Response
Is the activity a declared project under Part 3A of the EP&A Act?	No
Is the activity an exempt activity listed in the NPW Act or other legislation?	No
Will the activity involve harm that is trivial or negligible?	No
Is the activity in an Aboriginal place or are you already aware of Aboriginal objects on the land?	No
Is the activity a low impact activity for which there is a defence in the NPW Regulation?	No
Do you want to use an industry specific code of practice?	No
Do you wish to follow your own procedure?	No

As none of the questions outlined in Table 1 apply to the project, due diligence must be established through using the Code. The Code consists of a series of 5 steps outlined below.

STEP 1. WILL THE ACTIVITY DISTURB THE GROUND SURFACE OR ANY CULTURALLY MODIFIED TREES?

The proposed activity will include the installation of the pontoon and gantry, and is likely to impact the ground surface, particularly where the universal columns will anchor the pontoon and gantry. There are no culturally modified trees known to be present within the study area.

The activity will disturb the ground surface and/or any culturally modified trees and therefore consideration of steps 2a and 2b of the Code is required.

STEP 2A. SEARCH THE ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS) DATABASE AND USE ANY OTHER SOURCES OF INFORMATION OF WHICH YOU ARE ALREADY AWARE

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) database was conducted on 24 June 2021 (Client service ID: 601186). The search identified 2 Aboriginal archaeological sites within a 10 kilometre search area centred on the proposed study area. None of these registered sites are located within the study area (Figure 3). The mapping coordinates recorded for these sites were checked for consistency with their descriptions and location on maps from Aboriginal heritage reports where available. Spatial information for this report is displayed using the GDA94 Datum. Where AHIMS site records were provided on a different datum, they were converted using standard functions in QGIS software.

Table 2 AHIMS sites identified within 10 kilometres of the study area.

Site type	Occurrence
Burial	1
Shell Midden	1
Total	2

Table 2 identified 2 AHIMS sites within a 10 kilometre proximity to the study area, one burial located approximately north-west of the study area and a shell midden located approximately 2.6 kilometres to the west. The limited amount of Aboriginal objects on the NSW side of the Murray River may be attributed to the paucity of archaeological surveys and studies on the Euston side of the study area.

A review of the reports held on the AHIMS database identified several archaeological studies which have been undertaken in the locality of the study area. These are summarised in Table 3. Austral has also undertaken a review of information to identify whether the activity is located within landscape features likely to contain Aboriginal objects. This includes an assessment of ethnographic information, soils, geology, landform, disturbance and resource information pertinent to the study area. The outcome of this review is outlined in Table 4.

Table 3 Archaeological studies undertaken in the vicinity of the study area.

