TECHNICAL PAPER

02

Aboriginal cultural heritage assessment report

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

GML HERITAGE

Inland Rail—Albury to Illabo

Technical paper 2 – Aboriginal cultural heritage assessment report

Technical Assessment Report

2-0008-210-EAP-00-RP-0004

Report prepared for ARTC

June 2022

Acknowledgement of Country

At GML we acknowledge that we work and live on the land of the First Australians. We know that this land was never ceded, and we respect the rights and interests of Australia's first people in land, culture, and heritage. We acknowledge their Elders past and present and support the concepts of voice, treaty, and truth in the Uluru Statement from the Heart.

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Figures and tables

Abbreviations and glossary

Aboriginal places of heritage significance	An area of land, the general location of which is identified in an Aboriginal heritage study adopted by a council after public exhibition and that may be shown on the Heritage Map of a Local Environmental Plan, that is— (a) the site of one or more Aboriginal objects or a place that has the physical remains of pre-European occupation by, or is of contemporary significance to, the Aboriginal people. It may (but need not) include items and remnants of the occupation of the land by Aboriginal people, such as burial places, engraving sites, rock art, midden deposits, scarred and sacred trees and sharpening grooves, or (b) a natural Aboriginal sacred site or other sacred feature. It includes natural features such as creeks or mountains of long-standing cultural significance, as well as initiation, ceremonial or story places or areas of more contemporary cultural significance (Standard Instrument—Principal Local Environmental Plan. 2006 EPI 155a).
ACHAR	Aboriginal cultural heritage assessment report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ARTC	Australian Rail Track Corporation Ltd
ATSIHP Act	*Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth)
Burra Charter	Australian best heritage practice reference that provides guidance for the conservation and management of places of cultural significance (cultural heritage places)
DECC	Department of Environment and Climate Change (now EES and Heritage NSW)
DECCW	Department of Environment, Climate Change and Water (now EES and Heritage NSW)
DPE	NSW Department of Planning and Environment
DPIE	NSW Department of Planning, Industry and Environment (now NSW Department of Planning and Environment)
EES	DPE's Environment, Energy and Science Group
Enhancement site	Discrete sites within the A2I proposal site that are proposed for infrastructure enhancement.
Enhancement works	Enhancement works include track realignment, lowering and/or modification within the existing rail corridor, modification, removal or replacement of bridge structures (rail, road and/or pedestrian bridges), raising or replacing signal gantries, level crossing modifications and other associated works.
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
GML	GML Heritage Pty Ltd
'Harm'	An object or place includes any act or omission that— (a) destroys, defaces or damages the object or place, or (b) in relation to an object—moves the object from the land on which it had been situated, or (c) is specified by the regulations, or (d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c), but does not include any act or omission that— (e) desecrates the object or place, or (f) is trivial or negligible, or (g) is excluded from this definition by the regulations. (NPW Act)

LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NT Act	*Native Title Act 1993* (Cth)
OEH	Office of Environment and Heritage (now Heritage NSW)
PAD	Potential Archaeological Deposit
Precinct	Groupings of enhancement sites in line with the LGAs including Albury, Greater Hume – Lockhart, Wagga Wagga and Junee
The proposal	Proposed enhancement works to structures and sections of track along 185 kilometres of the existing operational standard gauge railway between Albury and Illabo for the purpose of meeting Inland Rail specifications.
The proposal site	The areas that would be directly impacted by the enhancement works for the Albury to Illabo section of Inland Rail. It includes the location of construction worksites, operational rail infrastructure, track realignment, new bridge structures (road and shared user) and other ancillary infrastructure.
RAP	Registered Aboriginal Party
SEARs	Secretary's Environmental Assessment Requirements
Site investigation zone	Site investigation zones were defined in the early stages of the proposal development to reflect a possible extent of the proposal site and provided a nominal assessment boundary for determining constraints for the proposal design and to identify the areas for site survey
Study area	For the purposes of this assessment, the study area comprises 24 discrete enhancement sites along the route of the existing rail corridor between Albury and Illabo and includes areas of the surrounding landscape to provide context for the desktop assessment of environmental and cultural values. The context for each element of the desktop assessment covers up to 20 kilometres either side of the proposal. The study area for this assessment is defined in detail in Section 3.2.

Executive summary

WSP Australia Pty Ltd (WSP), on behalf of Australian Rail Track Corporation (ARTC), has engaged GML Heritage Pty Ltd (GML) to prepare an Aboriginal cultural heritage assessment report (ACHAR) for the Albury to Illabo section of the Inland Rail program (the proposal). Inland Rail is a major national program that will enhance Australia's existing national rail network and serve the interstate freight market.

The proposal involves enhancement works which are required to provide increased vertical and horizontal clearances to support the transport of double-stacked freight trains. Works are proposed at 24 discrete sites along the route of the existing rail corridor between Albury and Illabo.

The proposal is Critical State Significant Infrastructure (CSSI) and this ACHAR has been prepared in accordance with the requirements of the Secretary of the then NSW Department of Planning, Industry and Environment (now the Department of Planning and Environment), dated 14 October 2020.

This ACHAR assesses the potential impacts to Aboriginal objects and/or places by the proposal. It has been prepared conforming to the requirements for assessments established by Heritage NSW and has included consultation with the local Aboriginal community in accordance with the guideline *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010).

Site investigations were completed at nine locations that were determined through desktop assessment as having archaeological potential. These locations were identified for ground surface survey based on the results of background review of cultural heritage and environmental data for the area.

Of those surveyed areas, one was found to have the potential to contain archaeological deposits and two isolated artefacts were found at two separate locations. The survey results included an area of archaeological potential near the Murray River bridge enhancement site, an isolated artefact (A2I-1) at Yerong Creek yard clearances enhancement site and a second isolated artefact (A2I-2) near the Olympic Highway underbridge at Junee. A number of Aboriginal cultural places were also identified during the assessment process including Doodle Comer Swamp and the Bomen Axe Quarry, although none were found to impacted by the proposal.

The proposal was designed to avoid impacts to the areas where Aboriginal cultural heritage was identified during the survey and assessment. The development of the proposal has sought to minimise impacts to Aboriginal cultural heritage while meeting operational design requirements.

Mitigation measures have been identified to manage construction activities in the vicinity of known Aboriginal heritage sites and to manage potential unexpected finds during construction.

1 Introduction

1.1 Overview

The Australian Government has committed to delivering a significant piece of national transport infrastructure by constructing a high performance and direct interstate freight rail corridor between Melbourne and Brisbane, via central-west New South Wales (NSW) and Toowoomba in Queensland. Inland Rail is a major national program that would enhance Australia's existing national rail network and serve the interstate freight market.

The Inland Rail route, which is about 1,700 kilometres long, would involve:

- using the existing interstate rail line through Victoria and southern NSW
- upgrading about 400 kilometres of existing track, mainly in western NSW
- providing about 600 kilometres of new track in northern NSW and south-east Queensland.

Inland Rail has been divided into 13 projects, seven of which are located in NSW. Each of these projects can be delivered and operated independently with tie-in points on the existing railway.

Australian Rail Track Corporation Ltd (ARTC) ('the proponent') is seeking approval to construct and operate the Albury to Illabo section of Inland Rail ('the proposal').

The proposal is Critical State Significant Infrastructure (CSSI) and is subject to approval by the NSW Minister for Planning under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This report has been prepared as part of the environmental impact statement (EIS) for the proposal. The EIS has been prepared to support the application for approval of the proposal, and address the environmental assessment requirements of the Secretary of the then NSW Department of Planning, Industry and Environment (the SEARs) (now NSW Department of Planning and Environment), dated 14 October 2020.

1.2 The proposal

The proposal involves enhancement works to structures and sections of track along 185 kilometres of the existing operational standard gauge railway between Albury and Illabo. Enhancement works are required to provide the increased vertical and horizontal clearances required for double-stacked freight trains.

1.2.1 Location

The proposal is generally within the existing active rail corridor extending from the town of Albury on the Victorian-NSW border and around three kilometres to the north-east of Illabo. The alignment passes through two major regional towns, Albury and Wagga Wagga, NSW, and several smaller regional towns. Works are proposed at 24 locations along the 'Main South Line' corridor, described as 'enhancement sites'.

The enhancement sites have been broken down into four precincts which align with the local government areas (LGA) of Albury, Greater Hume – Lockhart, Wagga Wagga and Junee, as identified in Table 1.1 and shown in Figure 1.1.

Table 1.1 Enhancement Sites.

Precinct	Enhancement Sites
Albury	Murray River bridge
	Albury Station pedestrian bridge
	Albury Yard clearances
	Riverina Highway bridge
	Billy Hughes bridge
	Table Top Yard clearances
Greater Hume, Lockhart	Culcairn pedestrian bridge
	Culcairn Yard clearances
	Henty Yard clearances
	Yerong Creek Yard clearances
	The Rock Yard clearances
Wagga Wagga	Uranquinty Yard clearances
	Pearson Street bridge
	Cassidy Parade pedestrian bridge
	Edmondson Street bridge
	Wagga Wagga Station pedestrian bridge
	Wagga Wagga Yard clearances
	Bomen Yard clearances
Junee	Harefield Yard clearances
	Kemp Street bridge
	Junee Station pedestrian bridge
	Junee Yard clearances
	Olympic Highway underbridge
	Junee to Illabo clearances

1.2.2 Key features

The key features of the proposal include:

- adjustments to approximately 44 kilometres of track across 14 enhancement sites to accommodate the vertical and horizontal clearances according to Inland Rail clearance specifications, comprising:
  - realignment of track within the rail corridor
  - lowering of track up to 1.6 metres at three enhancement sites
- changes to bridges and culverts at enhancement sites to accommodate vertical clearances and track realignment as follows:
  - replacement of two road bridges and adjustments to adjoining intersections
  - replacement of three pedestrian bridges
  - removal of two redundant pedestrian bridges

  - modifications to four rail bridges
  - ancillary works, including adjustments to nine level crossings
- modifications to drainage and road infrastructure, signalling infrastructure, fencing, signage, and services and utilities.

No additional works would be required outside the enhancement sites identified in Figure 1.1 as they meet the clearance requirement for the Inland Rail program.

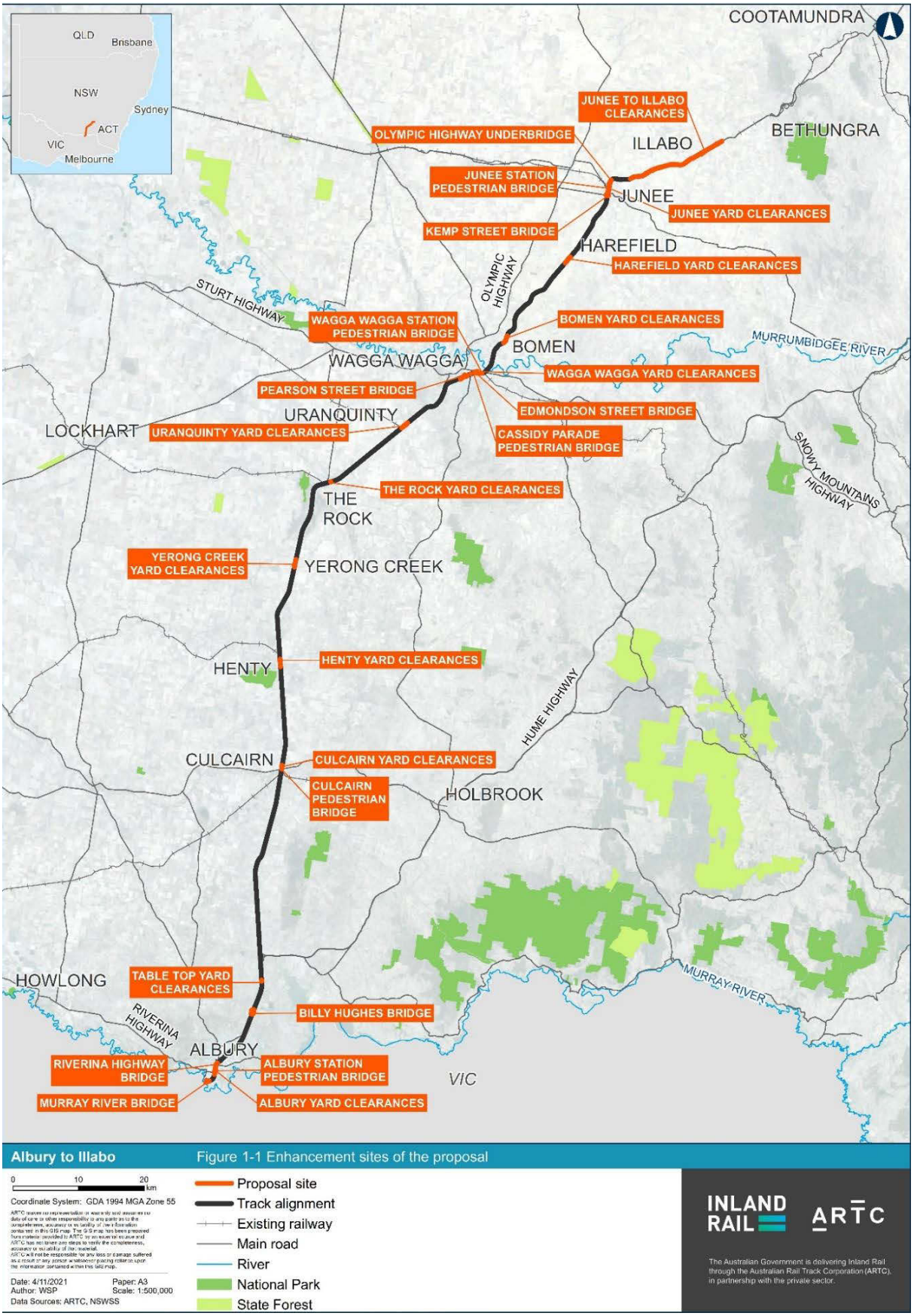

Figure 1.1 Location and key features of the proposal

1.2.3 Timing

Subject to approval, further design and procurement, construction of the proposal is planned to start in early 2024 and is expected to take about 16 months. The proposal would be fully operational in 2025 with enhancement sites progressively commissioned on completion of construction. Inland Rail as a whole would be operational once all 13 sections are complete, which is estimated to be in 2027.

1.2.4 Construction

An indicative construction methodology has been developed based on the current design to be used as a basis for the environmental assessment process. Overall, the construction strategy is based on an approach of dividing the proposal into four construction packages which align with the precincts: Albury, Greater Hume – Lockhart, Wagga Wagga and Junee.

Construction of the proposal would require:

- construction compounds and other areas needed to facilitate construction works
- temporary changes to the road network, including road closures to undertake works on road bridges and level crossings
- other ancillary works.

Construction within each precinct would generally involve the site establishment and enabling works, main construction works as relevant to the enhancement site and finishing works as outlined in Table 1.2.

Further information on the construction of the proposal is provided in Chapter 8 of the EIS.

Table 1.2 Indicative Construction Activities.

Construction stages	Indicative activities
Site establishment and enabling works	• Establishment of key construction infrastructure, work areas, access points and other construction facilities • Installation of environmental controls, fencing and site services • Preliminary activities including clearing/trimming of vegetation
Main construction works	• Track works • Rail bridge works • Road bridge replacement • Pedestrian bridge works • Associated infrastructure works on level crossings, culverts and signalling
Finishing works	• Testing and commissioning of the new and modified infrastructure • Demobilisation and removal of construction compounds and other construction infrastructure • Restoration of disturbed areas, as required, including revegetation and landscaping, where required

1.2.5 Operation

The proposal would form part of the rail network managed and maintained by ARTC. Train services would be provided by a variety of operators.

The proposal would enable the use of double stacked trains along its entire length. Inland Rail would operate 24 hours per day and would initially accommodate double-stacked freight trains up to 6.5 metres high and

up to 1,800 metres in length. The possible future use of the railway between Albury and Illabo by freight trains up to 3,600 metres long would be subject to separate assessment. Freight train speeds would range from 60 to 115 kilometres per hour, which is consistent with current train speeds.

The average number of freight trains movements between Albury and Illabo would increase from a current average of 12 per day in 2021 to 18 per day in 2025, further increasing to about 20 per day in 2040.

ARTC would continue to maintain the Main South Line. This would typically involve minor maintenance works, such as bridge and culvert inspections, rail grinding and track tamping, through to major maintenance, such as reconditioning of track and topping up of ballast as required. Maintenance works and schedule are not proposed to change as a result of the proposal and would continue in accordance with the existing Environmental Protection Licence which applies to the rail corridor (EPL 3142).

Further information on the operation of the proposal is in Chapter 7 of the EIS.

1.3 Scope and purpose of the report

This report has been prepared to identify and assess potential impacts of the proposal to Aboriginal cultural heritage in accordance with the SEARs issued on 14 October 2020.

The following SEARs are relevant to this assessment (Table 1.3)

Table 1.3 Heritage Issues and Requirements Relating to Aboriginal Cultural Heritage Identified in the SEARs.

Key Issue and Desired Performance Outcome	Assessment Requirement	Report Reference
2. Heritage The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.	1. The proponent must identify and assess direct and/or indirect impacts to the heritage significance of: (a) Aboriginal places and objects, as defined under the *National Parks and Wildlife Act 1974* and in accordance with the principles and methods of assessment identified in the current guidelines;	Legislation and Guidelines are outlined in Chapter 2: Sections 2.1 and 2.2 The identification and assessment of Cultural heritage is outlined in Section 4.1—Desktop Assessment, Section 4.2—Archaeological Assessment and Section 4.3—Cultural Value and Significance The assessment of direct and indirect impacts is outlined in Chapter 5—Impact Assessment and Chapter 6—Cumulative Impacts
	(b) Aboriginal places of heritage significance, as defined in the Standard Instrument—Principal Local Environmental Plan (LEP);	Section 4.1.3—Archaeological Context The assessment of direct and indirect impacts is outlined in Chapter 5—Impact Assessment and Chapter 6—Cumulative Impacts
	(d) items listed on the National and World Heritage lists;	Section 4.1.3 —Archaeological Context The assessment of direct and indirect impacts is outlined in Chapter 5—Impact Assessment and Chapter 6—Cumulative Impacts
	3. Where archaeological investigations of Aboriginal objects are proposed these must be conducted by a suitably qualified archaeologist, in accordance with	The assessment was undertaken by suitably qualified archaeologists in

Key Issue and Desired Performance Outcome	Assessment Requirement	Report Reference
	Section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (Department of the Environment, Climate Change, and Water [DECCW], 2010).	accordance with Section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (Department of the Environment, Climate Change, and Water [DECCW], 2010). The Author are nominated in Section 1.4 and the guidelines are outlined in Section 2.2
	4. Impacts to Aboriginal objects and/or places must be assessed and documented in an Aboriginal Cultural Heritage Assessment Report (ACHAR). Consultation must be undertaken with Aboriginal people in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010). The ACHAR must:	
	(a) document the outcomes of consultation with Aboriginal people and outline measures proposed to mitigate impacts, and document the significance of cultural heritage values for Aboriginal people who have a cultural association with the land;	Section 3.7—Aboriginal Community Consultation and Appendix B Section 4.3—Cultural Values and Significance
	(b) identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the project;	Chapter 4—Existing Environment
	(c) document the outcomes of the archaeological surface survey and test excavation to inform the need for targeted test excavations;	Test excavation was not required for this investigation. Detail of the investigation are outlined in Section 3.6—Further Investigation and Section 4.2.1—Results of Survey
	(d) assess and document impacts on Aboriginal cultural heritage values and demonstrate attempts to avoid impacts upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to the AHIMS Register; and	Section 3.5—Survey Chapter 5—Impact Assessment Section 5.1—Impact Avoidance and Minimisation Chapter 7—Mitigation Measures
	e) outline procedures to be followed if Aboriginal objects, burials or skeletal material are found at any stage of the life of the project to formulate appropriate measures to manage unforeseen impacts.	Chapter 7—Mitigation Measures

This report fulfils the requirements of an ACHAR in accordance the Office of Environment and Heritage (OEH) [now Heritage NSW], 2011, *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW*.

The objectives of this assessment were to:

- undertake identification of Aboriginal community members who can speak for the Country within which the project is located
- involve the Aboriginal community in the cultural heritage assessment process

- consult with the Aboriginal community and determine their opinions with respect to the project and its potential 'harm' to cultural heritage
- understand the range and type of Aboriginal heritage values and places within the study area
- determine whether the identified Aboriginal sites and places are a component of a wider Aboriginal cultural landscape
- understand how the physical Aboriginal sites relate to Aboriginal tradition within the wider area
- prepare a cultural heritage values assessment for all identified aspects of Aboriginal cultural heritage, as identified within this report
- determine how the proposed project may impact the identified Aboriginal cultural heritage
- aim to avoid impacts to Aboriginal cultural heritage through sensible and pragmatic site and land management
- determine where impacts are unavoidable and develop a series of impact mitigation measures that minimise impacts and seek to benefit Aboriginal cultural heritage and the proponent and
- provide clear recommendations for the conservation of Aboriginal heritage values and mitigation of any potential impacts to these values.

1.3.1 Report structure

This report is set out as per Table 1.4.

Table 1.4 Overview of Report Structure.

Chapter	Content
Chapter 1	Introduction
Chapter 2	Legislation and Policy Context
Chapter 3	Methodology
Chapter 4	Existing Environment
Chapter 5	Impact Assessment
Chapter 6	Cumulative Impacts
Chapter 7	Mitigation and Management Measures
Chapter 8	References
Appendix A	Lot and DPs for the proposal area
Appendix B	Consultation Log
Appendix C	ARTC Inland Rail Survey Report prepared by [name redacted]
Appendix D	Stage 1 Consultation Letters and Newspaper Advertisement
Appendix E	Design responses to RAP concerns
Appendix F	ARTC Inland Rail Albury to Illabo, Aboriginal Archaeological Research Design, March 2021
Appendix G	AHIMS Search Results
Appendix H	Landscape Context
Appendix I	Site Photographs

1.4 Authors

This report has been prepared by the consultants outlined in Table 1.5, all of whom meet or exceed the minimum qualifications for undertaking Aboriginal cultural heritage assessments in accordance with section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010).

> *For the purposes of the Code, an appropriately skilled and experienced person has:*
>
> *1 a minimum of a bachelor's degree with honours in archaeology or relevant experience in the field of Aboriginal cultural heritage management, and*
>
> *2 the equivalent of two years full-time experience in Aboriginal archaeological investigation, including involvement in a project of similar scope, and*
>
> *3 a demonstrated ability to conduct a project of the scope required through inclusion as an attributed author on a report of similar scope.*

Table 1.5 Authors of this Report.

Person	GML Position	Qualification	Industry Experience	Project Role
Martin Rowney	Principal, Archaeologist	Bachelor of Arts (Honours) Prehistoric Archaeology	29 years	Project Director, report author and reviewer
Elise Jakeman	Consultant, Archaeologist	Bachelor of Archaeological Practice (Honours) Bachelor of Arts (Biological Anthropology)	5 years	Project Manager, report author
Talei Holm	Graduate Consultant, Archaeologist	Bachelor of Archaeological Practice, Australian National University (Environmental Archaeology and Forensic Archaeology)	4 years	Report author

2 Legislation and policy context

This report has been prepared in accordance with a range of Commonwealth and NSW State legislation and guidelines.

2.1 Legislation

2.1.1 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), proposed 'actions' that have the potential to significantly impact on matters of national environmental significance, the environment of Commonwealth land, or that are being carried out by an Australian Government agency, must be referred to the Australian Minister for the Environment for assessment.

Preliminary environmental investigations identified threatened species under the EPBC Act which have the potential to be impacted by the proposal. As a result of the potential for impacts on protected matters, the proposal was referred to the (then) Australian Minister for the Environment on 2 June 2020 (EPBC Referral No 2020/8670). On 29 June 2020, the Australian Government Department of Agriculture, Water and the Environment (DAWE) notified that the proposal is a not controlled action, and hence approval under the EPBC Act is not required.

With respect to Aboriginal heritage, there are no matters of national environmental significance within 10 kilometres of the proposal site, and the assessment has not identified any impacts to matters of national environmental significance related to Aboriginal heritage.

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act) protects areas and/or objects that are significant to Aboriginal and Torres Strait Islander people and which are under threat of destruction. A significant area or object is defined as one that is of particular importance to Aboriginal people, according to Aboriginal tradition.

Under the Act, 'Aboriginal tradition' is defined as:

- The body of traditions, observances, customs and beliefs of Aboriginals generally or of a particular community or group of Aboriginals, and includes any such traditions, observances, customs or beliefs relating to particular persons, areas, objects or relationships.

The legislation must be invoked by or on behalf of an Aboriginal or Torres Strait Islander person or organisation. This legislation would be relevant in relation to specific significant cultural sites identified during the assessment process and where potential impacts to these sites could not be mitigated adequately. No declarations relevant to the proposal site have been made under the ATSIHP Act.

Native Title Act 1993

Native Title describes the recognition by the Australian legal system of the rights and interests of Aboriginal and Torres Strait Islander people to land and waters according to their traditional laws and customs. Native Title was first recognised in the Australian legal system in 1992 by the High Court.

Native Title includes rights of possession, occupation, use, and enjoyment of traditional Country. It may include the right to access an area of land or the right to participate in decisions concerning how the land or waters are used by other people.

The *Native Title Act 1993* (NTA Act) establishes the framework for the protection and recognition of Native Title. The Australian legal system recognises Native Title where:

(a) the rights and interests are possessed under the traditional laws acknowledged, and the traditional customs observed, by the Aboriginal peoples or Torres Strait Islanders

(b) the Aboriginal peoples or Torres Strait Islanders, by those laws and customs, have a connection with the land or waters and

(c) the rights and interests are recognised by the common law of Australia.

The NTA Act gives Indigenous Australians who hold Native Title rights and interests the right to be consulted and, in some cases, to participate in decisions about activities proposed to be undertaken on the land. Indigenous Australians have been able to negotiate benefits for their communities, including in relation to employment opportunities and heritage protection.

At the time of assessment there were no Native Title claims or determination within or adjoining the proposal.

2.1.2 NSW legislation

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) establish a framework for the assessment and approval of developments in NSW.

The proposal has been declared as CSSI and is subject to approval by the Minister for Planning under Division 5.2, Part 5 of the EP&A Act. An EIS has been prepared for the proposal to assess the impacts of the proposal in accordance with the SEARs. This technical paper supports the EIS.

Section 5.23 of the EP&A Act provides that an Aboriginal Heritage Impact Permit (AHIP) under the *National Parks and Wildlife Act 1974* (NPW Act) is not required for an approved State Significant Infrastructure project (including CSSI).

Local Environmental Plans

Local Environmental Plans (LEPs) are prepared by councils in accordance with the EP&A Act. The aim of LEPs in relation to heritage is to conserve the heritage significance of heritage items and heritage conservation areas, including archaeological sites.

Heritage items in LEPs can include Aboriginal objects and places, historic sites, landscapes, and parks. These instruments have been considered as part of this assessment.

In 2005 the NSW Government required the standardisation of LEPs between local council, through the adoption of the Standard Instrument—Principal Local Environmental Plan (2006EPI 155a). The Standard instrument sets out the standard provisions for a local environmental plan and includes a range of standard definitions including the definition of Aboriginal places of significance.

National Parks and Wildlife Act 1974

The NPW Act provides statutory protection for Aboriginal 'objects' consisting of any material evidence of the Indigenous occupation of NSW. Under Section 84, the Act enables the declaration of 'Aboriginal places' which is a place that, in the opinion of the Minister administering the NPW Act, is or was of special significance with respect to Aboriginal culture.

The NPW Act defines an Aboriginal object as:

> *any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*

Protection of Aboriginal objects and places applies irrespective of the level of their significance or issues of land tenure. Sites of traditional significance that do not necessarily contain material remains may be gazetted as 'Aboriginal places' and thereby be protected under the NPW Act.

Part 6 of the NPW Act provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm—including destroying, defacing, or damaging an Aboriginal object or declared Aboriginal place. A strict liability offence applies for harm to an Aboriginal object or declared Aboriginal place. This means that, unless a defence applies, even if an Aboriginal object is unwittingly harmed, a crime has been committed and prosecution can still occur.

The strict liability offence of harming Aboriginal objects has a number of defences. The two defences relevant to the proposal are the statutory defence of due diligence through complying with an adopted industry code, or compliance with the conditions of an AHIP issued under Section 90 of the NPW Act.

However, Section 5.23 of the EP&A Act provides that an AHIP is not required for approved State Significant Infrastructure projects (including CSSI). Despite these provisions, impacts on heritage are considered as part of the EIS and the Aboriginal heritage assessment process to satisfy the SEARs generally mirrors the assessment requirements outlined by Heritage NSW in their *Guide to Investigating, Assessing, and Reporting on Aboriginal Cultural Heritage in NSW*.

In summary the assessment process requires the following steps to be undertaken:

1—Review background information.

> Background contextual information should be compiled from register searches, reports and other relevant literature and analysed to gain an understanding of the cultural archaeological context of the landscape relevant to the study area.

2—Undertake Aboriginal community consultation.

> Consultation with the relevant local Aboriginal community should be conducted throughout the project and should follow the requirements of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010a) guideline.

3—Identify and assessment cultural heritage values.

> The heritage values should be identified from consultation with the Aboriginal community, the background research and site survey.

4—Assess harm.

> The potential for proposed activity to harm the identified heritage value should be assessed.

5—Avoid Harm.

> Measures to avoid harm should be determined. This may include redesign or reconfiguration of the development proposal. This is particularly important where harm may occur to significant Aboriginal cultural heritage values.

6—Minimise Impacts.

> Where harm cannot be avoided, measure to minimise the impacts should be determined.

7—Documentation.

All of the steps above should be documented in an Aboriginal Cultural Heritage Assessment Report.

National Parks and Wildlife Regulation 2019

The *National Parks and Wildlife Regulation 2019* provides regulations for Aboriginal heritage assessment and consultation with registered Aboriginal parties.

Part 5 (Division 2) of the *National Parks and Wildlife Regulation 2019* sets out the requirements of the due diligence assessment process and provides requirements for more detailed assessment and consultation with registered Aboriginal parties for activities that may result in harm to Aboriginal objects. This includes the consultation process to be carried out before an AHIP application is made (Clause 60) and the requirement for a CHAR to accompany the AHIP application (Clause 61).

Section 5.23 of the EPA Act provides that an AHIP is not required for approved State Significant Infrastructure projects (including CSSI). Despite these provisions, the preparation of this CHAR and consultation with registered Aboriginal parties has been carried out in accordance with the requirements of Clause 60 and Clause 61 of the regulation, and in accordance with the following guidelines:

- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW
- Aboriginal cultural heritage consultation requirements for proponents 2010.

State Environmental Planning Policy (Planning Systems) 2021

Chapter 3 of the *State Environmental Planning Policy (Planning Systems) 2021* provides for the making development delivery plans for land owned by Local Aboriginal Land Councils which must be considered when determining development applications and when preparing planning proposals.

At present the Aboriginal land provisions of the SEPP only applies to certain land of the Darkinjung Local Aboriginal Land Council and does not apply to any land associated with the proposal.

Aboriginal Land Rights Act 1983

The purpose of the *Aboriginal Land Rights Act 1983* (NSW) includes providing land rights for Aboriginal persons and representative Aboriginal Land Councils in the State. This Act applies to Crown lands that are not lawfully needed for an essential public purpose; referred to as claimable Crown land. No claimable Crown lands have been identified that would be affected by the proposal.

Native Title New South Wales Act 1994

This Act provides for native title in relation to land or waters. It ensures that NSW law is consistent with the Native Title Act 1993 (Commonwealth). The NSW *Native Title Act 1994* was introduced to ensure that the laws of NSW are consistent with the Commonwealth *Native Title Act 1993*. The *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a) stipulates that where relevant, consultation must be conducted with Native Title holders or registered Native Title claimants in accordance with the Native Title (New South Wales) Act 1994 (NSW). A search of the National Native Title Tribunal on 6 July 2021 did not identify any registered native title claims, applications or Indigenous land use agreements within or impacted by the proposal site.

Crown Land Management Act 2016

The Crown Land Management Act 2016 (NSW) sets out how Crown land is to be managed. The proposal site occupies Crown land beyond the ARTC lease area in several locations along the proposal site. An authorisation under this act to allow occupation of Crown land must be obtained (including short-term occupation).

The proposal site is partially on Crown land at several sites including crown roads and crossings over two Crown waterways: Murray River and Sandy Creek at Uranquinty. Travelling stock reserves are parcels of Crown land originally reserved for the use of travelling stock to connect smaller watering and camping reserves. The proposal site does not intersect any travelling stock reserves

2.2 Guidelines

2.2.1 *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011)

Part 6 of the NPW Act (Section 2.2) provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. The *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011), establishes the process for assessing Aboriginal objects and their context, sites, and places. The investigation and assessment of Aboriginal cultural heritage is undertaken to assess the harm of a proposed activity on Aboriginal objects and declared Aboriginal places and to clearly set out which impacts are avoidable and which are not.

The assessment process includes consultation with the Aboriginal community, undertaking complex assessments, assessing significance, assessing harm, preparing detailed investigation reports, and presenting mitigation measures.

2.2.2 *Aboriginal cultural heritage consultation requirements for proponents*, (DECCW, 2010a)

The *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010a) is the guiding document for engaging in consultation with Aboriginal communities in NSW for heritage assessments. The requirements are premised on the principle that Aboriginal people are the primary source of information about the value of their heritage, how it is best protected and conserved, and how they must have an active role in cultural heritage assessment and planning.

This guideline summarises the requirements of Sections 60 and 61 of the NPW Regulations 2019 for consultation with Aboriginal people when applying for an AHIP, and when preparing an ACHAR.

The purpose of the document is to set out the mandatory actions for consulting with Aboriginal communities as part of the heritage assessment process to determine the potential impacts of proposed activities on Aboriginal objects and places and to inform decision making for any application for approvals:

> *The aim is to facilitate positive Aboriginal cultural heritage outcomes by:*
>
> - *affording an opportunity for Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects(s) and/or place(s) in the area of the proposed project to be involved in consultation so that information about cultural significance can be provided to [Heritage NSW] to inform decisions regarding applications for an AHIP*
> - *providing Aboriginal people who hold cultural knowledge relevant to determining the significance of Aboriginal objects (s) and/or place(s) in the area of the proposed project with the opportunity to participate in decision making regarding the management of their cultural heritage by providing*

proponents information regarding cultural significance and inputting into management options (DECCW 2010a).

The consultation requirements comprise of four stages:

1. Informing Aboriginal people about the nature and scope of the proposal.

   Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the project must be identified, notified of the project, and invited to register to be consulted as a Registered Aboriginal Party (RAP) to the project.

2. Understanding what might be present in the landscape and its cultural significance.

   The RAPs must be provided with information about the scope of the proposed project and the proposed cultural heritage assessment process.

3. Determining the potential impacts and the proposed strategies to deal with them.

   A consultation process must be facilitated whereby RAPs can provide culturally appropriate information to the assessment, input into the research methodology, assist in the assessment of cultural significance, and input into the management of the identified cultural heritage values.

4. Reviewing the report.

   The draft and final assessment reports must be provided to the RAPs to allow them input into the conclusions and recommendations drawn by the assessment.

As per the requirements of the SEARs, the consultation processes set out in this guideline were followed for the proposal, noting that an AHIP is not required for a CSSI project. Details of the consultation process are outlined in Section 3.4.1.

2.2.3 Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010b)

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010b) (the Due Diligence Code of Practice) forms the framework for a due diligence assessment for the likely presence of Aboriginal objects and cultural heritage in a proposed project area. It outlines the reasonable and practicable steps that individuals and organisations are required to undertake in order to:

- identify whether or not Aboriginal objects are, or are likely to be, present in an area,
- determine whether or not their activities are likely to harm Aboriginal objects (if present), and
- determine whether an AHIP application is required.

Community consultation is not a mandatory component of a due diligence assessment. If any Aboriginal cultural material is identified during a due diligence assessment and an AHIP is required for the works to proceed, community consultation is required as part of the ACHAR preparation process.

Given the scale of the proposal and the previous recording of Aboriginal sites and objects in the near vicinity of the proposal, the processes of the Due Diligence Code of Practice are superseded by the detailed assessment processes for preparing an Aboriginal Cultural Heritage Assessment Report including consultation with the Aboriginal community.

Due to the declaration of the proposal as CSSI, an AHIP application is not required.

2.2.4 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010c)

The *Code of Practice for archaeological investigations of Aboriginals objects in NSW* (DECCW, 2010b) (the Code of Practice) establishes the requirements for undertaking test excavation as part of an archaeological investigation without an AHIP, or where an application for an AHIP is likely to be made.

Test excavations that are compliant with the requirements of the Code of Practice are excluded from the definition of harm under the NPW Act. The Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. Where an Aboriginal cultural heritage assessment requires an archaeological investigation to be undertaken, this must be done in accordance with the requirements of this Code.

Based on the findings of the Aboriginal cultural heritage assessment, no sites or objects were found within the proposal site, no impacts were identified and therefore no further investigation was warranted.

2.2.5 *Skeletal Remains: Guidelines for Management of Human Remains under the Heritage Act 1977* (NSW Heritage Office, 1998)

The NSW Heritage Office guidelines, Skeletal Remains: Guidelines for Management of Human Remains under the *Heritage Act 1977*, were developed to address situations where disturbance of skeletal remains occurs, including situations where disturbance happens inadvertently through an accidental discovery or chance find during construction work. The guidelines cover circumstances for where the human remains may be either Aboriginal, or non-Aboriginal and are not recent in origin. They also set out the relevant legislative frameworks that apply along with management procedures including community consultation procedures and expectations, principles of conservation practice and re-interment, and archaeological investigation.

These guidelines have informed the unexpected finds protocol outlined in Chapter 7.

2.2.6 Heritage NSW Forms

The SEARs reference a number of administrative forms that are required to be used during different stages of the investigating and assessing Aboriginal heritage in NSW. The forms include:

- Aboriginal site recording form,
- Aboriginal Heritage Information Management System site registration form,
- Aboriginal site impact recording form, and
- Care Agreement application form.

Aboriginal site recording form / Aboriginal Heritage Information Management System site registration form

The Aboriginal site recording form and the Aboriginal Heritage Information Management System site registration form are the same form—the latter superseding the former. These forms are the primary mechanisms for registering Aboriginal sites on AHIMS. The recent development of two digital interfaces for AHIMS have provided expanded formats for data entry for recording newly identified Aboriginal sites. Both the mobile AHIMS app and the desktop AHIMS system are now the main methods for recording new sites.

An Aboriginal site record is made when a new site is identified. The record is made by members of the Aboriginal community, and the archaeological profession entering site location and description data into AHIMS using either of the digital platforms or the hard copy AHIMS Aboriginal Site Recording Form.

Sites identified during the survey for this assessment (Section 4.2.1) will be recorded on AHIMS using a digital version of the AHIMS Aboriginal Site Recording Form

Aboriginal site impact recording form

The Aboriginal site impact recording form is designed to record changes to the condition of a site due to impacts resulting from:

1. a result of test excavation carried out in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*
2. authorised by an Aboriginal Heritage Impact Permit (AHIP) issued by Heritage NSW
3. undertaken for the purpose of complying with the SEARs issued by DPE for State Significant Infrastructure and CSSI projects under the EP&A Act

Due to the low likelihood of impacts to Aboriginal sites the use of this form is unlikely to be required for this project.

Care Agreement application form

Care agreements are made to formalise the custodianship of Aboriginal artefacts after they have been collected from a site. They are generally made between Aboriginal community organisations and Heritage NSW.

Due to the low likelihood of impacts to Aboriginal site, or the collection of artefacts, a care agreement is unlikely to be required for this project.

3 Methodology

3.1 Overview

The general methodology for this assessment comprised a combination of desktop assessment relating to the existing environment, a site survey and Aboriginal community consultation. Data gathering through these processes allowed an assessment of the nature, extent and significance of the Aboriginal cultural heritage environment.

Outcomes from the desktop assessment and the site survey has informed the design process, including construction methodology. Based on the outcomes of the impact assessment, recommendations for mitigation and/or management have been identified.

3.2 Study area

For the purposes of this assessment, the study area comprises the enhancement sites as listed in Table 1.1 and shown on Figure 1.1 and includes areas of the surrounding landscape to gain an understanding of the context for the desktop assessment of environmental and cultural values. The context for each element of the desktop assessment varied, and was adjusted to allow for the relevant scale needed to interpret the information—hydrology, soils and geological context. A study area of up to 10 kilometres around the proposal to cover a range of different landforms (Section 4.1.1 and Appendix H). Aboriginal cultural sites were identified up to 20 kilometres around the proposal (Section 4.1.2 and 4.1.3), to ensure that a broad variety of cultural sites were captured to assist with predictive modelling.

The enhancement sites have been grouped into 14 site investigation zones based on geographic proximity (refer to Figure 3.1). The site investigation zones were defined in the early stages of the proposal development to reflect a possible extent of the proposal site and provided a nominal assessment boundary for determining constraints for the proposal design and to identify the areas targeted for site survey as outlined in the Archaeological Research Design (ARD) (Appendix F). Survey areas were selected based on results of predictive modelling and their predicted level of disturbance.

The lots and DPs for properties included in the 14 zones are listed in Appendix A.

These assessment zones were organised as follows:

Table 3.1 Enhancement Sites and Corresponding Zones.

Precinct	Enhancement Site	Site Investigation Zone
Albury	Murray River bridge	1
	Albury Station pedestrian bridge	2
	Albury Station Yard clearances	2
	Riverina Highway bridge	2
	Billy Hughes bridge	3
	Table Top Yard clearances	3
Greater Hume – Lockhart	Culcairn pedestrian bridge	4
	Culcairn Yard clearances	4
	Henty Yard clearances	5
	Yerong Creek Yard clearances	6
	The Rock Yard clearances	7

Precinct	Enhancement Site	Site Investigation Zone
Wagga Wagga	Uranquinty Yard clearances	8
	Pearson Street bridge	9
	Cassidy Parade pedestrian bridge	10
	Edmondson Street bridge	10
	Wagga Wagga Station pedestrian bridge	10
	Wagga Wagga Yard clearances	10
	Bomen Yard clearances	11
Junee	Harefield Yard clearances	12
	Kemp Street bridge	13
	Junee Station pedestrian bridge	13
	Junee Yard clearances	13
	Olympic Highway underbridge	13
	Junee to Illabo clearances	14

This ACHAR describes the existing environment of the study area and assesses the impacts of the proposal based on the proposal site. Where relevant, mapping and figures in the assessment show either or both the site investigation zones and the proposal site.

3.2.1 Changes to the site investigation areas

During completion of the ACHAR, finalisation of the design of the proposal led to minor changes in the proposal site. As a result, changes in the site investigation areas occurred between the issue of the ARD (Appendix F), completion of the site survey, and the preparation of this ACHAR. These updates were reviewed, and were determined to not impact the area targeted for site survey. As such, the survey completed was determined to remain valid and these minor boundary changes had no bearing on the targeted survey strategy or the assessment (Section 3.5 and 4.2.1).