Author	Year	Details
Craib	1992	Surveyed the Wentworth and Gol Gol area, approximately 60km west of the study area. Craib inspected lacustrine or fluvial landforms and environments. Craib could find no discernible pattern to shell midden distribution on the Murray River, there was a slight trend where they were located at points where flood runners intersected the main channel. Lithic artefact scatters also comprised a significant proportion of the confluence assemblage, with 23 being recorded. These sites usually occurred as a spatially distinct component of shell middens but also in other contexts; most notably in scalds or deflation surfaces adjacent to lake edges while they were rare along river margins. Craib recorded 91 scarred trees; located predominantly on black box trees (68%) and also red gum (32%); The report contains little information regarding burials, although 8 were recorded during Craib's study; all located in sandy deposits close to Lake Gol Gol.
Archaeological Consulting Services	1996	Undertook an archaeological survey for the proposed upgrade of the Euston and Robinvale Bridge approximately 12 kilometres north-east. No sites were identified during the NSW survey, and one place, a shell midden, identified on the Victorian side.
Archaeological Consulting Services	2000	Undertook an Aboriginal and Historical heritage assessment concurrently, approximately 12km north-east of the study area. The Aboriginal survey identified 6 Aboriginal objects, three scarred trees, two shell middens and a hearth complex. In addition, three previously recorded sites consisting of a scarred tree, a burial and a shell midden were relocated during the survey. A PAD, along the top of the ancestral riverbank, and a potential PAD were also identified during the survey.
Archaeological Consulting Services	2001	Undertook a CHA including, a survey, at Tol Tol South, Pethard Road and Happy Valley/Hocking Road, approximately 2km north-east of the study area. No Aboriginal sites were identified.
Archaeological Consulting Services	2007	Completed a desktop and standard CHMP for an upgrade to the Robinvale Irrigation District. Shell was identified during the survey, however, it was not <i>in situ</i> and was associated with the higher alluvial terraces. No Aboriginal sites were recorded.
Edmonds & Brooke	2007	Completed a survey of the Hattah-Kulyne National Park, 14 km southwest of the study area. 55 new sites were recorded and 12 previously recorded sites were inspected around the margins of the Hattah Lakes, their inlet/outlet channel Chalka Creek and its junction with the Murray. Scarred trees, were the most common site type, with 30 recorded; other sites identified, included 16 shell middens, five hearths and four artefact scatters. A majority of the sites were located near the Chalk Creek and Murray River confluence.
Bell	2018	Conducted a CHMP for the proposed pump station, power station and irrigation works, approximately 130m to the east of the study area.
Benchmark Heritage Management	2020	Undertook a CHMP for the Robinvale Levee upgrade, approximately 13km south-west of the study area. There were 32 previously registered sites located within 200 m of the study area. The survey relocated a scarred tree and 2 shell middens and identified an additional scarred tree. The scarred tree was located 300m from the Murray River, one shell midden in a flat paddock and the other scarred tree on the eastern edge of the study area.

Table 4 Assessment of landscape features

Information	Details
Ethnographic	<p>Aboriginal people along the Murray River lived a semi-sedentary hunter-gatherer lifestyle and would often utilise the environment to their advantage (Beveridge 1889, p.32, Mulvaney & Kamminga 1999, p.303). As part of the process, Aboriginal people would have hunted animals, which lived in the river and used the water for survival, using nets and spears.</p> <p>Due to the proximity of the Murray River and the Mallee, local Aboriginal people would use the river for approximately 8 months of the year and would also move between the rivers to plains depending on the season and seasonal events, such as floods or droughts (Pardoe 2014, p.114, Benchmark Heritage Management 2018, p.20, Allen 1980, pp.51–54). Macropods, emus, eggs, fish, reptiles, birds, possums, yams and shellfish were all cooked in oven mounds, with some ovens being reused in locations where fuel was scarce (Stanbridge 1861, p.295, Beveridge & Royal Society of N.S.W. 1883, p.18, Beveridge 1889, pp.18–21). Ovens were situated near creeks, rivers, lakes, lagoons and other waterways, on both high and low ground (Coutts et al. 1979, pp.3–4).</p> <p>Other resources that would have been used in the area, include stone tools, such as quartz (often traded in) and shells, which were used for activities like cutting the skin of animals, cutting hair and sharpening materials such as wood for boomerangs and spears (Kirby 1896, p.46, Coutts 1977, p.10).</p> <p>Aboriginal people in the Murray and Mallee region also had a diet rich in fruit, vegetables and herbs. Seeds, such as nardoo, were a stable food source with grinding stones used for their production (Beveridge 1889, pp.139–165). The highly varied diet for people on the Murray River and Mallee Plains allowed for larger populations than what would have been possible away from the river corridor (Beveridge 1889, pp.9–35, 71).</p> <p>As well as for food, flora and fauna were used for creating clothing and ornamental accessories. Examples include 'bone points', which would have functioned as awls or piercers, as well as tail sinews, which were used to make fastening cords. Animals such as brush-tailed possums were highly prized for their fur, with possum-skin cloaks (Beveridge 1889, pp.19–21). Kangaroo teeth were also used for hair decoration and often bone or reeds were pierced through the middle cartilage of the nose (Beveridge 1889, p.29). Cumbungi root was multi-functional and twine from its fibre was used for armbands and waist-belts as well as bags to carry items from one camp to another. The fibre rush from cumbungi was also harvested for flax which could be used for making nets (Beveridge 1889, pp.68–73).</p>
Soils	The study area is characterised by Murray Channels and Floodplains (Figure 4). Generally, the river bank in the Euston area consists of a gray loam, overlaying a pale brown clayey sand with yellow mottles, which overlays a white and brown mottled clayey silt which overlays a clayey sand (Gill 1973, p.38). This suggests subsurface artefact concentrations (if any) will be shallow and unstratified.
Hydrology	<p>The major hydrological system associated with and adjacent to the study area is the Murray River, located in the south-eastern part of the Murray Basin (Figure 5). The Murray River has its major headwaters in the Australian Alps and runs approximately 3,750 kilometres to the Southern Ocean at Goolwa, South Australia. This permanent freshwater water source has many tributaries including other rivers, streams, paleo-channels, creeks, billabongs, swamps and levees that feed into the main river.</p> <p>Prior to European settlement and large scale infrastructure, the Murray River would have flooded seasonally each year (Coutts et al. 1979, p.29). During these periods of flooding, the areas of inundation would have supported a number of food resources for Aboriginal people, such as freshwater fish, shellfish species, other aquatic species and water birds (Pardoe 2014, p.114). Following the changes in the Holocene, the resources available changed with more stability in the environment leading to demographic and occupation changes (Pardoe 2014, p.114).</p>