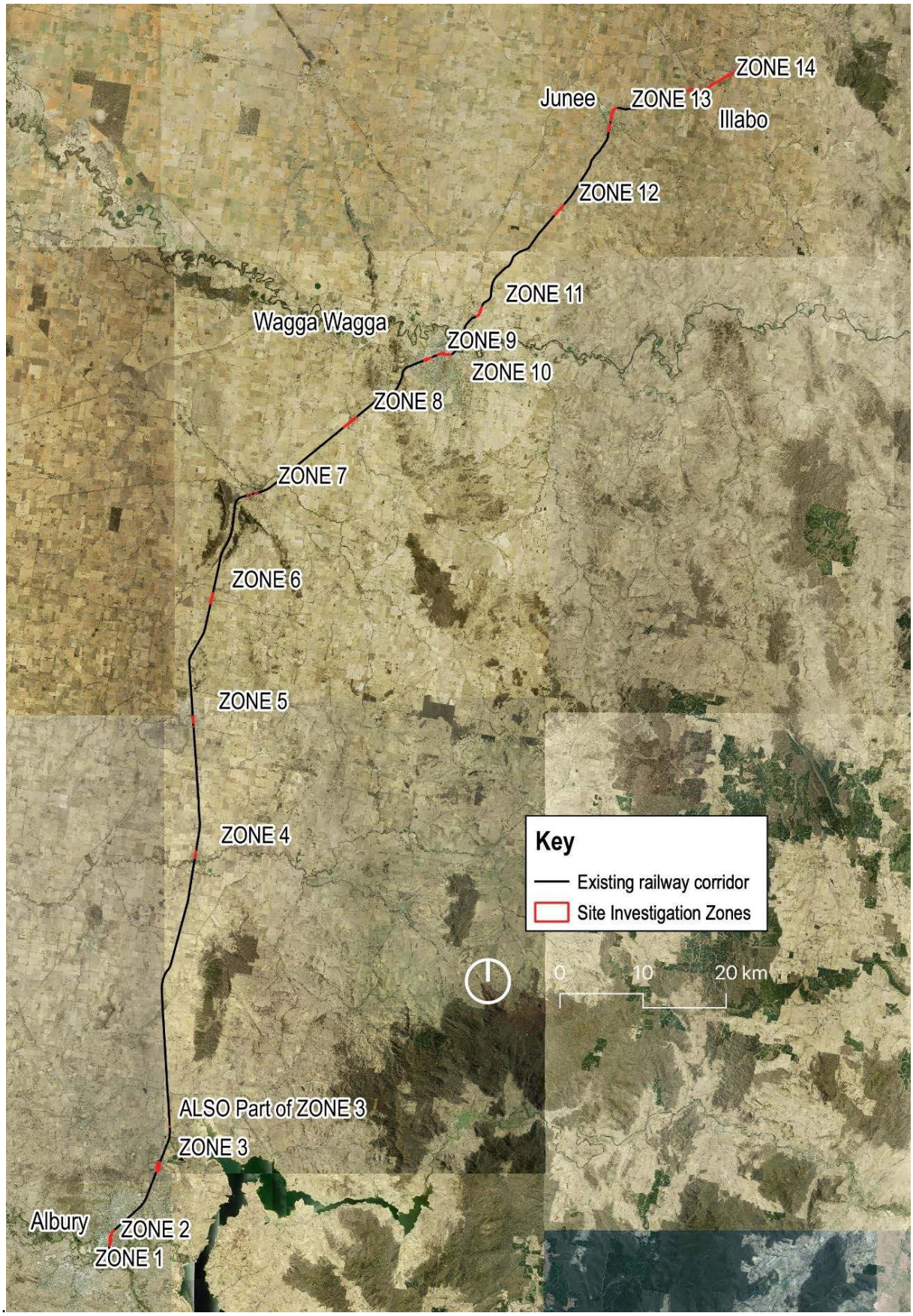

Figure 3.1 Site Investigation Zone locations. (Source: SIX Maps aerial with GML additions, 2021)

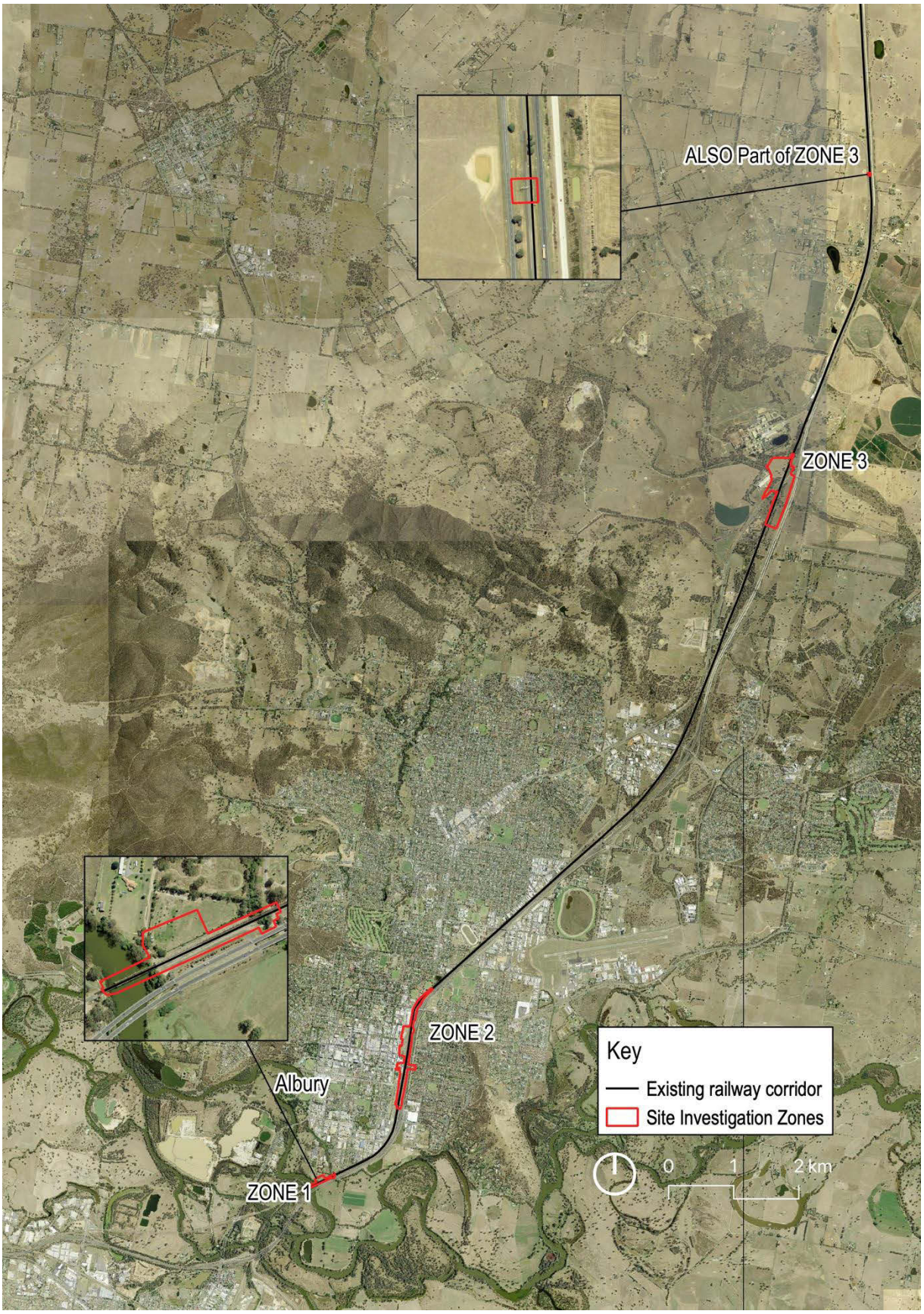

Figure 3.2 Site Investigation Zones 1 to 3. (Source: SIX Maps aerial with GML additions, 2021)

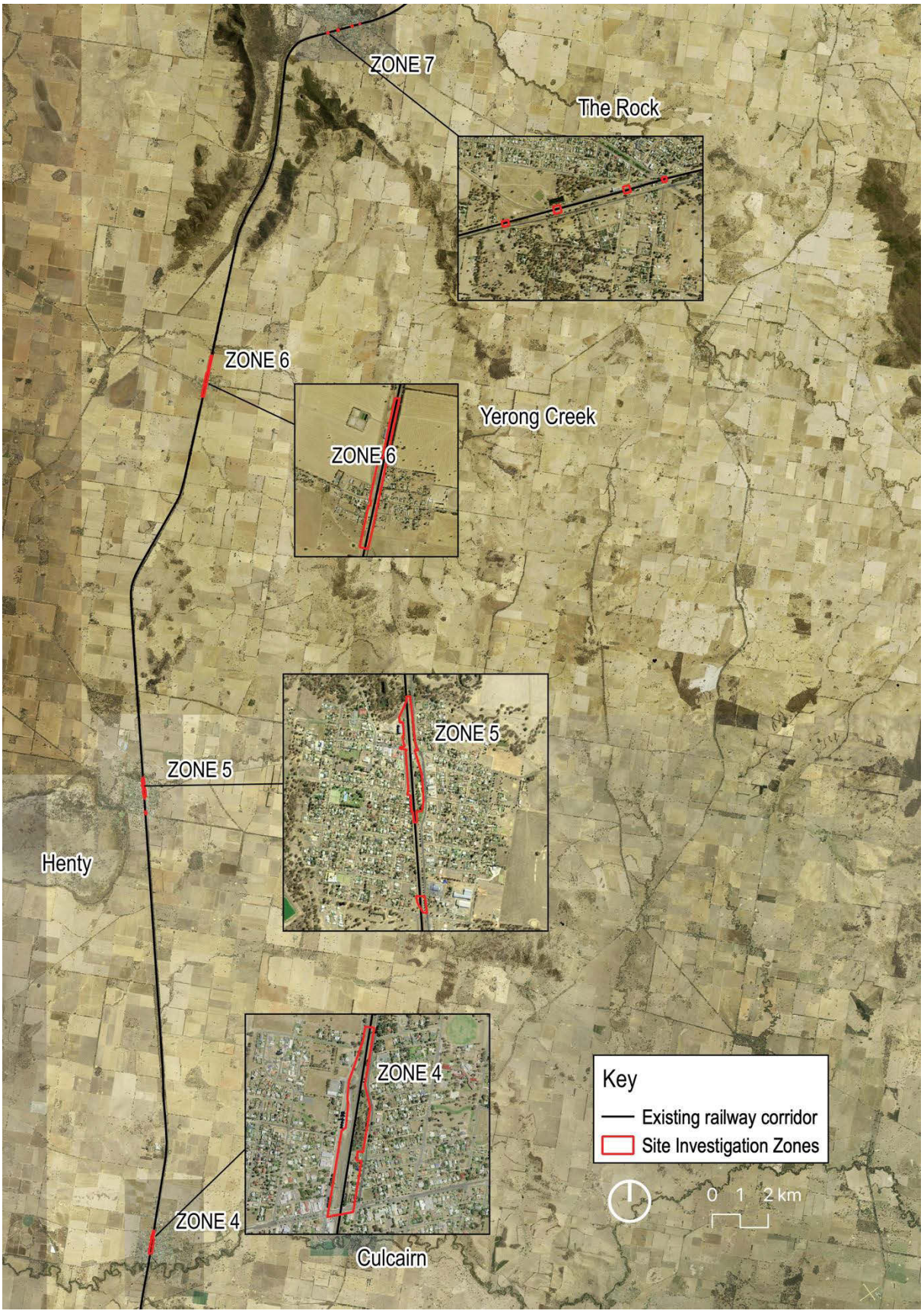

Figure 3.3 Site Investigation Zones 4 to 7. (Source: SIX Maps aerial with GML additions, 2021)

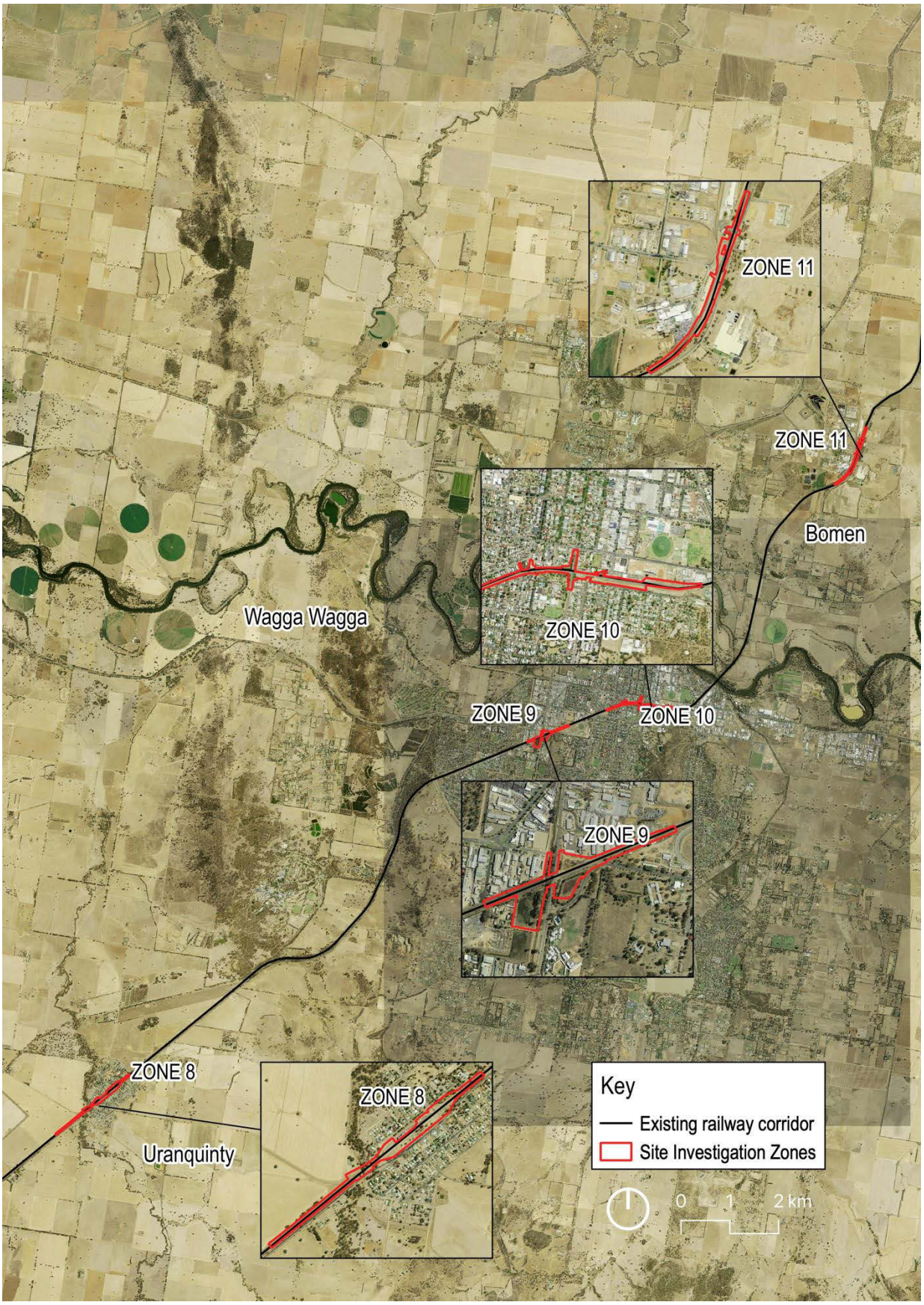

Figure 3.4 Site Investigation Zones 8 to 11. (Source: SIX Maps aerial with GML additions, 2021)

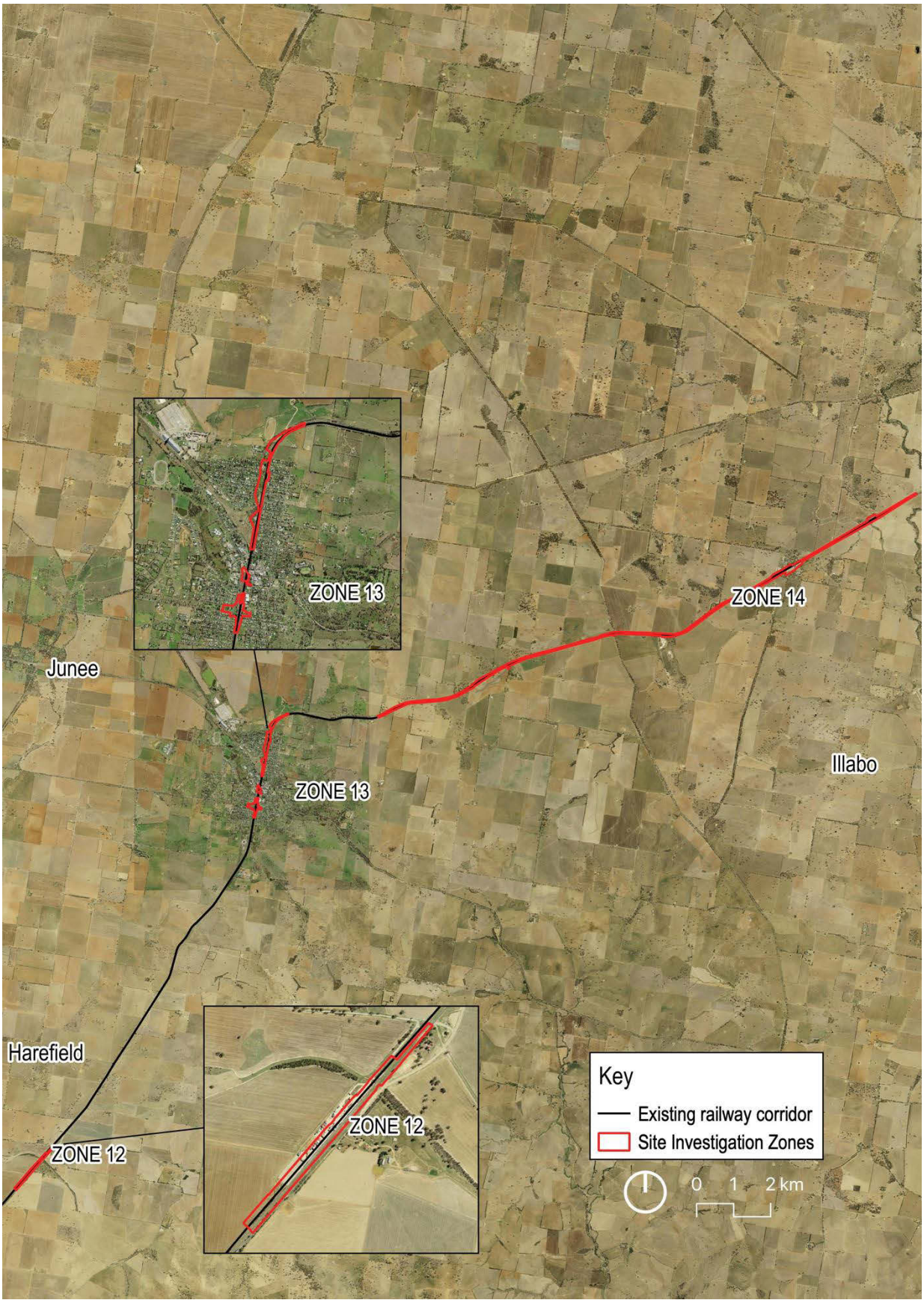

Figure 3.5 Site Investigation Zones 12 to 14. (Source: SIX Maps aerial with GML additions, 2021)

3.3 Desktop assessment

Desktop assessment phase comprised the following steps:

- review of environmental context information such as land use history, geology, soils and hydrology of the study area and its surrounds (Section 4.1.1)
- review of cultural background information through Aboriginal heritage assessments reports and other anthropological sources (Section 4.1.2)
- review of existing heritage and environmental reports for all Aboriginal heritage assessments that have been undertaken in the region within and surrounding the study area (Section 4.1.3)
- a search of the Aboriginal Heritage Information Management System (AHIMS) database for the region within and surrounding the study area (Section 4.1.3)
- a search of the State Heritage Inventory and the relevant LEPs for Aboriginal Places within and surrounding the study area (Section 4.1.3) and
- preparation of a predictive model for the occurrence of possible Aboriginal cultural sites in and around the study area (Section 4.1.4).

As the desktop assessment relies on contextual information surrounding the study area, cultural and environmental data was reviewed for areas within 10 kilometres of the proposal, with AHIMS site searches up to 20 kilometres from the proposal—as discussed in Section 3.2. A total of 12 extensive searches were done to capture the whole study area in detail. The search areas are shown in Figures 4.1 to 4.10 and are discussed in detail in Section 4.1.3. The search data is included in Appendix G.

The aim of the desktop assessment was to establish baseline information, identify gaps, and inform the ongoing investigation methodology. A key outcome of this process was the preparation of a predictive model for the occurrence of possible Aboriginal cultural sites and areas of cultural heritage sensitivity in the study area. This predictive model was used to inform the locations of field survey for the assessment.

An assessment methodology, the Aboriginal Archaeological Research Design (AARD), identifying the need for targeted site inspections and further research was then prepared based on the outcomes of the desktop assessment, and predictive modelling.

3.4 Aboriginal Archaeological Research Design

The AARD is a detailed methodology for the assessment process and is based on the outcomes of the desktop assessment, and predictive modelling. The AARD must be agreed by all RAPs for the project. The RAPs are provided with a 28-day review period for the AARD prior to the commencement of any survey, test excavation or any other investigative works.

The key conclusions of the AARD were for the need for survey to be undertaken in parts of nine of the 14 site investigation zones. The area for survey within each of the nine zones was determined based on predictive modelling and where land use history indicated that the landforms were either undisturbed or have been subject to only minor disturbances.

The AARD for the proposal was provided to the RAPs on 17 February 2021. At the completion of the RAP review period on 17 March 2021 no comments or further input had been received. The AARD was subsequently finalised.

3.5 Survey

A targeted survey of select areas of the site investigation zones was undertaken between 24 March and 26 March 2021. The survey included the participation of representatives of the Aboriginal community. The aim of the survey was to undertake a visual assessment of areas of the site investigation zones that were assessed through the desktop assessment as having potential archaeological sensitivity.

The desktop assessment established that nine of the 14 site investigation zones required targeted survey. Specific survey areas of less-disturbed ground were identified within each of the site investigation zones, and the survey targeted each of those specific areas for systematic survey where possible along with opportunistically targeting areas of higher ground surface visibility. Areas identified for targeted survey included zones predicted to contain Aboriginal objects based on proximity to water courses and correlations with previously recorded sites.

Sites and objects found were recorded using GPS-based site location data, descriptions and photographs. Areas of assessed Potential Archaeological Deposit (PAD) were also be recorded and their extent mapped and defined based on landform type and integrity. The survey noted areas of potential ground-surface disturbance where relevant. The definition of cultural landscapes were considered relative to the surrounding landforms, sites found and sites previously identified.

All Aboriginal objects and sites identified during the survey were reported to Heritage NSW for inclusion on AHIMS. They were not collected during the survey, with mitigation options for each object and site being included in this ACHAR.

3.6 Further investigation

Typically where Aboriginal objects and areas of archaeological potential are identified during survey and assessment, and are assessed as having the potential to be impacted by proposed works, further investigation such as test excavation would be undertaken.

Where further investigation is required, test excavations must be conducted by a suitably qualified archaeologist, in accordance with Section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW, 2010).

Based on the findings of the survey and assessment (Section 4.2), no sites or objects were found within the proposal site, no impacts were identified (Section 5) and therefore no further investigation was warranted.

3.7 Aboriginal community consultation

In NSW, ACHARs are undertaken following the requirements outlined by the *Guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW* (Section 2.6.1). This guide requires that Aboriginal community consultation is undertaken for any assessment of Aboriginal heritage in order to enable a proper inclusion of intangible heritage values held by the Aboriginal community, such as memories, stories, and associations between people and their traditional lands or Country.

Aboriginal people frequently express an enduring connection to their Country, a connection that transcends generations, both past and present. The connection is frequently expressed as a sense of belonging, which may manifest through physical objects or place; alternatively, it may be presented as an intangible idea, where an appreciation of an unseen quality or non-materialistic value connects a place in the landscape, tradition, observance, custom, lore, belief and/or history to the person or group describing the item, event or value. The notion of intangible, social, or community values is essential to Aboriginal people as ‘the effective protection and conservation of this heritage is important in maintaining the identity, health and wellbeing of Aboriginal people’.

In order to gather social and community views and opinions with respect to heritage, and identify and address heritage values, the *Aboriginal cultural heritage consultation requirements for proponents* (Section 2.2.2) establishes a consultation process.

GML recognises and acknowledges the continuing Aboriginal and Torres Strait Islander ownership of the traditional knowledge, traditional cultural expressions, practices, innovations and intellectual property rights in the materials provided by the RAPs, on which research and assessments in our reports may be based, and endeavours to protect the privacy, integrity and wellbeing of participants in this research.

3.7.1 The consultation process

The consultation requirements set out a process involving identification, registration, engagement, and consultation with Aboriginal peoples who may hold cultural knowledge relevant to determining the significance of an Aboriginal object and/or place. An overview of the process is outlined in Section 2.2.2 and is detailed further below including the respondents and processes undertaken. The specified timeframes for each stage of the consultation process are shown in Table 3.2. A log of all communications between GML and the RAPs pertaining to this assessment are provided in Appendix B.

Table 3.2 Consultation Timeline.

Stage	Task	Timeline detail	Date Started	Date Completed
1	Government Agency Letters	Date sent to Final response received	18 December 2020	29 January 2021
	Newspaper Advertisement	Date advertised	20 January 2021	20 January 2021
	Letters to Aboriginal Parties	14 days mandatory registration period	19, 29 Jan and 2 February 2021	16 February 2021
2	Presentation of Information	28 days mandatory review and response period	17 February 2021	17 March 2021
3	Field Survey Methodology		17 February 2021	17 March 2021
	Field Survey		24 March 2021	26 March 2021
4	Draft Report Review	28 days mandatory review and response period	5 October 2022	3 November 2021

Stage 1—Notification of the proposal

The aim of Stage 1 is to 'identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project' (DECCW 2010, pp. 10-11). The identification process involves:

- sending letters to select government agencies to determine relevant Aboriginal stakeholders that may be interested in registering to be consulted; and
- placing an advertisement in a local newspaper, inviting Aboriginal people and organisations who hold relevant cultural knowledge to register to be consulted (Appendix D).

Letters to statutory bodies were sent on 18 December 2020 requesting contact details for Aboriginal people who may have an interest in the study area. These statutory bodies included:

- Heritage NSW
- local Aboriginal land councils (LALCs)
  - Albury and District LALC

  - Wagga Wagga LALC
- The Registrar, Aboriginal Lands Right Act 1983
- National Native Title Tribunal (NNTT) (note: unlike the rest of the statutory bodies, the request for information to the NNTT was sent on 11 January 2021)
- Native Title Services Corporation (NTSCORP Limited)
- local councils:
  - Junee Shire Council
  - Wagga Wagga City Council
  - Lockhart Shire Council
  - Greater Hume Shire Council
  - Albury City Council
- Local Land Services (formerly Catchment Management Authorities):
  - Murray and
  - Riverina.

Following the receipt of responses from these letters, 22 potential Aboriginal stakeholders were identified. Letter of invitation to register were sent to the identified Aboriginal people on 19 January, 29 January and 2 February 2021, and an advertisement was placed in both The Border Mail and Wagga Wagga Daily Advertiser on 20 January 2021. The advertisement also invited Aboriginal people with an interest in the study area to register as stakeholders to be involved in consultations. Due to differing response periods from Government agencies, the letters of invitation to Aboriginal parties were staggered based on newly provided information. Ultimately all potential RAP invitees were provided with the full 14 days response period.

Registered Aboriginal Parties

Eleven of the 22 potential Aboriginal stakeholders, registered an interest in the project. The following list of stakeholders are the RAPs for the project:

This list has been removed due to sensitive data

All registrations of interest were acknowledged via phone or email.

Stage 2—Presentation of information

The aim of Stage 2 is:

> *To provide registered Aboriginal parties with information about the scope of the proposed project and the proposed cultural heritage assessment process* (DECCW 2010).

A letter outlining the project, project impacts, timeline and milestones was sent to all RAPs in conjunction with the beginning of Stage 3 as outlined below.

Stage 3—Gathering information

Information gathering can occur at a number of stages in the consultation process including through responses to methodology documents, during the field survey, in response to the survey and in response to the draft report.

Field Survey—Methodology

An ARD report (see F) was provided to all RAPs on 17 February 2021. The ARD detailed the methodology for undertaking field assessment. It also invited all RAPs holding information on culturally sensitive areas and local traditional knowledge concerning the proposal area to share information appropriate to the assessment. The comment period expired on 17 March 2021.

No responses or comments were received from the RAPs on the methodology.

Field Survey

During the field survey all RAPs were invited to share information about cultural values relating to the study area and its surrounds. This information was documented by the field team and is included in the discussion of cultural values in Section 4.3.

Field Survey—Response

In addition to information provided during the survey, one RAP, [name redacted], chose to provide a written response to the field survey stating cultural values and concerns. These values have been summarised in the in the discussion of cultural values in Section 4.3 and informed the impact assessment in Chapter 5. They were also considered as part of the formulation of mitigation measures in Chapter 7. The full report is included in Appendix C.

Further Investigation

As noted in Section 3.6, the conclusion of the impact assessment meant that no further investigation was warranted.

Stage 4—Review of the draft report

As no further investigation was required, the draft ACHAR report was prepared based on findings of the desktop assessment and site survey.

The RAPs were provided with a copy of the draft report for review and comment. The report was issued on 5 October 2021 with the comment period expiring on 3 November 2021. No written responses were received on the draft ACHAR report. However, a meeting was conducted between ARTC and [name redacted] to address concerns that were expressed in his written response to the field survey (Appendix C).

The meeting was held on 21 October 2021 between [name redacted] and representatives from ARTC operations and environment divisions, along with WSP and GML Heritage. [Name redacted] outlined the deep significance of Wiradjuri country and brought up concerns he had about environmental issues he saw as connected to the proposal. The issues raised were discussed and ARTC provided an update on responses to the issues raised, including ongoing operational management actions, and actions specifically relating to the proposal.

3.7.2 Requirements for future consultation

Once all comments have been received and addressed, this ACHAR will be finalised. Copies of the final report will be sent to all RAPs. Any future work relating to Aboriginal heritage values associated with the proposal, or any significant changes to the proposal, should include consultation with the RAPs.

3.8 Impact assessment

The impact assessment process relies on the identification of Aboriginal culture heritage sites and places, an assessment of their significance and an understanding of whether or not the proposal can be designed to avoid those places. Impacts can be assessed a both direct and indirect, and mitigation measures are formulated to account for the nature of the impact.

3.8.1 Assessing significance

Assessing the cultural significance of a place means defining the reasons why a place is culturally important. In NSW, the significance of Aboriginal sites is assessed based on the social or cultural values of a place, its historical associations, its scientific or archaeological values and its aesthetic values. Details of the assessment processes for these values are outlined in the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*.

The social or cultural value of a place is its spiritual, traditional, historical or contemporary associations and attachments for Aboriginal people. These are the values derived from an understanding of how Aboriginal people express their connection with a place and the meaning that the place has for them.

The historic values of a place are its associations with historical events, the passage of recorded history, and historically important people. These are associations that are important to the Aboriginal community but may also embody shared experiences and histories with the non-Aboriginal community. Historic places do not always have physical evidence of their historical importance, such as structures, planted vegetation or landscape modifications.

The scientific or archaeological value of a place is determined based on its rarity, representativeness, and the degree to which further investigation of it can further our understanding of the Aboriginal use and occupation of the area in the past. Information about scientific values is assessed through archaeological investigation.

Aesthetic values are the sensory, scenic, and creative aspects of the place. They may include objects, locations, views, landscapes, materials, smells and sounds. Aesthetic values are often closely linked to the social and cultural values of a place.

3.8.2 Assessing impacts

The impact of any development proposal on Aboriginal heritage can be defined as the harm to, the diminution of, or the removal of the attributes and reasons for its significance. The harm to, diminution or removal of significance can result from changes to sites, places and their context, and can be measured as being either direct or indirect. The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*, refers to these processes as ‘harm’ and define direct and indirect harm as follows:

> ***Direct harm*** *may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavating detention ponds and other drainage or flood mitigation measures, and changes in water flows affecting the value of a cultural site.*
>
> ***Indirect harm*** *may affect sites or features located immediately beyond, or within, the area of the proposed activity. Examples of indirect impacts include, but are not limited to, increased impact on art in a shelter site from increased visitation, destruction from increased erosion and changes in access to wild food resources* (NSW OEH 2011, p. 12).

Direct and indirect impacts are generally mitigated through project redesign, but where this cannot be achieved, mitigation measures typically include collection of surface artefacts and sites by the Aboriginal community along with salvage archaeological excavations.

4 Existing environment

4.1 Desktop assessment

4.1.1 Landscape context

An overview discussion of the site investigation zones and the proposal environment is outlined below with a more detailed discussion in Appendix H.

The proposal crosses a limited range of low relief landforms including alluvial floodplains, undulating plains and low rolling hills with gentle slopes, and a total of 20 different soil landscapes.

At the southern end of the proposal, around Albury, the landforms comprise mainly floodplains on the margin of a low rolling hills landscape. Site Investigation Zones 1 and 2 include the Wakool River, Livingstone and Wait-a-while soil landscapes—an alluvium floodplain, an erosional landscape along the edges of the hills and a stagnant alluvial soil landscape, respectively. These zones occur substantially across two alluvial areas—landscapes where soils are deposited through flood action and with fairly low erosion rates away from riverbanks. These soil landscapes will have contributed to the formation of archaeological sites in the past. The 'stagnant' classification of the Wait-a-while soil landscape indicates that it is no longer subject to depositional process, suggesting that any archaeological site formation would likely be of some antiquity.

Further north around Site Investigation Zone 3 is the Ettamogah soil landscape, which is characterised by undulating plains over lower slopes and drainage areas, where moderate gully erosion can occur. The surrounding landscape is crossed by numerous lower order streams.

The 35-40 kilometre distance from Culcairn (Site Investigation Zone 4), through Henty (Site Investigation Zone 5) to Yerong Creek (Site Investigation Zone 6) is largely an alluvial plain with numerous waterways crossing it including Billabong Creek, Sandy Creek, Buckaringah Creek and Yerong Creek. The Billabong Creek soil landscape around Culcairn is an alluvial plain while the Henty soil landscape was formed as an aeolian landscape, creating an extensive, gently inclined sloping plain. Within this soil landscape are significant deposits of wind-blown fine sand, overlying unconsolidated riverine deposits of clay, silt, sand and gravel. This environment would have produced favourable conditions for the formation of archaeological sites through the gradual accumulation of wind-blown deposits. This area also supports the Doodle Comer Swamp which was and continues to be a significant resource zone.

Yerong Creek is also mainly within an alluvium landscape—the Mangoplah soil landscape—which is a stable environment with little erosion. Closer to The Rock, Site Investigation Zone 7 is also within the Mangolah is landscape along with the Vincent Road soil landscape—a transferral landscape on a relatively flat plain, with sediments derived in part from the small line of ridges to the west.

Site Investigation Zone 8 at Uranquinty traverses three soil landscapes—Belfrayden, O'Briens Creek and Pearson—also largely alluvial and transferral. The topography of this area is very flat, punctuated only by the course of Sandy Creek through the surrounding plains. All three soil landscapes would favour the preservation of archaeological sites.

The Wagga Wagga area, including Site Investigation Zone 9 and 10 is dominated by the Becks Lane soil landscape but is highly disturbed and unlikely to support the preservation of archaeological deposits.

Site Investigation Zone 11 at Bomen was situated on the East Bomen and Currawarna soil landscapes. These landscapes are both aeolian sands originating from areas north of the Murrumbidgee floodplain, several kilometres north of Wagga Wagga. In this area, these landscape are highly susceptible to erosion and are considered unlikely to have soils that would maintain zones of archaeological potential.

Around Harefield (Site Investigation zone 12) the area can be divided into two soils landscapes: Currajong and Houlaghans Creek (variant A). The Currajong soils landscape consists of gentle to undulating foot slopes and colluvial plains. These soils descend into Houlaghans Creek, an alluvial plain associated with a large creekline of the same name. The Currajong soil landscape continues towards Junee, although with substantial disturbance due to urban development.

At the northern end of the proposal in the area around Illabo, (Site Investigation 14) many of the elevated slopes and crests in the region are made up of the Stony Hill landscape, consisting of highly variable and complex erosional soils. The lower slopes of these rises are characterised by Eurongilly, Mimosa and Currajong transferral slopes formed on Quaternary colluvium. These deep soils are subject to sheet erosion, particularly when they are heavily cleared for agriculture. A small edge of the site investigation zone falls within the Ironbong Creek soil landscape, with gently undulating alluvial plains around Ironbong Creek and its tributaries.

4.1.2 Cultural context

The purpose of this section is to synthesise available information from previous archaeological and ethnohistorical studies to provide context and a baseline for what is known about Aboriginal cultural heritage in the study area.

Wiradjuri Country

The study area lies within the traditional lands of the Wiradjuri language group (AECOM 2010). The Wiradjuri group occupies the largest geographic area of New South Wales of all Aboriginal groups (Briggs 2011). Gunnedah and Albury mark the northern and southern boundaries of Wiradjuri Country, while the eastern boundary is the Great Dividing Range, and the western boundary is approximately in line with the present towns of Hay and Nyngan (Bathurst Regional Council Website).

The Regional Histories of New South Wales states that the name ‘Wiradjuri’ means ‘people of the three rivers’, these rivers being the Macquarie, Lachlan and Murrumbidgee (AECOM 2010). These three rivers were key resource zones for the Wiradjuri people, providing a stable, abundant and varied supply of food provisions including shellfish and fish such as Murray cod.

The Wiradjuri people generally moved around in groups, using the river flats, open land and waterways with some regularity through the seasons as indicated by the scattered archaeological evidence in the region (NSW OEH). Journeying 100 kilometres and more to the southeast would have provided a range of additional resources from the southern alps and the Brindabella Ranges.

The Wiradjuri people carved trees to create shields, coolamons and canoes from the bark. Scarred trees were also selected specifically as markers, or signposts, within the cultural landscape to show areas of abundant resources or where people congregated (Cootamundra Aboriginal Working Party, pers comm. 2018). Carved trees were also used to mark the burial sites of celebrated men whose passing had great effect on the community (Briggs 2011, p. 8). Often, only one tree was carved at each burial site; however, in some cases up to five carved trees have been identified for one burial (Briggs 2011, p. 8).

The arrival of Europeans in the areas in the early 1800s had a devastating impact on the traditional Wiradjuri lifestyle: Clashes between the new European settlers and the local Aboriginal people were common around the Murrumbidgee and even further north, particularly between 1839 and 1841. These violent incidents have been termed the 'Wiradjuri wars' and involved removal of cattle and spearing of stockmen by the Wiradjuri people in response to killing of their people as well as loss of their fishing grounds and significant sites following invasion by the new settlers (Briggs 2011, p. 8).

After the frontier violence, pastoralism spread throughout Western NSW, and there were fewer and fewer places for Wiradjuri people to live (Hambrett 2018). The European pastoralists (originally mostly British and Irish people) would build their properties on Wiradjuri campsites, which generally were within the vicinity of drinking water, were sheltered, and safe from flooding. In the early to second half of the 18th Century, Wiradjuri men and women worked on pastoral stations as shepherds and labourers, with the material gains for working on stations (particularly food) being significant to Wiradjuri people as the ever-increasing numbers of livestock diminished traditional food stocks (Hambrett 2018; Montgomery 2010-2011, p. 10).

The 'Aborigines Protection Board' was established in 1883. From this date, until the abolition of its successor, the 'Aborigines Welfare Board' in 1969, Aboriginal people were forcibly relocated to missions, reserves and stations. This era which saw the creation of the Warangesda (Darlington Point) in Griffith, and Brungle (near Tumut) missions (Montgomery 2010-2011, p. 27; Kabaila 2011, p. 33). The Mission and reserves were made to control and confine Aboriginal people, with the purposes of this confinement changing over time (ANU Press). Wiradjuri people were also deeply impacted by the Stolen Generations—a period when children were removed from their families and raised by non-Aboriginal people or within institutions such as Kinchela Aboriginal Boys Training Home and the Cootamundra Aboriginal Girls' Training Home.

The intergenerational impact of the Stolen Generation on Wiradjuri people, was highlighted in the 1997 *Bringing them Home* report, leading to the then Prime Minster Kevin Rudd's National Apology to Australia's Indigenous Peoples. This was remembered by Aboriginal people, including Wiradjuri people, as a watershed moment, although little progress has been made by federal governments for further reform, since then (O'Brien 2018; Kelsey-Sugg and Quince 2018).

Wiradjuri people continue to occupy their traditional Country, in the townships of Dubbo, Condobolin, Orange, Bathurst, Wagga Wagga, Albury, Young, Narrandera and Griffith (Murray Lower Darling Rivers Indigenous Nations, n.d.).

Wiradjuri people are continuously involved in – and fight for – the protection of cultural heritage sites. Bundyi Cultural Services states on behalf of Wiradjuri people, that they continue to practice culture, language and lore and exercise rights as custodians of the land to defend, care and protect it (Bundyi Cultural Services 2021). The rail corridor passes by culturally significant places such as 'Doodle Comer (Sweet Water) known as Henty, Yirung (Tooth) Yerong Creek and Kengal (sloping ground) known as The Rock' (Bundyi Cultural Services 2021:3), and the use of the landscape draws on the Wiradjuri use of the landscape prior to colonisation:

> *The infrastructure and rail stations that now sit on Wiradjuri country are in those positions because those places have always us been our traditional murru (path/journey) way through our nations. Many of the towns are also places where my people have lived and continue to live and connect too (Bundyi Cultural Services 2021:3)*

4.1.3 Archaeological context

Aboriginal Heritage Information Management System search

GML undertook a search of the Heritage NSW AHIMS database. A total of 12 overlapping extensive searches were undertaken to capture the 14 investigation zones described in Section 3.2. The following searches were undertaken:

Table 4.1 Client Service ID numbers for AHIMS Searches

Client Service ID numbers			
# 560947	# 560951	# 560970	# 560974
# 560975	# 561274	# 561284	# 561288
# 562967	# 562987	# 562993	# 563001

These searches range in size from 37.6 kilometres x 29 kilometres down to 11.8 kilometres x 9.2 kilometres and vary in size according to the amount of sites data captured as part of the search process.

The search identified 925 sites and eight Aboriginal places. The results of the search are shown in Table 4.2 and Figure 4.1 to Figure 4.10, and Appendix G.

Table 4.2 Results of AHIMS Search.

Recorded Site Types / Feature	Frequency	Percentage %
Aboriginal Ceremony and Dreaming	9	0.96
Aboriginal Ceremony and Dreaming and Modified Tree	1	0.11
Aboriginal Resource and Gathering	3	0.32
Art	3	0.32
Artefact and Modified Tree	4	0.43
Artefact and Stone Quarry	3	0.32
Artefact Site	407	43.62
Artefacts and PAD	9	0.96
Grinding Groove	1	0.11
Habitation Structure	1	0.11
Hearth	1	0.11
Isolated Artefact	134	14.36
Modified Tree (Carved or Scarred)	336	36.02
Ochre Quarry	1	0.11
Potential Archaeological Deposit (PAD)	6	0.64
Restricted Site	2	0.21
Stone Quarry	3	0.32
Waterhole	1	0.11
Aboriginal Places	**8**	**0.86**
Total	933	100

There are no previously recorded sites or Aboriginal places within the proposal site. Nevertheless, there were a number of recorded sites adjacent to the proposal site—35 sites within 50 metres of the existing rail alignment—which can provide an indication of the archaeological site types may occur within and around the study area. Site cards for those 35 sites were reviewed to understand the detail of the sites in closest proximity to the existing rail alignment. Of those 35 recorded sites, 19 are scarred trees, 14 are artefacts sites/isolated artefacts and two are PADs. Of the remaining 898 recorded sites from the AHIMS searches,

686 occur between 50 metres and five kilometres of the existing rail alignment with the remaining 212 located between five and 15 kilometres away.

The results of the AHIMS search show that stone artefact sites are the most common within the region, making up 44 per cent of all sites. Stone-based sites and artefacts by nature preserve best in the archaeological record and can survive in highly disturbed areas. Modified trees are also a dominant site type in this region (36 per cent). Therefore, any archaeological evidence of prior Aboriginal occupation of the investigation area is likely to be stone-artefact sites. There is also potential for culturally modified trees to occur in uncleared areas along the less disturbed aspects of the study area.

Aboriginal Places

The eight Aboriginal places noted in the AHIMS search results in Table 4.2 are also included on the NSW State Heritage Inventory. The following Aboriginal places are located within three kilometres of the existing rail corridor, but only the Bomen Axe Quarry and the Doodle Comer Aboriginal Place are in the vicinity of any of the enhancement sites (discussed further in Section 4.3.1):

- Bomen Axe quarry
- Bomen Lagoon Aboriginal Place
- Wiradjuri Reserve and Gobba Beach Aboriginal Reserve
- Flowerdale Lagoon Aboriginal Place
- Wollundry Lagoon and Tony Ireland Reserve Aboriginal Place
- The Rock Nature Reserve Aboriginal Place
- Doodle Comer Aboriginal Place and
- Mungabareena Reserve Aboriginal Place.

The locations of these places are shown in Figures 4.2 to 4.9.

Local Environmental Plans (LEPs)

The heritage schedules of the LEPs for Albury, Greater Hume, Lockhart, Wagga Wagga and Junee were reviewed. No Aboriginal places of heritage significance are listed in the heritage schedules of the LEPs.

National and World Heritage Sites

No Aboriginal places have been recorded in the National or World Heritage lists within 10 kilometres of the proposal.

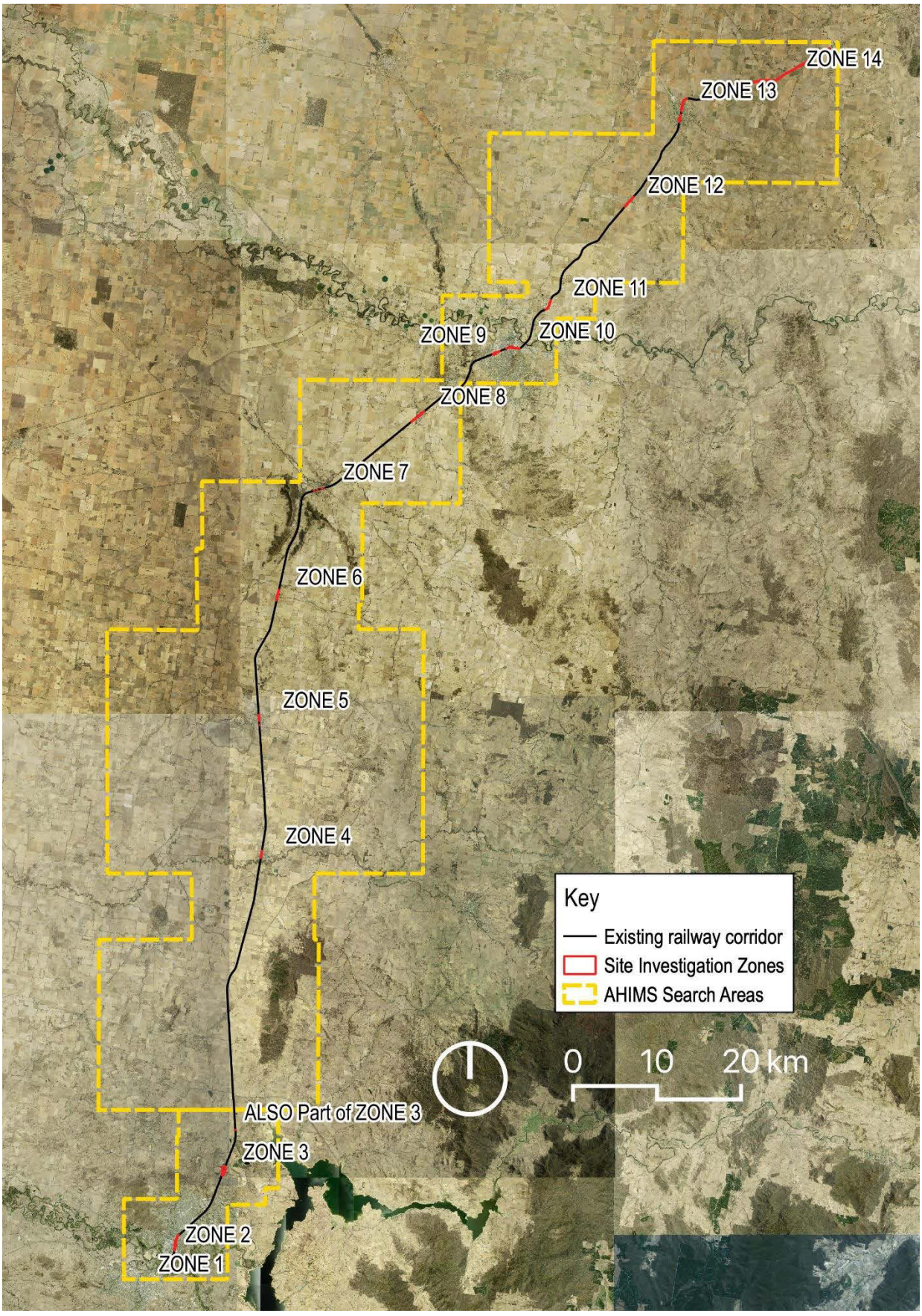

Figure 4.1 AHIMS search area. (Source: SIX Maps with GML additions, 2021)

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Figure 4.2 AHIMS sites around Zones 1 and 2. (Source: SIX Maps aerial with AHIMS inclusions)

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Figure 4.3 AHIMS sites around Zone 3. (Source: SIX Maps aerial with AHIMS inclusions)

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Figure 4.4 AHIMS sites around parts of Zones 3 and 4. (Source: SIX Maps aerial with AHIMS inclusions)

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Figure 4.5 AHIMS sites around parts of Zones 4, 5 and 6. (Source: SIX Maps aerial with AHIMS inclusions)

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Figure 4.6 AHIMS sites around part of Zones 6 and 7. (Source: SIX Maps aerial with AHIMS inclusions)

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Figure 4.7 AHIMS sites around Zones 7 and 8. (Source: SIX Maps aerial with AHIMS inclusions)

Figure 4.8 AHIMS sites around Zones 9, 10 and 11. (Source: SIX Maps aerial with AHIMS inclusions)

Figure 4.9 AHIMS sites around Zones 11 and 12. (Source: SIX Maps aerial with AHIMS inclusions)

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Figure 4.10 AHIMS sites around Zones 13 and 14. (Source: SIX Maps aerial with AHIMS inclusions)

Relevant local literature

The study area is located in a region that has been subject to some prior Aboriginal heritage assessment. A review of relevant Aboriginal archaeological and heritage reports from the AHIMS has been undertaken (Table 4.3). Mapping of previous survey areas has not been provided due to inconsistencies in the data with older reports not providing clearly mapped survey areas.

The background literature indicates that in areas of minimal disturbance along the Albury to Illabo rail corridor, it is possible to detect Aboriginal objects, in particular quartz flakes. This is particularly relevant in the 2006 Biosis report which surveyed the rail corridor along the rail corridor between Albury and Junee and found quartz flakes in a number of locations (discussed in Table 4.2). The report also indicates that farmland, especially in floodplains and near creeks, has potential for archaeological deposits, and that scar trees are likely to occur in the region, but only where woodland clearance has not occurred. The background literature provides no indication of the potential for subsurface deposits to exist in the study area, as all the reports are based on pedestrian surveys, rather than archaeological excavations.