Information	Details
	The permanent freshwater Murray River and its floodplain have previously been recorded as being an area that is highly likely to contain Aboriginal cultural heritage sites with its resource-rich environment (Coutts et al. 1979, p.86).
Geology	The geology is Clastic Sediment (Q_acm), dated to the Holocene and late Pleistocene period and described as containing older unweathered alluvial channel deposits that consist of sand, silt, clay and gravel (James et al. 1992, p.897, Welch et al. 2011, p.9) [Figure 5].
Landform	The study area is located on the Murray River bank and within 200m of water (Figure 4). Areas within 200m of water are often associated with Aboriginal people's occupation of the area and traditional activities, which can result in the presence of Aboriginal objects (DECCW 2010a, p.12).
Disturbance	The historical aerial photographs identify the areas adjacent to the study area as being cleared of vegetation sometime before 1973 for large irrigation works during the early development of the region (Figure 2 and Figure 6). Erosion, as a result of the river levels, is present within the activity area, potentially as a result of the river levels changing due to weirs and locks and paddle steamers
Vegetation	In general, vegetation in the region is mostly Red gums (<i>Eucalyptus camaldulensis</i>), Black box (<i>E. largiflorens</i>), mallee (<i>E. spp.</i>), blue bush (<i>Koschia spp.</i>), and salt bush (<i>Bassia spp.</i> , <i>Atriplex spp.</i>), with acacia (<i>A.spp.</i>) and belar (<i>Casuarina lepidophloia</i>). In forested areas, the flora is more diverse; some of the common species in addition to the above being Murray pine (<i>Callitris glauca</i>), Sandwood (<i>Myoporum platycarpum</i>), Cabbage bush (<i>Heterodendron oleifolium</i>), hakea (<i>H. vitteata</i>), Cumbungi (<i>Typhaceae</i>) and grevillea (<i>G. spp.</i>).

Based upon the results of these background studies Austral has been able to develop a series of predictive statements relating to the type and character of Aboriginal cultural heritage sites that are likely to exist in the study area and where they are more likely to be located. These predictive statements indicate that:

- Site types expected to be found include earthen features (mounds), scarred trees, shell middens and burials;
- Shell middens and scarred trees are the most frequently occurring site type.
- Large mound sites (more than 400 metre²) are commonly found near permanent water, while smaller mounds are located both within and further than 200 metres of permanent water sources;
- Sites, except for scarred trees, occur commonly on source bordering dunes, lunettes, prior order depressions and levees, floodplains, ancestral streams, incised rivers and streams, aeolian dunes of the Woorinen formation and linear/occluded depressions;
- Burials are likely to be found in sandy deposits, along watercourses, in well-drained areas;
- Artefact scatters are most likely to occur on well-drained and raised, level ground, near sources of freshwater or wetlands, or along spur crest or ridgelines.