Table 4.3 Summary of Relevant Prior Aboriginal Heritage Reports.

Report	Description	Relevance to Current Assessment
Eleanor Crosby, June 1979—Aboriginal Sites in Albury	In 1979, Eleanor Crosby surveyed a number of sites in the Albury district, as part of the work carried out for the Albury-Wodonga Development Corporation in March, April and May 1979.	The study area is around 1 kilometre west of Zone 1. No Aboriginal objects were detected on the site survey, due to long grass coverage and site disturbance (eroded high hillsides or roadsides). The report did note that a number of scarred trees were visible on the nearby riverbanks west of the crossing. Importantly, this report supports earlier reports (Whitter, 1978; Crosby, 1978) that noted an absence of surface camp sites in the area.
Biosis, November 2006—North–South Rail Corridor Albury to Junee Passing Lane Project: Archaeological Survey	In November 2006, Biosis undertook an Archaeological Survey for the North–South Rail Corridor Albury to Junee Passing Lane Project.	The archaeological survey recorded 13 Aboriginal archaeological sites, across a range of areas associated directly associated with the current study area. One area surveyed was directly near zones 1 and 2: the rail line near Murray River and Albury Station. The report found that the areas around Albury Station had been subject to high disturbance from the construction of the railway station and rail yard, and the whole area was artificially built up with a combination of earth and blue metal as the foundation to avoid flood waters from the Murray River. However, the authors noted that a PAD was associated with the area around Murray River—albeit not immediately adjacent to the rail line—where there were Aboriginal objects excavated in high numbers to a depth of 1.5m. Another survey area outlined in this report was near the current investigation zone near Table Top, adjacent to Zone 3. Like the Albury rail line, the surface area was highly modified, yet four isolated artefacts were recorded: all quartz flakes (ARTC 1 to 4). Further survey was also undertaken between Henty and Culcairn (between current investigation zones 4 and 5). Seven Aboriginal sites were recorded (ARTC 04–10), all of which were quartz artefact sites. The next project survey was between Yerong Creek and The Rock (between current investigation zones 6 and 7). The report found that disturbance within the railway corridor was minimal, with the track built on a single base of blue metal less than 0.5m depth. Two Aboriginal quartz flakes were identified (ARTC 11 and ARTC12); at least one appeared to be introduced to the area with the fill used to raise an access road. The next survey area was associated with the Wagga Wagga and Bomen railway areas (around current investigation zones 9, 10 and 11). These areas were found to have been heavily disturbed and therefore were assessed as having no Aboriginal sites or archaeological potential. Another site, ARTC 13, was recorded although its location is not clear in the report.

Report	Description	Relevance to Current Assessment
A Djekic 1978—Report for the National Parks and Wildlife Service of NSW on an archaeological survey of the Wagga Wagga to Albury Transmission Line	The route covered approximately 120 kilometres and was surveyed over a five-day period from 13 to 17 June 1978.	Archaeological pedestrian survey was undertaken along the proposed transmission line from Wagga Wagga to Albury. This route traversed well-established farming places, and found that scarred trees were the most common archaeological site type. Six modified trees were found, as well as a number of granite stone artefacts in a farm at Culcairn, in a floodplain near Billabong Creek.
GML Heritage, 2021 (forthcoming)—ARTC Inland Rail Illabo to Stockinbingal Aboriginal Cultural Heritage study	Between 2019 and 2020, GML Heritage and RAPS excavated over 200 tests along the proposed Illabo and Stockinbingal Inland Rail Route.	The 37 kilometre section of Inland Rail between Illabo to Stockinbingal will be new track, whereas the present study area is current track enhancements. This section of the Inland Rail directly links to the Illabo portion of the current study area. Like the current study area, the Illabo to Stockinbingal route is across Wiradjuri Country. The test excavation refined predictive modelling in the region, determining that Aboriginal occupation sites will mainly be present in association with water sources—primarily lower order streams. Aboriginal occupation sites are most likely to occur on low-gradient, well-drained landforms in close proximity to those water sources. Over 120 artefacts were detected, made up of quartz, quartzite, silicified wood, IMSTC: (indurated mudstone/silicified tuff/chert) FGS (other fine-grained siliceous rocks such as chert and chalcedonic chert) A number of scar trees were also documented, corresponding to AHIMS findings that the most common artefact sites in the region are midwifed trees and artefacts. This report is being finalised by GML Heritage.

4.1.4 Summary

The review of the cultural and archaeological context of the study area shows that the existing rail corridor sits within an important cultural landscape for the Wiradjuri people.

The richness of cultural life is attested to through the record of significant cultural places in the area including Doodle Comer wetlands, and other Aboriginal places near Wagga Wagga, Bomen, The Rock and Albury. The ongoing cultural connection for the Wiradjuri people is a practiced and living part of that landscape.

The landforms across the study area including alluvial floodplains delineated by a network of creeks and rivers, and low rolling hills, provided a varied resource zone conducive to sustaining the traditional occupation of the area. The widespread traditional use of the landscape is embodied in the archaeological record, which includes a wide variety of sites in all landscapes. The more than 900 sites recorded on AHIMS for the surrounding area document the evidence of the ongoing and diverse use of the landscape, showing no specific focus on the use of any one landform over any other landform.

The desktop review indicates that landscape on the whole has high Aboriginal cultural values, and the potential for moderate to high archaeological values.

4.1.5 Aboriginal archaeological potential and predictive modelling

The AHIMS search results indicate that the two most common site types in the study area are stone artefact sites and modified trees. As corroborated by archaeological reports, stone artefacts are likely to occur across any areas which contain undisturbed (or not heavily disturbed) soils, with a greater tendency to occur in relatively close proximity to a water source—river, creek or waterhole. The landforms across the study area

are predominantly alluvial floodplains and undulating plains with only a few lower slopes of hills and ranges. Artefact sites were recorded for each of these landforms, showing no clear correlation between artefacts sites and any specific landform. Modified trees were also found to occur anywhere where woodland has not been cleared in recent history.

Based on the desktop assessment nine of the 14 site investigation zones were predicted as having a likely presence of Aboriginal objects based on proximity to water courses and correlations with previously recorded sites.

Table 4.4 provides a summary of the zones where archaeological survey was proposed based on the predictive modelling results and identified in the ARD prepared for the proposal. Detailed areas of survey within each site investigation zone are shown in conjunction with the survey results in Section 4.2.1, Figures 4.11 to 4.21. Details of the survey results are outlined in the next section of the report.

As detailed in Chapter 3, the proposal site does extend outside the site investigation area as it was defined at the time of survey. These areas have been reviewed and do not require further investigation due to similarities in surveyed landforms and levels of disturbance (refer to Section 4.2 for further detail).

Table 4.4 Predictive Model for the 14 Site Investigation Zones.

Zone	Survey required	Reasoning (Based on Landscape and Archaeological Data)
1	Yes	• Landscape features (distance to water less than 200m) indicate further investigation is required. • There are two PADs recorded within 50m on each side of the western area (Murray River bridge).
2	No	• This zone is shown to be highly disturbed by modern rail infrastructure, and the building and subsequent demolition of the Bunge Flour Mill.
3	Yes	• The investigation area associated with the Billy Hughes bridge enhancement site has two PADs in proximity, within 50m of the site investigation zone. A further two artefact scatters are recorded 115m west and 600m northeast of this area, and two scar trees are recorded 550m northeast and 600m west. • Landscape features (distance to water less than 200m) indicate further investigation was required in the site investigation area for the Billy Hughes bridge enhancement site. • The northern investigation area in this zone (the Table Top Yard clearances enhancement site) is within a highly disturbed context, and did not warrant any further survey.
4	Yes	• Zone 4 starts 350m from Billabong Creek which has numerous sites approximately 2 kilometres to the west of the study area. • The eastern areas of this zone appear relatively less disturbed and were recommended to be the focus of a survey.
5	Yes	• Multiple sites have been found around the wetland, Doodle Comer Aboriginal Place, located approximately one kilometre to the west of Henty and covering an area of approximately five kilometres by 4.6 kilometres. • This zone lies in close proximity to Buckargingah Creek. • Survey was identified for two areas: one on the northwest side and one on the southeast side of the rail alignment in the zone of lesser disturbance.
6	Yes	• Multiple scar trees have been recorded in this area, indicating general use of the landscape by Aboriginal people in the past. • This zone is close to Sandy Creek and within 1 kilometre of the next substantial water course (Yerong Creek). • Survey from the south end of the site investigation area north to Plunkett Street was identified.

Zone	Survey required	Reasoning (Based on Landscape and Archaeological Data)
7	No	• There are multiple scar trees recorded near here around Burkes Creek. However, the site investigation areas are within the disturbed existing rail corridor.
8	Yes	• There are multiple scar trees recorded near here around Sandy Creek along with some artefact scatters on the plains to the north within 1–2 kilometres. • Survey was identified for the southeast side of the zone, where the site investigation area was less disturbed.
9	No	• There are multiple sites recorded around Wagga Wagga; however, the entire site investigation area is within the existing disturbed corridor. Previous work by Biosis (Table 3.2) indicates that there is a lack of Aboriginal archaeology within the Wagga Wagga urban area.
10	No	• As above (Zone 9).
11	No	• The nearest recorded sites are around Bomen Axe Quarry approximately 750m to the east. • This zone is highly disturbed and within the existing rail corridor
12	Yes	• Although the nearest artefacts are some distance away, the southwest end has undeveloped land within reasonable proximity of the waterway.
13	Yes	• The nearest recorded sites are 6–7 kilometres away to the north and southeast. • However, landscape analysis suggests that it is possible this zone may have some archaeological potential. The absence of recorded sites in the surrounding area may be a reflection of the lack of survey in the area in the past, rather than an absence of archaeological sites per se. • There are two undeveloped areas that were identified for survey to test predictive modelling, both to the west side of the rail corridor.
14	Yes	• Some artefact sites have been found surrounding this zone on various past infrastructure projects such as pipelines. Survey of some of the area adjacent to the corridor near Illabo was identified: ▪ Sampling 200 metres on either side of Jeralgambeth Creek (to the northeast of Illabo Station); and ▪ Sampling a section to the southwest of Illabo Station.

4.2 Archaeological assessment

4.2.1 Results of survey

The site survey was conducted on 23 – 26 March 2021 and was attended by eight representatives from the Registered Aboriginal Parties.

Site Investigation Zone 1—Murray River Bridge Enhancement Site

This zone was a level terrace adjacent to the Murray River bridge, along an unformed section of Townsend Street between the bridge and Abercorn Street, and along the rail corridor. The gate into the rail corridor was unable to be accessed so observations were made across the fence.

The unformed section of Townsend Street comprised a dirt track punctuated with some deep ruts and scours. The visible soil was a fine silty sand. The edges of unformed road were obscured by grass but otherwise the vehicle tracks were clear. No artefacts were identified on this road. The northern 200 metres of this unformed road was not subject to survey. The road surface was gravelled along this 200 metre section, and the verges were entirely grassed, resulting in this area having no ground surface visibility. On that basis, any further survey would have been ineffective.

Despite the poor visibility, this area was considered to have archaeological potential based on its immediate proximity to the river.

This zone also included the access tracks along both the north and south sides of the rail line for a distance of approximately 275 metres. Both of these zones were clear of vegetation, had a generally sandy surface and had been subject to some surface disturbance. These areas were considered as too disturbed to retain any archaeological potential.

Figure 4.11 Zone 1 Showing survey areas and survey coverage with the original site investigation area and proposal site boundaries (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Figure 4.12 Assessed area of archaeological potential within and adjoining Zone 1 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 3—Billy Hughes Bridge Enhancement Site

This zone included four separate areas around the Railway line, the Billy Hughes bridge and the Hume Highway at Ettamogah (Figure 4.13). On the northern side of the Billy Hughes bridge, and west of the rail line was a large open paddock, which was relatively level. This area had a mildly undulating surface with a minor rise in the centre, gently sloping down towards a small creekline to the north, beyond the property boundary. Surface undulations were indicative of some prior ground surface disturbance. The ground surface visibility ranged from nil visibility (zero per cent) through to total visibility (100 per cent). Approximately 75 per cent of this area was covered completely with grass, with the remaining 25 per cent cleared of vegetation and used for vehicle movement and parking. These exposed areas appeared to have had topsoil removed for surface levelling and vehicle use, and a number of stockpiles of soil were also present on the eastern side of the area towards the rail corridor. Only a few mature trees were in this area.

No artefacts were seen and generally the land was considered fairly disturbed across the whole surface.

Further to the south was a triangle of public land that had been revegetated by Landcare approximately 10 years ago. This area showed a general level of ground disturbance, most of which appeared to be prior to the revegetation program. Disturbance included an access track, areas of stockpiled soil, scattered mounds of dumped bitumen and concrete waste and isolated patches of ground levelling and reshaping – possibly for water run-off control. Across this area was also a network of small irrigation pipes that appeared to be part of the revegetation program. Most of these pipes were disturbed and broken, and the area was scattered with remnants of plastic tree protection barriers. This area had no mature trees with the vegetation all part of the replanting program. Ground surface visibility was fairly poor with ground surface exposures in

around 10 per cent of the site area. No artefacts were seen, and in general this area had been heavily disturbed.

Two areas of combined rail and road easement were surveyed between the railway line and the Hume Highway to the east. This area was fairly level and had been subject to only minor surface disturbance – including the installation of a Telecom Australia communications cable. The area had also been subject to some revegetation. No artefacts were seen.

To the north of the Billy Hughes bridge was a small survey area that includes the steeply former embankments of the Billy Hughes bridge, and the easement between the rail line and the road. This area was completely overgrown with no surface visibility but was considered by all to have been disturbed by the construction of both sets of infrastructure.

The remaining part of Zone 3 was the area to the south of Wagga Road and west of the rail line, extending south to Sanctuary Lane. This area was generally fairly level with some minor undulations indicating minor surface disturbance in the past. Generally ground surface visibility was once again poor, with only a few exposures around the bases of trees. Most of the trees were quite mature, although none showed any signs of cultural modification.

None of these areas within Zone 3 were considered to have any archaeological potential.

During the survey of this area, RAP representative Mark Saddler pointed out that there was Mistletoe in the Yellow Box trees, which provided habitat for gliders, possums and the mistletoe bird – all of which were Wiradjuri bush tucker.

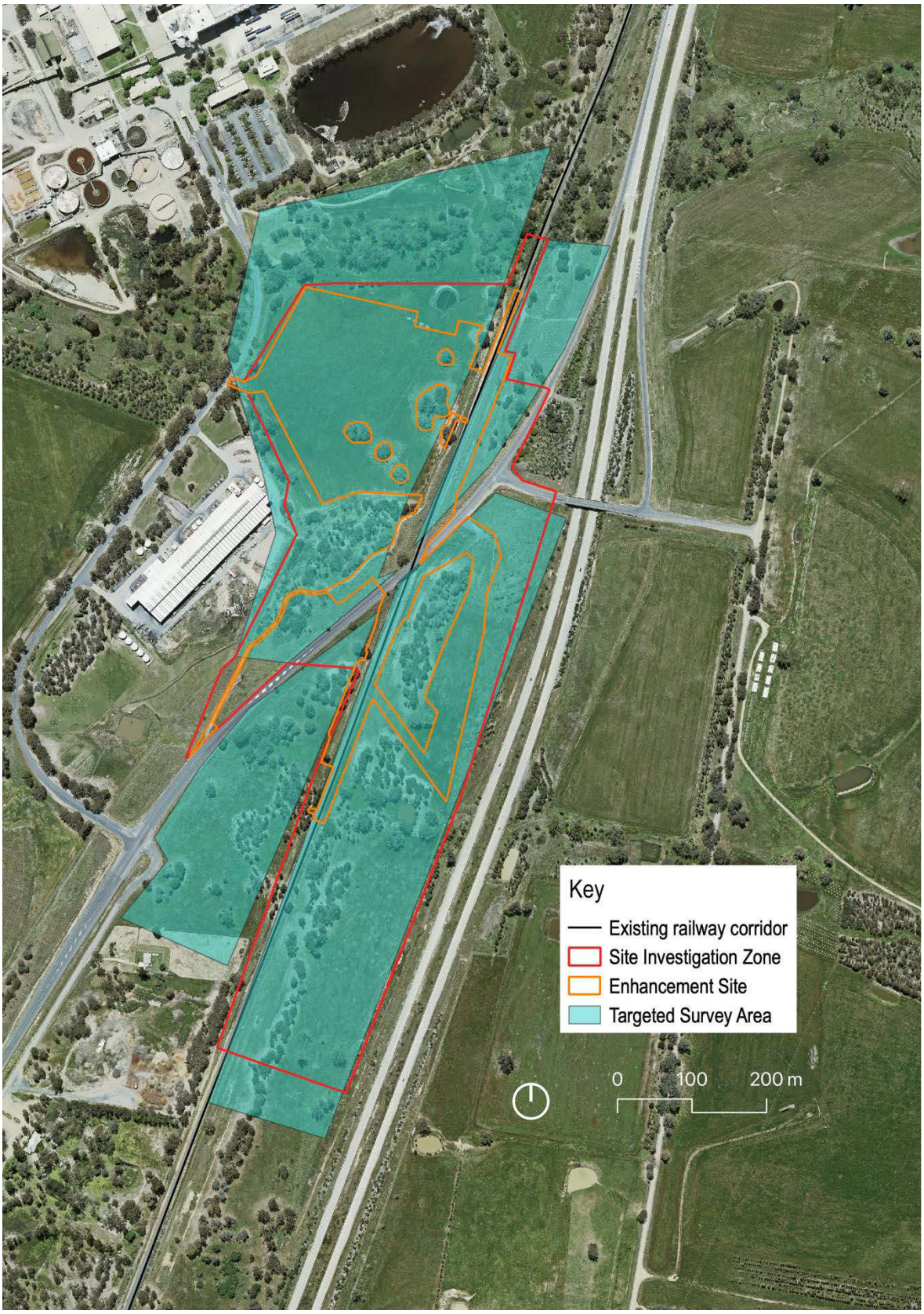

Figure 4.13 Survey areas across Zone 3 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 4—Culcairn Yard Clearances Enhancement Site

Zone 4 was centred on Culcairn. The survey area was located on the eastern side of the rail line to the north of the railway station (Figure 4.14). The survey area was 280 metres long and 50 metres wide and had been nominated as a survey zone based on its apparently undisturbed nature.

The survey area was found to be a small wetland, which was heavily vegetated and providing habitat to range of birds and frog species. There was no ground surface visibility within this survey area, however, it is likely that Aboriginal people in the past would have used wetland areas like this for foraging. While there is no overt archaeological evidence of the use of this area by Aboriginal people in the past, all of the RAPs considered that its natural habitat values were important. This area is not within the proposal site.

Other parts of this enhancement site were not surveyed as these had clearly been subject to substantial prior disturbance as part of the rail construction.

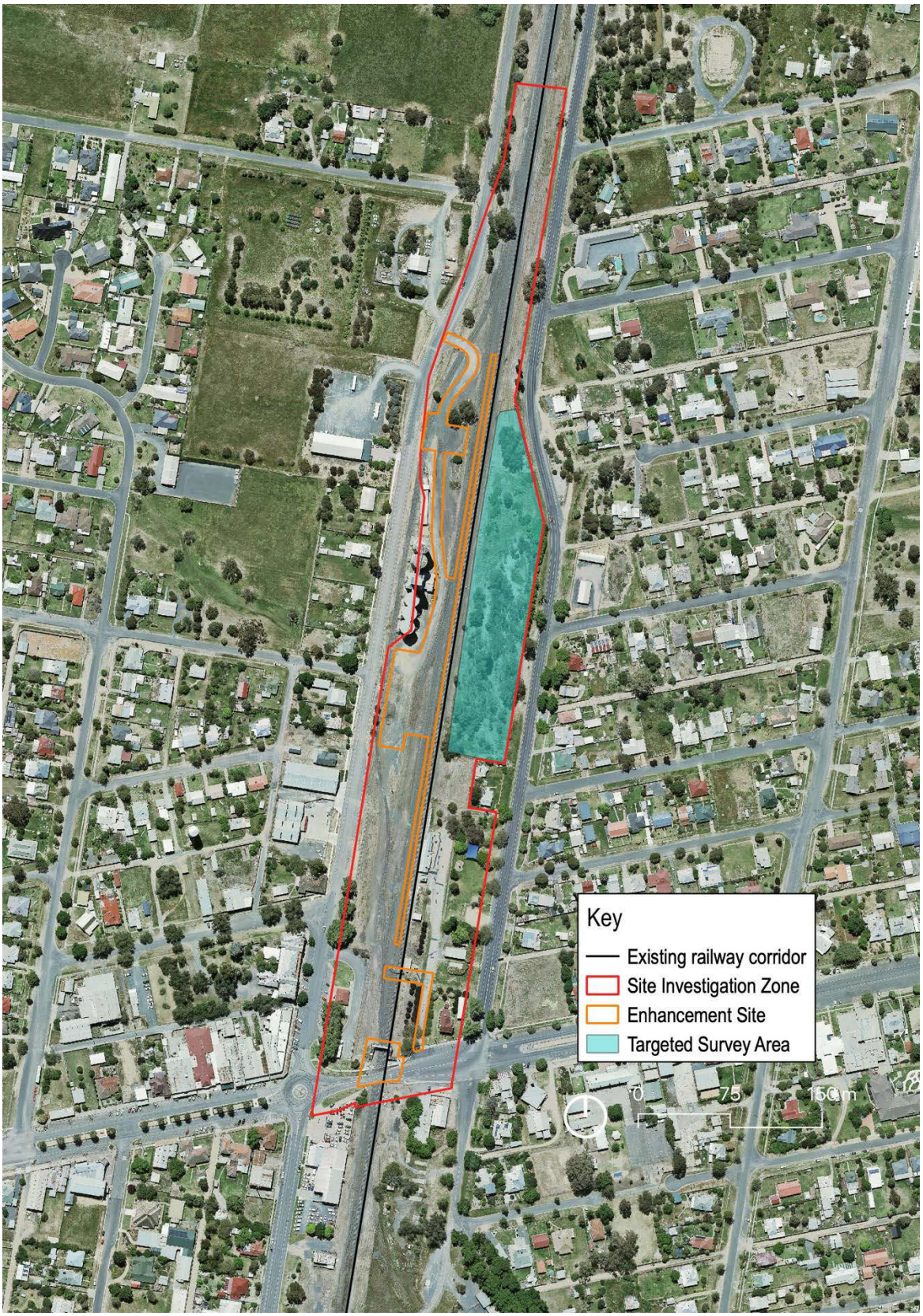

Figure 4.14 Survey areas across Zone 4 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 5—Henty Yard Clearances Enhancement Site

Zone 5 at Henty was chosen for survey because of its proximity to Buckargingah Creek. It comprised two areas – the northern-most being an area of 260 metres by 50 metres on the western side of the track to the north of Sladen Street, while the southern-most area covered 310 metres by 45 metres between the rail line and the Olympic Highway (Figure 4.15).

The northern area had been subject to surface disturbance from rail construction activity and is now mostly covered with ballast, with some areas exposed ground with some minor erosion leading towards the creek at the north. Rail lines are also stockpiled in this area.

The southern area was grassed and landscaped parkland, toilets, Barbeques and a museum building.

No artefacts were found and this area was assessed as having no archaeological potential. The main concern expressed by RAPs in this area was the observation that erosion and sediment run-off may affect Buckargingah Creek to the north. They were concerned that sediment controls be installed to mitigate this possibility.

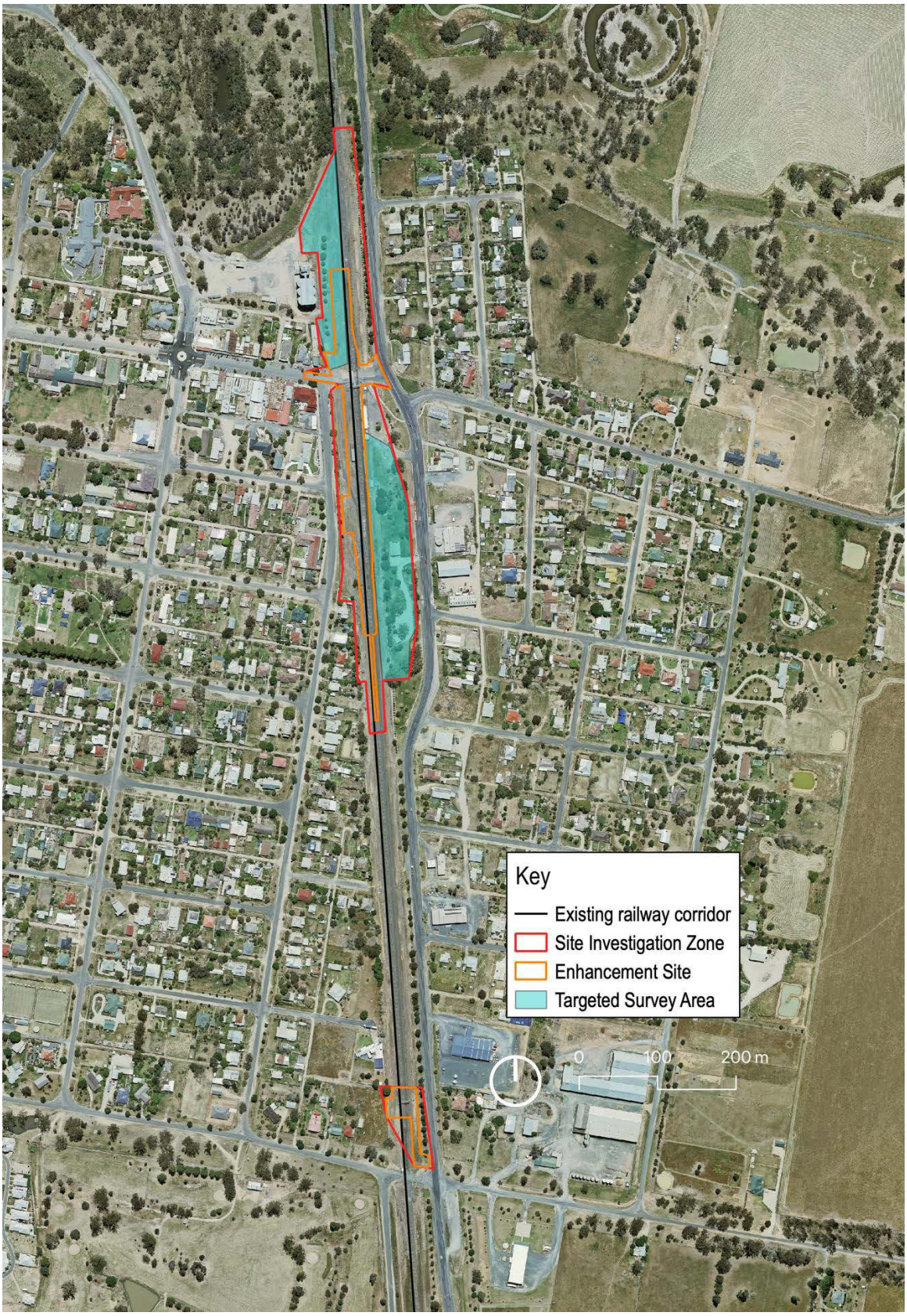

Figure 4.15 Survey areas at Henty, Zone 5 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 6—Yerong Creek Yard Clearances Enhancement site

The survey area at Yerong creek comprised an area of level land either side of the rail line to the south of Plunkett Street (Figure 4.16). The total area was 410 metres by 80 metres and was generally level and muddy. Surface disturbance including stockpiled gravels, stored sleepers, scattered random rubbish, some weeds and ponded water.

One previously unrecorded isolated artefact (A2I–1) was found in this area – a single quartz flaked piece measuring 20 millimetres by 15 millimetres, situated on the muddy ground within four metres of the base of the basalt bed

The eastern side of the track was vegetated with grass and had very low ground surface visibility.

The general disturbance within this area suggests that the zone is unlikely to contain undisturbed archaeological deposits.

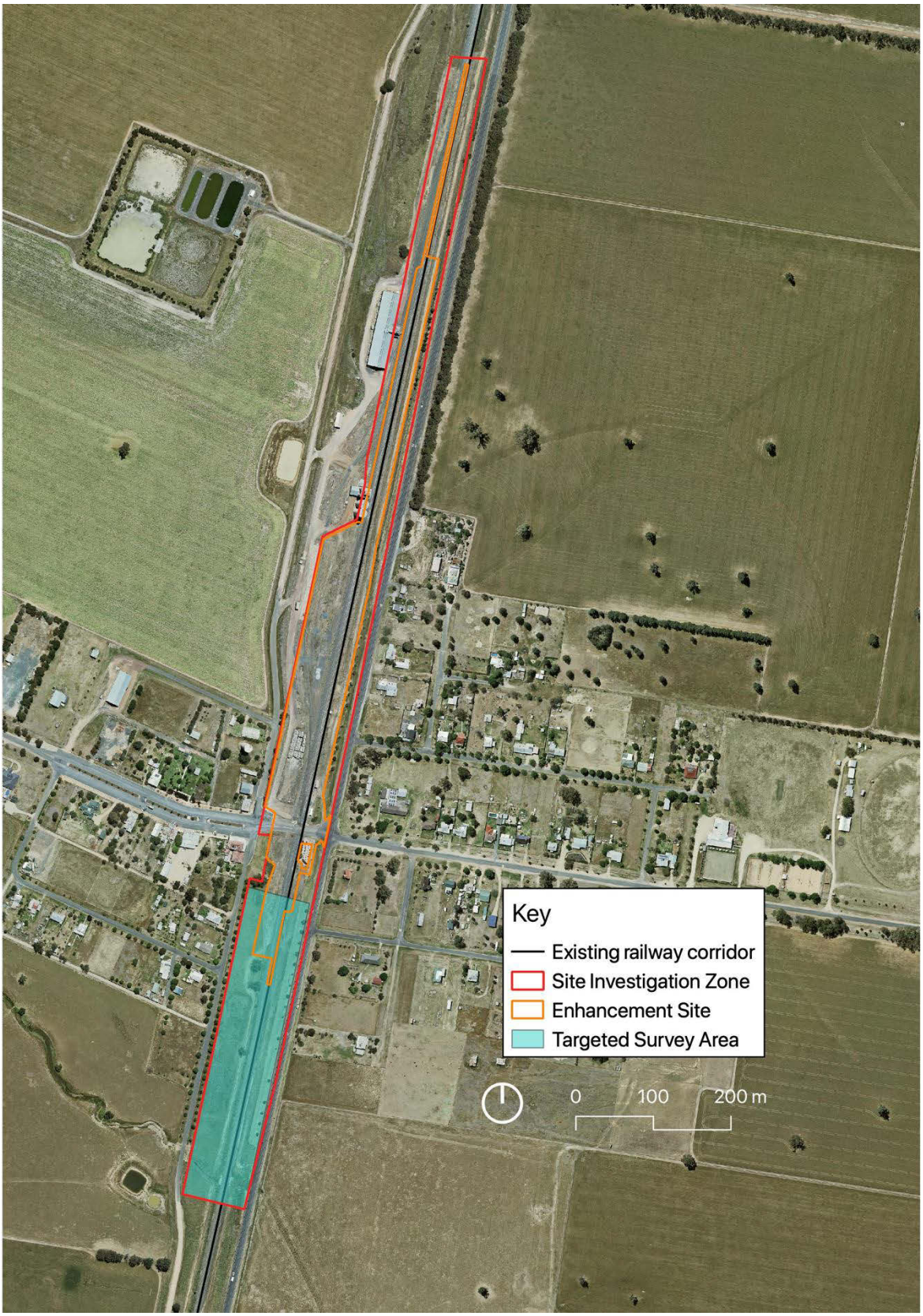

Figure 4.16 Survey area at Zone 6, Yerong Creek (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 8—Uranquinty Yard Clearances Enhancement Site

The survey area at Uranquinty was located between the rail line and the Olympic Highway and mostly to the south-west of the Yarragundry Street (Figure 4.17). This zone was mainly levelled, landscaped public park, covering 450 metres by 40 metres, with paths, a rest stop and garden beds. It had been identified for survey based on its proximity to Sandy Creek which is approximately 250 metres to the west of this area. While general ground surface visibility was low, no artefacts were found and it was apparent that the surface had been levelled and landscape for the park. This area was considered to have no archaeological potential.

Figure 4.17 Survey area at Zone 8, Uranquinty (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 12—Harefield Yard Clearances Enhancement Site

The main area of interest at Harefield was to the south-west of the container terminal on the northern side of the track (Figure 4.18). This area was substantially disturbed due to the container terminal construction. The opposite side of the track was also notably disturbed and comprised mainly ballast and disturbed ground overgrown with grass.

This area was assessed as having no archaeological potential.

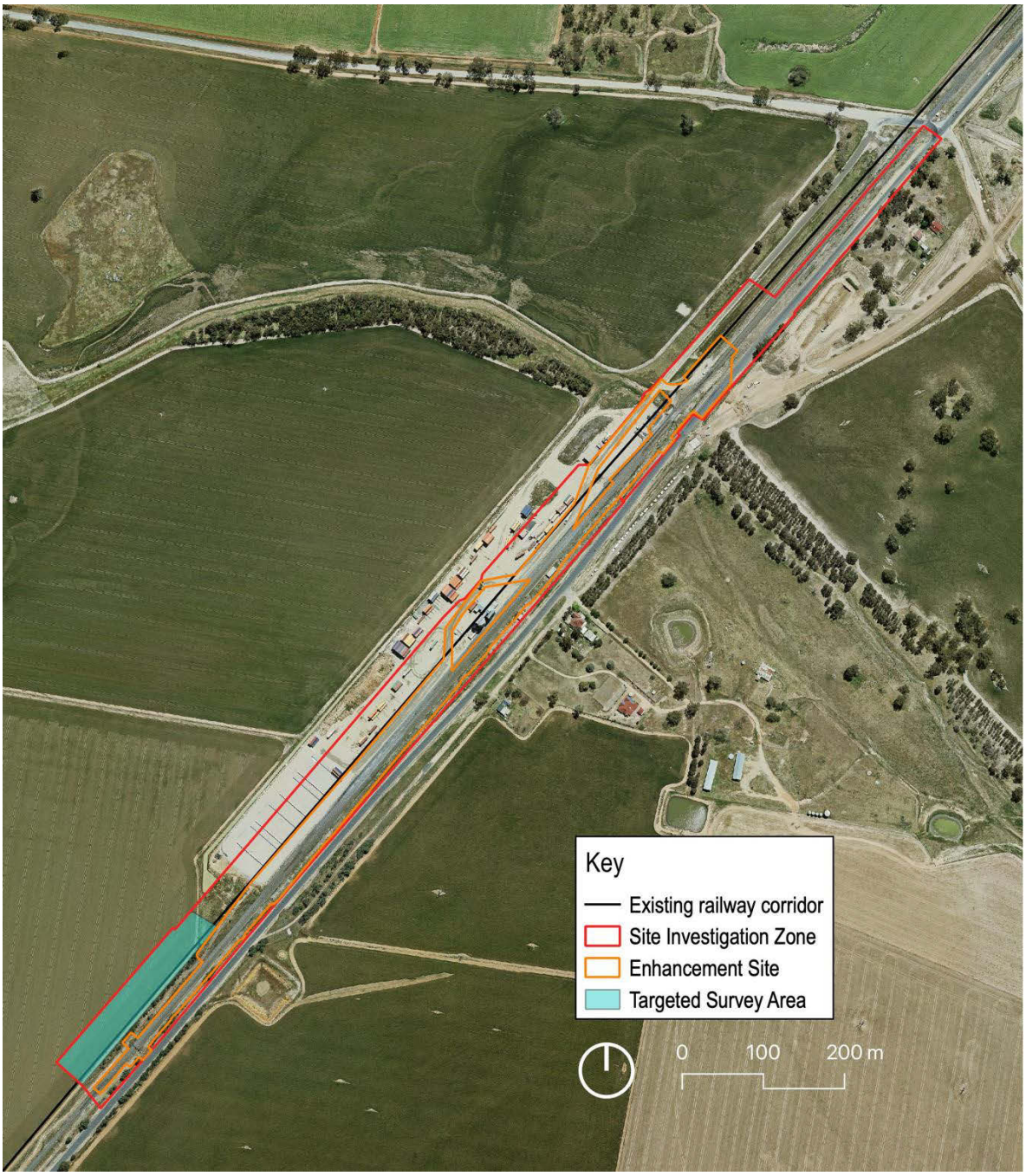

Figure 4.18 Survey Areas within Zone 12 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 13—Olympic Highway Underbridge Enhancement Site

The zone 13 areas of interest were focused around the northern end of Junee. A large area of land was surveyed on the eastern side of the Olympic Highway to the south of the Olympic Highway underbridge, and another area of land to the north of the Olympic Highway underbridge between the Olympic Highway and Waterworks Road (Figure 4.19).

The southern area mainly comprised grassed and landscaped parkland within 250 metres of the south of the bridge. Further south for another 250 metres was vacant land – possibly rail reserve. This land was mainly grassed with a moderate scattering of trees with two gravelled access tracks. It appeared largely unused and partly disturbed by the establishment of the tracks and some recent landscaping drainage works

near the Olympic Highway underbridge. The landscaping works for drainage included grading a drainage batter and compacting the ground.

One previously unrecorded isolated artefact (A2I – 2) was found here – a small quartz flaked piece measuring 17 millimetres by eight millimetres by eight millimetres. It was located on the edge of the drainage landscaping, having been exposed by grading and levelling for the drainage works. Despite one artefact having been identified, the overall archaeological potential of this area was considered low due to its generally level landform and the nearest natural watercourse being a small ephemeral drainage channel. The artefact was considered to be a representation of a general background scatter of artefactual material.

North of the Olympic Highway was a service station which was situated on the southern side of an open grassed paddock. This paddock was one of the areas of interest. It was gently sloping to the south and completely covered with grass – it had no ground surface visibility.

Further north around a bend in the Olympic Highway was an area of vacant overgrown land which had also been identified as a project investigation area. It was substantially vegetated with high grasses and had a moderate tree coverage and was gently sloping to the west. It had a numerous exposures across the area between the grasses where ground surface visibility was high, dropping to very low in area where grass cover was thicker. No artefacts were found.

Generally across Zone 13, the areas of investigation were considered to have no archaeological potential.

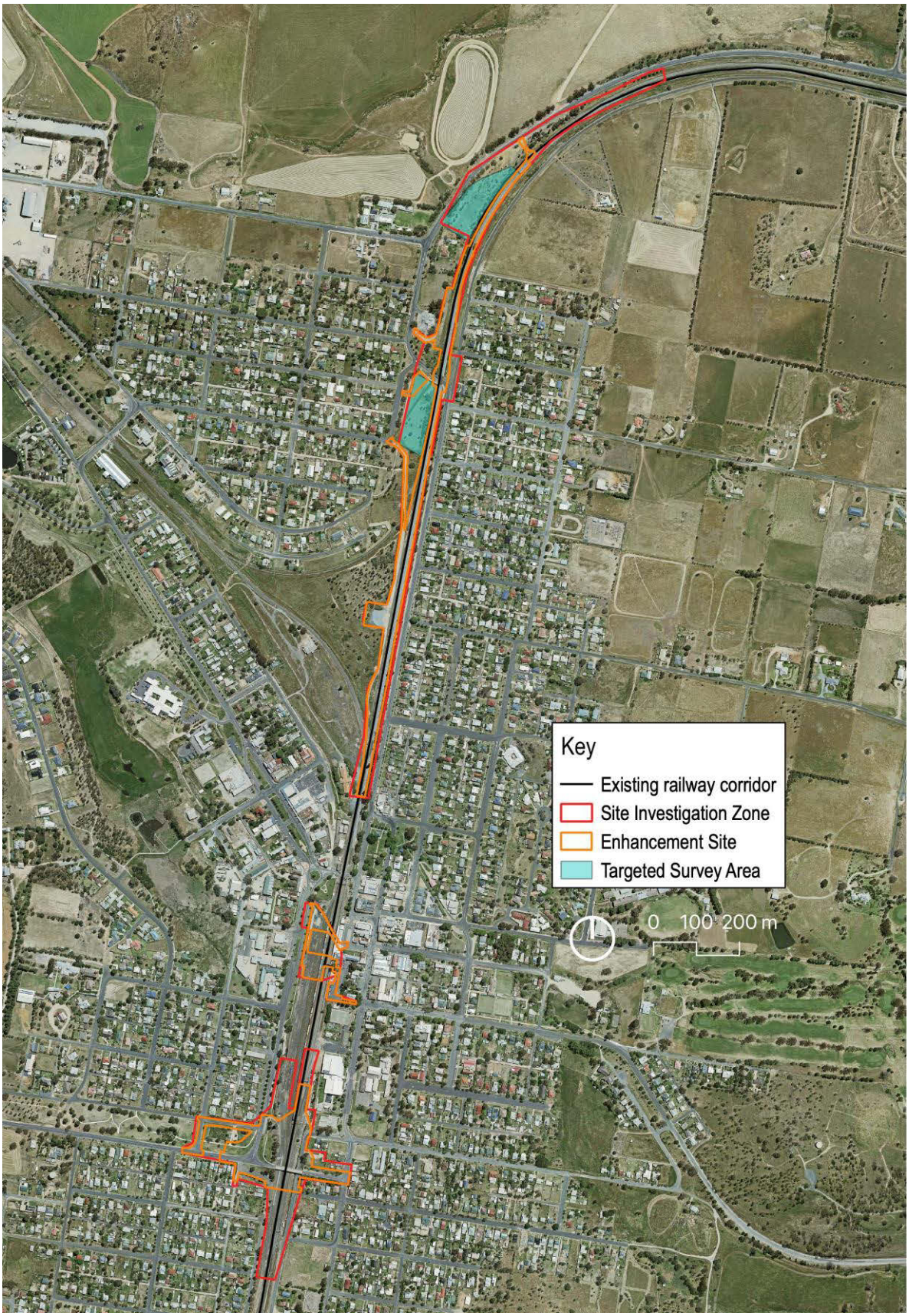

Figure 4.19 Survey areas in Zone 13 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

Site Investigation Zone 14—Junee to Illabo Clearances Enhancement Site

Zone 14 was located at Illabo with two investigation areas – one to the south of township and the other to the north (Figure 4.20 and 4.21).

The southern investigation area covered a 420 metres by 45 metres zone of grassed vacant land between the Olympic Highway and the rail corridor. This area was low-lying, poorly drained land, and despite the grass cover had a modest number of areas of reasonable ground surface visibility. No artefacts were noted here, and this area was considered to have nil archaeological potential.

The northern investigation area covered 420 metres by 30 metres and was located just to the south-west of the Warrens Lane intersection with the Olympic Highway. This area straddled Jeralgambeth Creek and was chosen based on this proximity. Overall the land in the area was fairly disturbed, as it was largely within the existing rail corridor and comprised an access track and the ballast bed. No artefacts were noted here, and this area was also considered to have nil archaeological potential.

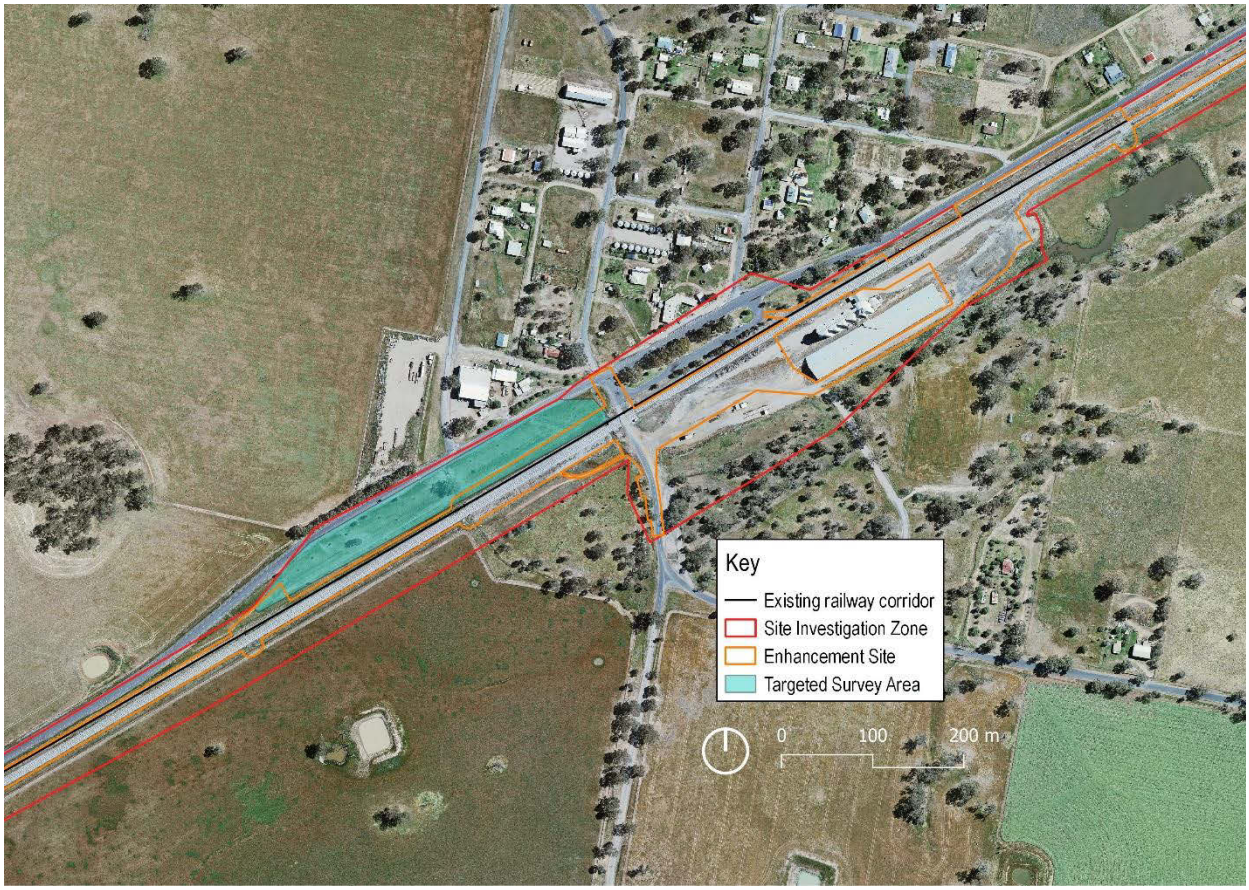

Figure 4.20 Survey area at the south end of Zone 14 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

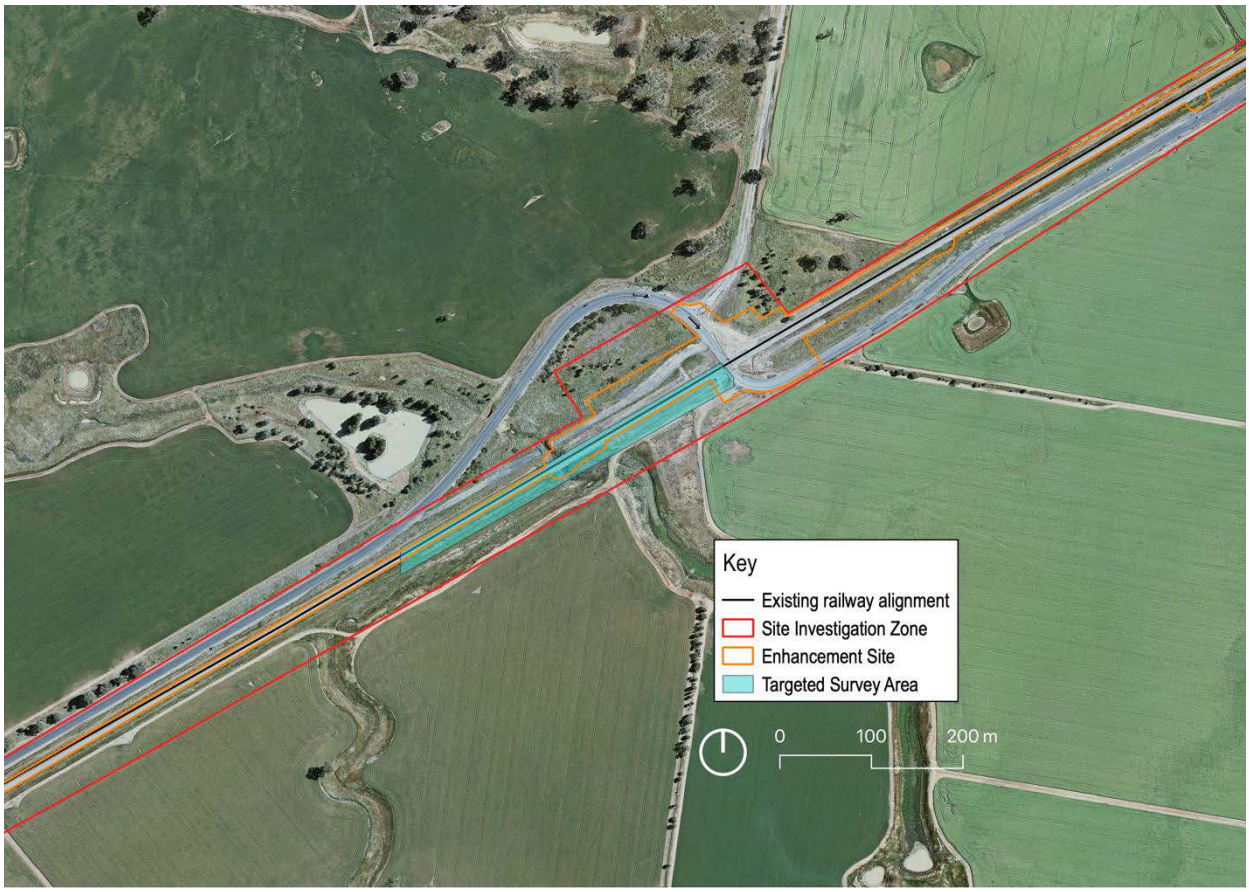

Figure 4.21 Survey area at the north end of Zone 14 (Source: SIX Maps aerial with ARTC proposal overlay and GML additions, 2021)

4.2.2 Summary of Survey Outcomes

Two isolated artefacts were identified within the site investigation areas at Yerong Creek (Zone 6) (Isolated artefact A2I-1) and Junee (Zone 13) (Isolated artefact A2I-2), although neither is within the enhancement sites, and neither would be directly impacted by the proposal.