STEP 2B. ACTIVITIES IN AREAS WHERE LANDSCAPE FEATURES INDICATE THE PRESENCE OF ABORIGINAL OBJECTS

Table 5 Applicability landscape features from the Code likely to have Aboriginal objects to the study area.

Question	Response
Is the activity within 200m of 'waters'?	Yes
Is the activity within a sand dune system?	No
Is the activity located on a ridge top, ridge line or headland?	No

Question	Response
Is the activity located within 200m below or above a cliff face?	No
Is the activity within 20m of or in a cave, rock shelter or cave mouth?	No
Is the activity (or any part of it) on land that is disturbed?	No
Do the predictive statements of 2A indicate Aboriginal Objects or places are likely to occur on any of the topographic elements of the activity area?	No

The study area is located within proximity to water, and while a majority of the study area is not disturbed, a review of the site topography and landform indicate that the undisturbed parts of the activity area are unlikely to contain Aboriginal cultural material.

STEP 3. CAN YOU AVOID HARM TO THE OBJECT OR DISTURBANCE OF THE LANDSCAPE FEATURE?

It is not possible to avoid harm to the object or landscape feature.

STEP 4. DESKTOP ASSESSMENT AND VISUAL INSPECTION

In order to ground-truth the desktop assessment, a visual inspection of the study area was undertaken on 25 June 2021 by Nicole Monk (Archaeologist, Austral). The visual inspection consisted of a systematic survey of the study area to identify and record any Aboriginal archaeological sites visible on the surface or areas of Aboriginal archaeological potential and cultural sensitivity. The archaeological survey was conducted on foot. The methods used during the visual inspection conformed to requirements 5 to 8 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b).

In general, the site inspection confirmed that the study area was below the high water mark and within a single landform of moderately sloped riverbank (Figure 7 and Figure 8). The disturbances in the study area are confined to small, naturally occurring erosional gullies on the higher river bank and stepped erosion from fluctuating river levels closer to the river. There was also evidence of burrowing animals, most likely rabbits. The river bank was characterised by high ground visibility (80%) and high exposure, recorded at 60%.

During the visual inspection, sporadic and dispersed freshwater mussel shell was identified on the higher portions of the riverbank, however, there was no burnt shell, charcoal or bone identified (Figure 9). This shell is not *in situ* and most likely originates from the higher alluvial terraces above the high water mark. No Aboriginal sites were identified within the study area.

Natural sandstone formations were present within and to the east of the study area, however, an inspection of the resource did not identify any Aboriginal objects.

Despite Aboriginal sites associated with the Murray River, the survey noted that the study area is located in a landform is likely to be prone to flooding and as such is unlikely to be suitable for Aboriginal occupation. The results of the visual inspection are outlined in Figure 10.

STEP 5. FURTHER INVESTIGATIONS AND IMPACT ASSESSMENT

Based upon the outcome of Steps 1 to 4 of the code, further assessment is not warranted based. As such the project may proceed with caution. The following recommendations apply:

1. This ACHDDA only applies to the area below the high water mark of the Murray River (NSW), if works proceed past this point, then the study area is within the Victorian border and all works past this point will be subject to the Victorian CHMP 16518.
2. All Aboriginal objects and Places are protected under the NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by Heritage NSW. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying Heritage NSW and Aboriginal stakeholders.

3. Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, you must:
 - immediately cease all work at that location and not further move or disturb the remains
 - notify the NSW Police and Heritage NSW's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location
 - not recommence work at that location unless authorised in writing by OEH.

If you have any questions regarding the advice within this letter, please do not hesitate to contact me on the details below.