One area of Potential Archaeological Deposit (PAD) was identified at the Murray River bridge enhancement site (Zone 1). At this location, the majority of the identified PAD was outside of the proposal site. Furthermore, the intended activities along the unformed Townsend Street would involve surface grading and covering the road with gravel to limit any disturbance by the proposal to the zone of existing surface disturbance. Use of this road would also be restricted to light vehicles to avoid more substantial works to make this road suitable for heavy vehicles. On the basis of this proposed activity, no further investigation or test excavation was required for this area as the above measures would avoid any impacts on the PAD.

All other areas of the site investigation zones were assessed as having no archaeological potential. Most of the survey areas were found to have been subject to prior disturbance, thus diminishing the likelihood of the survival of intact archaeological sites and deposits. On the basis of this conclusion, where subsequent changes to the proposal site occurred, completion of additional survey was not considered necessary as these areas were not considered to have archaeological potential.

4.3 Cultural values and significance

Throughout the on-site survey and assessment process discussions were held with RAPs in regard to the cultural values of the project areas.

The cultural values noted were generally related to the importance of Wiradjuri country, and the fact that the proposal runs through this country. It was observed that the existing rail line follows traditional pathways. New infrastructure including rail can disturb and affect places that are not necessarily immediately within the rail corridor including nearby important places and songlines. Observations on cultural values include the natural environment because the RAPs view nature and culture as intertwined parts of the concept of their country (Bundya Cultural Services 2021).

4.3.1 Important places noted within or in the near vicinity of the proposal

Important places noted within or in the near vicinity of the proposal are outlined in the following sections. No other specifically significant places were identified by the RAPs.

Doodle Comer Swamp and Buckargingah Creek

The key most important location close to the proposal was the Doodle Comer Swamp at Henty (Figure 4.22 and 4.23). This swamp is an important natural feature of the cultural landscape as a resource zone, as a refuge for wildlife and as a culturally important cultural place. The Doodle Comer Swamp is located approximately one kilometre to the west of Henty and covers an area of approximately five kilometres by 4.6 kilometres. Its specific cultural significance was not disclosed.

Doodle Comer Swamp is fed by a number of watercourses including Buckargingah Creek which is connected to a locally significant songline. Buckargingah Creek crosses the rail line at the north end of Henty and is located over 150 metres to the north of the Henty Yard clearances enhancement. Detail of the songline was not disclosed.

There was substantial concern here about environmental protection, ensuring that sediments would be controlled to avoid harm to the water quality and habitats of sites downstream.

Bomen Axe Quarry

Bomen Axe Quarry is a significant Aboriginal place within 750 metres of the proposal site (Figures 4.22 and 4.25). This site is a rock quarry and traditional axe manufacturing zone, and is an important cultural place for the Wiradjuri people due to its rarity, its demonstration of a range of Wiradjuri cultural practices and its potential as an educational resource.

In general discussions of the cultural landscape this site was not specifically identified by the RAPs as being a concern in relation to the proposal.

4.3.2 Other observations on cultural values in the near vicinity of the proposal

Beyond the discussions of specific cultural sites, the RAPs also commented on their cultural views and concerns in relation to elements of the natural environment within and around the proposal site, because of the interconnectedness of nature and culture across Wiradjuri country.

Ettamogah—Billy Hughes Bridge enhancement site

A narrow vegetated area to the south of the Billy Hughes bridge, within the investigation area to the east of the rail line was identified as a habitat zone that should not be disturbed. The RAPs were of the opinion that this area had become a sanctuary for native fauna including glider squirrel, mistletoe bird and possum. The

general nature of the flora and faunal environment was observed and generally noted to have been partly compromised by local development in this area. This area is not within the proposal site.

Harefield—Harefield Yard Clearances enhancement site

Reedy Creek just to the north of Harefield is within the Harefield Yard clearances enhancement site (Figure 4.24). This creek leads to Houlaghans Creek (to the west) which is part of a significant Wiradjuri site comprising a number of creeks and wetlands. The key concern here was about environmental protection, ensuring that sediments and runoff would be controlled to avoid harm to the water quality of downstream environments.

Illabo— Junee to Illabo clearances enhancement site

This area straddled Jeralgambeth Creek which is a tributary of Billabong Creek (Figure 4.26). The main concern was about environmental protection, ensuring that sediments and run off would be controlled to avoid harm to the water quality of downstream environments.

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Figure 4.22 Cultural Sites in the vicinity of the proposal – overview (Source: SIX Maps aerial with GML additions, 2021)

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Figure 4.23 Cultural places near Henty (Source: SIX Maps aerial with GML additions, 2021)

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Figure 4.24 Cultural places near Harefield (Source: SIX Maps aerial with GML additions, 2021)

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Figure 4.25 Cultural places near the Bomen Yard clearances enhancement site (Source: SIX Maps aerial with GML additions, 2021)

Figure 4.26 Cultural places near Illabo (Source: SIX Maps aerial with GML additions, 2021)

4.3.3 Significance

Cultural Places

Two aspects of the cultural reporting give rise to observations regarding significance – one specific culturally important place, Doodle Comer Swamp, and a general concern about the environment surrounding the proposal.

Doodle Comer Swamp is considered to be a cultural area of high significance by Wiradjuri people. It is a place of both cultural and natural importance. While details of the cultural aspects of this significance were not disclosed, RAPs indicated that it was a highly significant place.

Furthermore, its association with Buckargingah Creek and its songline reinforces the notion of that significance.

Generally the significance of the natural landscape was expressed by all RAPs during the survey work. This significance revolves around Caring for Country and ensuring that the proposal does not inadvertently impact the natural environment.

Archaeological objects and sites

The two isolated artefacts were noted by the RAPs as being tangible evidence of the presence of Aboriginal people in the landscape prior colonial settlement.

The scientific significance of these two artefacts, and the area of archaeological potential in site Investigation Zone 1, can be assessed in relation to the Heritage NSW guidelines for assessing scientific value which includes the following five key criteria:

- Research potential—does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
  - Integrity and condition—integrity refers to the level of modification a site has been subject to (the cultural and natural formation process) and whether the site could yield intact archaeological deposits, which could be spatially meaningful. Condition considers the state of the material, which is especially relevant for organic materials.
  - Complexity—the demonstrated or potential ability of a site to yield a complex assemblage (stone, bone and/or shell) and/or features (hearths, fire pits, activity areas).
  - Archaeological potential—the potential to yield information (from subsurface materials which retain integrity, stratigraphical or not) that will contribute to an understanding of contemporary archaeological interest, or which could be saved for future research potential.
  - Connectedness—whether the site can be connected to other sites at the local or regional level through aspects such as type, chronology, content (ie materials present, manufacturing processes), spatial patterning or ethnohistorical information.
- Representativeness—how much variability (outside and/or inside the study area) exists, what is already conserved, and how much connectivity is there?
- Rarity—is the study area important in demonstrating a distinctive way of life, custom, process, land use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential—does the study area contain teaching sites or sites that might have teaching potential?
- Archaeological landscapes—the study of the cultural sites relating to Aboriginal peoples within the context of their interactions in the wider social and natural environment they inhabited. Landscapes can be large or small depending upon specific contexts (ie local or regional conditions); they may also be influenced by Aboriginal social and demographic factors (which may no longer be apparent).

The two isolated artefacts do not meet any of the criteria above—being isolated and individual occurrences they provide little information on the nature of the cultural activity in the area, they lack complexity and connectedness to afford substantive research value, they are not particularly rare, and are too disconnected from other cultural material to demonstrate meaningful representativeness. Overall, therefore considered to have no scientific significance. The RAPs noted that stone artefact sites are generally significant to them as being tangible evidence of the presence of Aboriginal people in the landscape prior to colonial settlement.

The two isolated artefacts are examples of that tangible evidence, although, due to their locations being devoid of any other cultural context, were not considered to be of high significance.

The area of archaeological potential in site Investigation Zone 1 has not been subject to test excavation and therefore cannot be assessed against these criteria at this time. Revisions to the construction site compound design resulted in the majority of the area of archaeological potential being excluded from the proposal site (see Section 5.1), and therefore no further investigation of this PAD was undertaken.

5 Impact assessment

This section assesses the potential construction and operational impacts of the proposal, both direct and indirect, to Aboriginal heritage values identified in or in proximity to the proposal site.

5.1 Impact avoidance and minimisation

The results of the desktop assessment and site survey have been considered in relation to the development of the proposal, including construction methodology. This has resulted in the following outcomes:

- At Murray River bridge, the majority of the area of archaeological potential has been excluded from the proposal site by relocating the required laydown areas to a location within the existing rail corridor near Olive Street, Albury. Areas of archaeological potential remaining within the proposal site, are limited to the existing unformed section of Townsend Street and construction activities for this area have been restricted to minimal track formation works and light vehicle access only. This has enabled works to be limited to a zone of existing surface disturbance, and in doing so, avoided more substantial road improvement works that would have otherwise been required to make this suitable for heavy vehicles. This is discussed further in Section 5.2 of this report.
- At Yerong Creek the isolated artefact (A2I-1) is outside of the proposal site.
- At Junee (Olympic Highway underbridge), the construction compound was adjusted to avoid the identified isolated artefact (A2I-2).
- Across the enhancement sites, removal of native vegetation has been limited to the greatest extent possible. This includes avoidance of patches of native vegetation in the vicinity of Billy Hughes bridge.

Despite these refinements, some impacts could occur without appropriate harm minimisation and mitigation measures in place. This is discussed in Section 5.2 and 5.3.

In addition to the impact avoidance outcomes outlined above, a number of mitigation measures have also responded to the issues raised by RAPs (which are discussed in the following section and in Section 7). A full summary of the issues raised by RAPs and the response by the proposal is provided in Appendix E.

5.2 Construction impacts

The proposal includes 24 enhancement sites along the route of the existing rail corridor between Albury and Illabo that require enhancement and modification to support the transport of double-stacked freight trains.

The anticipated works include modifying the existing rail line and associated infrastructure (such as bridges) to a sufficient height and width to support the safe running of double-stacked freight trains.

General works would include:

- modifications to rail tracks and associated infrastructure (such as trackside drainage and signal structures)
- modifications to bridges (pedestrian, shared user and/or road bridges)
- modifications to level crossings
- establishment and operation of temporary construction compounds
- adjustments to access roads and creation of temporary access routes and
- utility adjustments.

Specifically, the potential for construction impacts to Aboriginal heritage would originate from ground preparation works for temporary construction compounds and access routes, and from earthworks for permanent infrastructure (including, but not limited to track modifications, drainage and utility upgrades).

5.2.1 Assessment of direct impacts

This section specifically addresses those enhancement sites where the survey and assessment identified Aboriginal cultural heritage values, namely:

- Zone 1—Murray River bridge enhancement site
- Zone 6—Yerong Creek Yard clearances enhancement site and
- Zone 13 – Olympic Highway underbridge enhancement site.

The remaining enhancements sites assessed had no Aboriginal cultural heritage values identified and had also been subject to substantial ground surface disturbance in many of the survey and assessment areas.

Murray River bridge Enhancement Site

The site survey identified that both the private property and the access track were areas of archaeological potential due to their proximity to the river. As discussed in Section 5.1, the proposal site has been refined leaving only the unformed section of Townsend Street as the likely zone of possible impact. This unformed road would be subject to surface grading (around 50 millimetres in depth) and covering with gravel to avoid substantial impacts to the underlying zones of archaeological potential. Consequently, there would be minor surface impacts through the grading process although this would occur within a zone of existing surface disturbance. Therefore, this work is unlikely to impact intact archaeological deposits. The gravel cover would provide protection from additional impacts from vehicle movements during the construction process.

Yerong Creek Yard Clearances Enhancement Site

One isolated artefact (A2I-1) was found in this zone during the survey. The artefact is approximately 200 metres outside the proposal site and therefore would not be subject to any direct impact. The remainder of the zone had no archaeological potential, and no further impacts are predicted.

Olympic Highway Underbridge Enhancement Site

One isolated artefact (A2I-2) was found in this zone. The artefact is not within the proposal site. It is however located within five metres of a construction compound. The potential for inadvertent direct impacts would be managed by through mitigation measures (refer to Section 7.2). This area would be returned to open space following the completion of construction.

The remainder of the zone had no archaeological potential, and no further impacts are predicted.

5.2.2 Assessment of indirect impacts

Indirect impacts from the proposal are largely centred around the idea that impacts to the broader environment also constitute cultural impacts based on Caring for Country ideals, although impacts from vibration may also have the potential to impact some site types.

Cultural values

No specific impacts to cultural values were noted by the RAPs during consultation. Concerns were specifically raised relating to the relationship between the rail corridor and its position within Wiradjuri country. The concerns raised were focussed on erosion and sedimentation where the proposal crosses or

is in the near vicinity of creeks, and also the potential for impacts to fauna in an area of vegetation close to the proposal. Both are discussed below.

Erosion and sedimentation

During consultation the Aboriginal community noted their concern about possible indirect impacts from erosion and sedimentation from construction work areas, and impacts to the water quality of downstream environments that have cultural value. Specifically, concerns were raised at the following sites:

- Henty Yard clearances enhancement site. The proposal site is located over 150 metres to the south of Buckargingah Creek. Buckargingah Creek has cultural values associated with a songline and with the Doodle Comer Swamp to the south-west.
- Harefield Yard clearances enhancement site. The proposal site crosses Reedy Creek, which drains to Houlaghans Creek (to the west) which is part of a significant Wiradjuri site comprising a number of creeks and wetlands. Works would be required on the existing bridge crossing Reedy Creek as part of the proposal.
- Junee to Illabo clearances enhancement site. The proposal crosses Jeralgambeth Creek, which is a tributary to Billabong Creek, and alterations to an existing culvert which drains into this creek, would be required as part of the proposal.

Construction work across these sites include track realignment works and modifications to existing structures. This would require earthwork activities to account for the widened rail formation and adjustments to other rail infrastructure, clearing of trackside vegetation and works in or over waterways. Site specific erosion and sediment control plans would be required at each proposal site to manage and minimise the risks of impacts to water quality. As discussed in Technical Paper 11 (Hydrology, flooding and water quality), the implementation of appropriate soil and water construction management measures would minimise impacts to water quality impacts during construction of the proposal. Additionally, impacts would be limited to the duration of construction and would be a short term.

As such construction of the proposal would not cause significant changes to the water quality environment or downstream environments.

Impacts to aquatic biodiversity of downstream environments

As discussed in Technical Paper 9 (Aquatic biodiversity impact assessment), changes in water quality, removal of riparian or in-stream vegetation and works within a watercourse can impact the aquatic biodiversity of the receiving environment. In the case of Buckargingah Creek (and the receiving Doodle Comer wetland) and Reedy Creek, the risk of impacts to aquatic biodiversity by the proposal would be low or negligible due to the lack of key fish habitat values, the minor nature of works proposed near or at these watercourses, and the proposed mitigation measures provided in Technical Paper 11 (Hydrology, flooding and water quality).

At Jeralgambeth Creek, there is a moderate risk of impacts to aquatic biodiversity due to the culvert modifications which would require in-stream works, vegetation removal and the temporary blockage of fish passage. As concluded in the technical paper, these potential impacts would be reduced by appropriate construction mitigation and management measures. This includes erosion and sediment control measures, and conducting instream works where possible in dry conditions.

Impacts to fauna habitat at Ettamogah

During consultation the Aboriginal community noted their concern about possible impacts to habitat south of the Billy Hughes bridge located between the rail line and the Hume Highway. This patch of vegetation

has been avoided by the proposal. Indirect impacts to fauna during construction (such as lighting) has been considered in Technical Paper 8 (Biodiversity development assessment report) and has concluded that any impacts would be low to negligible. Therefore, impacts to any cultural values relating to the integrity of the faunal habitat are also low to negligible.

Further discussion on biodiversity, including mitigation, is provided in Technical Paper 8 (Biodiversity development assessment report).

Vibration

Vibration has the potential to affect the condition of objects, places and structures, including heritage items and features. The ability to cause damage depends on the strength and duration of the vibration-generating activity, the separation distance, and the integrity and condition of heritage item/feature. Aboriginal heritage places such as rock shelters are more sensitive to being damaged by vibration-generating activities.

In the case of the proposal, no sites sensitive to vibration were identified during this assessment. The assessment identified two isolated artefacts and an area of PAD—none of which would be sensitive to vibration from with construction or operation of the proposal. The most likely Aboriginal heritage sites that could be affected by vibration would be rock shelters, and none have been recorded within 20 kilometres of the proposal. Landforms in the area suggest that the likelihood of an undiscovered rock shelter existing within 200m of the proposal are non-existent.

Therefore, there would be no direct or indirect impacts to Aboriginal cultural heritage sites from vibration.

5.3 Ongoing operation impacts

The proposal is located within the existing rail corridor and the rail maintenance regimes would not change. While the proposal would enable the use of double stacked container trains and the frequency of movements would increase, this use would remain within the existing context of the landscape (being a rail corridor). Therefore, the proposal would not result in changes to the heritage environment.

The additional risk of impact on water quality and aquatic biodiversity in tributaries of watercourses and wetlands with cultural value from the operation of the proposal is negligible. The proposal would be confined to the existing rail corridor and the maintenance regime would not change as a result of the proposal.

6 Cumulative impacts

For an EIS, cumulative impacts can be defined as the successive, incremental, and combined effect of multiple impacts, which may in themselves be minor but could become significant when considered together. The methodology for the cumulative impact assessment is provided in detail in the EIS (Chapter 26).

Cumulative harm relates to the impact the proposal would have on the entire representative archaeological resource of Australia through the accumulation of multiple impacts over a period of time.

Projects identified with sufficient information to undertake assessment of potential cumulative impacts from the proposal include:

- Thurgoona Link Road
- Jindera Solar Farm
- Glenellen Solar Farm
- Walla Walla Solar Farm
- Culcairn Solar Farm
- Gregadoo Solar Farm
- EnergyConnect (NSW – Eastern Section)
- Inland Rail – Illabo to Stockinbingal section

6.1 Proposal impact summary

The proposal has been assessed as having no impacts to Aboriginal cultural heritage. The two newly identified isolated artefacts will not be subject to any impacts. Similarly, known significant Aboriginal cultural places in the near vicinity of the proposal will not be affected by the proposal.

The RAPs raised concerns about the management of erosion and sedimentation as a potential impact (both immediate and cumulative) to Wiradjuri country. The issues raised have been discussed and ARTC provided an update on responses to the issues raised, including ongoing operational management actions, and actions specifically relating to the proposal.

Overall, the proposal would not diminish the overall representative archaeological resource across Australia.

6.2 Nearby projects

Projects in the study area considered to have the potential for cumulative impacts with the proposal are listed in Table 6.1. Locations of these projects are shown on Figure 6.1.

Table 6.1 Projects in the Vicinity of the Proposal.

Project	Location	Impact
Thurgoona Link Road	Adjacent to Billy Hughes bridge Enhancement Site	Possible impacts to 5 registered Aboriginal sites.
Jindera Solar Farm	About 10 kilometres northwest of Table Top Yard clearances Enhancement Site	Direct impacts to 40 stone artefact sites
Glenellen Solar Farm	About 14 kilometres northwest of Table Top Yard clearances Enhancement Site	Direct impacts to 3 stone artefact sites

Project	Location	Impact
Walla Walla Solar Farm	About six kilometres southwest of Culcairn Yard clearances Enhancement Site	Direct impacts to 24 stone artefact sites
Culcairn Solar Farm	About 10 kilometres southwest of Culcairn Yard clearances Enhancement Site	Direct impacts to 40 stone artefact sites and one cultural site
Gregadoo Solar Farm	About 12 kilometres east of Uranquinty Yard clearances Enhancement Site	Direct impacts to 3 stone artefact sites
Energy Connect (NSW - Eastern Section)	From Wagga Wagga to Buronga, approx. 540 km to the east.	Direct and indirect impacts on a total of 94 sites
Inland Rail—Illabo to Stockinbingal section	Adjacent to Junee to Illabo clearances Enhancement Site and northern continuation of proposal	Seven of 22 identified sites to be partially or completely impacted

As the proposal has been assessed as having no impacts it would also not have a cumulative impact on the Aboriginal cultural heritage values in the area.

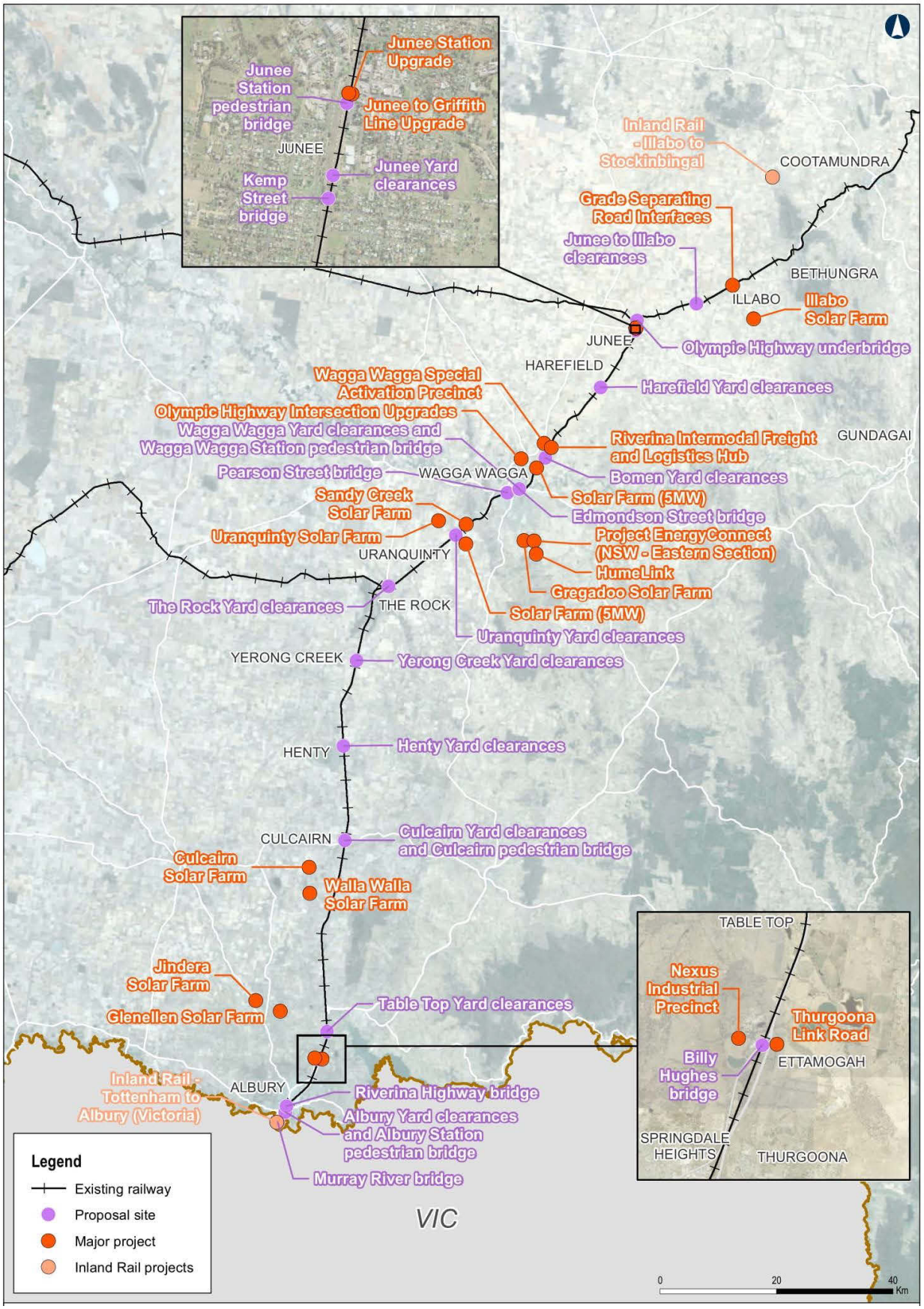

Figure 6.1 Major projects in the vicinity of the proposal (Source: ARTC)

7 Mitigation and management measures

7.1 Approach to mitigation and management

Environmental management for the proposal would be carried out in accordance with the environmental management approach as detailed in Chapter 27 (Approach to environmental management) and Appendix H (Construction Environmental Management Plan outline) of the EIS.

This would include a heritage sub-plan, prepared as part of the Construction Environmental Management Plan (CEMP). The sub-plan would detail the measures to be implemented during construction to minimise the potential for impacts, manage heritage and the procedures for any unexpected finds. It would include (but is not limited to) the following:

- an unexpected finds procedure
- plans and requirements for exclusion fencing
- induction package for construction workers and supervisors
- measures to protect sites close to the proposal site from inadvertent impacts and
- mechanisms for the monitoring, review and amendment of the sub-plan.

7.2 Summary of mitigation and management measures

The mitigation measures to manage impacts to Aboriginal heritage from the proposal during pre-construction and construction are outlined in Table 7. No mitigation measures have been identified for the operational phase of the proposal.

Mitigation measures proposed in Technical Paper 11 would address potential soil and water quality impacts.

Table 7.1 General Mitigation Measures.

Impact type	Mitigation management measure	Phase
Avoidance of inadvertent impacts	A2I-1 and A2I-2 will be marked on the environmental control maps, site plans, and avoided. Prior to the commencement of construction, the location of A21-2 will be inspected by a suitability qualified person to reconfirm location and to demarcate the exclusion measures (such as fencing).	Pre-construction and construction
Avoidance of inadvertent impacts	Prior to the commencement of construction at the Murray River bridge enhancement site, the section of Townsend Street that requires grading would be inspected by a suitably qualified person, and the projects RAPs to confirm the absence of Aboriginal objects. Depending on the results of that survey further mitigation measures or assessment may be required,	Pre-construction and construction
Avoidance of inadvertent impacts	If any changes are made to the construction methodology (surface grading and gravel cover as outlined in Section 5.2.1) at the Murray River bridge enhancement site relating to the use of Townsend Street in the area of the PAD, further assessment will be carried out.	Pre-construction and construction
Avoidance of inadvertent impacts	Cultural and historic heritage awareness training will be carried out for all personnel working on the proposal. This training will provide information on known heritage site and places, along with specific requirements to avoid impacts and the Unexpected Finds Protocols.	Pre-construction and construction

Unexpected finds	In the event of an unexpected find, the following procedure will apply: • all ground disturbance work in the vicinity of the find must cease immediately. • the project manager must contact a suitably qualified heritage specialist to inspect the find, and to determine the need for further investigation or management, • if the find is an Aboriginal object, the Project Manager and/or heritage specialist will contact the RAPs to attend site to inspect the find and to determine in consultation, the next steps for management. • the Project Manager and/or heritage specialist will also contact Heritage NSW to confirm the next steps for management. • ground disturbance work in the vicinity of the find can only continue under supervision of a suitably qualified heritage specialist, having regard to any advice received from Heritage NSW and RAPs. In the event of the unexpected find Is human skeletal material: • all ground disturbance work in the vicinity of the find must cease immediately. • the project manager must contact NSW Police, • if the skeletal materials are found to be Aboriginal and historical in nature, the Project Manager should contact a suitably qualified heritage specialist, the RAPs and Heritage NSW to inspect the find and to confirm a course of action for ongoing management. The unexpected finds procedure would be included in the heritage sub-plan of the CEMP.	Construction

7.3 Predicted effectiveness of the mitigation and management measures proposed

The preferred heritage outcomes is to avoid all impacts to Aboriginal cultural heritage. During the development of the design of the proposal impact to known and predicted Aboriginal sites, places and objects was avoided as far as practical. There remains some residual risk of impacts to as-yet-undiscovered Aboriginal cultural heritage. The mitigation measures specified above are anticipated to reduce the likelihood and/or consequence of the identified risks.

The assessment of Aboriginal cultural heritage, the potential for impacts from the proposal and the proposed mitigation measures were prepared by qualified archaeologists in consultation with representatives of the Aboriginal community. As a result, the measures are expected to be effective.

Marking sites on environmental control maps and site plans, along with exclusion fencing are avoidance measures and are effective in avoiding impacts.

Cultural heritage awareness training is also an avoidance measure designed to increase awareness of potential impacts so that the likelihood of unanticipated impacts can be reduced. It is considered effective in avoiding impacts.

The unexpected finds protocol relies on individuals' awareness. It is partly effective and is suitable for situations of low archaeological potential. It is limited in effectiveness where ground surface exposure and visibility are low such as piling works.

Where an identified issues/risk is reduced but not eliminated, it would be assessed further through all project stages to determine if further action is required.

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Appendices

Appendix A

Lots and DPs for the proposal area

Appendix B

Consultation Log

Appendix C

ARTC Inland Rail A2I Survey Report prepared by [name redacted]—26/03/2021

Appendix D

Stage 1 Consultation Letters and Newspaper Advertisement

Appendix E

Design responses to RAP concerns

Appendix F

GML Heritage Pty Ltd, ARTC Inland Rail Albury to Illabo—Aboriginal Archaeological Research Design, Report prepared for Australian Rail Track Corporation, March 2021

Appendix G

AHIMS results

Appendix H

Landscape Context

Appendix I

Site Photographs

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Aboriginal cultural heritage assessment report

Appendix A Lots and DPs for the proposal area

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

Lots and DPs for Project Area

Precinct	Enhancement Site	Lot / DP
Albury	Albury yard clearances	DP/1/1051882
Albury	Albury yard clearances	DP/1/1177553
Albury	Albury yard clearances	DP/1/232226
Albury	Albury yard clearances	DP/1/715439
Albury	Albury yard clearances	DP/1/726624
Albury	Albury yard clearances	DP/1/86382
Albury	Albury yard clearances	DP/153/1034940
Albury	Albury yard clearances	DP/2/1109126
Albury	Albury yard clearances	DP/2/1177553
Albury	Albury yard clearances	DP/2/232226
Albury	Albury yard clearances	DP/2/715439
Albury	Albury yard clearances	DP/3/232226
Albury	Albury yard clearances	DP/4/1177553
Albury	Albury yard clearances	DP/4/839936
Albury	Albury yard clearances	DP/50/748217
Albury	Albury yard clearances	DP/75/1012290
Albury	Albury yard clearances	DP/A/437690
Albury	Billy Hughes Bridge	DP/123/904898
Albury	Billy Hughes Bridge	DP/8/264463
Albury	Murray River Bridge	DP/185/1111291
Albury	Table Top yard clearances	DP/2222/1208382
Junee	Harefield yard clearances	DP/11/1193255
Junee	Harefield yard clearances	DP/296/664269
Junee	Harefield yard clearances	DP/5/1095218
Junee	Junee to Illabo dual track clearances	DP/1/1074460
Junee	Junee to Illabo dual track clearances	DP/1/533779
Junee	Junee to Illabo dual track clearances	DP/1/554876
Junee	Junee to Illabo dual track clearances	DP/1/819498
Junee	Junee to Illabo dual track clearances	DP/1/819697
Junee	Junee to Illabo dual track clearances	DP/20/134165
Junee	Junee to Illabo dual track clearances	DP/3/133717
Junee	Junee to Illabo dual track clearances	DP/62/751398
Junee	Junee to Illabo dual track clearances	DP/701/94372
Junee	Junee yard clearances	DP/2/1066082

Precinct	Enhancement Site	Lot / DP
Junee	Kemp Street Bridge	DP/1/914183
Junee	Kemp Street Bridge	DP/2/1066082
Junee	Kemp Street Bridge	DP/2/908405
Junee	Kemp Street Bridge	DP/2/914183
Junee	Kemp Street Bridge	DP/21/1206571
Junee	Kemp Street Bridge	DP/4/1/946
Junee	Kemp Street Bridge	DP/5/1080992
Junee	Kemp Street Bridge	DP/6/1080992
Junee	Olympic Highway underbridge	DP/1/808840
Lockhart / Greater Hume	Culcairn yard clearances	DP/1/1077465
Lockhart / Greater Hume	Culcairn yard clearances	DP/1/1166206
Lockhart / Greater Hume	Culcairn yard clearances	DP/1/819838
Lockhart / Greater Hume	Culcairn yard clearances	DP/2/819838
Lockhart / Greater Hume	Henty yard clearances	DP/1/1112743
Lockhart / Greater Hume	Henty yard clearances	DP/1/878288
Lockhart / Greater Hume	Henty yard clearances	DP/5557/1221963
Lockhart / Greater Hume	The Rock yard clearances	DP/773/1221959
Lockhart / Greater Hume	Yerong Creek yard clearances	DP/5557/1221963
Wagga Wagga	Bomen yard clearances	DP/2/852602
Wagga Wagga	Pearson Street Bridge	DP/1/62738
Wagga Wagga	Pearson Street Bridge	DP/378/1221958
Wagga Wagga	Pearson Street Bridge	DP/5/632012
Wagga Wagga	Pearson Street Bridge	DP/5/802891
Wagga Wagga	Uranquinty yard clearances	DP/1/181530
Wagga Wagga	Uranquinty yard clearances	DP/2/835762
Wagga Wagga	Uranquinty yard clearances	DP/773/1221959
Wagga Wagga	Wagga Wagga Station Precinct	DP/1/1041553
Wagga Wagga	Wagga Wagga Station Precinct	DP/1/546433
Wagga Wagga	Wagga Wagga Station Precinct	DP/1/602344
Wagga Wagga	Wagga Wagga Station Precinct	DP/12/1136467
Wagga Wagga	Wagga Wagga Station Precinct	DP/13/1043109
Wagga Wagga	Wagga Wagga Station Precinct	DP/2/1006140
Wagga Wagga	Wagga Wagga Station Precinct	DP/2/543801
Wagga Wagga	Wagga Wagga Station Precinct	DP/378/1221958
Wagga Wagga	Wagga Wagga Station Precinct	DP/4/1006140
Wagga Wagga	Wagga Wagga Station Precinct	DP/5/1006140

TECHNICAL PAPER

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Aboriginal cultural heritage assessment report

Appendix B Consultation log

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

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Aboriginal cultural heritage assessment report

Appendix C Survey Report

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

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TECHNICAL PAPER

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Aboriginal cultural heritage assessment report

Appendix D Stage 1 consultation letters and newspaper advertisement

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

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TECHNICAL PAPER

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Aboriginal cultural heritage assessment report

Appendix E Design response to RAP concerns

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

Appendix E - Design Responses to RAP concerns

Concerns raised by RAPs	Response	
	Design response	Key mitigation and management response
The two isolated artefacts A2I-1 and A2I-2 found during the field survey were noted as being tangible evidence of the presence of Aboriginal people in the landscape prior colonial settlement.	Both sites are located outside the enhancement sites and would not be directly impacted by the proposal.	A2I-1 and A2I-2 will be marked on the environmental control maps, site plans, and avoided. Prior to the commencement of construction, the location of A21-2 will be inspected by a suitability qualified person to reconfirm location and to demarcate the exclusion measures (such as fencing).
Full survey of Murray River bridge enhancement site to be undertaken prior to soil disturbance and commencement of construction.	In response, the following changes were made to the proposal: Adjustment of the construction compound areas for the enhancement site to avoid impact to areas of Aboriginal archaeological potential. Restriction of use of Townsend Road to light vehicles only to avoid vegetation clearance and impacts to areas of Aboriginal archaeological potential, as far as practicable.	Several mitigation measures have been proposed, including: Grading of the section of Townsend Street will be limited to the existing disturbed area of the unformed road. Controls will be implemented to exclude use of areas adjacent to the unformed road. Prior to the commencement of construction at the Murray River bridge enhancement site, the section of Townsend Street that requires grading will be inspected by a suitably qualified person, and the A2I RAPs to confirm the absence of Aboriginal objects. If any Aboriginal objects are found, the heritage unexpected finds protocol will be implemented.
Ensuring that sediments would be controlled to avoid harm to the water quality of areas with cultural value downstream of the proposal site including Buckargingah Creek and the Doodle Comer wetland Reedy Creek, which drains to Houlaghans Creek Jeralgambeth Creek which is a tributary of Billabong Creek	No specific design response, noting: Works at Reedy Creek and Jeralgambeth Creek are modifications to existing structures the proposal is over 150 metres to the south of Buckargingah Creek and would not be directly impacted.	Sediment and erosion control devices will be installed in accordance with Managing Urban Stormwater: Soils and Construction, Volume 1 (Landcom, 2004). Fish passage will be maintained at Jeralgambeth Creek (Junee to Illabo clearances). To manage potential risks to aquatic biodiversity and water quality at Jeralgambeth Creek (Junee to Illabo clearances): In-stream works would be carried out in dry conditions, as far as practicable. Where works cannot be conducted in

Concerns raised by RAPs	Response	
	Design response	Key mitigation and management response
		the dry, appropriate erosion and sediment control would be installed (i.e. a silt curtain or sediment boom around the work area and attached to the same side of the bank to maintain fish passage) Appropriate erosion and sediment control will be installed and maintained. Aquatic habitat will be returned to pre-works condition (or better) in accordance with the rehabilitation strategy.
Protection of areas identified as a sanctuary for native fauna during the field survey including Vegetated area to east of the rail corridor at Billy Hughes bridge Vegetated area to east of the rail corridor at Tabletop Yard clearances natural wetlands area on the eastern side of the rail corridor at Culcairn Yard clearances wetlands to the west of Illabo in the Junee to Illabo Clearances.	The vegetated area at Billy Hughes bridge has been excluded from the proposal site. The vegetated areas at Table Top, the wetlands at Culcairn and wetlands to the west of Illabo are located outside the enhancement sites.	Several mitigation measures have been proposed, including mitigate impacts to biodiversity during construction, including: Exclusion areas will be established and maintained around native vegetation and riparian vegetation to be retained; particularly, areas of biodiversity value adjoining the proposal site that are located in close proximity to work areas. Construction workforce will be supplied with sensitive area maps (showing clearing boundaries and exclusion zones), including updates, as required. To manage any indirect impacts, sediment and erosion control devices will be installed in accordance with Managing Urban Stormwater: Soils and Construction, Volume 1 (Landcom, 2004

TECHNICAL PAPER

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Aboriginal cultural heritage assessment report

Appendix F Aboriginal archaeological research design report

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

ARTC Inland Rail Albury to Illabo

Aboriginal Archaeological Research Design

Report prepared for Australian Rail Track Corporation

Inland Rail Document Number 2-0008-210-ECH-00-RP-001

March 2021

Sydney Office Level 6, 372 Elizabeth Street Surry Hills NSW Australia 2010 T +61 2 9319 4811
Canberra Office 2A Mugga Way Red Hill ACT Australia 2603 T +61 2 6273 7540
GML Heritage Pty Ltd ABN 60 001 179 362

www.gml.com.au

Report Register

The following report register documents the development and issue of the report entitled ARTC Inland Rail Phase 2 Albury to Illabo—Aboriginal Archaeological Research Design, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

Job No.	Issue No.	Notes/Description	Issue Date
20-0170A	1	Draft Report for WSP Review	4 February 2021
20-0170A	2	Draft Report for ARTC Review	8 February 2021
20-0170A	3	Draft Report for RAP Review	17 February 2021
20-0170A	4	Final Report	19 March 2021

Quality Assurance

GML Heritage Pty Ltd operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2008.

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

Project Manager:	Elise Jakeman	**Project Director**	Martin Rowney*
Issue No.	4	**Issue No.**	4
Position:	Heritage Consultant	**Position:**	Principal
Date:	19 March 2021	**Date:**	19 March 2021

*Martin Rowney, the project lead, is a suitably qualified archaeologist in accordance with S1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (2010).*

Cover image from ARTC Inland Rail website<https://inlandrail.artc.com.au/december-2020-project-update-for-albury-to-illabo/>

Contents Page

1.0 Introduction

The Australian Rail Track Corporation Ltd (ARTC) is working to build a high performance and direct interstate freight rail corridor between Melbourne and Brisbane, via central west New South Wales (NSW) and Toowoomba in Queensland. Inland Rail will complete Australia's national freight network, transforming how goods are moved around Australia. The 1,715km fast freight network will connect Melbourne and Brisbane via regional Victoria, NSW and Queensland. The Inland Rail programme consists of 13 individual projects, seven of which are located within NSW. The Albury to Illabo section (the Project) is a State Significance Infrastructure (SSI) project and will be subject to Division 5.2, Part 5 of the Environmental Planning and Assessment Act 1979. WSP Australia Pty Ltd (WSP), on behalf of Australian Rail Track Corporation (ARTC), has engaged GML Heritage Pty Ltd (GML) to prepare an Aboriginal cultural heritage assessment report (ACHAR) for the Albury to Illabo project

As part of the ACHAR, this Aboriginal Archaeological Research Design (ARD) has been prepared to define the methodology and research parameters for the investigation of Aboriginal heritage along the investigation areas and alignment between Albury and Illabo (the study area). This report is in line with NSW state Aboriginal heritage processes for best practice after the stipulated requirements in the Secretary's Environmental Assessment Requirements (SEARs). This methodology fulfils Stage 2 and 3 of the former Department of Environment, Climate Change and Water (DECCW) (now Heritage NSW) *Aboriginal cultural heritage consultation requirements for proponents* (the Consultation Requirements).[1] The current methodology aims to:

- ensure Aboriginal archaeological constraints and opportunities are adequately addressed and appropriately managed throughout the life of the project;
- consult with the Aboriginal community regarding the cultural significance of the study area; and
- ensure that any risks to Aboriginal heritage values (both intangible and tangible) are appropriately identified and mitigated.

1.1 The Study Area

The study area is 14 discreet sites along the route of the existing rail corridor between Albury and Illabo that require enhancement and modification to support the transport of double-stacked freight trains (Figure 1.1 and Figure 1.2). The study area is divided into 14 zones, shown in Figure 1.3, and detailed in the forthcoming sections of the report. The lots and DPs for properties included in the 14 zones are listed in Appendix A. The exact boundaries of these zones might be subject to minor modification as the project progresses. The surveys undertaken will aim to characterise and explore each zone and its immediate surrounds, allowing for slight adjustments to the study areas without the need for re-survey.