Yours sincerely,



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1. REFERENCES

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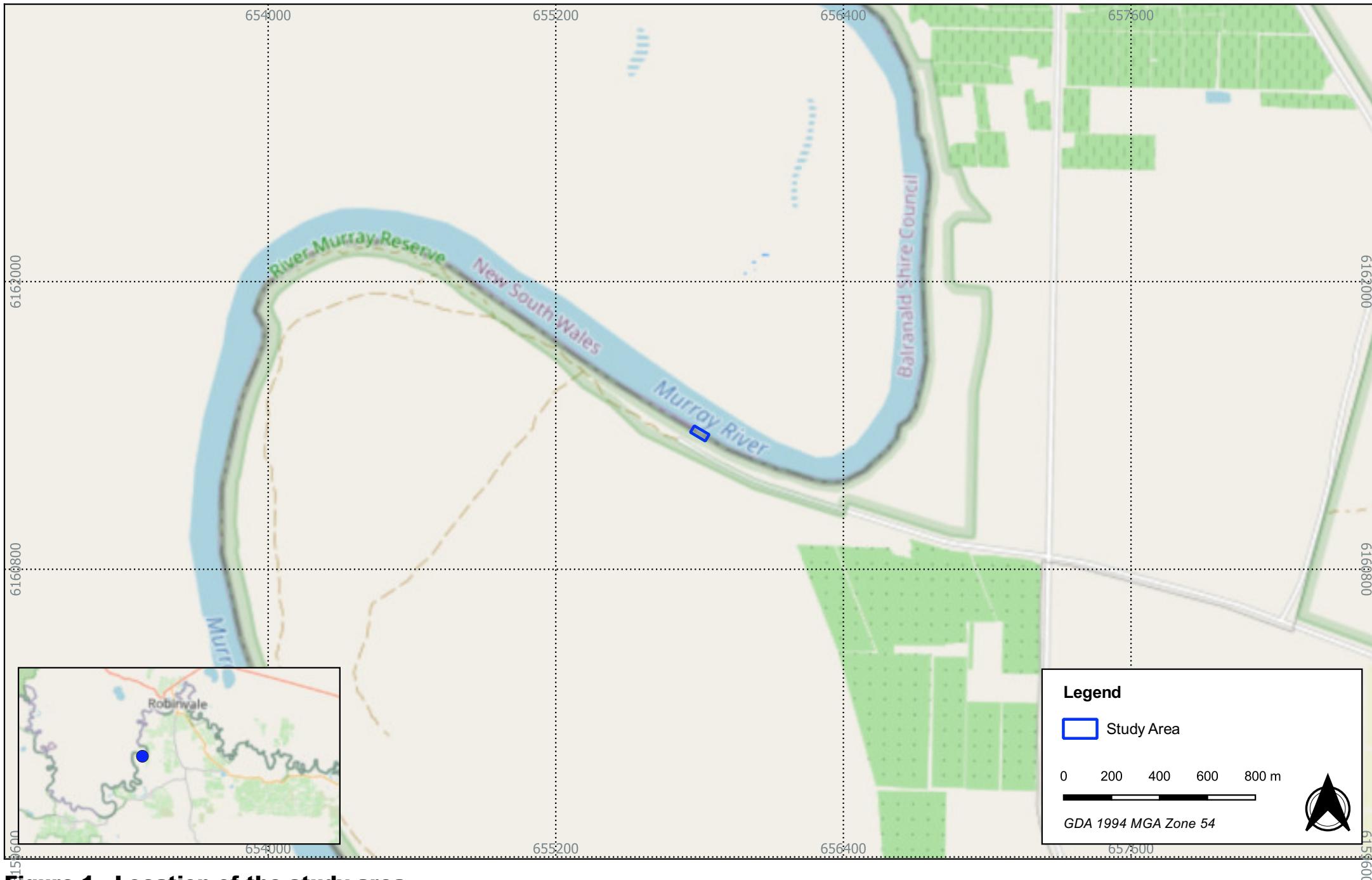


Figure 1 - Location of the study area

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM

Drawn by: SS Date: 2021-07-07



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Figure 2 - Detailed aerial of the study area

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM; Bing Satellite Imagery

Drawn by: SS Date: 2021-07-07



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A R C H A E O L O G Y



Figure 3 - AHIMS sites (Overview)

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM; Bing Satellite Imagery

Drawn by: SS Date: 2021-07-07



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Figure 4 - Geology/Hydrology of the study area

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM; Bing Satellite Imagery; NSW Spatial Services

Drawn by: SS Date: 2021-07-07



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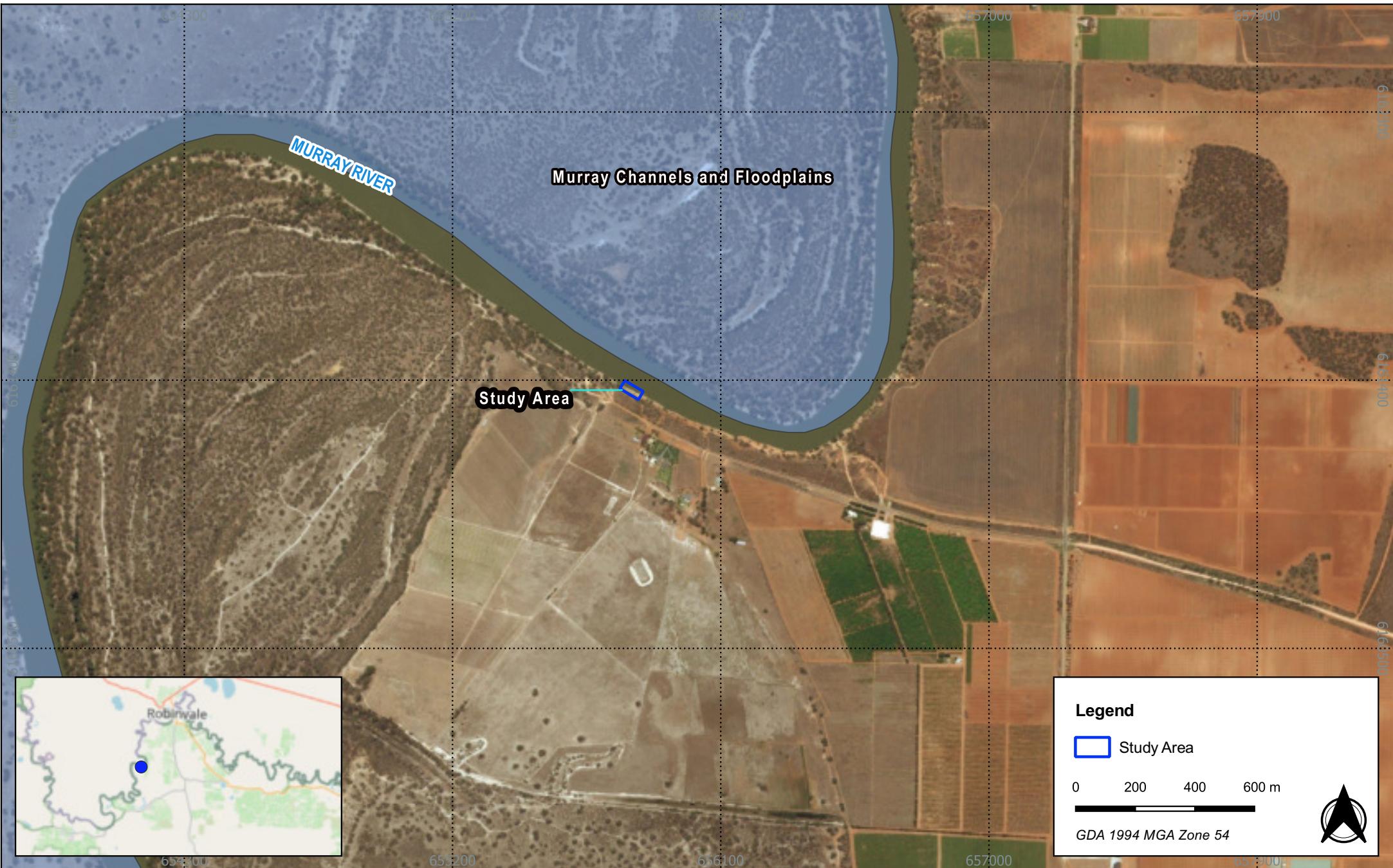


Figure 5 - Mitchell landscapes of the study area

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM; Bing Satellite Imagery; NSW Spatial Services