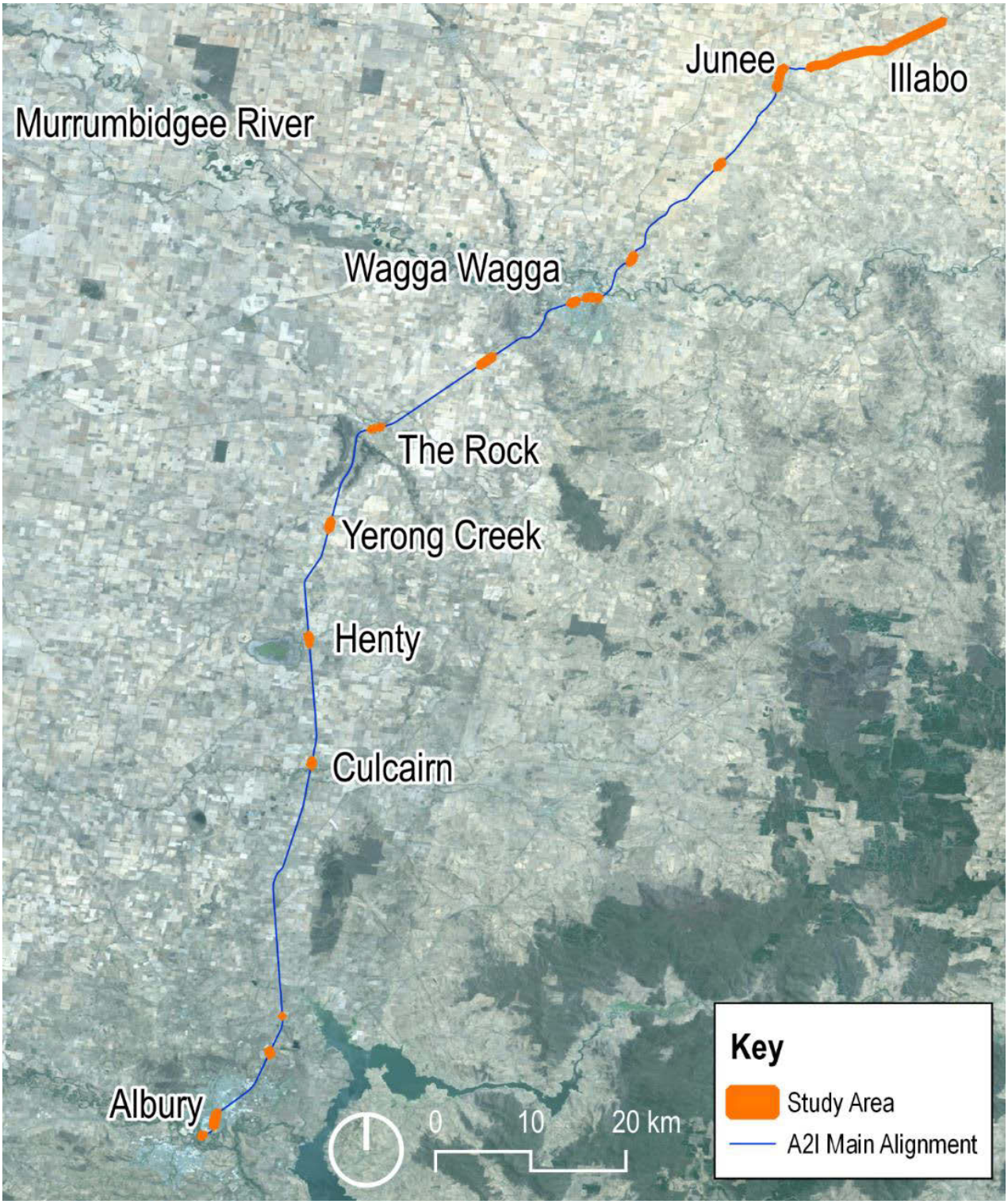

Figure 1.1 The study area in relation to towns and the present railway track from Albury to Illabo. (Source: SIX Maps aerial with GML additions, 2021)

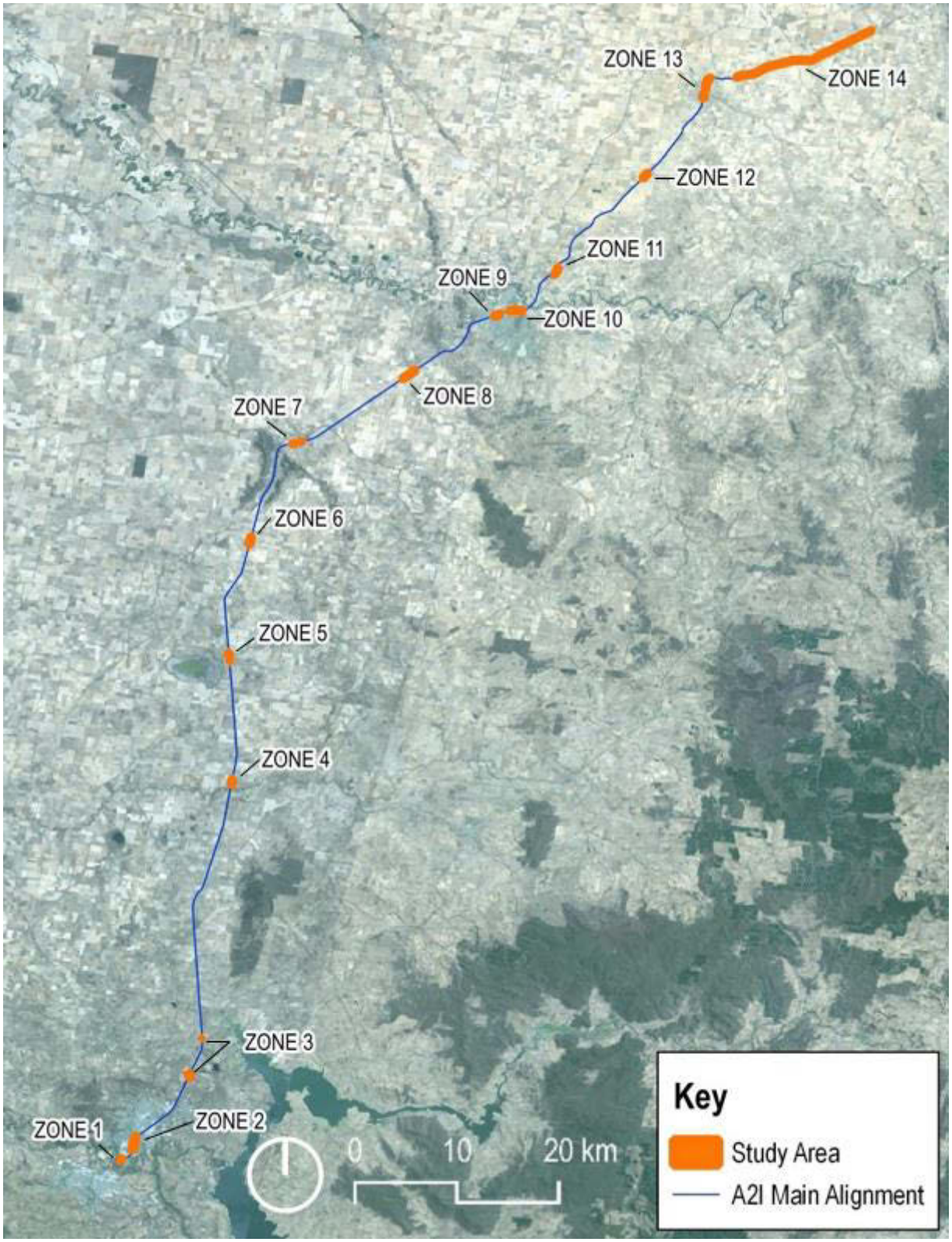

Figure 1.2 Zone of works across the current alignment (where modifications and enhancements are occurring). The zones are referred to throughout this ARD. (Source: SIX Maps aerial with GML additions, 2021)

1.2 Proposed Works

The anticipated works include modifying the existing rail line to a sufficient height and width to support the safe running of double-stacked freight trains.

Works will include enhancements or modifications to:

- rail tracks;
- footbridges and road bridges;
- overhead structures;
- signal structures; and
- level crossings.

The Albury to Illabo project is currently at the reference design stage. During this time, ARTC is conducting various studies and consulting with landowners and other key stakeholders to finalise plans for this project. Due to the size and nature of the project, minor details may change during construction.

1.3 Statutory Context

The following statutory controls are relevant to the study area and therefore this report:

- *Environmental Planning and Assessment Act 1979* (NSW) (EPA Act);
- *National Parks and Wildlife Act 1974* (NSW) (NPW Act);
- *Junee Local Environmental Plan 2012*;
- *Greater Hume Local Environmental Plan 2012*;
- *Lockhart Local Environmental Plan 2012*;
- *Albury Local Environmental Plan 2010;* and
- *Wagga Wagga Local Environmental Plan 2010.*

Under Section 90 of the NPW Act, the Proponent would require an Aboriginal Heritage Impact Permit (AHIP) should the development activities harm any Aboriginal object or Aboriginal place. Heritage NSW requires the appropriate management of other Aboriginal heritage social values, if connected with a study area.

However, the project is a State Significant Infrastructure (SSI) project and will be determined under Division 5.2, Part 5 of the EPA Act. Under Section 5.23 of the EPA Act, Section 90 of the NPW does not apply (and therefore an AHIP is not required). The assessment will address the SEARs for the project which mirror the standard NSW Aboriginal heritage requirements.

1.4 Objectives of this Aboriginal Archaeological Research Design

This ARD is a methodology document to define the project methodology being undertaken as part of the ACHAR process. Development of the ACHAR requires a series of stages including a program of Aboriginal community consultation, an archaeological survey, and archaeological test excavation (where

relevant). This ARD provides the framework for the program of archaeological survey. This process can be defined in the following steps (noting that some steps may occur concurrently):

1. Commencement of Aboriginal Community Consultation (encompassing stage 1 of the Aboriginal Community Consultation process)
2. Preparing methodology for archaeological survey (encompassing stage 2 and 3 of the Aboriginal Community Consultation process);
3. Archaeological survey (which will determine if Aboriginal archaeological test excavation is necessary);
4. Preparing methodology for archaeological test excavation (if necessary) (encompassing stage 2 and 3 of Aboriginal Community Consultation process);
5. Archaeological test excavation (if necessary);
6. Preparing ACHAR, and getting this reviewed by project's Registered Aboriginal Parties (RAPs) (encompassing stage 4 of Aboriginal Community Consultation process);
7. Finalisation of ACHAR.

Archaeological survey will be undertaken in collaboration and consultation with the project's Registered Aboriginal Parties (RAPs). The aim of consulting with Aboriginal people is to facilitate a process for RAPs to contribute culturally appropriate information, as well as to participate in the determination of the cultural significance of Aboriginal objects and/or places that may be present within the study area. Consultation also provides an opportunity for RAPs to have input into the development of cultural heritage management options.

The objectives of the assessment are to:

- understand the number, extent, type, condition, integrity and archaeological potential of Aboriginal heritage sites and places within the study area;
- determine whether the identified Aboriginal sites and places are a component of a wider Aboriginal cultural landscape;
- understand how the physical Aboriginal sites relate to Aboriginal tradition within the wider area;
- prepare a cultural values assessment for all identified aspects of Aboriginal cultural heritage identified within the study area;
- determine how the proposed project may impact the identified Aboriginal cultural heritage;
- minimise impacts to Aboriginal cultural heritage through prudent, feasible and pragmatic design solutions;
- determine where impacts are unavoidable and develop a series of impact mitigation strategies; and
- provide clear recommendations for the conservation of archaeological values and mitigation of impacts to these values.

1.5 Authors

This report has been prepared by Lara Tooby, Heritage Consultant, and Martin Rowney, Principal, with graphics created by Talei Holm, Graduate Heritage Consultant.

1.6 Endnotes

[1] Department of Environment, Climate Change and Water, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

2.0 Aboriginal Community Consultation

2.1 Aboriginal Community Consultation to Date

Aboriginal community consultation was initiated in accordance with the Heritage NSW (formerly DECCW) *Aboriginal cultural heritage consultation requirements for proponents*.[1] Stage 1.1 letters to statutory bodies were sent on 18 December 2020 requesting contact details for Aboriginal people who may have an interest in the study area. These statutory bodies included:

- Heritage NSW;
- local Aboriginal land councils (LALCs):
  - Albury and District LALC;
  - Wagga Wagga LALC;
- The Registrar, Aboriginal Lands Right Act 1983;
- National Native Title Tribunal (NNTT) (note: unlike the rest of the statutory bodies, the request for information to the NNTT was sent on 11 January 2021);
- Native Title Services Corporation (NTSCORP Limited);
- local councils:
  - Junee Shire Council;
  - Wagga Wagga City Council;
  - Lockhart Shire Council;
  - Greater Hume Shire Council;
  - Albury City Council;
- Local Land Services (formerly CMA):
  - Murray; and
  - Riverina.

Following the receipt of responses from Stage 1.1, several potential Aboriginal stakeholders were identified. Stage 1.2 letters were sent to the identified Aboriginal people on 19 January, 29 January and 2 February 2021, and an advertisement was placed in both The Border Mail and Wagga Wagga Daily Advertiser on 20 January 2021. Both the Stage 1.2 letters and the advertisement invited Aboriginal people with an interest in the study area to register as stakeholders to be involved in consultations. A copy of the consultation log (with contact information redacted for privacy) will be presented in the forthcoming ACHAR.

Eleven Aboriginal parties registered an interest in the project. The following list of stakeholders are the RAPs for the project:

This table removed due to sensitive data

All registrations of interest were acknowledged via phone or email.

2.2 Cultural Heritage Assessment Program

Heritage NSW has defined a number of stages during the Aboriginal consultation process.[2] The following table provides a synopsis of the process to date.

Stage	Status
Write to statutory bodies to obtain contact details for Aboriginal people who may have an interest in the project.	Complete
Write to identified Aboriginal people, inviting them to register an interest in the project.	Complete
Place an advertisement in local print media, inviting Aboriginal people with cultural knowledge of the area to register an interest in the project.	Complete
Record names of Aboriginal people who have registered an interest in the project.	Complete
Advise the LALCs and Heritage NSW of RAPs' details (subject to privacy requests).	Complete
Present information regarding proposed project to RAPs.	This document
Provide methodology for the cultural heritage and archaeological assessment to RAPs.	This document
Invite RAPs to provide input for the assessment methodology.	Pending
Invite RAPs to identify: • whether any Aboriginal objects of cultural value are present within the study area; and • whether any places of cultural value are present within the study area.	Forthcoming
Invite RAPs to comment on potential management outcomes.	Forthcoming
Prepare draft ACHAR and provide to RAPs for comment.	Forthcoming

Stage	Status
Incorporate RAPs' comments into final ACHAR.	Forthcoming
Provide final ACHAR (and AHIP application) to the RAPs, LALCs and Heritage NSW.	Forthcoming

2.3 Roles and Expectations

Heritage NSW (formerly DECCW[3]) Consultation Requirements list a number of responsibilities and expectations for both the Aboriginal community and the proponent regarding the assessment of the study area's cultural heritage.

The Aboriginal community is responsible for determining who is authorised to speak for Country and its associated cultural heritage. If there is a dispute regarding who has the right to speak for Country, it is up to the Aboriginal community, not the proponent or Heritage NSW, to resolve the dispute in a timely manner.[4]

RAPs are also responsible for providing information relating to Aboriginal cultural heritage relevant to the study area to assist in managing its cultural significance in an appropriate manner.[5]

It is expected that:

- Aboriginal people providing knowledge regarding the cultural heritage of the study area are trusted and allowed by the rest of the Aboriginal community to speak for Country;[6]
- people speaking for Country hold knowledge about the cultural significance of their heritage and are able to provide input into appropriate management strategies;[7]
- RAPs have an understanding of the commercial environment in which the proponent is operating and the constraints associated with this environment;[8] and
- RAPs understand that the Secretary of the Department of Planning and Environment, in consultation with the Chief Executive of Heritage NSW, is the final decision maker relating to the approval of works relating to the SSI project and that these decisions may not be consistent with the views of the RAPs.[9]

The proponent is responsible for consulting with the Aboriginal community and managing the consultation process in accordance with the Consultation Requirements.[10]

It is expected that:

- the proponent would develop and implement appropriate consultation methods, in accordance with the Consultation Requirements;[11]
- Aboriginal views are considered and appropriately incorporated into the assessment process;[12] and
- the consultation process is accurately documented, including both the consultation undertaken and the input from the RAPs.[13]

2.4 Endnotes

1 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW).
2 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW).
3 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW).
4 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 36.
5 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 15.
6 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 8.
7 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 8.
8 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 16.
9 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 15.
10 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 16.
11 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 6.
12 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 16.
13 Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW), p 16.

3.0 Desktop Assessment

3.1 Landscape Context

The purpose of this section is to identify whether there are landscape features within each study area zone that might indicate the likely existence of Aboriginal objects. *Due Diligence Code of Practice for the Protection of Aboriginal Objects* (NSW) indicates that if the study area is:

- *within 200m of waters, or*
- *located within a sand dune system, or*
- *located on a ridge top, ridge line of headland, or*
- *located within 200m below or above a cliff face, or*
- *within 20m of or in a cave, rock shelter of cave mouth*

And is on land that is not disturbed, then further investigation is required if harm cannot be avoided.[1]

This is a preliminary desktop assessment examining each of the 14 zones, with information being drawn from regional studies. The zones will be examined in more detail in the forthcoming ACHAR. In some zones, a high-level assessment using aerial photography was enough to determine that the study area was within a highly disturbed context with low potential for Aboriginal archaeology. Other zones were found to be within areas where landform, soils and hydrology characteristics indicated they were more likely to have archaeological potential requiring further investigation. A discussion of each of these zones is outlined below.

All soil landscape information has been taken from the *Soil Landscapes of Central and Eastern NSW* dataset: <https://datasets.seed.nsw.gov.au/dataset/published-soil-landscapes-of-central-and-eastern-nsw37d37>.

3.1.1 Zones 1 and 2 Landscape Context

Zone 1 (Figure 3.1) comprises the project area covering the rail track over the Murray Bridge, while Zone 2 is a 2km-long section of the rail alignment centred on Albury Railway Station. They are discussed here together due to their proximity and similar landscape features.

The landforms within both these sub-zones comprise floodplains on the margin of a low rolling hills landscape, located adjacent to the Murray River in Albury. Zone 1 is located on the Wakool River soil landscape, an alluvium floodplain with deep, variable soils, while Zone 2—the Albury Railway Station study area—crosses both the Livingstone and Wait-a-while soil landscapes. Livingstone is an erosional landscape which occurs in the study area along the gentle rises on the edge of the plains, whilst Wait-a while is a stagnant alluvial soil landscape, made up of silts, soils and sands, located in the lower slopes of the study area.

These zones occur substantially across two alluvial areas—landscapes where soils are deposited through flood action and with fairly low erosion rates away from riverbanks. These soil landscapes will have contributed to the formation of archaeological sites in the past. The ‘stagnant’ classification of the Wait-a-while soil landscape indicates that it is no longer subject to depositional process, suggesting that any archaeological site formation would likely be of some antiquity.

However, the high degree of infrastructure developed across these zones has caused substantial changes to the natural landforms and drainage, as indicated by artificial hydrology lines. It is likely then that any substantial archaeology in the area will have been removed or disturbed by urban development. Zone 2 would have been completely disturbed by the Bunge Flour Mill, which was a complex of brick buildings, steel silos and masonry buildings, which have since been demolished, occurring in the cleared region north west of Albury Train Station. Despite this, there are small areas in Zone 1 which appear slightly less disturbed and where undisturbed natural soils and landforms may remain. These may have the potential to contain archaeological deposits.

In summary, landscape features indicate that Zone 2 is completely disturbed and does not require inspection, however Zone 1 contains some less modified areas which requires inspection.

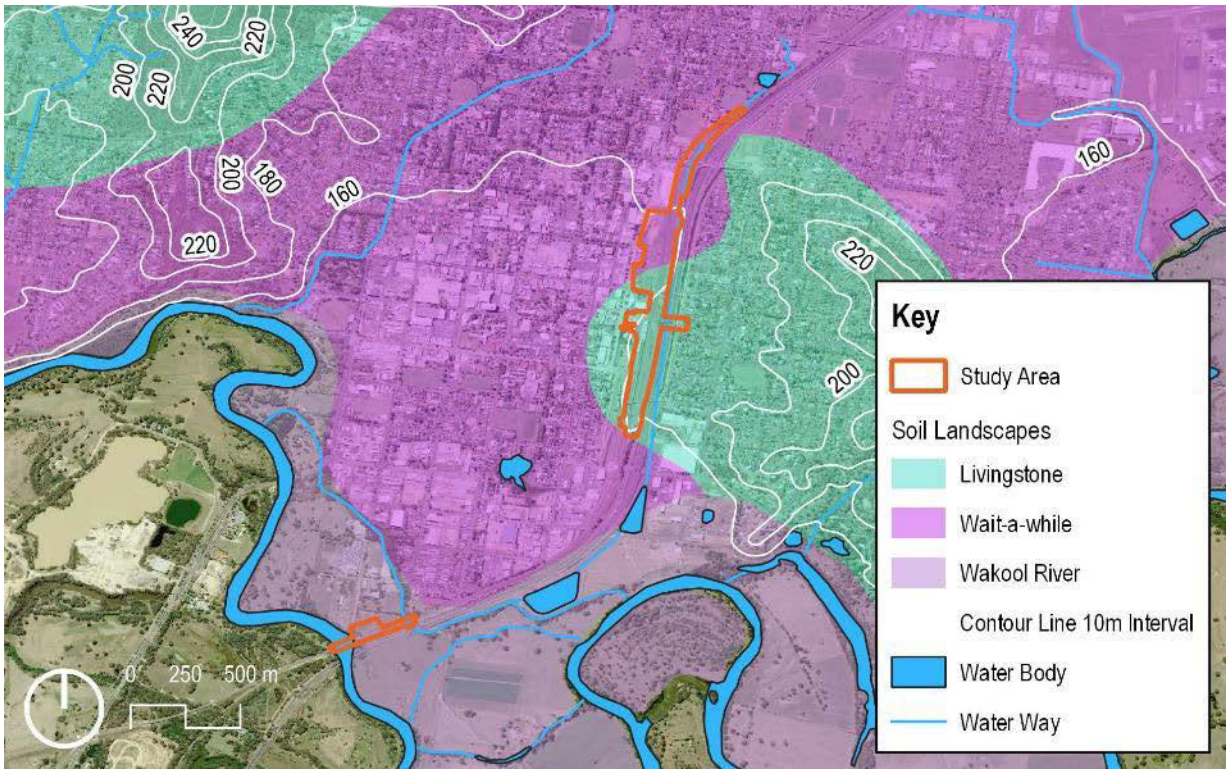

Figure 3.1 Soil landscapes, hydrology and topography of zones 1 and 2 (Albury area). Note that topographic information appears to be missing around zone 1, and that this area would be below 160m ASL. (Source: NSW Land Registry Services [LRS] with GML additions, 2021)

3.1.2 Zone 3 Landscape Context

Zone 3 (Figure 3.2) landscape is within the Table Top area, and comprises a project investigation area at the Wagga Road Bridge and a more northern investigation area, at Trackside Chainage 632.86, located directly on the rail corridor. Both investigation areas in this zone are part of the Ettamogah soil landscape, which is characterised by undulating plains over lower slopes and drainage areas, where moderate gully erosion can occur. The surrounding landscape is crossed by numerous lower order streams.

The area has been impacted by urban development of the Hume Highway and rail track, as well as surrounding agriculture.

Nevertheless, the investigation sites are generally within 200m of former and dormant water courses, and some parts of the Wagga Bridge Road investigation area, outside the rail corridor, appear relatively intact.

In summary, landscape features indicate that the Wagga Bridge Road investigation area of this zone requires site inspection, whereas the Trackside Chainage 632.86 location is within a completely disturbed landscape that does not require further assessment.

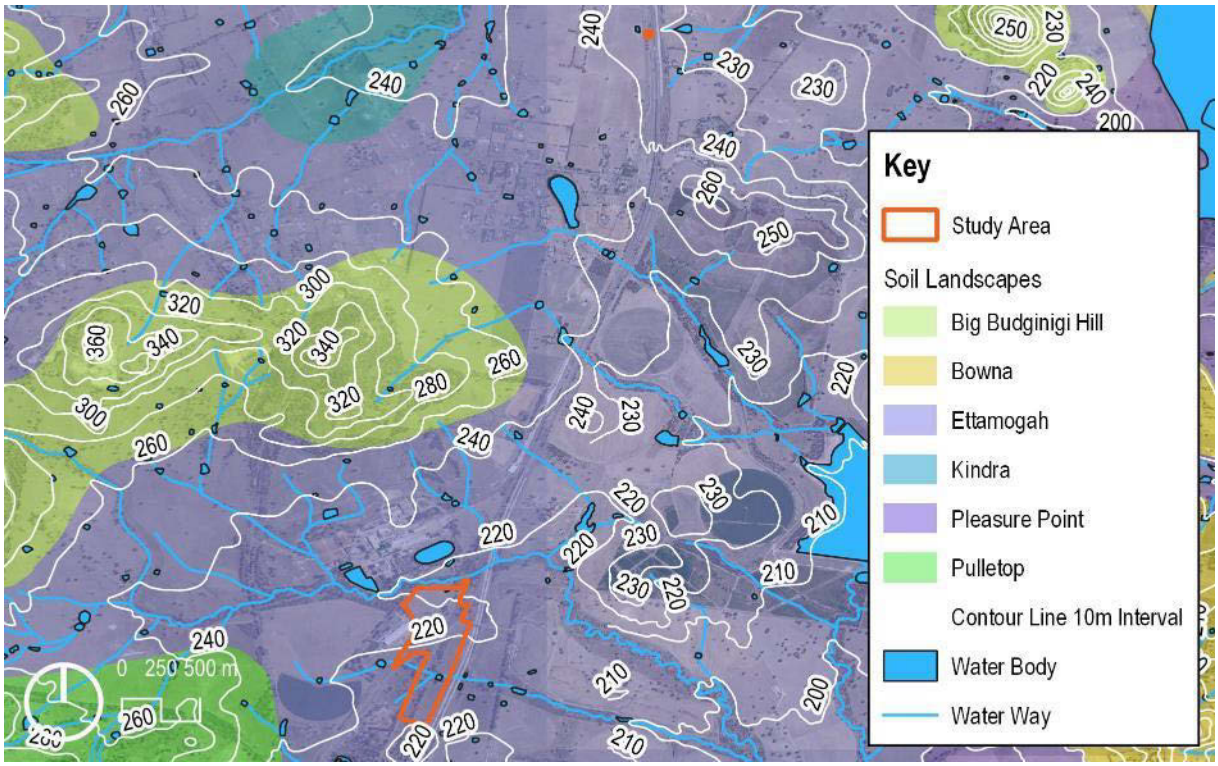

Figure 3.2 Soil landscapes, hydrology and topography of Zone 3 (Table Top area). (Source: NSW LRS with GML additions, 2021)

3.1.3 Zone 4 Landscape Context

Zone 4 (Figure 3.3) is located on Billabong Creek soil landscape around Culcairn. This landscape is an expansive flat comprising alluvium layers including floodplains, ancient channel deposits and alluvial terraces. Although agricultural and urban disturbance are prevalent in this zone, large portions of the zone are outside the rail corridor and may have intact soils containing archaeology, potentially ancient channel deposits and alluvial terraces overlain by more modern deposits. The southern portion of the zone is just over 200m away from an extensive water body, and the northern edge of the site is near an ephemeral stream.

In summary, landscape features indicate that Zone 4 requires site inspection.

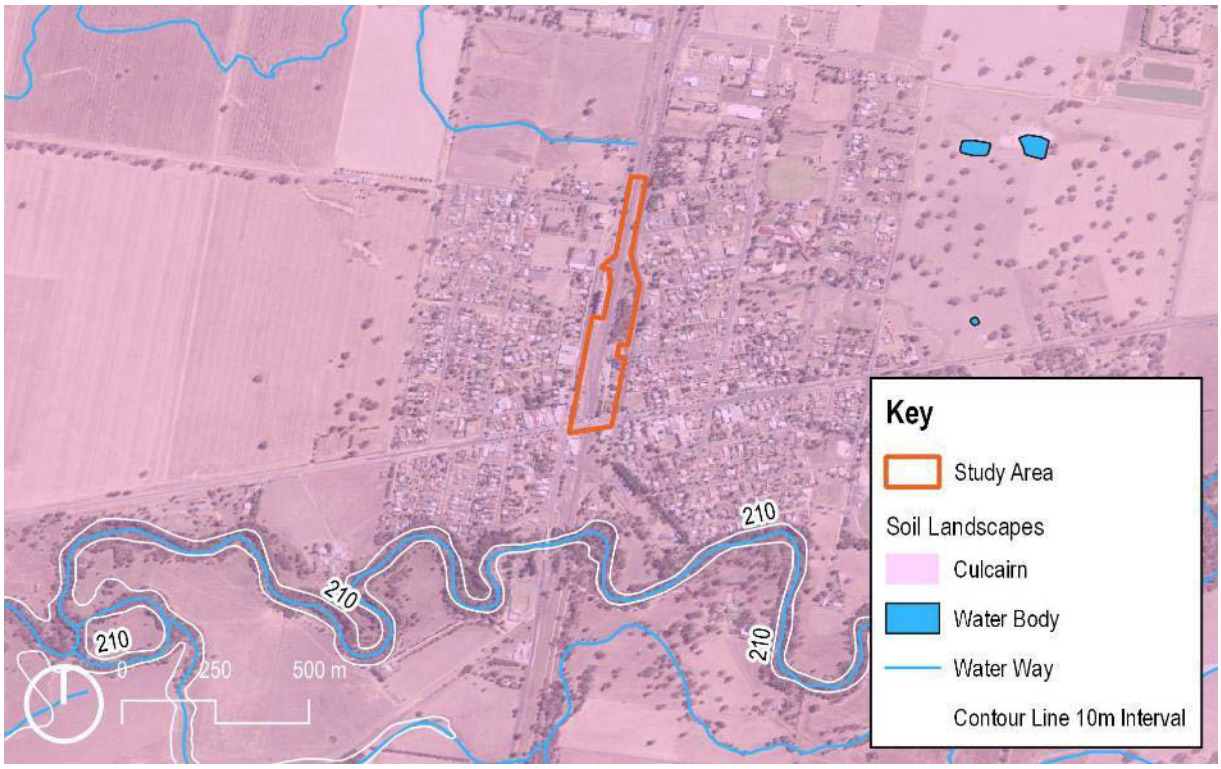

Figure 3.3 Soil landscapes, hydrology and topography of Zone 4 (Culcairn area). (Source: NSW LRS with GML additions, 2021)

3.1.4 Zone 5 Landscape Context

Zone 5 (Figure 3.4) occurs within the Henty soil landscape and consists of two separate sub-zones—a 700m-long section focused around Henty Railway Station (north) and another small area approximately 500m to the south.

The Henty soils were formed as an aeolian landscape, creating an extensive, gently inclined sloping plain. Within this soil landscape are significant deposits of wind-blown fine sand, overlying unconsolidated riverine deposits of clay, silt, sand and gravel. This environment would have produced favourable conditions for the formation of archaeological sites through the gradual accumulation of wind-blown deposits. Although aerial photography indicates that the study area has been impacted by modern development, including the current rail line, some aspects of the site appear undisturbed. Deep in situ archaeological deposits may be present throughout this area, and also in association with deposits associated with the Buckargingah Creek waterbody (<200m away).

In summary, landscape features indicate that Zone 5 requires site inspection.

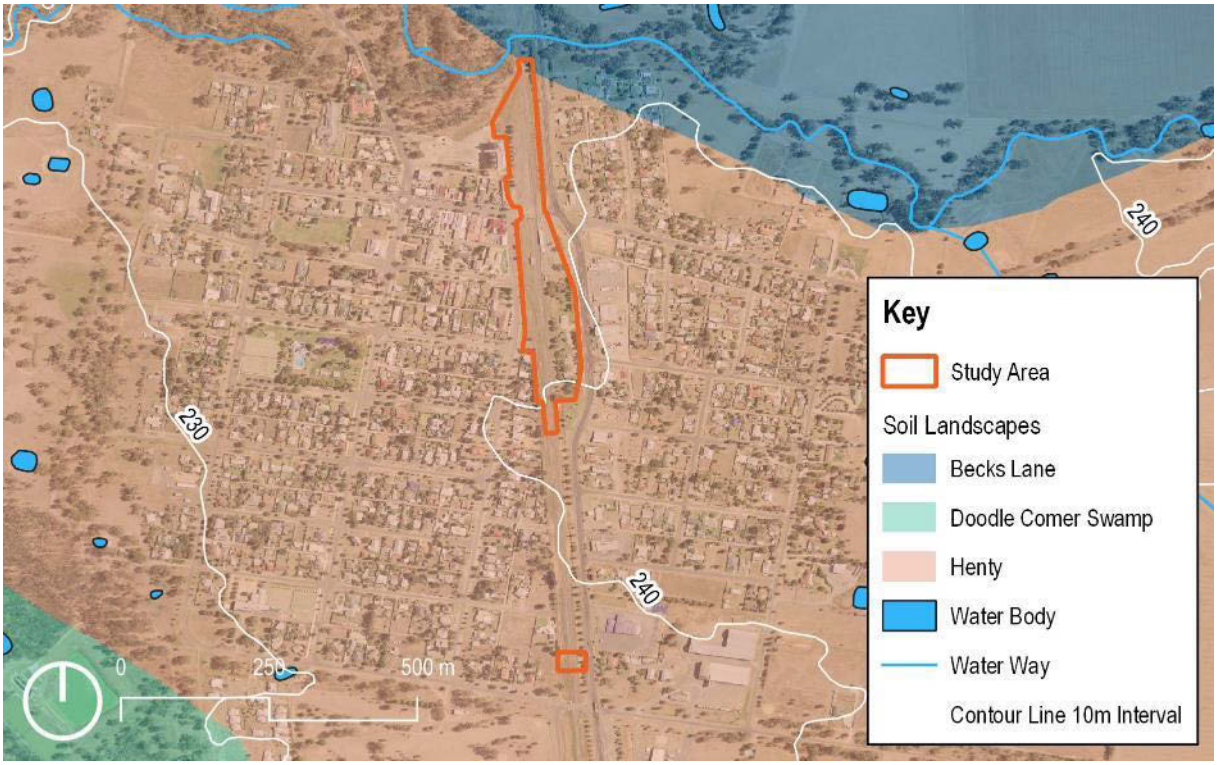

Figure 3.4 Soil landscapes, hydrology and topography of Zone 5 (Henty area). (Source: NSW LRS with GML additions, 2021)

3.1.5 Zone 6 Landscape Context

Zone 6 (Figure 3.5) is located at Yerong Creek and is mainly within the Mangoplah soil landscape, with the southwestern portion of the site overlapping into the adjacent O'Briens Creek soil landscape. Mangoplah is an alluvium landscape across an extensive level plain, consisting of loam, sand and clay soils of moderate depth. It contains incised, narrow drainage lines, and has been almost completely cleared of woodland. This is a relatively stable environment, with erosion only occurring along the creekline. There has been no recorded flooding of the extensive plain since European development. The stability of the environment would be conducive to the preservation of buried archaeological deposits.

The O'Briens Creek soil landscape encompasses Sandy Creek, and is made up of transferred slope wash sediments from other areas (such as the Mangoplah landscape). The southern part of this zone appears less disturbed than other areas nearby.

In summary, landscape features indicate that Zone 6 requires site inspection.

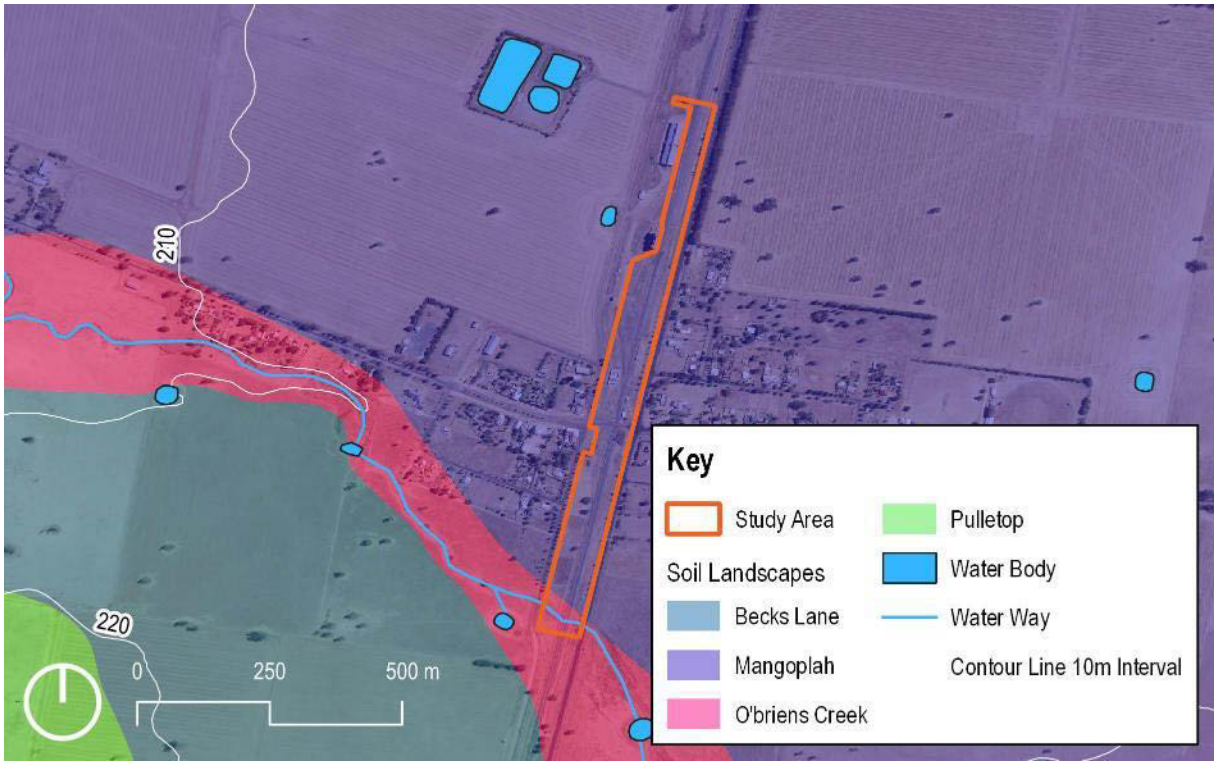

Figure 3.5 Soil landscapes, hydrology and topography of Zone 6 (Yerong Creek area). (Source: NSW LRS with GML additions, 2021)

3.1.6 Zone 7 Landscape Context

Zone 7 (Figure 3.6) is located at The Rock, and comprises four small separate investigation areas between Yerong Street and The Rock Mangoplah Road. This zone lies within the Vincent Road and Mangoplah soil landscapes. As noted in the Zone 6 description above, Mangoplah is an alluvium soil landscape and is conducive to the preservation of formed archaeological deposits. This landscape incorporates Burkes Creek, a major creek 250m to the north of the zone.

Most of the western part of this zone is situated on the Vincent Road soil landscape—a transferral landscape on a relatively flat plain. Transferral landscapes are formed on deep deposits of mostly eroded parent materials washed from areas upslope. In this case, Zone 7 occurs across the plains extending from the lower slopes of a ridgeline location 1.8km to the south of the study area. The combination of nearby high ground, proximity to a stable source of water at Burkes Creek, and its status as a transferral landscape would typically result in the potential for intact archaeological sites and deposits.

However, all four of the investigation areas within Zone 7 have been subject to substantial disturbance and as a consequence are unlikely to have any remaining archaeological potential.

Figure 3.6 Soil landscapes, hydrology and topography of Zone 7 (The Rock area). (Source: NSW LRS with GML additions, 2021)

3.1.7 Zone 8 Landscape Context

Zone 8 (Figure 3.7) is located at Uranquinty and traverses three soil landscapes in the Kapooka area—Belfrayden, O'Briens Creek and Pearson. The topography of this area is very flat, punctuated only by the course of Sandy Creek through the surrounding plains.

The centre of this zone straddles the O'Briens Creek soil landscape, which encompasses Sandy Creek, and is made up of transferred slope wash sediments from other areas, such as the adjacent Pearson and Belfrayden alluvial plains.

The Belfrayden and Pearson soil landscapes are generally very similar and flank either side of the O'Briens Creek landscape in the area. While Belfrayden is a gently undulating plain of thick alluvial clay sequence with extensive plains, and shallow drainage lines, Pearson has the same characteristics but has formed as a low tableland across an extensive area to the southwest of Uranquinty.

All three soil landscapes would favour the preservation of archaeological sites. The general proximity of the zone to Sandy Creek indicates the possibility of archaeological potential in the area. However, the majority of this investigation zone is within previously disturbed and developed land. A relatively undisturbed area remains to the southeast side of the rail lines within this investigation zone. This area warrants further investigation.

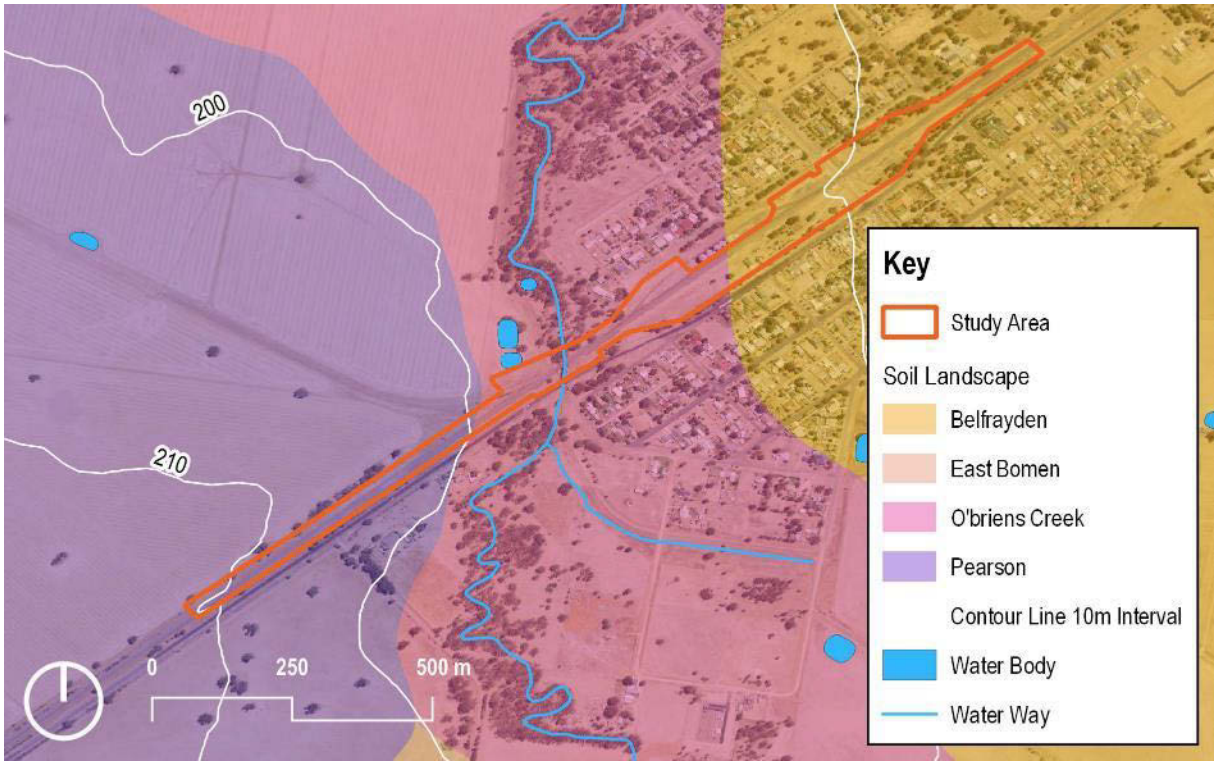

Figure 3.7 Soil landscapes, hydrology and topography of Zone 8 (Kapooka area). (Source: NSW LRS with GML additions, 2021)

3.1.8 Zones 9 and 10 Landscape Context

Both zones 9 and 10 (Figure 3.8) are located within Wagga Wagga, straddling the dense urban area. The Becks Lane soil landscape characterising the region would have been highly modified by artificial drainage, industrial buildings, roads, as well as the rail line. There is no indication that there would be any remaining intact soils. Due to the high level of disturbance, no site surveys are required for either of these zones.

Figure 3.8 Soil landscapes, hydrology and topography of Zone 9 (west Wagga Wagga area). (Source: NSW LRS with GML additions, 2021)

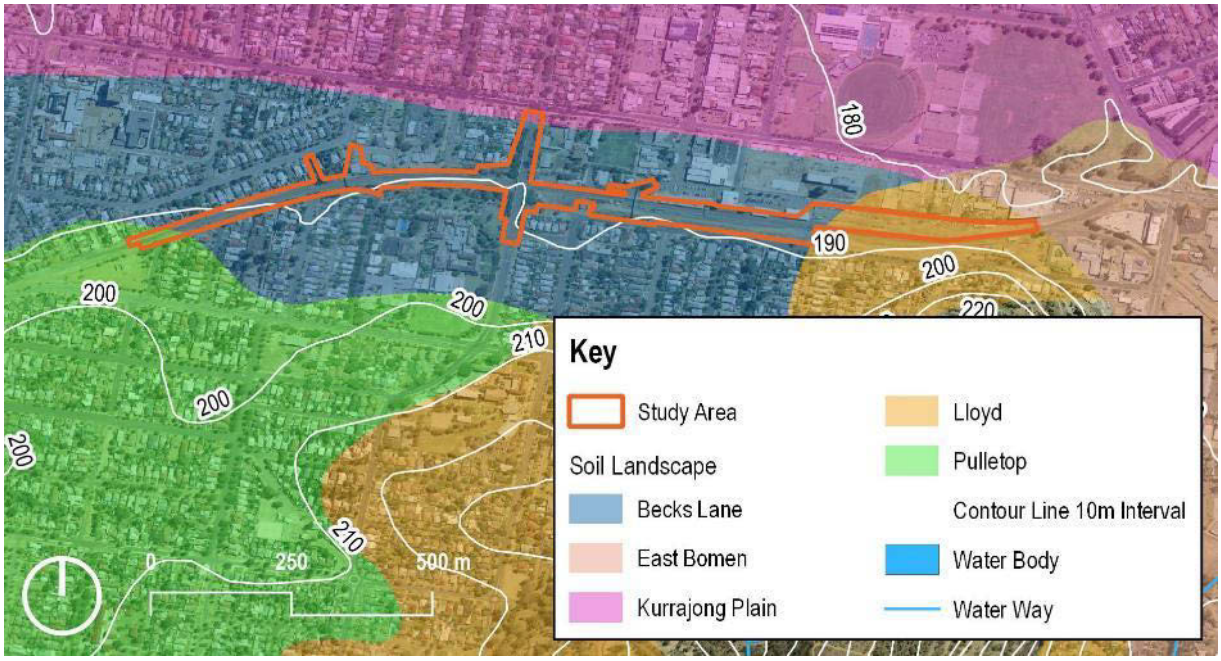

Figure 3.9 Soil landscapes, hydrology and topography of Zone 10 (east Wagga Wagga area). (Source: NSW LRS with GML additions, 2021)

3.1.9 Zone 11 Landscape Context

Zone 11 (Figure 3.10) consists of a 1200m-long investigation area centred on Bomen Railway Station. It is also situated on the East Bomen and Currawarna soil landscapes. These landscapes are both Aeolian (wind-deposited) sands originating from areas north of the Murrumbidgee floodplain, several kilometres north of Wagga Wagga. The Currawarna soil landscape has a slightly lower elevation, of around 210m, and is dominated by sand to depths of over 1m. On the other hand, the East Bomen soil landscape has sand elements but also consists of earthy loam and clay. The high sand content of both the East Bomen and Currawarna landscape makes both soil landscapes vulnerable to wind and sheet erosion, especially when exposed due to widespread de-vegetation.

Zone 11 had been highly disturbed by infrastructure development, including the stripping of vegetation, which means many of the original soils potentially containing archaeological deposits would have been removed or impacted.

In summary, due to the Zone 11 study area being located either directly on top of the rail line or within highly stripped soils, this zone does not require survey.