Drawn by: SS Date: 2021-07-07



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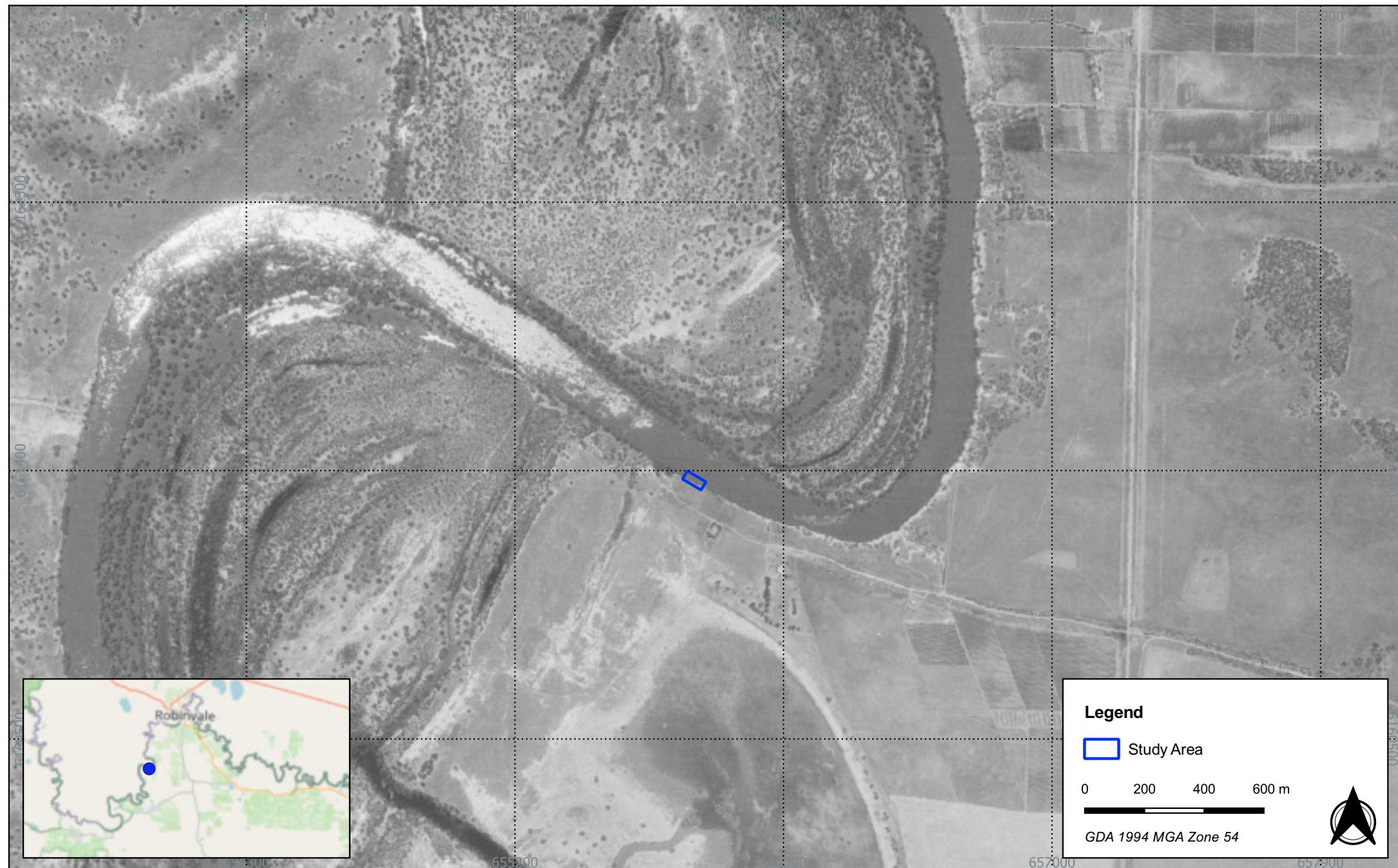


Figure 6 - 1973 Historic aerial of the study area

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM; Bing Satellite Imagery; NSW Spatial Services

Drawn by: SS Date: 2021-07-07



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Figure 7 West facing view of the study area and pre-existing pump in the background.



Figure 8 North facing view of the study area landscape.



Figure 9 **South facing view of the sporadic shell.**

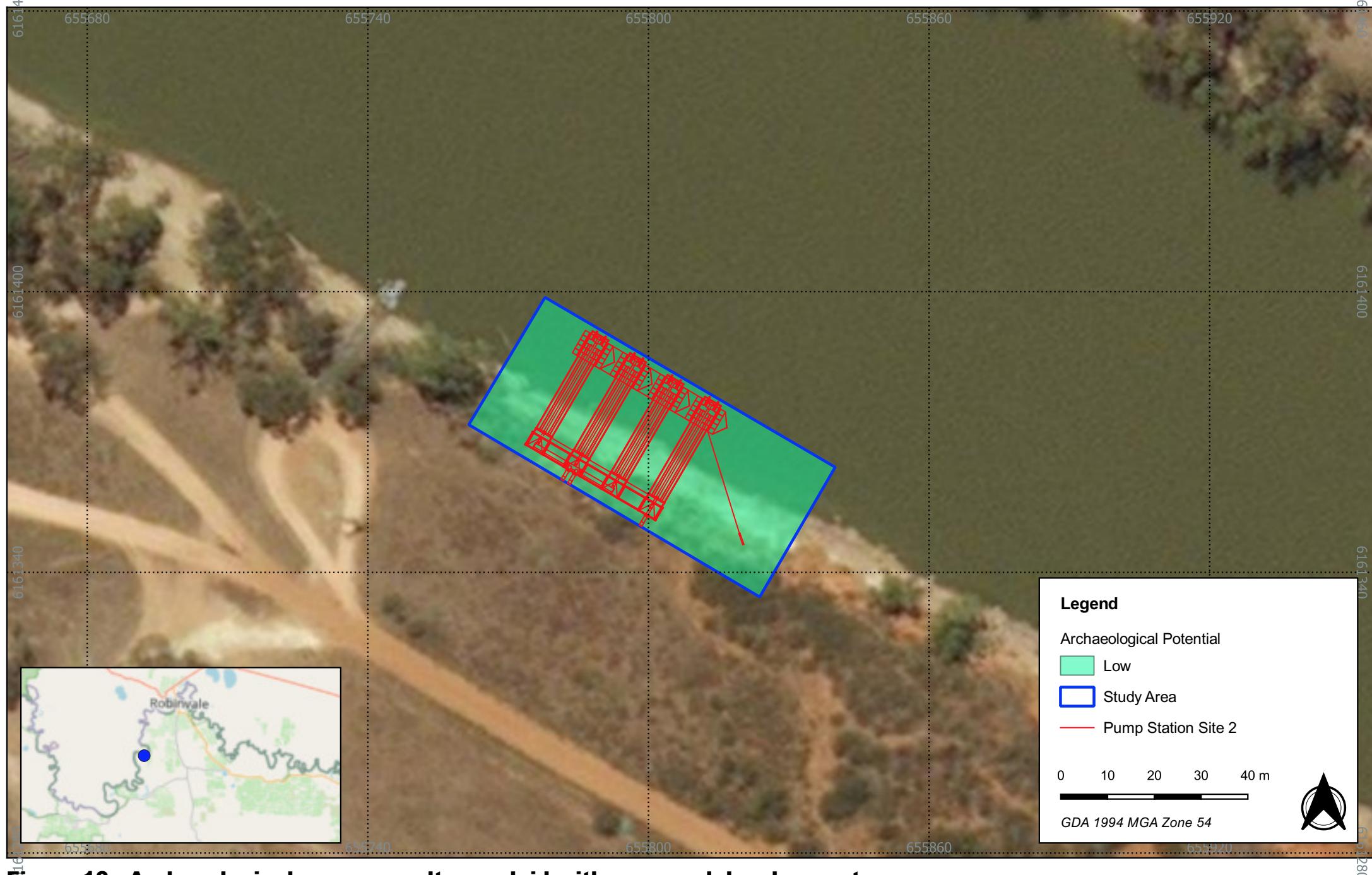


Figure 10 - Archaeological survey results overlaid with proposed development

21079 - Happy Valley Landing Road, Happy Valley

Source: OSM; Bing Satellite Imagery; NSW Spatial Services

Drawn by: SS Date: 2021-07-07



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