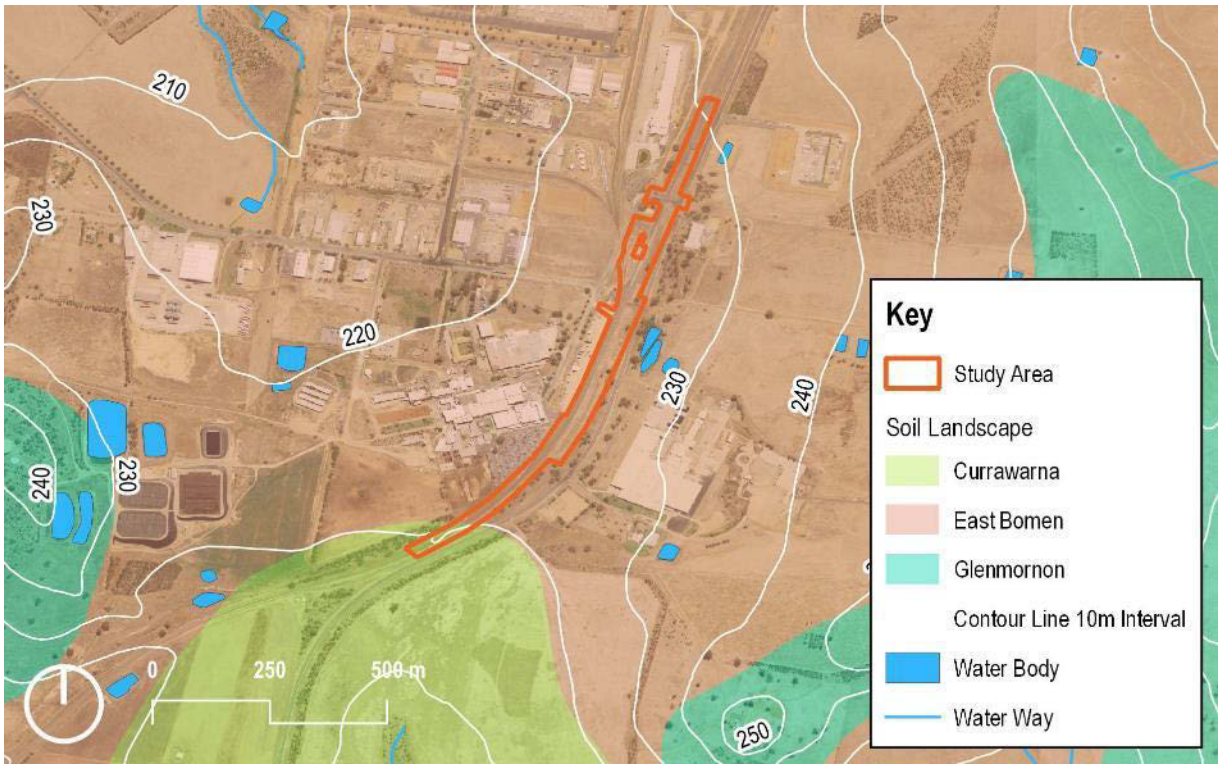

Figure 3.10 Soil landscapes, hydrology and topography of Zone 11 (Bomen area). (Source: NSW LRS with GML additions, 2021)

3.1.10 Zone 12 Landscape Context

Zone 12 (Figure 3.11) is located at Harefield and can be divided into two soils landscapes: Currajong and Houlaghans Creek (variant A). The Currajong soils landscape consists of gentle to undulating foot slopes and colluvial plains. These soils descend into Houlaghans Creek, an alluvial plain associated with a large creekline of the same name, found 6km west of the current study area. Zone 12 is associated with the Reedy Creek drainage depression and stream (<200m away). The foot slopes of the Currajong landscape to the south of the investigation area would have provided mildly elevated and drained land on which Aboriginal occupation could have occurred in the past. Although most of the study area looks modified, its southwestern portion appears less disturbed and might have potential for intact archaeology.

In summary, the relatively undisturbed aspects of Zone 12 and its association with Reedy Creek indicate that the zone requires site inspection.

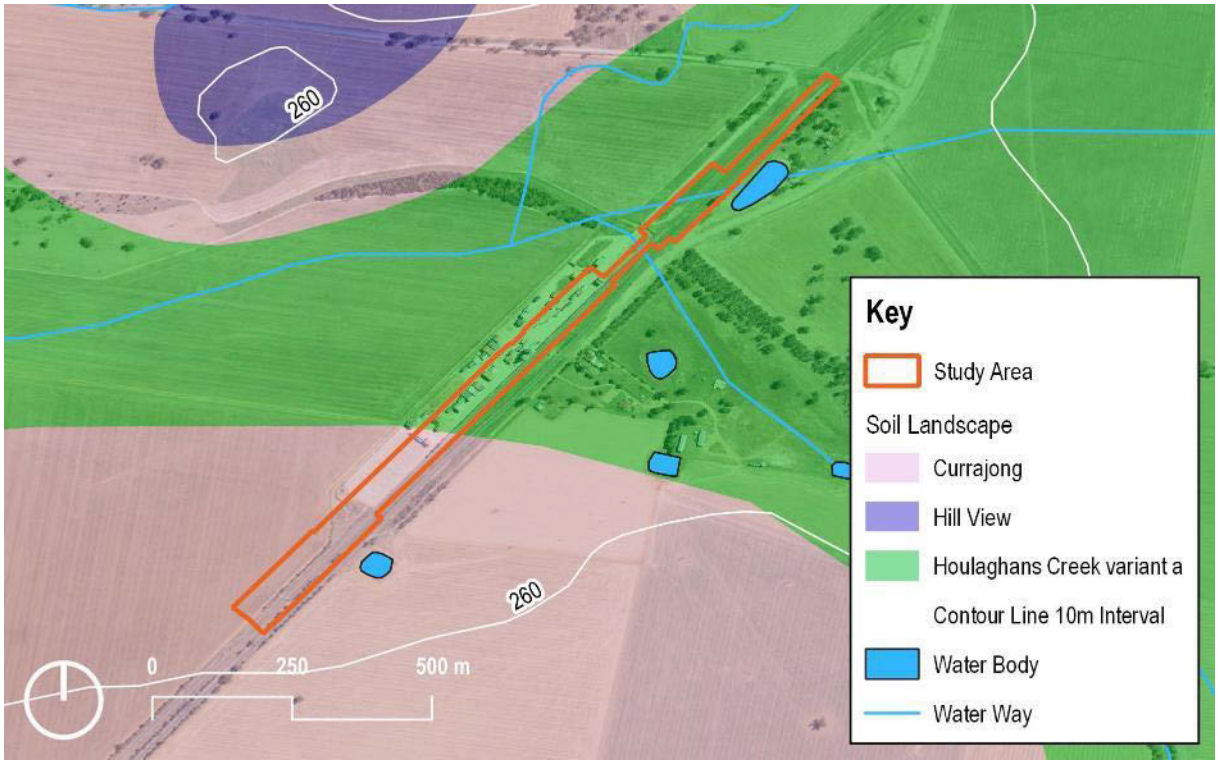

Figure 3.11 Soil landscapes, hydrology and topography of Zone 12 (Harefield area). (Source: NSW LRS with GML additions, 2021)

3.1.11 Zone 13 Landscape Context

Zone 13 (Figure 3.12) follows the current trainline through Junee along the Currajong soil landscape. This soil landscape consists of gentle to undulating foot slopes and colluvial plains. In the study area, it is flanking the drainage depression along Junction Street, which has been artificially manipulated to avoid flowing into urban locations. The surrounding landscape includes watercourses to the north and west of the investigation area which would have provided a stable water supply for habitation of this area by Aboriginal people in the distant past. Lower slopes of undulating plains, through which the investigation area passes, would have also provided an ideal semi-drained zone for habitation.

However, most of the study area has been cleared and disturbed from urban development in Junee and the current rail line, although there appear to be pockets of intact soils on the western side and to the northwest of the investigation area. These intact pockets may have archaeological potential.

In summary, landscape features indicate that the undisturbed parts of Zone 13 may warrant site survey.

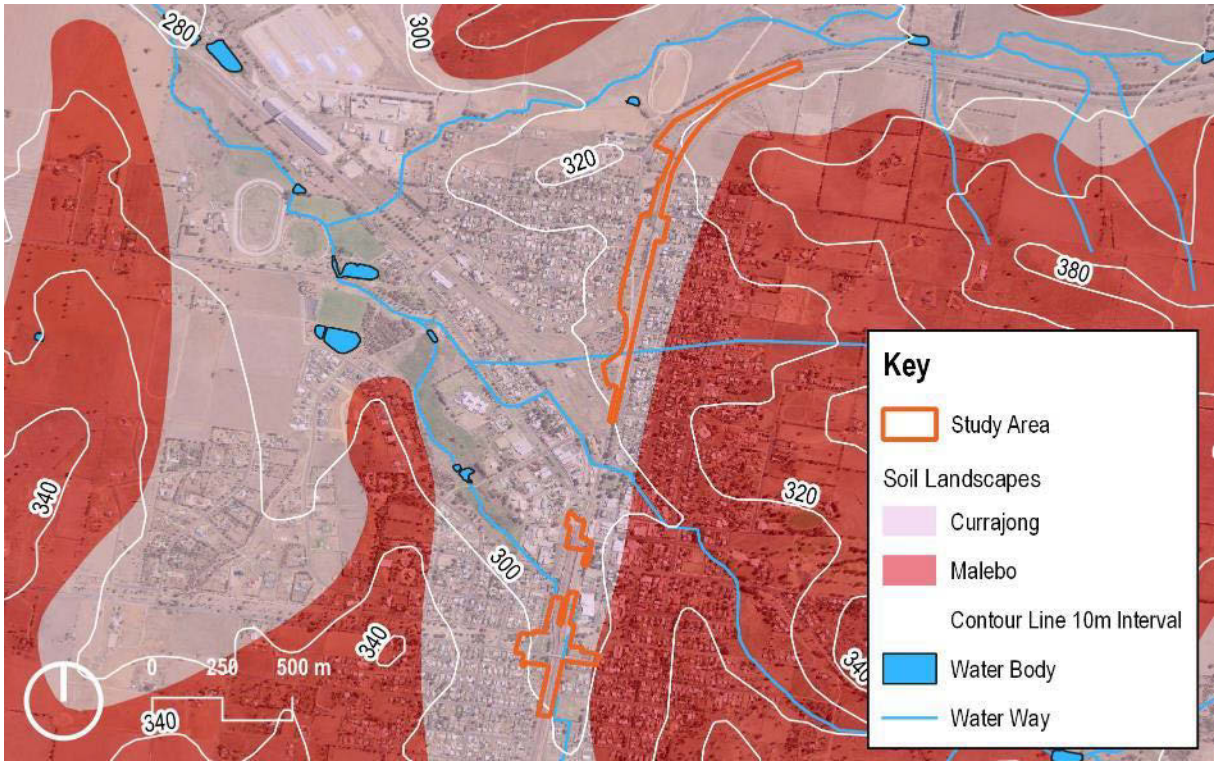

Figure 3.12 Soil landscapes, hydrology and topography of Zone 13 (Junee area). (Source: NSW LRS with GML additions, 2021)

3.1.12 Zone 14 Landscape Context

Zone 14 (Figure 3.13) stretches along the current rail line through the Illabo region across gentle to undulating hills and plains.

Many of the elevated slopes and crests in the region are made up of the Stony Hill landscape, consisting of highly variable and complex erosional soils. The lower slopes of these rises are characterised by Eurongilly, Mimosa and Currajong transferral slopes formed on Quaternary colluvium. These deep soils are subject to sheet erosion, particularly when they are heavily cleared for agriculture. A small edge of the study area falls within the Ironbong Creek soil landscape, with gently undulating alluvial plains around Ironbong Creek and its tributaries.

The whole study area has been cleared for agriculture or disturbed while building the railway line. Despite this, there is potential for archaeology, if present in the area, to be located within the deep subsurface soils on either side of the rail track. In situ deposits are also likely to occur in the Ironbong Creek landscape, which would present a favourable landscape due to the abundant freshwater from the creekline.

In summary, landscape features indicate that Zone 14 requires site inspection around the undisturbed parts of Illabo Railway Station and around the Jeralgambeth Creek crossing.

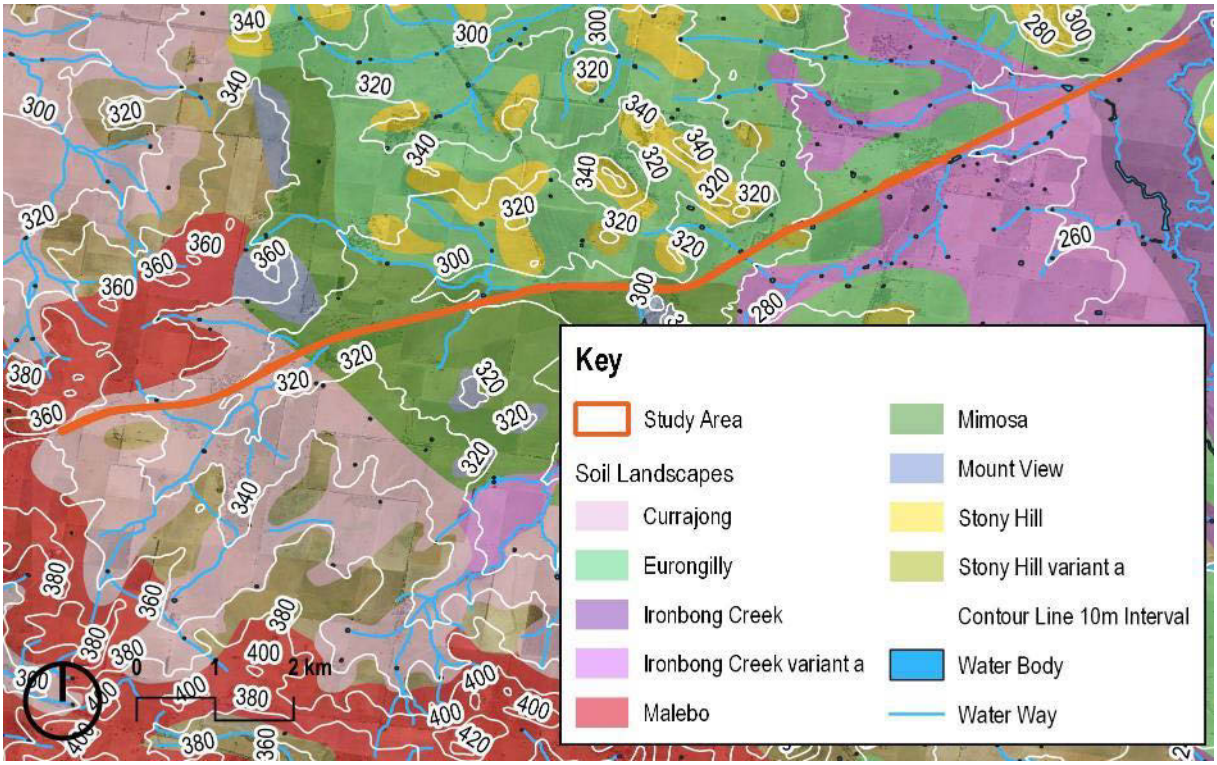

Figure 3.13 Soil landscapes, hydrology and topography of Zone 14 (Illabo area). (Source: NSW LRS with GML additions, 2021)

3.2 Archaeological Context

The purpose of this section is to synthesise available information from previous archaeological and ethnohistorical studies to provide context and a baseline for what is known about Aboriginal cultural heritage in the subject area. Note that this information is preliminary only, and further reporting will be undertaken as part of the ACHAR through additional research and ongoing Aboriginal community consultation.

3.2.1 Wiradjuri Country

The study area lies within the traditional lands of the Wiradjuri language group.[2] The Wiradjuri group occupies the largest geographic area of New South Wales of all Aboriginal groups.[3] Gunnedah and Albury mark the northern and southern boundaries of Wiradjuri Country, while the eastern boundary is the Great Dividing Range, and the western boundary is approximately in line with the present towns of Hay and Nyngan.[4]

The Regional Histories of New South Wales states that the name 'Wiradjuri' means 'people of the three rivers', these rivers being the Macquarie, Lachlan and Murrumbidgee.[5] These three rivers were key resource zones for the Wiradjuri people, providing a stable, abundant and varied supply of food provisions including shellfish and fish such as Murray cod.

The Wiradjuri people generally moved around in groups, using the river flats, open land and waterways with some regularity through the seasons as indicated by the scattered archaeological evidence in the region.[6] Journeying 100km and more to the southeast would have provided a range of additional resources from the southern alps and the Brindabella Ranges.

The Wiradjuri people carved trees to create shields, coolamons and canoes from the bark. Scarred trees were also selected specifically as markers, or signposts, within the cultural landscape to show areas of abundant resources or where people congregated.[7] Carved trees were also used to mark the burial sites of celebrated men whose passing had great effect on the community.[8] Often, only one tree was carved at each burial site; however, in some cases up to five carved trees have been identified for one burial.[9]

The arrival of Europeans in the areas in the early 1800s had a devastating impact on the traditional Wiradjuri lifestyle:

> *Clashes between the new European settlers and the local Aboriginal people were common around the Murrumbidgee and even further north, particularly between 1839 and 1841. These violent incidents have been termed the 'Wiradjuri wars' and involved removal of cattle and spearing of stockmen by the Wiradjuri people in response to killing of their people as well as loss of their fishing grounds and significant sites following invasion by the new settlers.10*

After the frontier violence, pastoralism spread throughout Western NSW, and there were fewer and fewer places for Wiradjuri people to live.[11] The European pastoralists (originally mostly British and Irish people) would build their properties on Wiradjuri campsites, which generally were within the vicinity of drinking water, were sheltered, and safe from flooding. In the early to second half of the 18th Century, Wiradjuri men and women would work on pastoral stations and shepherds and labourers, with the material gains for working on stations (particularly food) being significant to Wiradjuri people as the ever increasing numbers of livestock diminished traditional food stocks.[12]

The 'Aborigines [sic] Protection Board' was established in 1883. From this date, until the abolition of its successor, the 'Aborigines [Sic] Welfare Board' in 1969, Aboriginal people were forcibly relocated to missions, reserves and stations. This era which saw the creation of the Warangesda (Darlington Point) in Griffith, and Brungle (near Tumut) missions.[13] The Mission and reserves were made to control and

confine Aboriginal people, with the purposes of this confinement changing over time.[14] Wiradjuri people were also deeply impacted by the Stolen Generations—a period when children were removed from their families and raised by non-Aboriginal people or within institutions such as Kinchela Aboriginal Boys Training Home and the Cootamundra Aboriginal Girls' Training Home.

The intergenerational impact of the Stolen Generation on Wiradjuri people, was highlighted in the 1997 *Bringing them Home* report, leading to the then Prime Minster Kevin Rudd's National Apology to Australia's Indigenous Peoples. This was remembered by Aboriginal people, including Wiradjuri people, as a watershed moment, although little progress has been made by federal governments for further reform, since then.[15]

Wiradjuri people continue to occupy their traditional Country, in the townships of Dubbo, Condobolin, Orange, Bathurst, Wagga Wagga, Albury, Young, Narrandera and Griffith.[16] Wiradjuri are continuously involved in - and fight for- the protection of cultural heritage sites.

3.2.2 Aboriginal Heritage Information Management System Search

GML undertook a search of the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) database. A total of 12 extensive searches were done to capture the whole study area in detail. This search area is shown in Figure 3.14.

The search identified 925 sites and eight Aboriginal places. The results of the search are shown in Table 3.1 and Figures 2.15 to 2.23.

Table 3.1 Results of AHIMS Search.

Site Feature	Frequency	Percentage %
Aboriginal Ceremony and Dreaming	9	0.96
Aboriginal Ceremony and Dreaming and Modified Tree	1	0.11
Aboriginal Place	8	0.86
Aboriginal Resource and Gathering	3	0.32
Art	3	0.32
Artefact and Modified Tree	4	0.43
Artefact and Stone Quarry	3	0.32
Artefact Site	407	43.62
Artefacts and PAD	9	0.96
Grinding Groove	1	0.11
Habitation Structure	1	0.11
Hearth	1	0.11
Isolated Artefact	134	14.36
Modified Tree (Carved or Scarred)	336	36.02
Ochre Quarry	1	0.11
Potential Archaeological Deposit (PAD)	6	0.64
Restricted Site	2	0.21
Stone Quarry	3	0.32
Waterhole	1	0.11

Site Feature	Frequency	Percentage %
Total	933	100

There were no sites **within** the study's investigation areas (zones 1–14). Nevertheless, there were a number of sites **adjacent** to the study areas, which can provide an indication of which archaeological types are likely to occur in the region.

The results of the AHIMS search show that stone artefact sites are the most common within the region, making up 43.62% of all sites. Stone-based sites and artefacts by nature preserve best in the archaeological record and can survive in highly disturbed areas. Modified trees are also a dominant site type in this region (36.02%). Therefore, any archaeology found in the area is likely to be artefacts. There is also potential for forested trees to occur in uncleared areas along the less disturbed aspects of the study area.

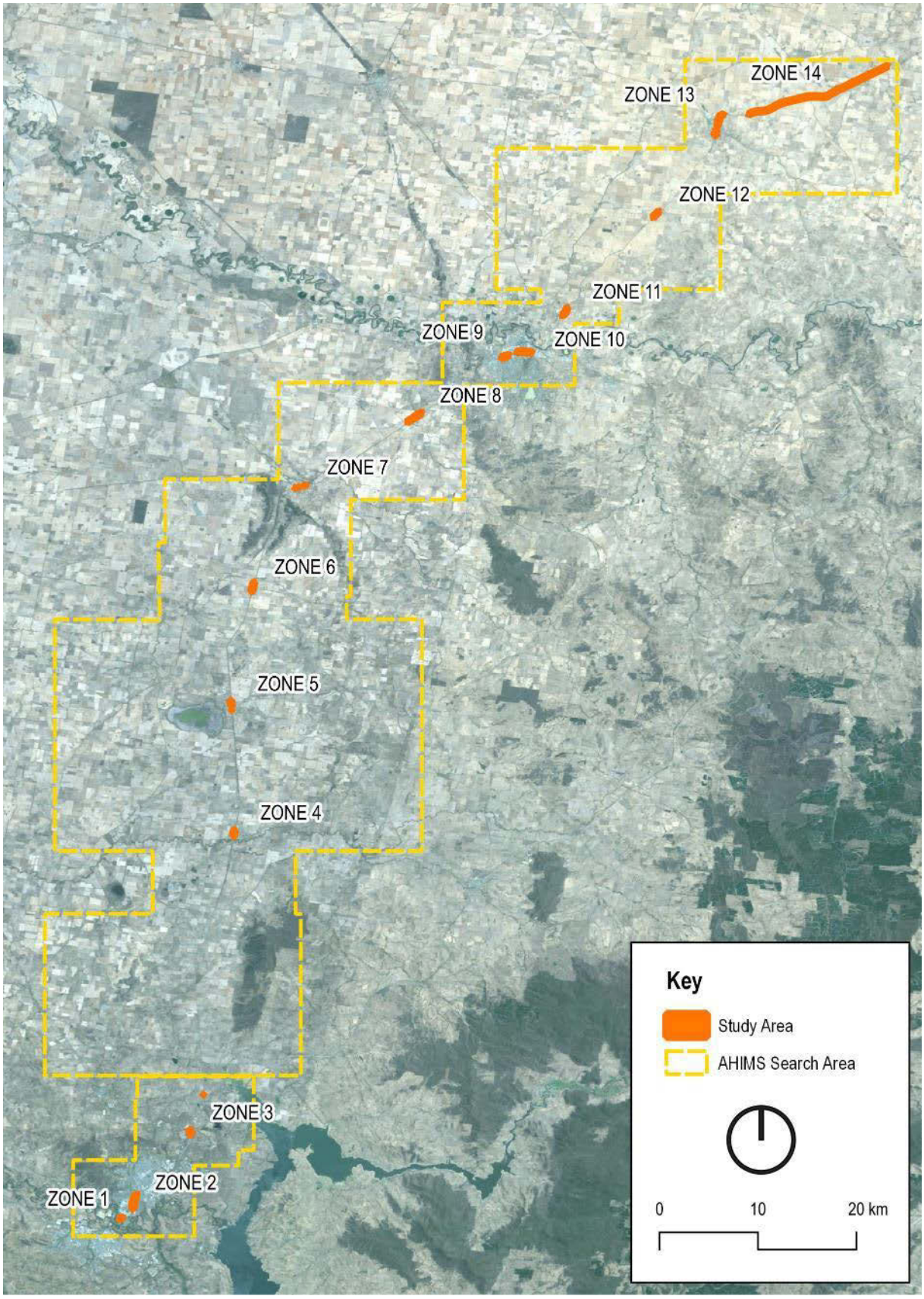

Figure 3.14 AHIMS search area. (Source: SIX Maps with GML additions, 2021)

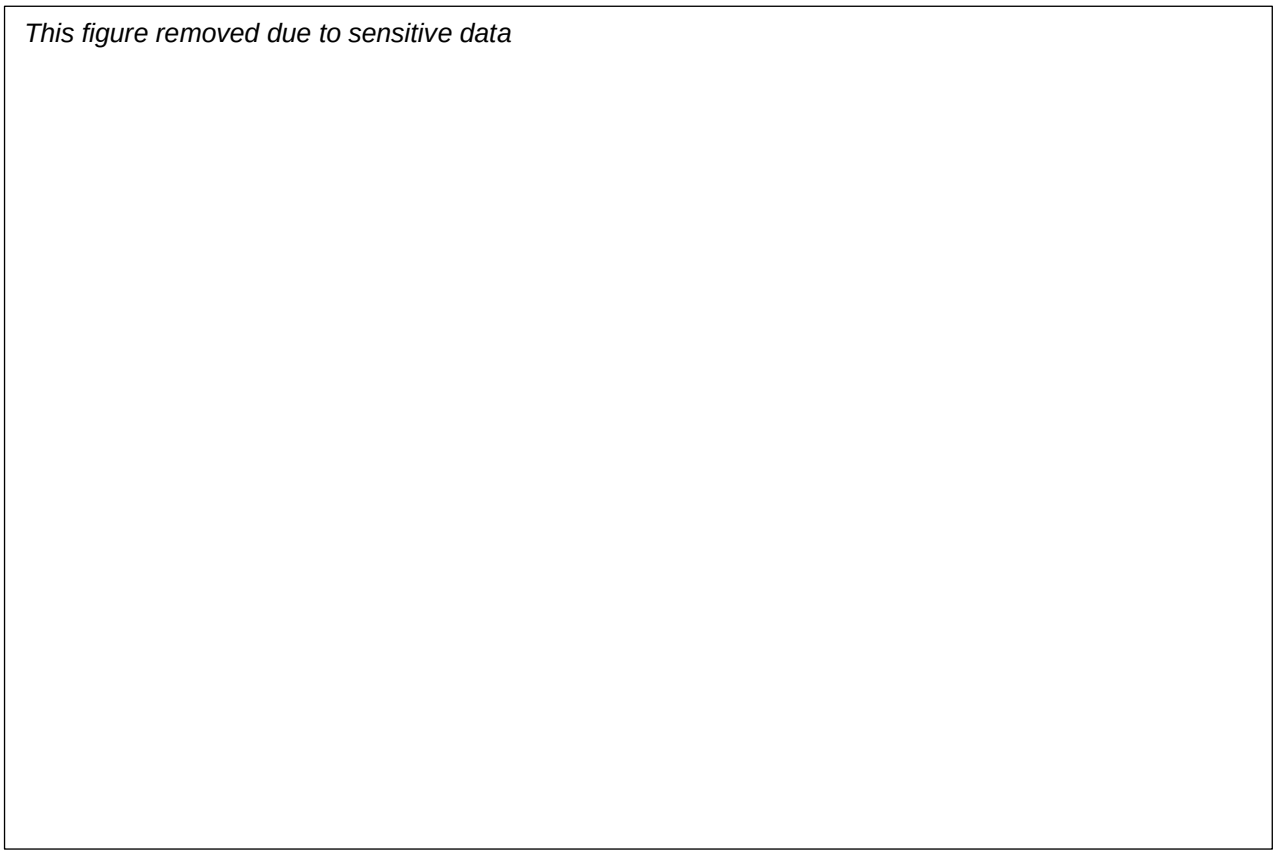

Figure 3.15 AHIMS sites around zones 1 and 2. (Source: SIX Maps aerial with AHIMS inclusions)

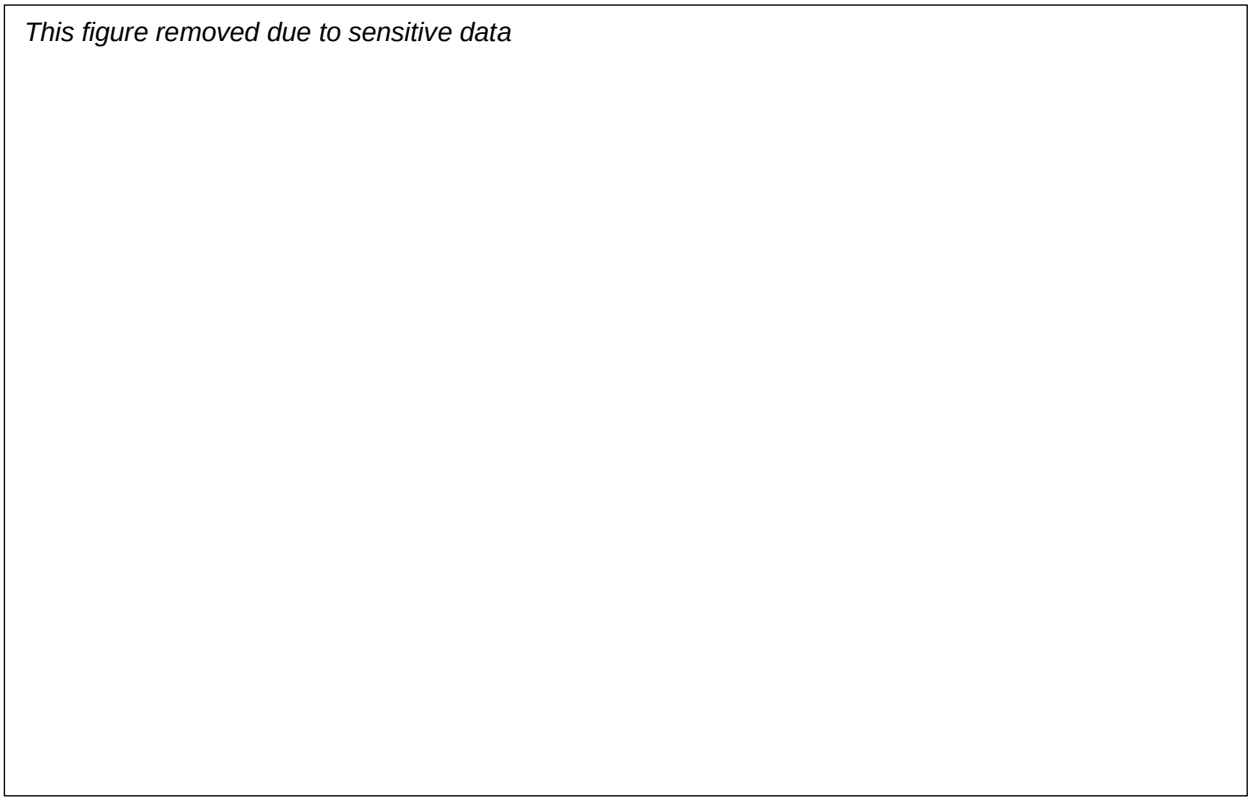

Figure 3.16 AHIMS sites around Zone 3. (Source: SIX Maps aerial with AHIMS inclusions)

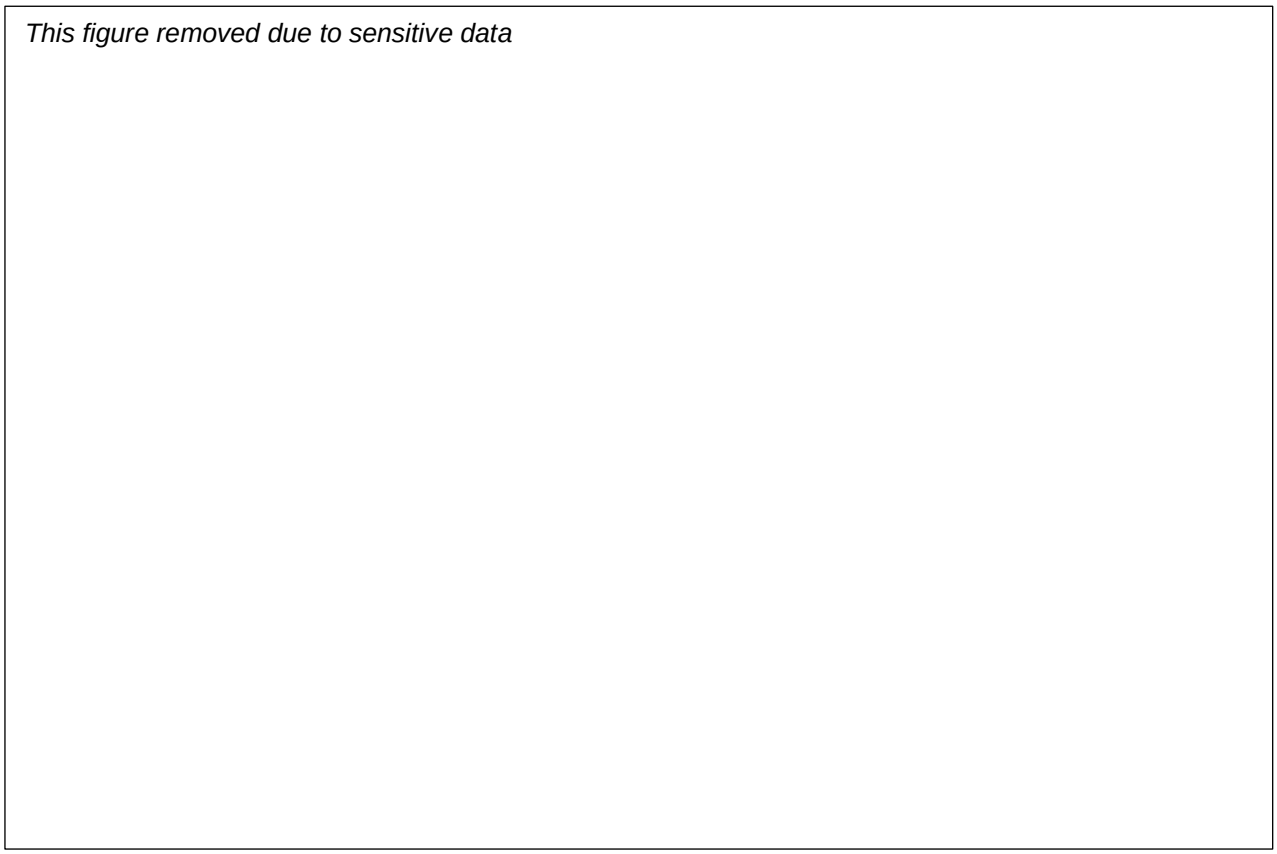

Figure 3.17 AHIMS sites around parts of zones 3 and 4. (Source: SIX Maps aerial with AHIMS inclusions)

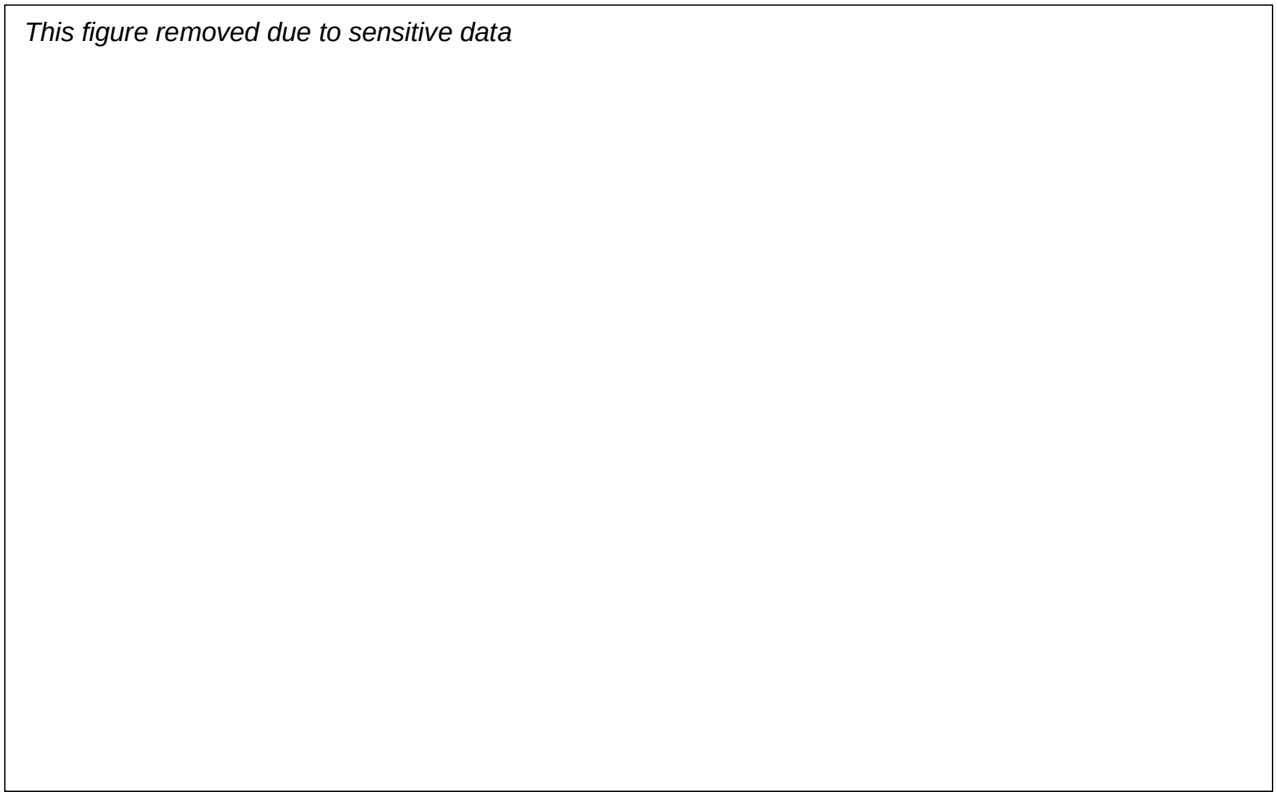

Figure 3.18 AHIMS sites around parts of zones 4, 5 and 6. (Source: SIX Maps aerial with AHIMS inclusions)

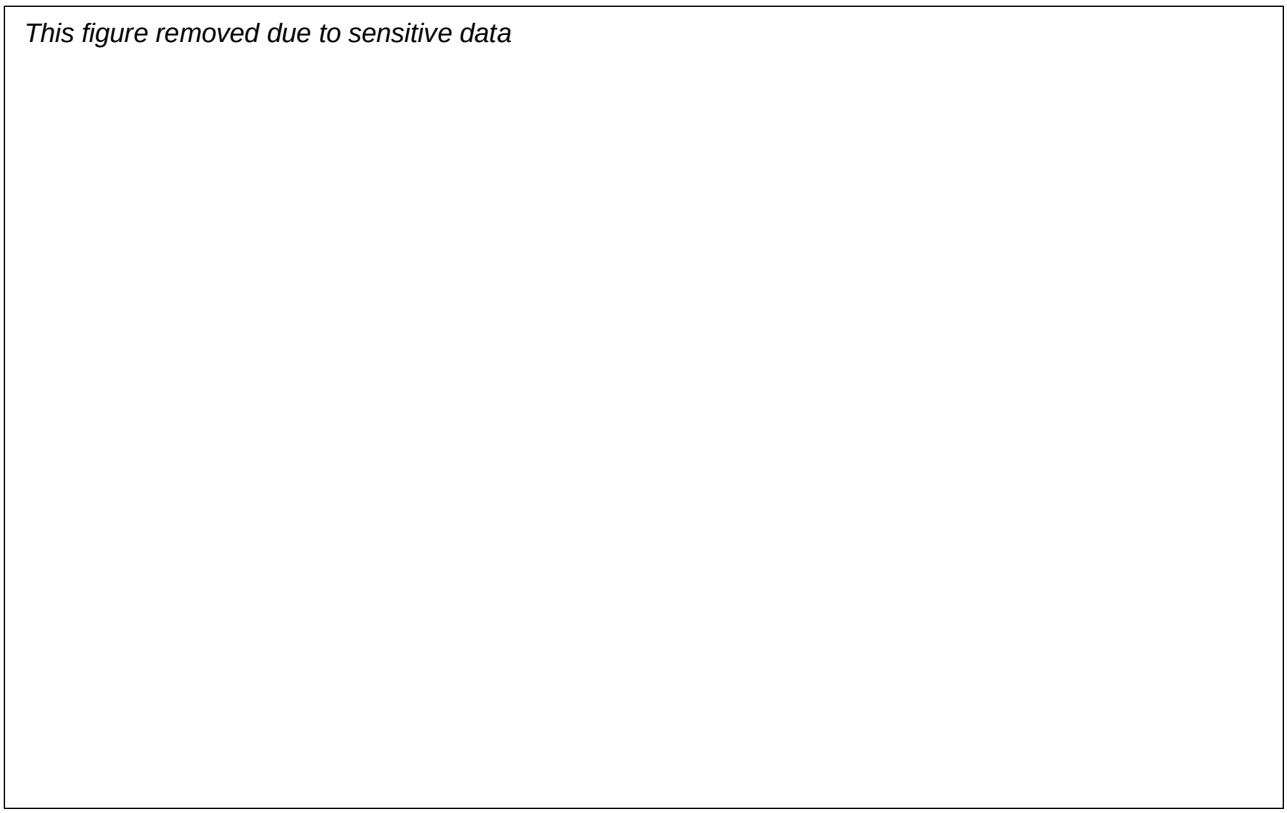

Figure 3.19 AHIMS sites around part of zones 6 and 7. (Source: SIX Maps aerial with AHIMS inclusions)

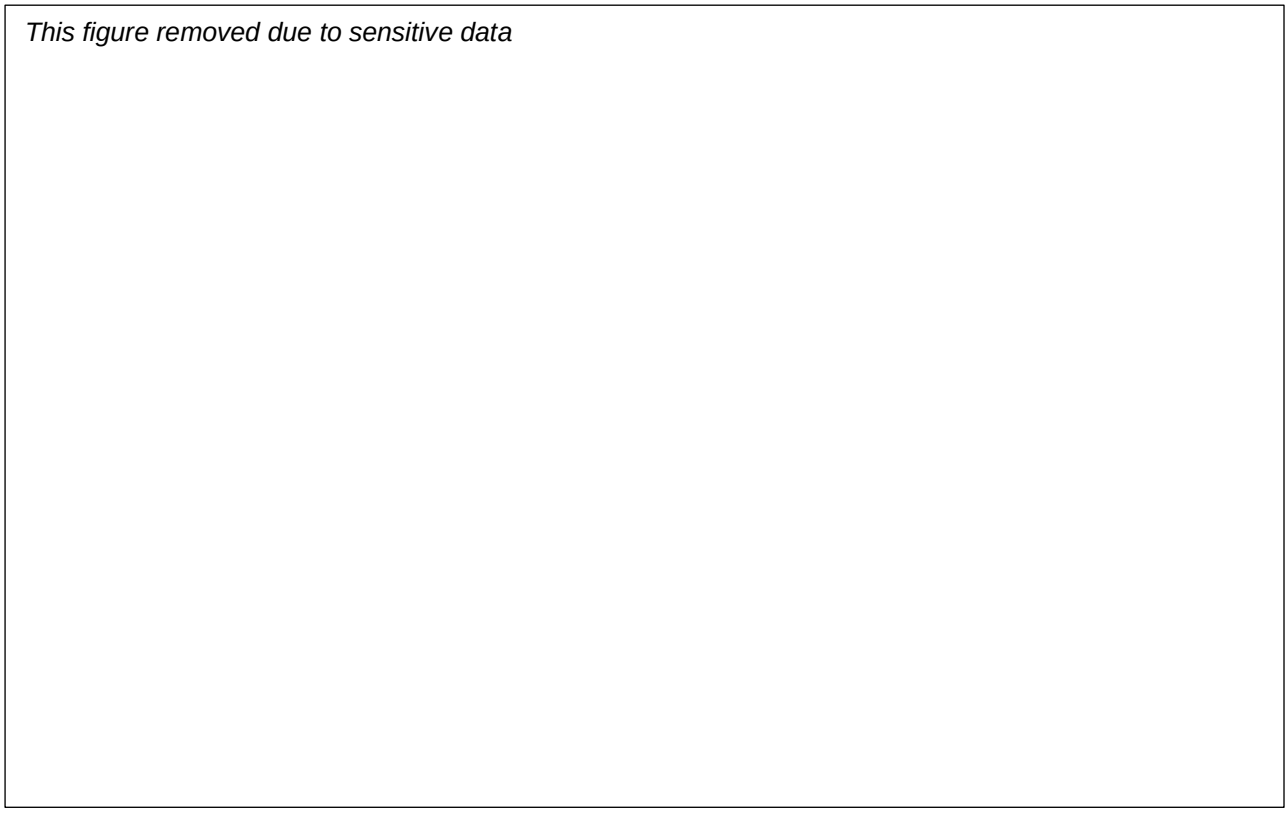

Figure 3.20 AHIMS sites around zones 7 and 8. (Source: SIX Maps aerial with AHIMS inclusions)

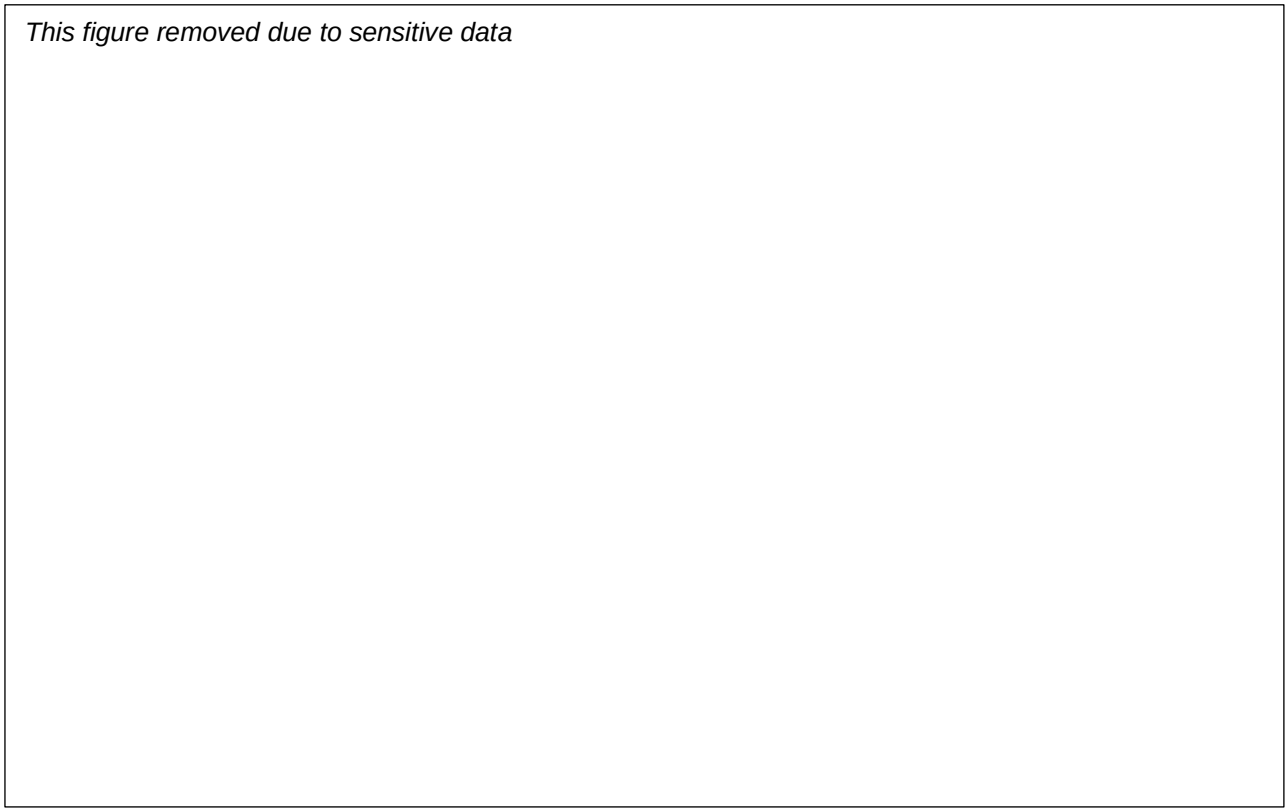

Figure 3.21 AHIMS sites around zones 9, 10 and 11. (Source: SIX Maps aerial with AHIMS inclusions)

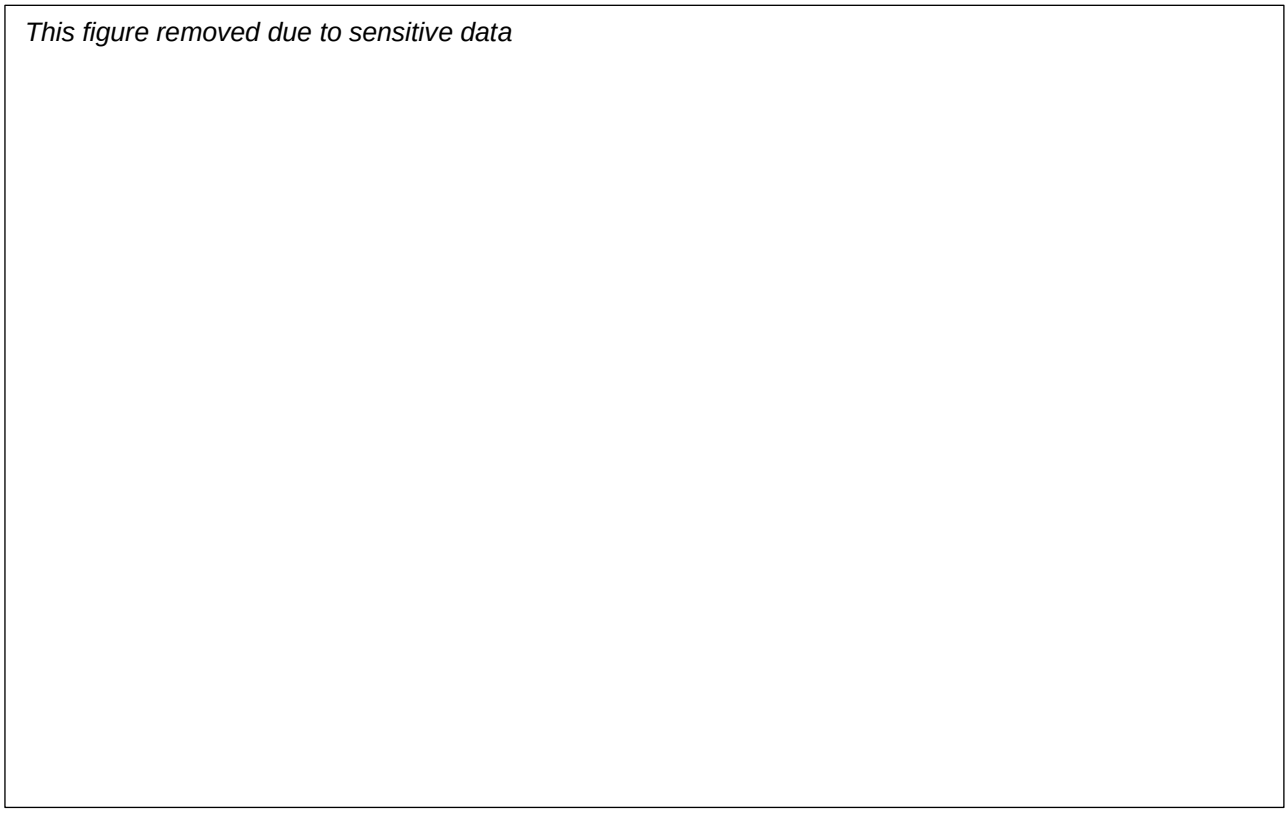

Figure 3.22 AHIMS sites around zones 11 and 12. (Source: SIX Maps aerial with AHIMS inclusions)

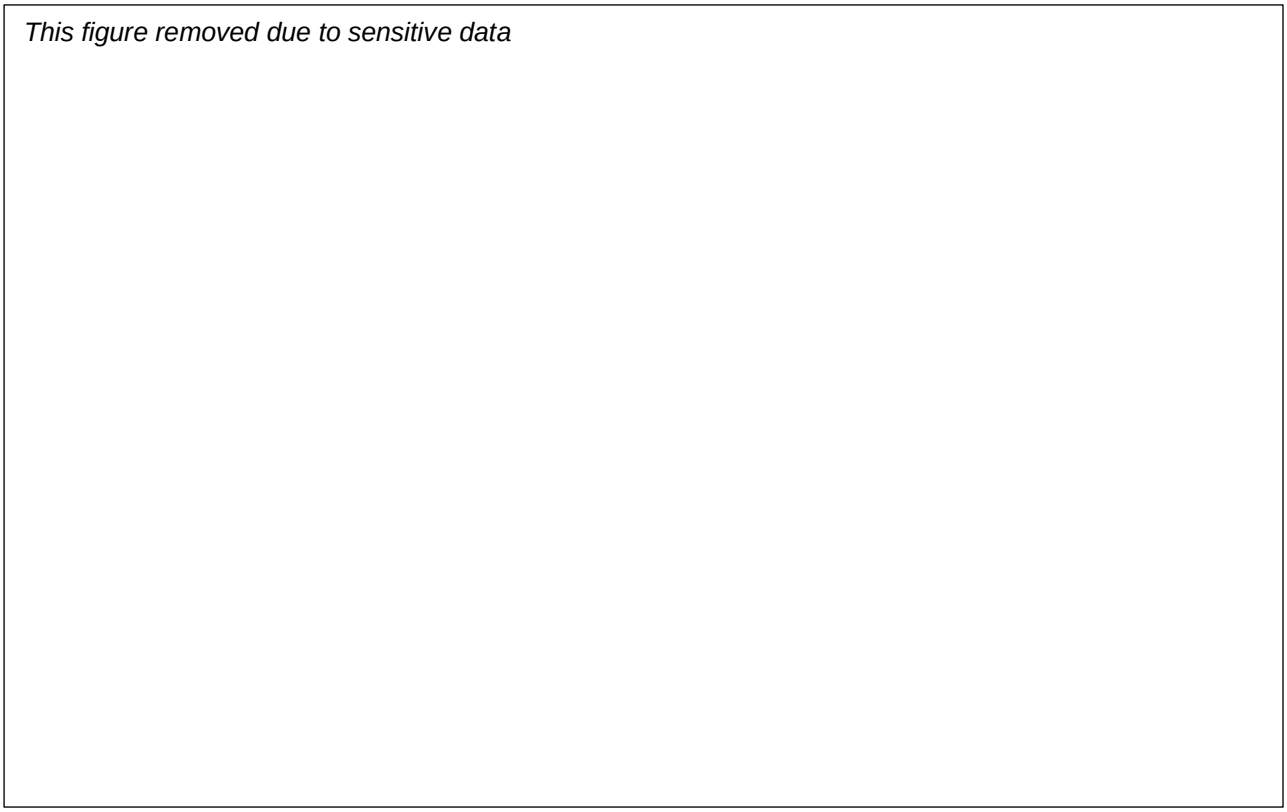

Figure 3.23 AHIMS sites around zones 13 and 14. (Source: SIX Maps aerial with AHIMS inclusions)

3.2.3 Relevant Local Literature

The study area is located in a region that has been subject to some prior Aboriginal heritage assessment. A review of relevant Aboriginal archaeological and heritage reports from the AHIMS has been undertaken (Table 3.2). Further analysis of and elaboration on this literature will follow in the ACHAR reporting, as well as in-depth analysis of relevant sites in the study area.

The background literature indicates that in areas of minimal disturbance along the Albury to Illabo rail corridor, it is possible to detect Aboriginal objects, in particular quartz flakes. This is particularly relevant in the 2006 Biosis report which surveyed the rail corridor along the rail corridor between Albury and Junee. The report also indicates that farmland, especially in floodplains and near creeks, has potential for archaeological deposits, and that scar trees are likely to occur in the region, but only where woodland clearance has not occurred. The background literature provides no indication of the potential for subsurface deposits to exist in the study area, as all the reports are based on pedestrian surveys, rather than archaeological excavations.

Table 3.2 Summary of Relevant Prior Aboriginal Heritage Reports.

Report	Description	Relevance to Current Assessment
Eleanor Crosby, June 1979—Aboriginal Sites in Albury	In 1979, Eleanor Crosby surveyed a number of sites in the Albury district, as part of the work carried out for the Albury-Wodonga Development Corporation in March, April and May 1979.	The study area is around 1km west of Zone 1. No Aboriginal objects were detected on the site survey, due to long grass coverage and site disturbance (eroded high hillsides or roadsides). The report did note that a number of scarred trees were visible on the nearby riverbanks west of the crossing. Importantly, this report supports earlier reports (Whitter, 1978; Crosby, 1978) that noted an absence of surface camp sites in the area.
Biosis, November 2006—North–South Rail Corridor Albury to Junee Passing Lane Project: Archaeological Survey	In November 2006, Biosis undertook an Archaeological Survey for the North–South Rail Corridor Albury to Junee Passing Lane Project.	The archaeological survey recorded 13 Aboriginal archaeological sites, across a range of areas associated directly associated with the current study area. One area surveyed was directly near zones 1 and 2: the rail line near Murray River Albury Station. The report found that the areas around Albury Station had been subject to high disturbance from the construction of the railway station and rail yard, and the whole area was artificially built up with a combination of earth and blue metal as the foundation to avoid flood waters from the Murray River. However, the authors noted that a PAD was associated with the area around Murray River—albeit not immediately adjacent to the rail line—where there were Aboriginal objects excavated in high numbers to a depth of 1.5m. Another survey area outlined in this report was near the current investigation zone near Table Top, adjacent to Zone 3. Like the Albury rail line, the surface area was highly modified, yet four isolated artefacts were recorded: all quartz flakes (ARTC 1 to 4). Further survey was also undertaken between Henty and Culcairn (between current investigation zones 4 and 5). Seven Aboriginal sites were recorded (ARTC 04–10), all of which were quartz artefact sites. The next project survey was between Yerong Creek and The Rock (between current investigation zones 6 and 7). The report found that disturbance within the railway corridor was minimal, with the track built on a single base of blue metal less than 0.5m depth. Two Aboriginal quartz flakes were identified (ARTC 11 and ARTC12); at least one appeared to be introduced to the area with the fill used to raise an access road. The next survey area was associated with the Wagga Wagga and Bomen railway areas (around current investigation zones 9, 10 and 11). These areas were found to have been heavily disturbed and therefore were assessed as having no Aboriginal sites or archaeological potential. Another site, ARTC 13, was recorded although its location is not clear in the report.
A Djekic 1978—Report for the National Parks and Wildlife Service of NSW on an archaeological survey of the Wagga Wagga to Albury Transmission Line	The route covered approximately 120km and was surveyed over a five-day period from 13 to 17 June 1978.	Archaeological pedestrian survey was undertaken along the proposed transmission line from Wagga Wagga to Albury. This route traversed well-established farming places, and found that scarred trees were the most common archaeological site type. Six modified trees were found, as well as a number of granite stone artefacts in a farm at Culcairn, in a floodplain near Billabong Creek.

Report	Description	Relevance to Current Assessment
GML Heritage, 2021 (forthcoming)—ARTC Inland Rail Illabo to Stockinbingal Aboriginal Cultural Heritage study	Between 2019 and 2020, GML Heritage and RAPS excavated over 200 tests along the proposed Illabo and Stockinbingal Inland Rail Route.	The 37km section of Inland Rail between Illabo to Stockinbingal will be new track, whereas the present study area is current track enhancements. This section of the Inland Rail directly links to the Illabo portion of the current study area. Like the current study area, the Illabo to Stockinbingal route is across Wiradjuri Country. The test excavation refined predictive modelling in the region, determining that Aboriginal occupation sites will mainly be present in association with water sources—primarily lower order streams. Aboriginal occupation sites are most likely to occur on low-gradient, well-drained landforms in close proximity to those water sources. Over 120 artefacts were detected, made up of quartz, quartzite, silified wood, IMSTC: (indurated mudstone/silicified tuff/chert) FGS (other fine-grained siliceous rocks such as chert and chalcedonic chert) A number of scar trees were also documented, corresponding to AHIMS findings that the most common artefact sites in the region are midwifed trees and artefacts. This report is being finalised by GML Heritage.

3.3 Aboriginal Archaeological Potential

This preliminary desktop assessment has found that there are a number of landscape features within the 14 zones of the study area that indicate the likely presence of Aboriginal objects. As a result, further investigation is required in these areas.

The two most common site types in this study area are stone artefacts and modified trees. As corroborated by archaeological reports, stone artefacts are likely to occur across any areas which contain undisturbed (or not heavily disturbed) soils, whereas modified trees could occur anywhere where woodland has not been cleared in recent history.

Table 3.3 provides a summary of the zones requiring further investigation in the form of an archaeological survey. Details of the survey are outlined in the next section of the report.

Table 3.3 Predictive Model for the 14 Zones within the Study Area. (Details of the survey are outlined in Section 4).

Zone	Is a Survey Required?	Reasoning (Based on Landscape and Archaeological Data)
1	Yes	• Landscape features (distance to water less than 200m) indicate further investigation is required. • There are two PADs recorded within 50m on each side of the western area (Murray Bridge).
2	No	• This zone is shown to be highly disturbed by modern rail infrastructure, and the building and subsequent demolition of the Bunge Flour Mill.

Zone	Is a Survey Required?	Reasoning (Based on Landscape and Archaeological Data)
3	Yes	• The Wagga Road Bridge investigation area has two PADs in proximity, within 50m of the investigation area. A further two artefact scatters are recorded 115m west and 600m northeast of this area, and two scar trees are recorded 550m northeast and 600m west. • Landscape features (distance to water less than 200m) indicate further investigation is required in the Wagga Road Bridge investigation area of this zone. • The northern investigation area in this zone, Trackside Chainage 632.86, is within a highly disturbed context, and does not warrant any further survey.
4	Yes	• Zone 4 starts 350m from Billabong Creek which has numerous sites approximately 2km to the west of the study area. • The eastern areas of this zone appear relatively less disturbed and should be the focus of a survey.
5	Yes	• Multiple sites have been found around the wetland to the southwest of this area between 600m and 2km away and it lies in close proximity to Buckargingah Creek. • Survey is proposed for two areas: one on the northwest side and one on the southeast side of the rail alignment in the zone of lesser disturbance.
6	Yes	• Multiple scar trees have been recorded in this area, indicating general use of the landscape by Aboriginal people in the past. • This zone is close to Sandy Creek and within 1km of the next substantial water course (Yerong Creek). • Survey from the south end of the project area north to Plunkett Street.
7	No	• There are multiple scar trees recorded near here around Burkes Creek. However, the project areas are within the disturbed existing rail corridor.
8	Yes	• There are multiple scar trees recorded near here around Sandy Creek along with some artefact scatters on the plains to the north within 1–2km. • Survey is recommended on the southeast side of the zone, where the project area is less disturbed.
9	No	• There are multiple sites recorded around Wagga Wagga; however, the entire project area is within the existing disturbed corridor. Previous work by Biosis (Table 3.2) indicates that there is a lack of Aboriginal archaeology within the Wagga Wagga urban area.
10	No	• As above (Zone 9).
11	No	• The nearest recorded site is in an isolated artefact in a paddock 1.3km to the south. • This zone is highly disturbed.
12	Yes	• Although the nearest artefacts are some distance away, the southwest end has undeveloped land within reasonable proximity of the waterway.
13	Yes	• The nearest recorded sites are 6–7km away to the north and southeast. • However, landscape analysis suggests that it is possible this zone may have some archaeological potential. The absence of recorded sites in the surrounding area may be a reflection of the lack of survey in the area in the past, rather than an absence of archaeological sites per se. • There are two undeveloped areas that could be surveyed to test predictive modelling, both to the west side of the alignment.
14	Yes	• Some artefact sites have been found surrounding this zone on various past infrastructure projects such as pipelines. Sampling of some of the area adjacent to the corridor near Illabo is recommended. • Sampling 200m on either side of Jeralgambeth Creek (to the northeast of Illabo Station); and • Sampling a section to the southwest of Illabo Station.

3.4 Endnotes

1 Department of Environment, Climate Change and Water, Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, 2010, p 12.

2 AECOM, Young to Wagga Wagga Looping Gas Pipeline, Heritage Assessment Stage 1 – Bethungra to Wagga Wagga, report prepared for APA Group, January 2010.

3 Briggs, R, ed. 2011, *Carved Trees: Aboriginal Cultures of Western NSW*, SLNSW Exhibition Guide, State Library of NSW, Sydney, p 8; NSW Office of Environment and Heritage, *South Western Slopes - Regional History*, viewed 1 August 2019 <https://www.environment.nsw.gov.au/bioregions/SouthWesternSlopes-RegionalHistory.htm>.

4 Bathurst Regional Council Website, Aboriginal People, viewed 4 February 2021 < https://www.bathurst.nsw.gov.au/community/community_mm/aboriginal-people/190-indigenous-people.html>

5 AECOM, Young to Wagga Wagga Looping Gas Pipeline, Heritage Assessment Stage 1 – Bethungra to Wagga Wagga, report prepared for APA Group, January 2010. NSW Office of Environment and Heritage, *South Western Slopes - Regional History*, viewed 1 August 2019 <https://www.environment.nsw.gov.au/bioregions/SouthWesternSlopes-RegionalHistory.htm>.

6 NSW Office of Environment and Heritage, *South Western Slopes - Regional History*, viewed 1 August 2019 <https://www.environment.nsw.gov.au/bioregions/SouthWesternSlopes-RegionalHistory.htm>.

7 Cootamundra Aboriginal Working Party, Letter dated 22 November 2018, authored by Paula Maher, Amanda Levett and Peter Beath to GML Heritage.

8 Briggs, R, ed. 2011, Carved Trees: Aboriginal Cultures of Western NSW, SLNSW Exhibition Guide, State Library of NSW, Sydney, p 8.

9 Briggs, R, ed. 2011, *Carved Trees: Aboriginal Cultures of Western NSW*, SLNSW Exhibition Guide, State Library of NSW, Sydney, p 8.

10 Briggs, R, ed. 2011, *Carved Trees: Aboriginal Cultures of Western NSW*, SLNSW Exhibition Guide, State Library of NSW, Sydney, p 8.

11 ABC Central West, Micaela Hambrett, 20 August 2018, How the Wiradjuri people of Central West NSW survived first contact with European settlers, viewed 4 February 2021, < https://www.abc.net.au/news/2018-08-17/curious-central-west-how-the-wiradjuri-survived-first-contact/10128822>

12 ABC Central West, Micaela Hambrett, 20 August 2018, How the Wiradjuri people of Central West NSW survived first contact with European settlers, viewed 4 February 2021, < https://www.abc.net.au/news/2018-08-17/curious-central-west-how-the-wiradjuri-survived-first-contact/10128822> ; Montgomery, B, A Study On The Relationship Between Wiradjuri People And The Non-Indigenous Colonisers Of Wagga Wagga 1830-1900., report prepared as part of Charles Sturt University Archives Summer Scholarship, 2010-11, p. 10

13 Montgomery, B, A Study On The Relationship Between Wiradjuri People And The Non-Indigenous Colonisers Of Wagga Wagga 1830-1900., report prepared as part of Charles Sturt University Archives Summer Scholarship, 2010-11, p. 27; Kabaila, P, 2011,. *Survival Legacies: Stories from Aboriginal settlements of southeastern Australia* . Canberra: Canprint Publishing, p. 33.

14 ANU PRESS 'A modern-day concentration camp': using history to make sense of Australian immigration detention centres Aboriginal reserves, viewed 4 February 2021 < http://press-files.anu.edu.au/downloads/press/p109651/html/ch04s03.html >

15 Sydney Morning Herald, July 20, 2018 'Some people in government wish we had died out, says Anita Heiss' https://www.abc.net.au/news/2018-07-04/complex-history-of-indigenous-and-non-indigenous-australia/9930944 ; ABC Radio National, 4 July 2018, 'Watershed moments in Indigenous Australia's struggle to be heard' < https://www.abc.net.au/news/2018-07-04/complex-history-of-indigenous-and-non-indigenous-australia/9930944> .

16 Murray Lower Darling Rivers Indigenous Nations, Wiradjuri Nation, viewed 4 February 2021 < https://www.mldrin.org.au/membership/nations/wiradjuri-nation. >

4.0 Assessment Methodology

4.1 Approach to Assessment

The overall project objectives are outlined in Section 1 and include assessing the archaeological sensitivity of the investigation areas, avoiding impacts through design measures and mitigating impacts that are unavoidable.

The key objective of this stage of the assessment project is to understand the nature of the Aboriginal archaeological environment along the study corridor so that design solutions can be used as the primary mechanism for managing environmental impacts where possible.

Further stages of information gathering and assessment through archaeological test excavation may also be warranted at later stages and would be the subject of a second, specific Aboriginal Archaeological Research Design formulated on the results of the surveys and any revised potential impacts from the iterative design process. The stages are outlined below.

4.2 Archaeological Survey

4.2.1 Methodology

An archaeological survey will be undertaken with the aim of assessing those areas of proposed rail alignment that are assessed as having potential archaeological sensitivity.

The Desktop assessment within this ARD has established 9 of the 14 zones within this Albury to Illabo Inland Rail project area will need to be ground-truthed by pedestrian survey.

Specific survey areas of less-disturbed ground have been identified in each of those 10 zones, and the pedestrian survey will target each of those specific survey areas for systematic survey where possible along with opportunistically targeting areas of higher ground surface visibility. These specific survey zones are highlighted below in Figures 4.1–4.9.

The survey aims to assess those areas of proposed rail alignment and adjoining land that may be impacted by the project and are assessed as having potential archaeological sensitivity, and will be conducted where private access to land is provided. At present, alignment options are still being formulated by the design team, and therefore some minor adjustments may need to be made to the length or width of some of the identified specific survey areas. Minor adjustments to the approach will be discussed with the field team and communicated to all RAPs as part of the ongoing consultation process.

Sites and objects found will be recorded including GPS-based site location data, descriptions and photographs. Areas assessed as having the potential to contain PADs will also be recorded and their extent will be mapped and defined based on landform type and integrity. The survey would also be used to assess areas of potential ground-surface disturbance and notes will be made regarding the soil condition and evidence of disturbance, where required.

The field team will include two archaeologists for one week, along with a select number of RAPs to be determined in conjunction with ARTC after the close of the RAP registration period.

Survey and Assessment Outcomes

Outcomes from the updated desktop assessment and the field survey will inform the ongoing design process. The locations of identified Aboriginal objects and sites, along with refined areas of sensitivity, will be provided to the project design team to assist in design re-evaluation to avoid sites, objects and areas of sensitivity where possible.

Where this is not possible, recommendations will be provided on areas that will need further investigation as part of the process of formulating mitigation and management measures.

All Aboriginal objects and sites identified during the survey will be reported to Heritage NSW for inclusion on AHIMS. They will not be collected during the survey, with mitigation options for each object and site being included in the test excavation Archaeological Research Design (ARD) (see below).

Results of the survey will be incorporated into an ACHAR being prepared for the project.

Further Investigation If Required

Test Excavation

Areas of sensitivity identified during the survey as requiring further investigation will be subject to a test excavation program under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (the Code of Practice).

The test excavation program will include a detailed sampling strategy based on the results of the site survey and assessments of areas of sensitivity. An ARD outlining the test excavation methodology (including a post-excavation reporting process and artefact management) would be prepared and, as part of the ongoing RAP consultation process, would be sent to the RAPs for their information and endorsement.

Based on the requirements of the Code of Practice, the test excavations would comprise a series of hand excavated test units (TUs) set out on systematic grids and based at 10m or 20m intervals. The expansion of individual TUs would occur based on the excavation results where higher artefact densities are recovered.

As part of the ongoing RAP consultation process, the test excavation program would include the RAPs to assist in the work.

Assessment Deliverables

An ACHAR and Archaeological Technical Report (ATR) would be prepared based on the results of the test excavations. This report would detail the nature, extent and significance of the archaeological resources, any cultural values identified by the RAPs, as well as identifying the impacts and providing mitigation measures such as design alterations or proposed salvage excavation. This report would also be sent to the RAPs for their information and endorsement.

4.3 Significance Assessment

Management of Aboriginal cultural heritage within the study area is largely based on an assessment of its significance.[1] Generally, an assessment of the significance of Aboriginal cultural heritage considers two factors—archaeological (or scientific) values, and the cultural values identified by the RAPs.

Consideration of these two values would allow an assessment of the significance of cultural heritage within the study area. An assessment of the cultural significance of any objects or places identified within

the study area will be sought from the RAPs prior to the finalisation of the ACHAR. Should any restrictions apply to the cultural knowledge supplied (for example, male-only information), these will be strictly adhered to by the proponent.

The archaeological significance of any Aboriginal objects or places identified within the study area would be assessed in accordance with *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (the Burra Charter).[2] Any archaeological potential would be mapped and zoned as high, moderate or low, based on consideration of the predictive model for the study area and the assessed archaeological significance criteria.

4.4 Aboriginal Community Input

This methodology has been provided to all RAPs for their review and comment. Any input from the RAPs will be considered in the final methodology for the project.

GML is currently planning the archaeological survey component of this project. We will soon contact RAPs to discuss their involvement in this work. The archaeological survey will occur following the 28-day review period for this methodology.

In accordance with Heritage NSW guidelines, RAPs are asked to provide written and/or oral comments by **17 March 2021**. Comments can be provided by phone, email or letter in accordance with instructions included with this document. Please advise when commenting if you wish to be involved in the physical archaeological site inspection phase of this project. All participants will be required to have a good level of physical fitness and be able to walk up to 10km per day.

Any ACHAR prepared for the project will be prepared with a public and restricted access version. The latter will only be supplied to RAPs, ARTC, WSP, Heritage NSW and DPIE with stipulations that the restricted version document is publicly notified. The public access version will be provided for public notification purposes and will have site specific information redacted and the removal of mapping at certain scales. Furthermore, very sensitive information (i.e., gender-based information) will have restrictions of access in terms prescribed by the RAPs holding the information.

4.5 Proposed Survey Area Maps

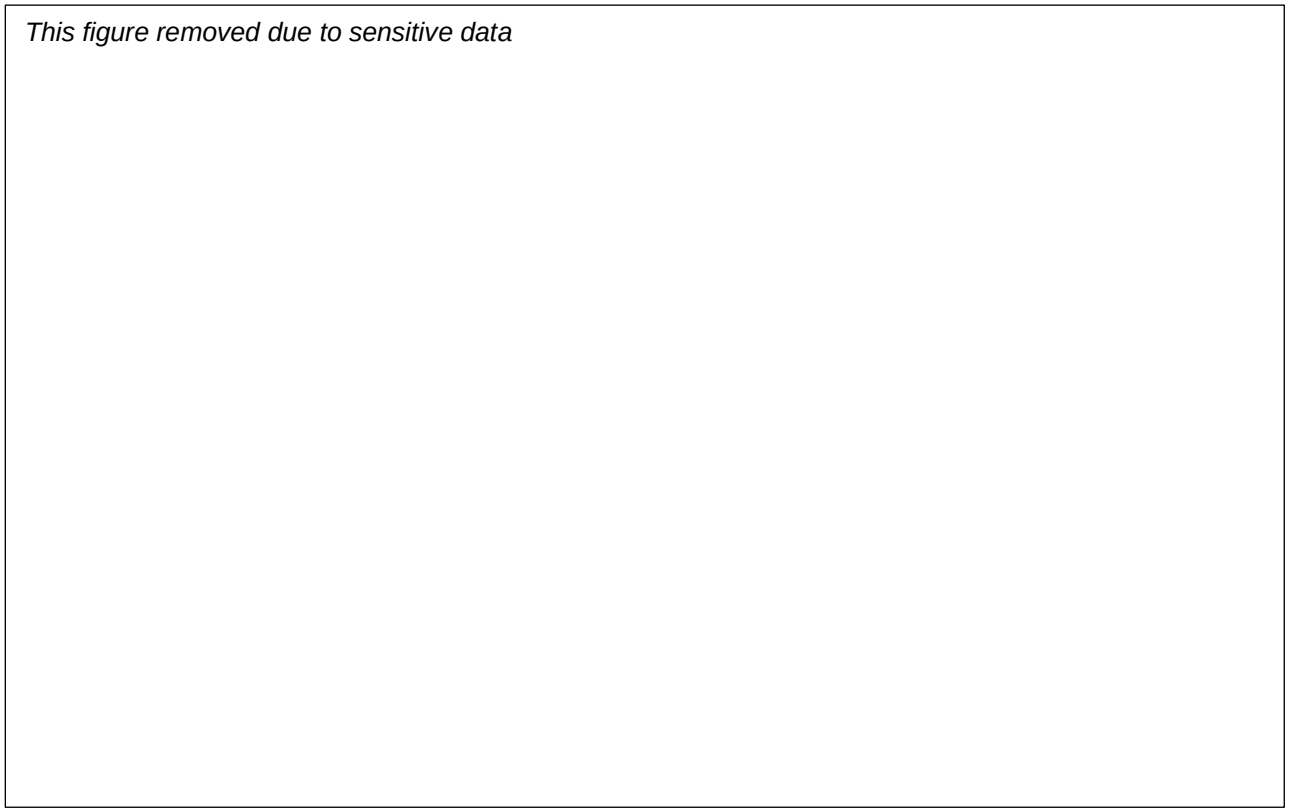

Figure 4.1 Proposed survey locations for Aboriginal archaeology near the Murray River (Zone 1). (Source: SIX Maps with GML additions, 2020)

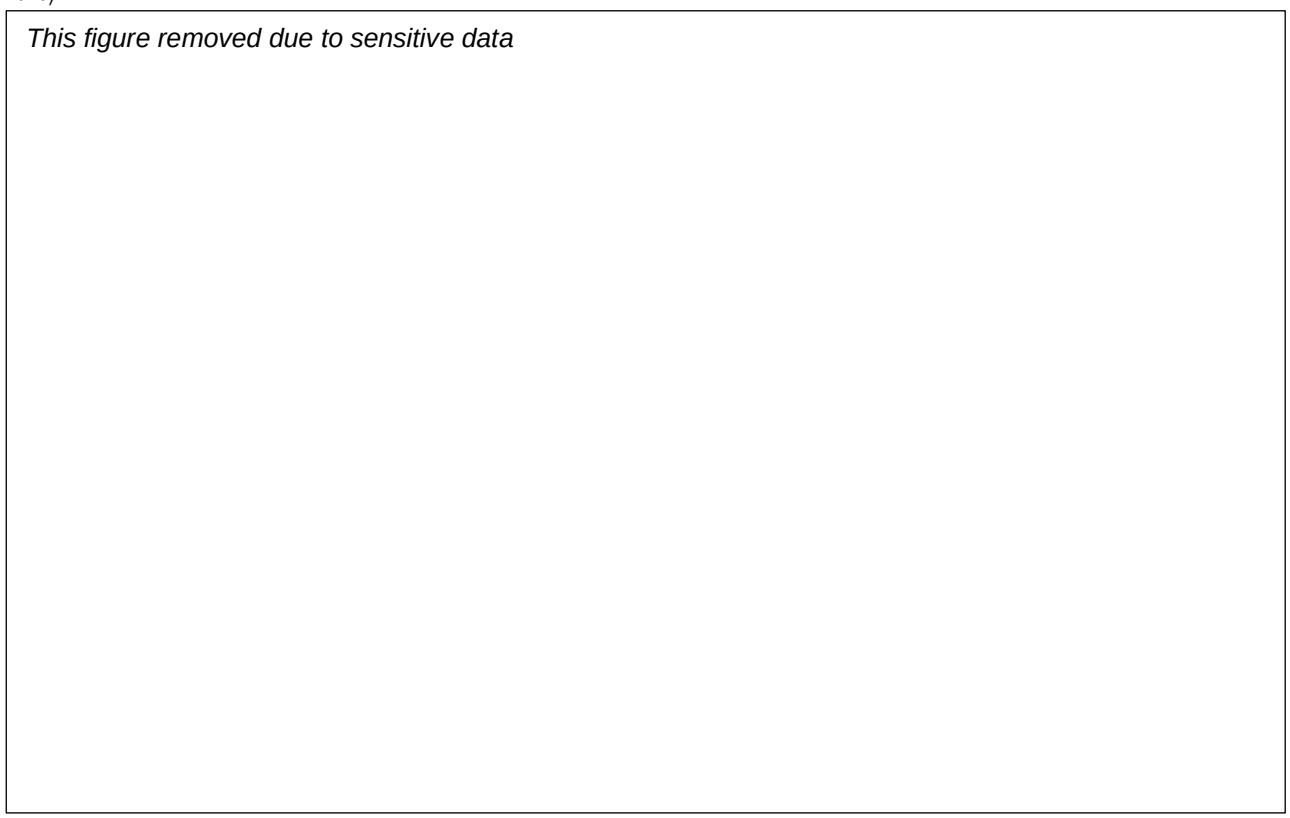

Figure 4.2 Proposed survey locations in Zone 3 near the Wagga Road Bridge, Albury. (Source: SIX Maps with GML additions, 2020)

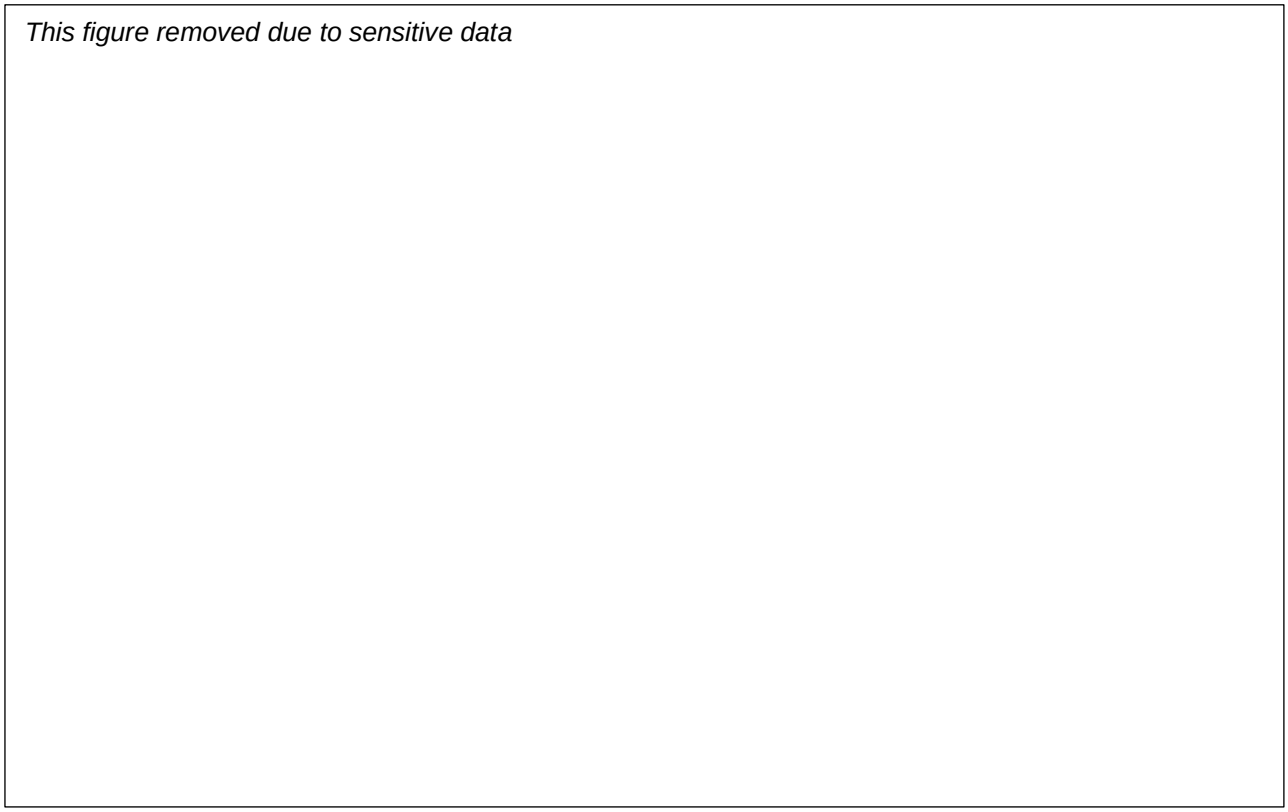

Figure 4.3 Proposed survey locations within Zone 4 near Culcairn. (Source: SIX Maps with GML additions, 2020)

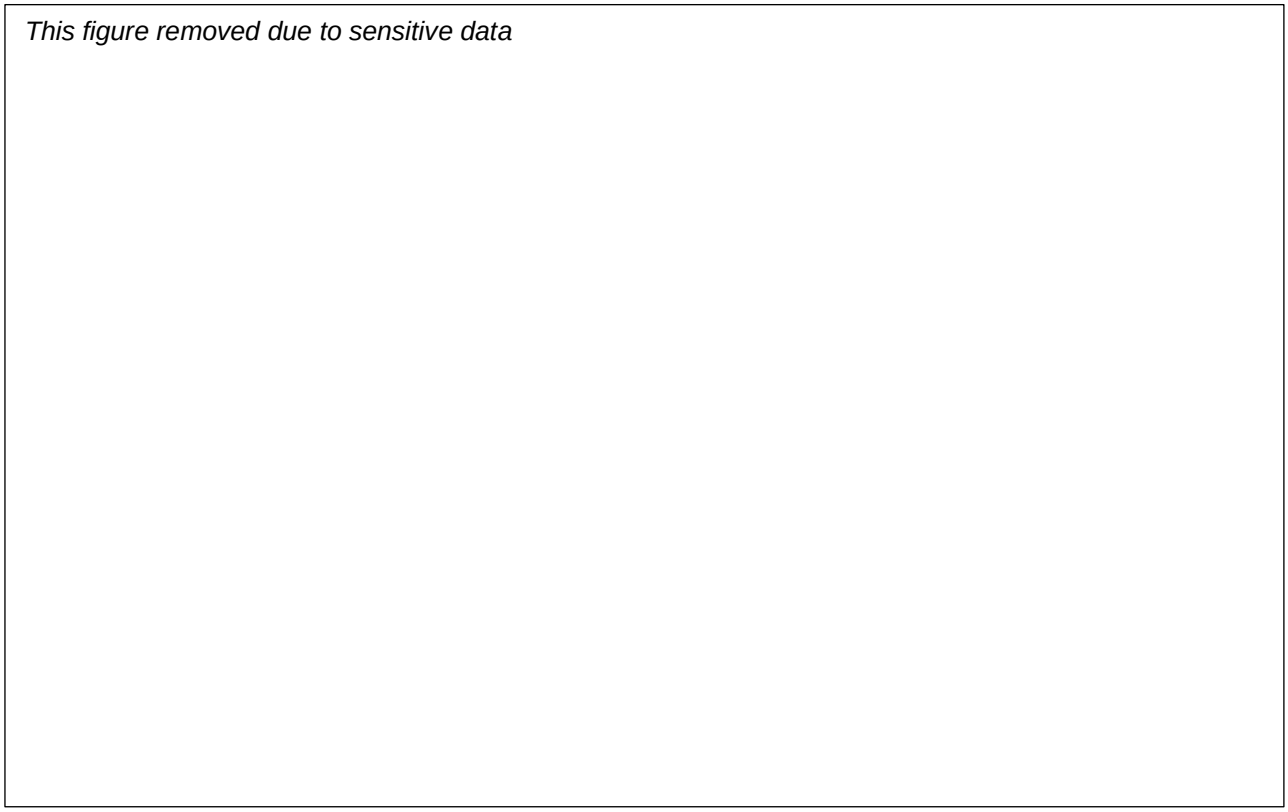

Figure 4.4 Proposed survey locations within Zone 5, Henty. (Source: SIX Maps with GML additions, 2020)

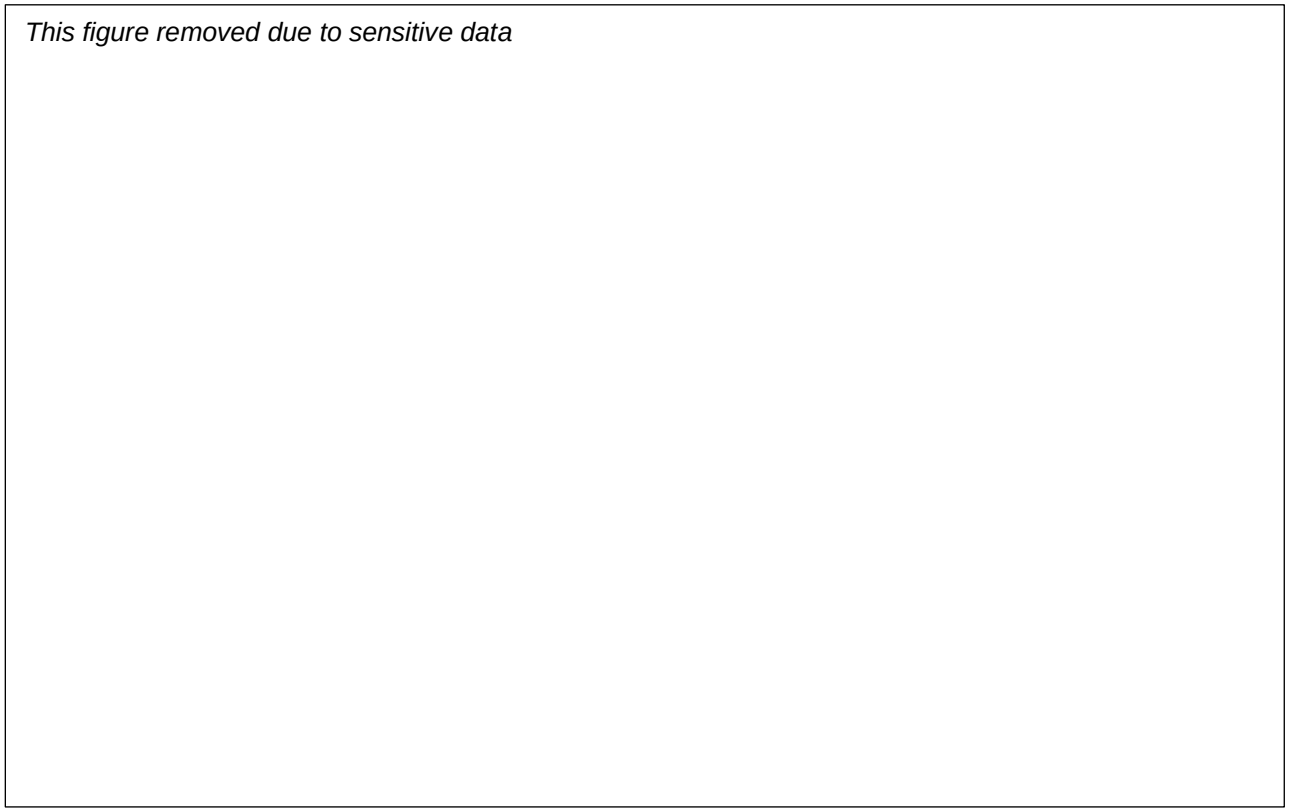

Figure 4.5 Proposed survey locations within Zone 6, Yerong Creek. (Source: SIX Maps with GML additions, 2020)

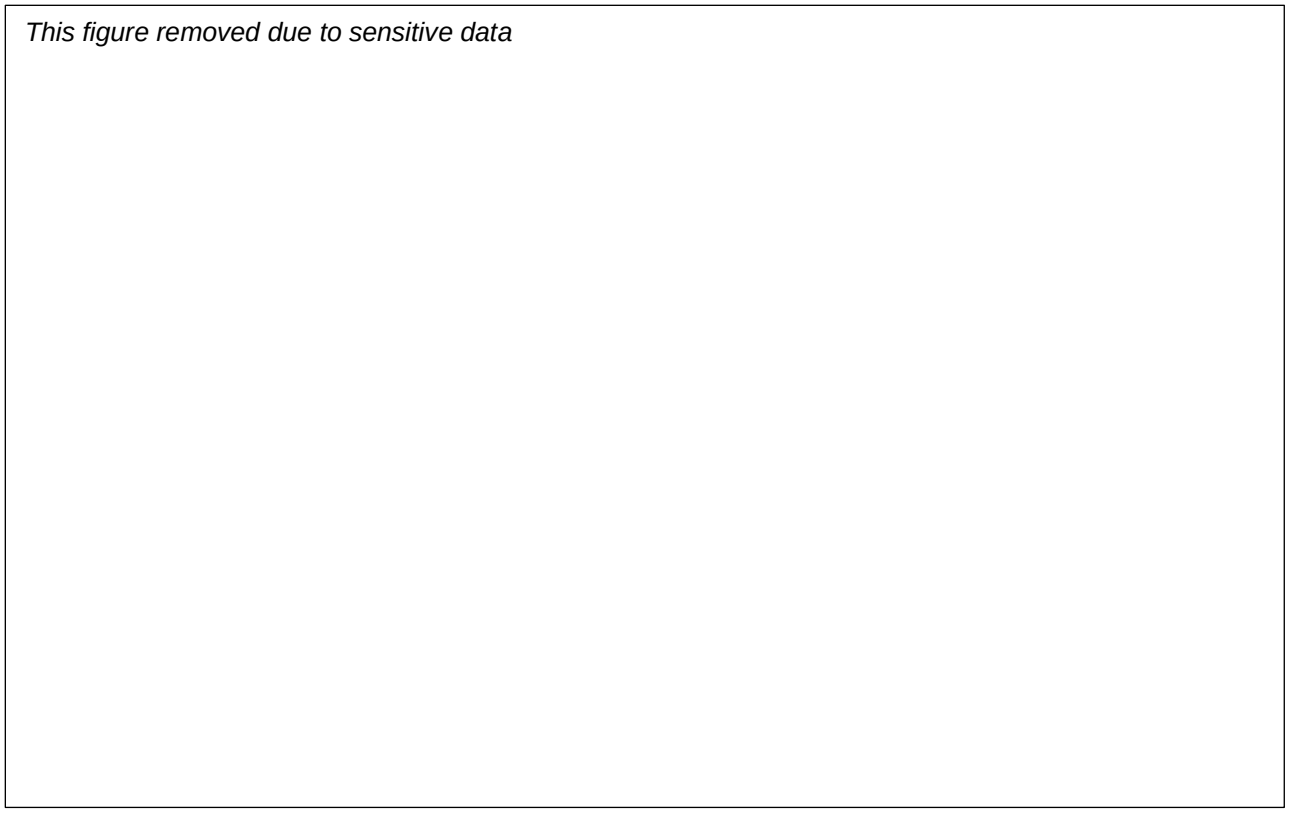

Figure 4.6 Proposed survey locations within Zone 8, Uranquinty. (Source: SIX Maps with GML additions, 2020)

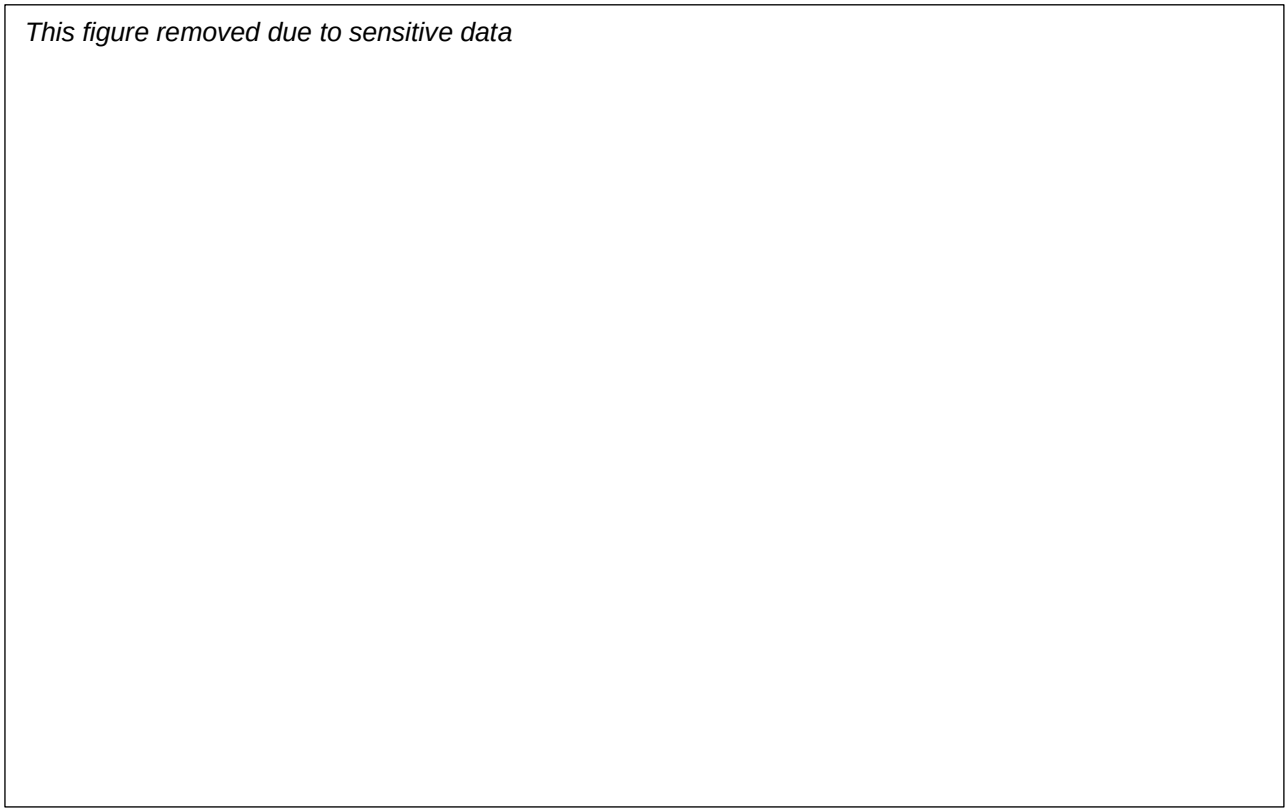

Figure 4.7 Proposed survey locations within Zone 12, Harefield. (Source: SIX Maps with GML additions, 2020)

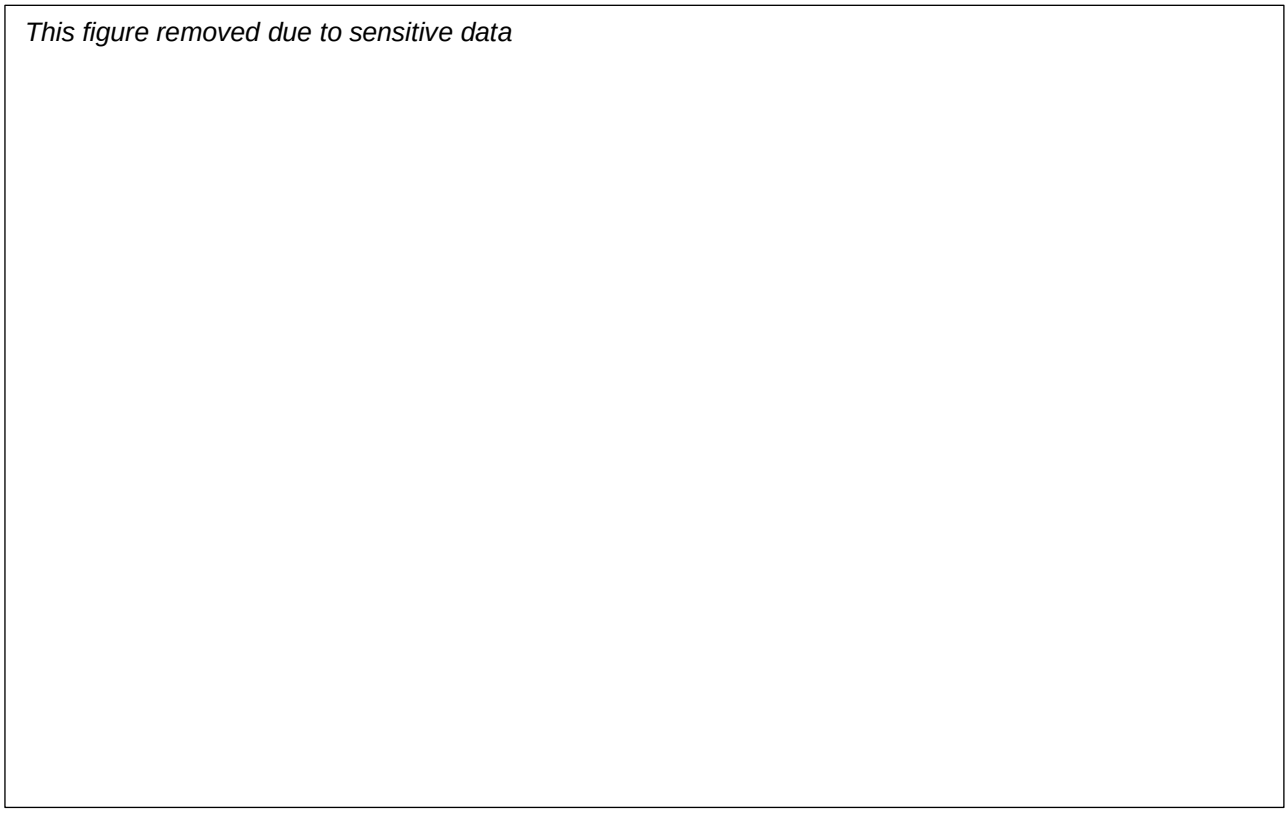

Figure 4.8 Proposed survey locations within Zone 13, Junee. (Source: SIX Mas with GML additions, 2020)

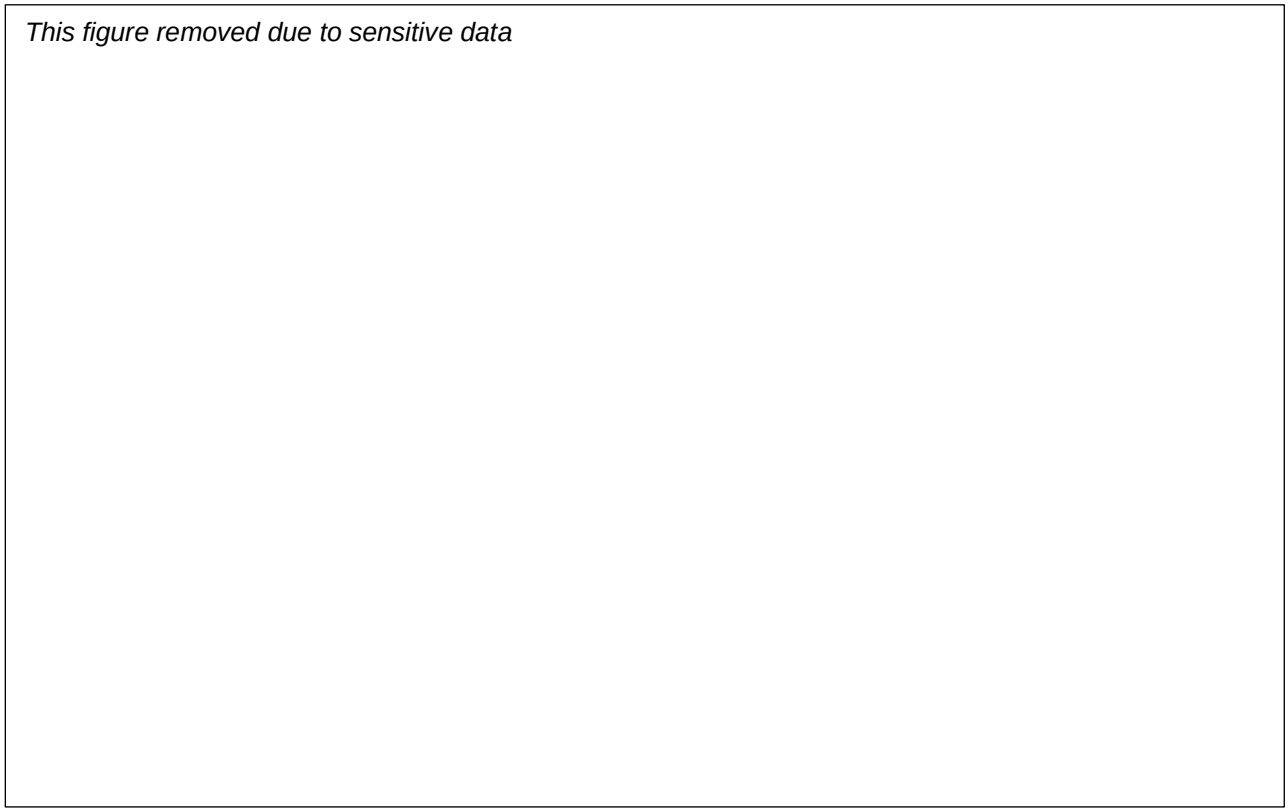

Figure 4.9 Proposed survey locations within Zone 14. (Source: SIX Maps with GML additions, 2020)

4.6 Endnotes

1 Department of Environment, Climate Change and Water 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.

2 Marquis-Kyle, P and Walker, M 2004, *The Illustrated Burra Charter*, third revision, Australia ICOMOS.

5.0 Appendices

Appendix A

Land tenure information for land parcels within the study area zone

Appendix A

Table A.1 Land tenure information for land parcels within the study area zone.

CADID	Controlling Authority	Lot/Sec/Plan	Property Address (Where Applicable)
103340463	FREEHOLD	DP/2//232226	570 YOUNG ST, ALBURY NSW 2640
103340454	FREEHOLD	DP/5//808502	536 YOUNG ST, ALBURY NSW 2640
103340452	FREEHOLD	DP/3//808502	532 YOUNG ST, ALBURY NSW 2640
103396957	FREEHOLD	DP/127//751399	245 STANYER RD, ILLABO NSW 2590
103400186	FREEHOLD	DP/1//327148	HILL ST, JUNEE NSW 2663
103396075	FREEHOLD	DP/2/3/10923	52 MAIN ST, JUNEE NSW 2663
103342579	FREEHOLD	DP/1//354753	SCOTS SCHOOL, 393 PERRY ST, ALBURY NSW 2640
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103340449	FREEHOLD	DP/1//808502	528 YOUNG ST, ALBURY NSW 2640
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103240652	FREEHOLD	DP/13/C/5282	6 ROSLER PDE, HENTY NSW 2658
103340456	FREEHOLD	DP/7//808502	540 YOUNG ST, ALBURY NSW 2640
103340459	FREEHOLD	DP/1//232226	570 YOUNG ST, ALBURY NSW 2640
103399128	FREEHOLD	DP/5//908405	7 HILL ST, JUNEE NSW 2663
103396053	FREEHOLD	DP/6/3/10923	62 MAIN ST, JUNEE NSW 2663
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103340451	FREEHOLD	DP/2//808502	530 YOUNG ST, ALBURY NSW 2640
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103340450	FREEHOLD	DP/4//839936	YOUNG ST, ALBURY NSW 2640
104422161	FREEHOLD	DP/1//715439	397 WILSON ST, ALBURY NSW 2640
103260317	FREEHOLD	DP/57//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
103399147	FREEHOLD	DP/5//848629	5 DUCKER ST, JUNEE NSW 2663
103399156	FREEHOLD	DP/A//354467	6 GEORGE ST, JUNEE NSW 2663

CADID	Controlling Authority	Lot/Sec/Plan	Property Address (Where Applicable)
103727734	FREEHOLD	DP/C//354467	4 GEORGE ST, OLD JUNEE NSW 2652
103338953	FREEHOLD	DP/C//156516	372 KENILWORTH ST, EAST ALBURY NSW 2640
103397986	FREEHOLD	DP/2//819498	OLYMPIC HWY, WANTIOOL NSW 2663
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103259940	FREEHOLD	DP/53//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
103259925	FREEHOLD	DP/51//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
103260315	FREEHOLD	DP/55//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
103240351	FREEHOLD	DP/1//819695	ALLAN ST, HENTY NSW 2658
104422174	FREEHOLD	DP/2//715439	397 WILSON ST, ALBURY NSW 2640
103338811	FREEHOLD	DP/8/A/32698	381 KENILWORTH ST, EAST ALBURY NSW 2640
104587625	FREEHOLD	DP/51//748217	397 WILSON ST, ALBURY NSW 2640
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103260316	FREEHOLD	DP/56//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
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103399150	FREEHOLD	DP/4//848629	3 DUCKER ST, JUNEE NSW 2663
103399120	FREEHOLD	DP/D//354467	2 GEORGE ST, JUNEE NSW 2663
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103240559	FREEHOLD	DP/1//839946	4 SLADEN ST, HENTY NSW 2658
103338951	FREEHOLD	DP/A//156516	380 KENILWORTH ST, EAST ALBURY NSW 2640
104366525	FREEHOLD	DP/50//748217	397 WILSON ST, ALBURY NSW 2640
103338810	FREEHOLD	DP/A//154066	379 KENILWORTH ST, EAST ALBURY NSW 2640
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104422175	FREEHOLD	DP/3//715439	WILSON ST, ALBURY NSW 2640
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103260314	FREEHOLD	DP/54//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
103399092	FREEHOLD	DP/1//431538	EDGAR ST, JUNEE NSW 2663
103395946	FREEHOLD	DP/1//1055361	21 ILLABO RD, JUNEE NSW 2663
103335074	FREEHOLD	DP/1//738705	144 TOWNSEND ST, SOUTH ALBURY NSW 2640
103340462	FREEHOLD	DP/A//437690	570 YOUNG ST, ALBURY NSW 2640
103268625	FREEHOLD	DP/9//837921	14 CHESHIRE ST, WAGGA WAGGA NSW 2650

CADID	Controlling Authority	Lot/Sec/Plan	Property Address (Where Applicable)
103276252	FREEHOLD	DP/13//151376	2 DONNELLY AVE, WAGGA WAGGA NSW 2650
103399133	FREEHOLD	DP/B//354467	4 GEORGE ST, OLD JUNEE NSW 2652
103238401	FREEHOLD	DP/1//819505	GRAINCORP SILOS, JOHN ST, CNR, THE ROCK NSW 2655
108045000	FREEHOLD	DP/1//819838	RAILWAY PDE, CULCAIRN NSW 2660
103276244	FREEHOLD	DP/14//151376	4 DONNELLY AVE, WAGGA WAGGA NSW 2650
103727735	FREEHOLD	DP/1//914183	LORD ST, JUNEE NSW 2663
100175631	FREEHOLD	DP/1//111283	LORNE ST, JUNEE NSW 2663
108044998	CROWN	DP/1//622732	URANQUINTY CROSS RD, URANQUINTY NSW 2652
104306574	FREEHOLD	DP/5//632012	ALAN TURNER DEPOT, 155 FERNLEIGH RD, GLENFIELD PARK NSW 2650
103243998	FREEHOLD	DP/2//809905	35 BALFOUR ST, CULCAIRN NSW 2660
103400178	FREEHOLD	DP/1//819495	661 HAREFIELD RD, HAREFIELD NSW 2650
103335073	FREEHOLD	DP/2//87275	144 TOWNSEND ST, SOUTH ALBURY NSW 2640
104422164	FREEHOLD	DP/153//1034940	414 WILSON ST, ALBURY NSW 2640
103236991	FREEHOLD	DP/1//819900	PEARSON ST, URANQUINTY NSW 2652
103912753	FREEHOLD	DP/11//876126	222 URANA ST, ASHMONT NSW 2650
100175669	FREEHOLD	DP/3/3/10923	52 MAIN ST, JUNEE NSW 2663
103395903	FREEHOLD	DP/1//808840	17 ILLABO RD, JUNEE NSW 2663
108116134	FREEHOLD	DP/2//835762	65 URANQUINTY CROSS RD, URANQUINTY NSW 2652
103340458	FREEHOLD	DP/1//726624	570 YOUNG ST, ALBURY NSW 2640
103260332	FREEHOLD	DP/5//802891	URANA ST, ASHMONT NSW 2650
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150976609	FREEHOLD	DP/1//1077465	
151418104	FREEHOLD	DP/1//1051882	WILSON ST, ALBURY NSW 2640
151479562	FREEHOLD	DP/2//1066082	RAILWAY SQ, JUNEE NSW 2663
151479563	FREEHOLD	DP/1//1066082	LORNE ST, JUNEE NSW 2663
153380941	FREEHOLD	DP/5//1095218	1922 BYRNES RD, HAREFIELD NSW 2650
154277523	FREEHOLD	DP/75//1012290	ATKINS ST, SOUTH ALBURY NSW 2640
154277526	FREEHOLD	DP/2//1109126	YOUNG ST, ALBURY NSW 2640
157770038	FREEHOLD	DP/1//1112734	HUME HWY, EAST ALBURY NSW 2640
162031777	FREEHOLD	DP/12//1136467	KILDARE ST, TURVEY PARK NSW 2650

CADID	Controlling Authority	Lot/Sec/Plan	Property Address (Where Applicable)
163495969	FREEHOLD	DP/4/1/946	EDGAR ST, JUNEE NSW 2663
164941194	FREEHOLD	DP/4902//1158809	HUME HWY, SOUTH ALBURY NSW 2640
167613517	NSW GOVERNMENT	DP/3//1172095	384 KENILWORTH ST, EAST ALBURY NSW 2640
167613520	NSW GOVERNMENT	DP/2//1172095	384 CENTENARY ST, EAST ALBURY NSW 2640
157829460	FREEHOLD	DP/1//1112743	HENTY-PLEASANT HILLS RD, HENTY NSW 2658
103691461	FREEHOLD	DP/1//830096	58 DAMPIER ST, BOMEN NSW 2650
103691462	FREEHOLD	DP/3//852602	THE ROCK-COLLINGULLIE ROAD, COLLINGULLIE NSW 2650
150280924	CROWN	DP/1//1070804	661 HAREFIELD RD, HAREFIELD NSW 2650
150681038	FREEHOLD	DP/1//1074460	OLYMPIC HWY, ILLABO NSW 2590
150893880	FREEHOLD	DP/1//1082207	SCOTS SCHOOL, 393 PERRY ST, ALBURY NSW 2640
103274795	FREEHOLD	DP/32/H/13345	30 BROOKONG AVE, WAGGA WAGGA NSW 2650
103274812	FREEHOLD	DP/33/H/13345	28 BROOKONG AVE, WAGGA WAGGA NSW 2650
103268624	FREEHOLD	SP///57159	
103718964	FREEHOLD	DP/1//546433	RAILWAY LAND, RED HILL RD, GLENFIELD PARK NSW 2650
169537545	NSW GOVERNMENT	DP/2//1177553	14 RAILWAY PL, ALBURY NSW 2640
169537546	NSW GOVERNMENT	DP/4//1177553	YOUNG ST, ALBURY NSW 2640
103790380	FREEHOLD	DP/20//862667	WAGGA RD, ETTAMOGAH NSW 2640
103790381	FREEHOLD	DP/21//862667	WAGGA RD, ETTAMOGAH NSW 2640
104036398	FREEHOLD	DP/123//904898	WAGGA RD, TABLE TOP NSW 2640
165911995	FREEHOLD	DP/602//1163923	19 SANCTUARY LANE, ETTAMOGAH NSW 2640
170196718	FREEHOLD	DP/1//1183963	490–494 YOUNG ST, ALBURY NSW 2640
170196719	FREEHOLD	DP/2//1183963	480 YOUNG ST, ALBURY NSW 2640
104718386	FREEHOLD	DP/4//794102	YOUNG ST, ALBURY NSW 2640
169537544	NSW GOVERNMENT	DP/1//1177553	15 RAILWAY PL, ALBURY NSW 2640
103328778	FREEHOLD	DP/7//264463	70 R W HENRY DR, ETTAMOGAH NSW 2640
103328735	FREEHOLD	DP/8//264463	117 R W HENRY DR, ETTAMOGAH NSW 2640
103276395	FREEHOLD	DP/2//543801	KILDARE CATHOLIC COLLEGE, COLEMAN ST, TURVEY PARK NSW 2650
165911996	CROWN	DP/609//1163923	HENSHAW CT, ETTAMOGAH NSW 2640
103260325	FREEHOLD	DP/1//577011	208–210 URANA ST, ASHMONT NSW 2650
103260328	FREEHOLD	DP/2//577011	208–210 URANA ST, ASHMONT NSW 2650
103260306	FREEHOLD	DP/4//625018	8 RABAUL PL, ASHMONT NSW 2650
103260323	FREEHOLD	DP/4//8243	212 URANA ST, ASHMONT NSW 2650
103260318	FREEHOLD	DP/5//8243	214 URANA ST, ASHMONT NSW 2650

CADID	Controlling Authority	Lot/Sec/Plan	Property Address (Where Applicable)
104188488	FREEHOLD	DP/2//1006140	97 RAILWAY ST, TURVEY PARK NSW 2650
104188486	FREEHOLD	DP/7//1006140	COUNTRYLINK TRAVEL CENTRE, 20 STATION PL, WAGGA WAGGA NSW 2650
104188478	FREEHOLD	DP/5//1006140	STATION PL, WAGGA WAGGA NSW 2650
104188487	FREEHOLD	DP/4//1006140	95 RAILWAY ST, TURVEY PARK NSW 2650
103912754	FREEHOLD	DP/12//876126	218–220 URANA ST, ASHMONT NSW 2650
104036277	FREEHOLD	DP/8//837921	16 CHESHIRE ST, WAGGA WAGGA NSW 2650
104513530	FREEHOLD	DP/13//1043109	18 STATION PL, WAGGA WAGGA NSW 2650
103268623	FREEHOLD	SP///49952	
104513528	FREEHOLD	DP/14//1043109	14 STATION PL, WAGGA WAGGA NSW 2650
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153266593	FREEHOLD	DP/38/H/13345	BROOKONG AVE, WAGGA WAGGA NSW 2650
103237330	NSW GOVERNMENT	DP/1//181530	THE ROCK-COLLINGULLIE ROAD, COLLINGULLIE NSW 2650
104546423	FREEHOLD	DP/1//1041553	19 STATION PL, WAGGA WAGGA NSW 2650
108096468	FREEHOLD	DP/2//852602	THE ROCK-COLLINGULLIE ROAD, COLLINGULLIE NSW 2650
103398994	FREEHOLD	DP/14/1/1554	8 KEMP ST, JUNEE NSW 2663
157186699	FREEHOLD	DP/185//1111291	182 OLIVE ST, SOUTH ALBURY NSW 2640
172415387	NSW GOVERNMENT	DP/2222//1208382	HUME HWY, TABLE TOP NSW 2640
173462894	FREEHOLD	DP/2//1213252	38A BOMEN RD, BOMEN NSW 2650
173462893	FREEHOLD	DP/1//1213252	1 DAMPIER ST, BOMEN NSW 2650
103274755	FREEHOLD	DP/1//602344	20 BROOKONG AVE, WAGGA WAGGA NSW 2650
100167615	FREEHOLD	DP/1//62738	WAGGA WAGGA SHOW GROUND, 26 BOURKE ST, TURVEY PARK NSW 2650
103260322	FREEHOLD	DP/58//8243	2 GLENFIELD RD, GLENFIELD PARK NSW 2650
174573752	FREEHOLD	DP/6//1217349	36 DAMPIER ST, BOMEN NSW 2650
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175727669	FREEHOLD	DP/134//1232583	24–26 BROOKONG AVE, WAGGA WAGGA NSW 2650
175727670	FREEHOLD	DP/135//1232583	24–26 BROOKONG AVE, WAGGA WAGGA NSW 2650
174229254	NSW GOVERNMENT	DP/378//1221958	GLENFIELD RD, GLENFIELD PARK NSW 2650
176037938	FREEHOLD	DP/42//1236178	18 CHESHIRE ST, WAGGA WAGGA NSW 2650
152526047	FREEHOLD	DP/6//862288	
103929956	FREEHOLD	DP/1//878288	HENTY FIRE STATION, IVOR ST, HENTY NSW 2658
103239219	FREEHOLD	DP/1//819725	26 FINLAYSON LANE, YERONG CREEK NSW 2642

CADID	Controlling Authority	Lot/Sec/Plan	Property Address (Where Applicable)
103239813	FREEHOLD	DP/1//813893	PLUNKETT ST & FINLAYSON LANE, YERONG CREEK NSW 2642
108042402	FREEHOLD	DP/2//819725	FINLAYSON LANE, YERONG CREEK NSW 2642
174263174	NSW GOVERNMENT	DP/5557//1221963	ORANGE FLAT LANE, HENTY NSW 2658
167675876	LOCAL GOVERNMENT AUTHORITY	DP/22//1172095	
166324148	LOCAL GOVERNMENT AUTHORITY	DP/22//1159985	
166724474	LOCAL GOVERNMENT AUTHORITY	DP/3//1168805	
157990719	NSW GOVERNMENT	DP/5//1109126	
157990720	NSW GOVERNMENT	DP/6//1109126	
166184511	LOCAL GOVERNMENT AUTHORITY	DP/1//1109126	
166184628	LOCAL GOVERNMENT AUTHORITY	DP/4//1109126	
163673297	NSW GOVERNMENT	DP/63//1119851	
165728377	LOCAL GOVERNMENT AUTHORITY	DP/1//1164457	
170373062	NSW GOVERNMENT	DP/7//1172095	
170373104	NSW GOVERNMENT	DP/8//1172095	
170373110	NSW GOVERNMENT	DP/9//1172095	
170392940	NSW GOVERNMENT	DP/1//1159985	
170393259	NSW GOVERNMENT	DP/4//1159985	
170424069	NSW GOVERNMENT	DP/5//1005404	
170424072	NSW GOVERNMENT	DP/1//1172418	
170439936	NSW GOVERNMENT	DP/4//131328	
170457247	NSW GOVERNMENT	DP/80//1166823	
170457336	NSW GOVERNMENT	DP/84//1166823	
170457342	NSW GOVERNMENT	DP/86//1166823	
170457419	NSW GOVERNMENT	DP/87//1166823	
170459720	NSW GOVERNMENT	DP/15//1172095	
170459916	NSW GOVERNMENT	DP/16//1172095	
165728378	LOCAL GOVERNMENT AUTHORITY	DP/3//1164457	

TECHNICAL PAPER

02

Aboriginal cultural heritage assessment report

Appendix G AHIMS results

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

This Appendix removed due to sensitive data

TECHNICAL PAPER

02

Aboriginal cultural heritage assessment report

Appendix H Landscape context

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

Appendix H

Landscape Context

The purpose of this section is to identify whether there are landscape features within each site investigation zone that might indicate the likely existence of Aboriginal objects.

This desktop assessment examines each of the 14 site investigation zones, with information being drawn from regional studies. Within each site investigation zone, areas where identified that were more likely to have archaeological potential requiring further investigation based on the level of historical disturbance and development, and based on the landform, soils and hydrology characteristics. All soil landscape information has been taken from the Soil Landscapes of Central and Eastern NSW dataset.[1]

As identified in Section 3.2, the proposal site has been refined since the completion of the site survey and has been taken into account in Section 4.1.1.

A discussion of each of these site investigation zones is outlined below.

Site Investigation Zones 1 and 2

Zone 1 (Figure 0.1) relates to the Murray River Bridge enhancement site, while Zone 2 is a two kilometre long section of the rail alignment centred on Albury Railway Station to capture the enhancement sites relating to Albury Station yard clearances, Albury Station shared user bridge and the Riverina Highway Bridge. They are discussed here together due to their proximity and similar landscape features.

The landforms within both these sub-zones comprise floodplains on the margin of a low rolling hills landscape, located adjacent to the Murray River in Albury. Zone 1 is located on the Wakool River soil landscape, an alluvium floodplain with deep, variable soils, while Zone 2—the Albury Railway Station site investigation zone—crosses both the Livingstone and Wait-a-while soil landscapes. Livingstone is an erosional landscape which occurs across the study area along the gentle rises on the edge of the plains, whilst Wait-a-while is a stagnant alluvial soil landscape, made up of silts, soils and sands, located in the lower slopes of the study area.

These zones occur substantially across two alluvial areas—landscapes where soils are deposited through flood action and with fairly low erosion rates away from riverbanks. These soil landscapes will have contributed to the formation of archaeological sites in the past. The ‘stagnant’ classification of the Wait-a-while soil landscape indicates that it is no longer subject to depositional process, suggesting that any archaeological site formation would likely be of some antiquity.

However, the high degree of infrastructure developed across these zones has caused substantial changes to the natural landforms and drainage, as indicated by artificial hydrology lines. It is likely then that any substantial archaeology in the area will have been removed or disturbed by urban development. Zone 2 would have been completely disturbed by the Bunge Flour Mill, which was a complex of brick buildings, steel silos and masonry buildings, which have since been demolished, occurring in the cleared region north west of Albury Station. Despite this, there were small areas in Zone 1 which were slightly less disturbed and where undisturbed natural soils and landforms may remain. These may have the potential to contain archaeological deposits.

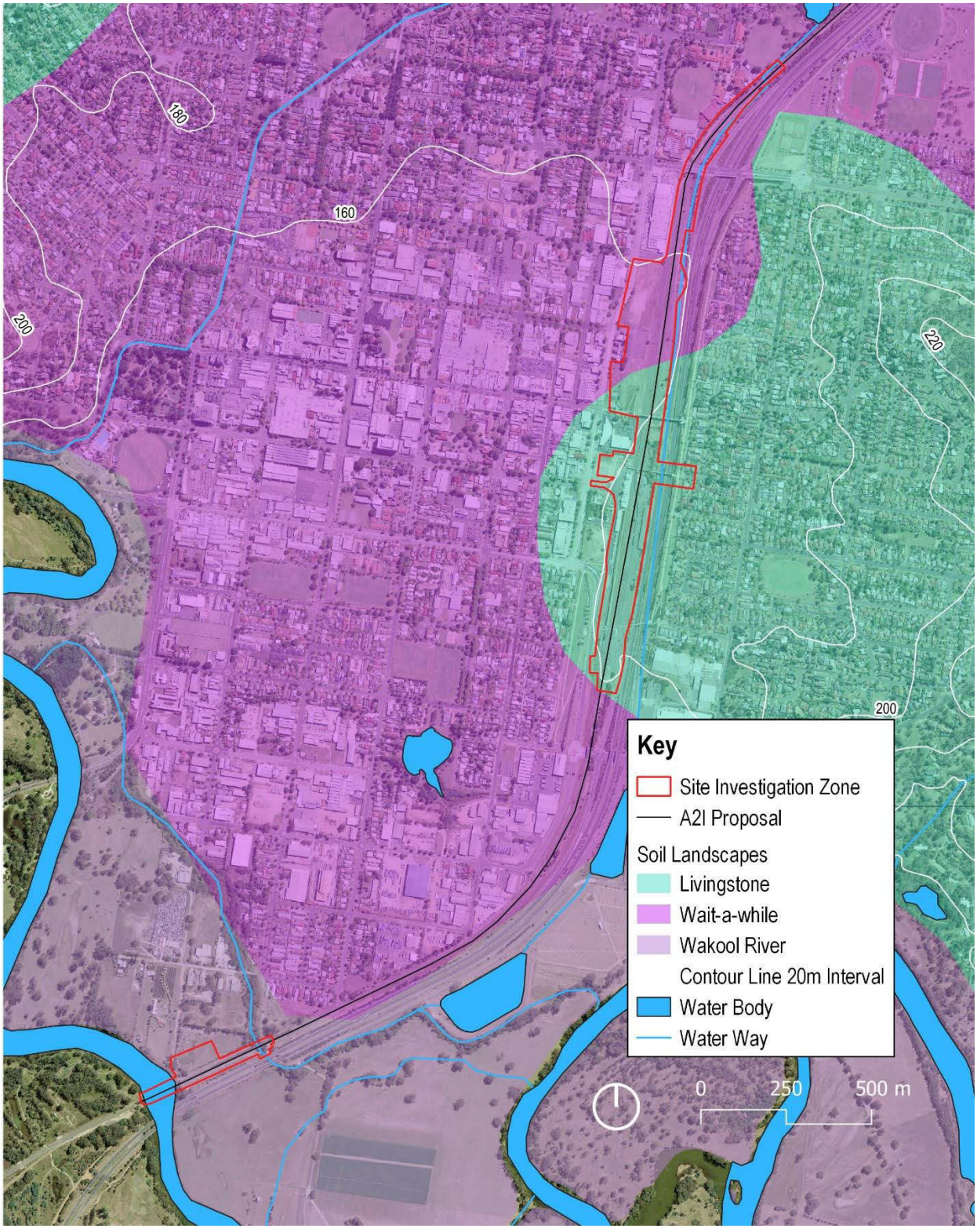

Figure H.1 Soil landscapes, hydrology and topography of Site Investigation Zones 1 and 2 (Albury area). Note that topographic information appears to be missing around Zone 1, and that this area would be below 160m ASL. (Source: NSW Land Registry Services [LRS] with GML additions, 2021)

Site Investigation Zone 3

Zone 3 (Figure 0.2) landscape is within Ettamogah and Table Top, and relates to the Billy Hughes Bridge and Table Top enhancement sites. This zone is located on the Ettamogah soil landscape, which is characterised by undulating plains over lower slopes and drainage areas, where moderate gully erosion can occur. The surrounding landscape is crossed by numerous lower order streams.

The area has been impacted by the development of the Hume Highway and rail track, as well as surrounding agriculture. Nevertheless, the investigation sites were generally within 200 metres of former and dormant water courses, and some parts of the site investigation zone associated with the Billy Hughes enhancement site, outside the rail corridor, were relatively intact.

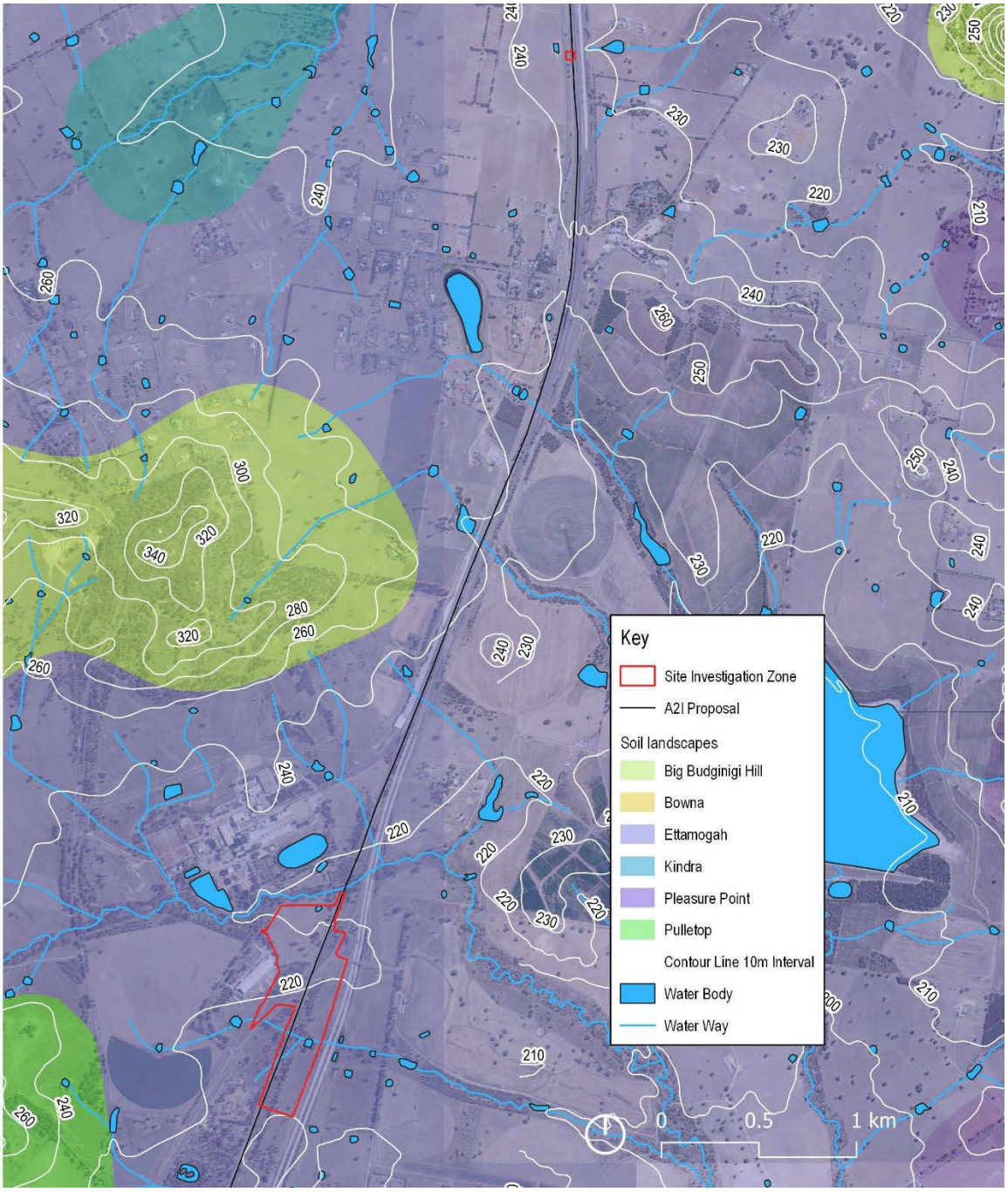

Figure H.2 Soil landscapes, hydrology and topography of Zone 3 (Table Top area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 4

Zone 4 (Figure 0.3) is located on Billabong Creek soil landscape around Culcairn. This landscape is an expansive flat comprising alluvium layers including floodplains, ancient channel deposits and alluvial terraces. Although agricultural and urban disturbance are prevalent in this zone, large portions of the zone are outside the rail corridor and may have intact soils containing archaeology, potentially ancient channel deposits and alluvial terraces overlain by more modern deposits. The southern portion of the zone is just over 200 metres away from an extensive water body, and the northern edge of the site is near an ephemeral stream.

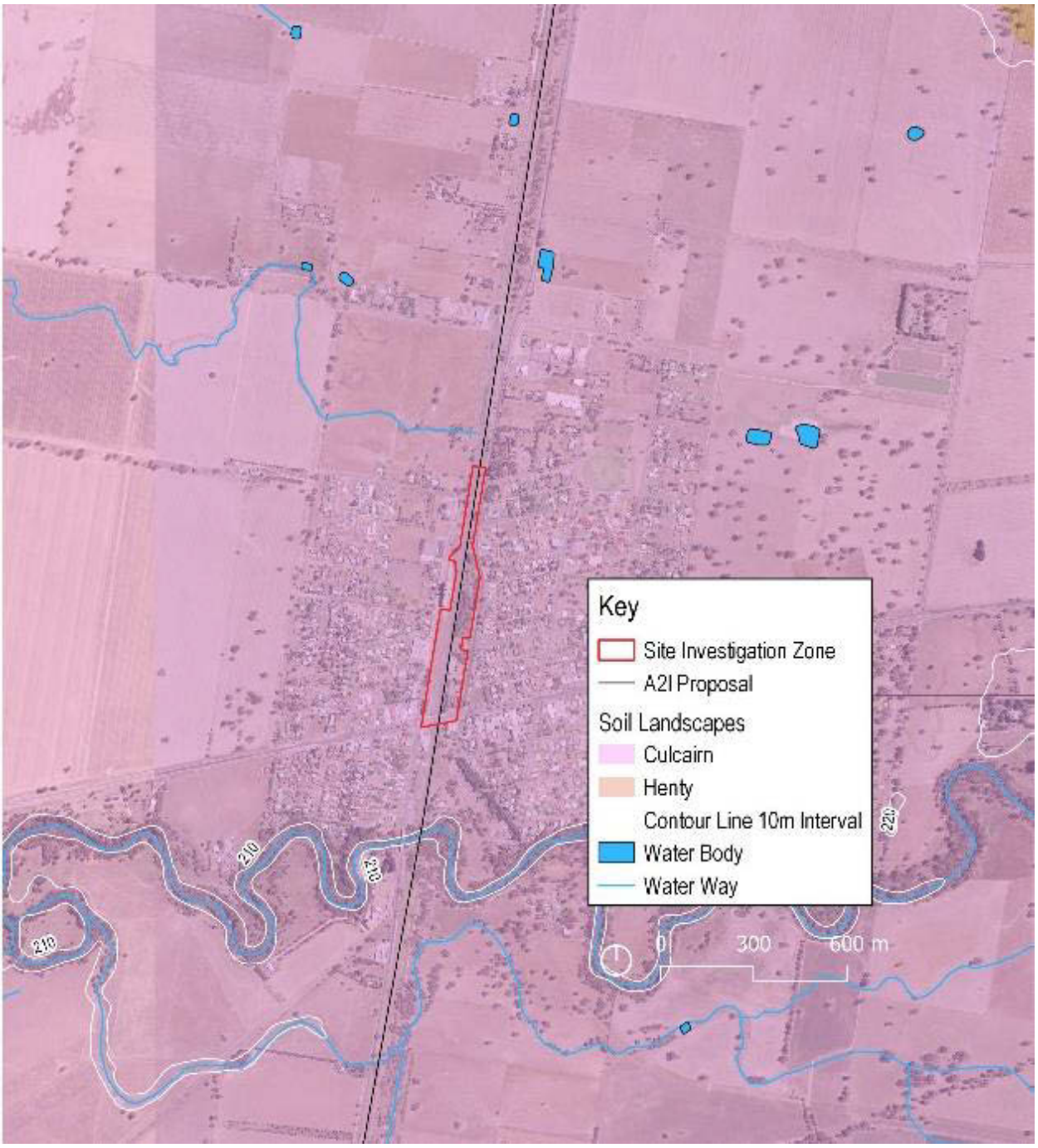

Figure H.3 Soil landscapes, hydrology and topography of Zone 4 (Culcairn area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 5

Zone 5 (Figure 0.4) occurs within the Henty soil landscape and consists of two separate sub-zones—a 700 metre long section focused around Henty Station (north) and another small area approximately 500 metres to the south.

The Henty soils were formed as an aeolian landscape, creating an extensive, gently inclined sloping plain. Within this soil landscape are significant deposits of wind-blown fine sand, overlying unconsolidated riverine deposits of clay, silt, sand and gravel. This environment would have produced favourable conditions for the formation of archaeological sites through the gradual accumulation of wind-blown deposits. Although aerial photography indicates that the site investigation zone has been impacted by modern development, including the current rail line, some aspects of the site were undisturbed. Deep in situ archaeological deposits may be present throughout this area, and also in association with deposits associated with the Buckargingah Creek waterbody (less than 200 metres away).

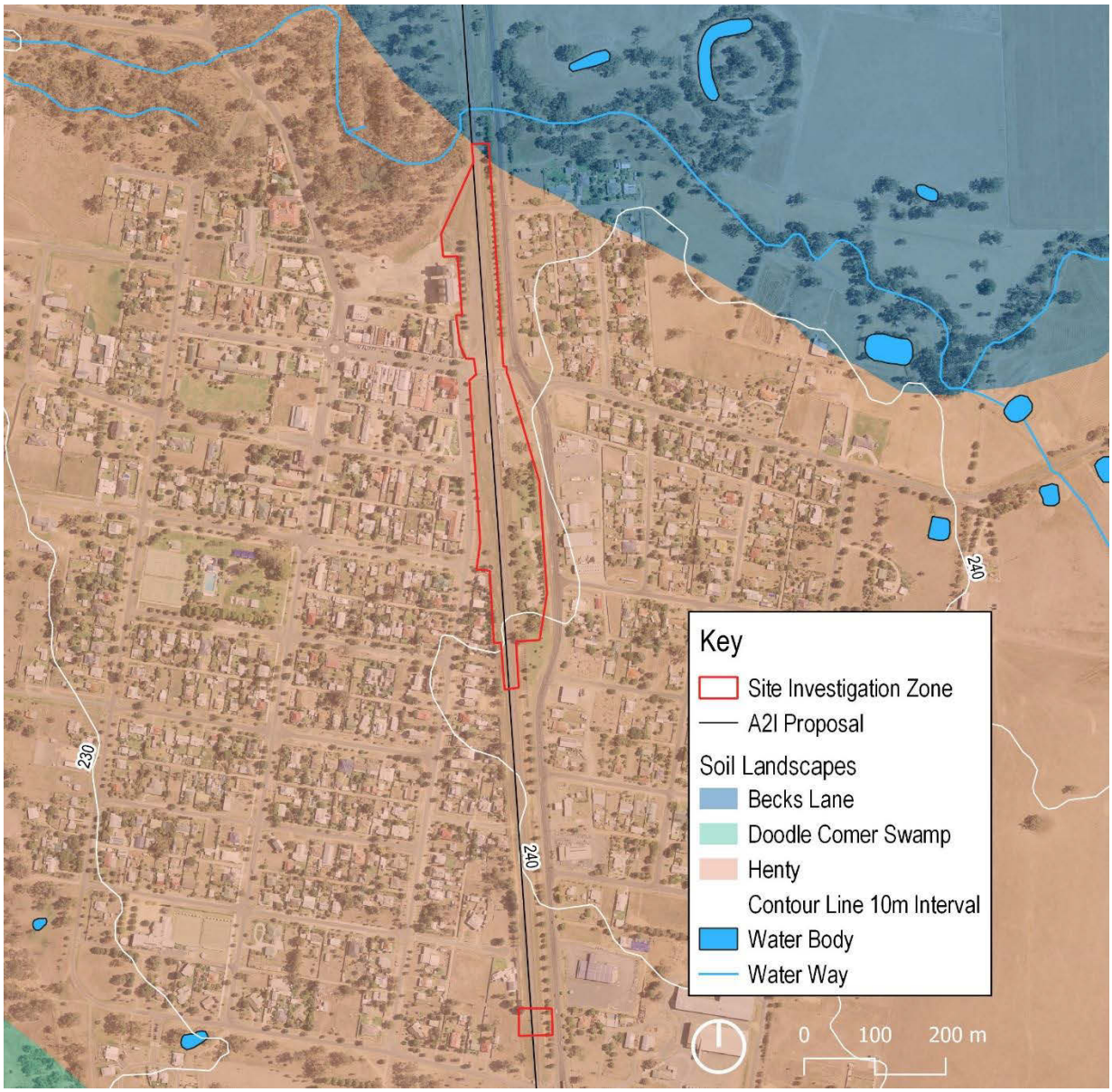

Figure H.4 Soil landscapes, hydrology and topography of Zone 5 (Henty area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 6

Zone 6 (Figure 0.5) is located at Yerong Creek and is mainly within the Mangoplah soil landscape, with the southwestern portion of the site overlapping into the adjacent O'Briens Creek soil landscape. Mangoplah is an alluvium landscape across an extensive level plain, consisting of loam, sand and clay soils of moderate depth. It contains incised, narrow drainage lines, and has been almost completely cleared of woodland. This is a relatively stable environment, with erosion only occurring along the creekline. There has been no recorded flooding of the extensive plain since European development. The stability of the environment would be conducive to the preservation of buried archaeological deposits.

The O'Briens Creek soil landscape encompasses Sandy Creek, and is made up of transferred slope wash sediments from other areas (such as the Mangoplah landscape). The southern part of this zone was disturbed than other areas nearby.

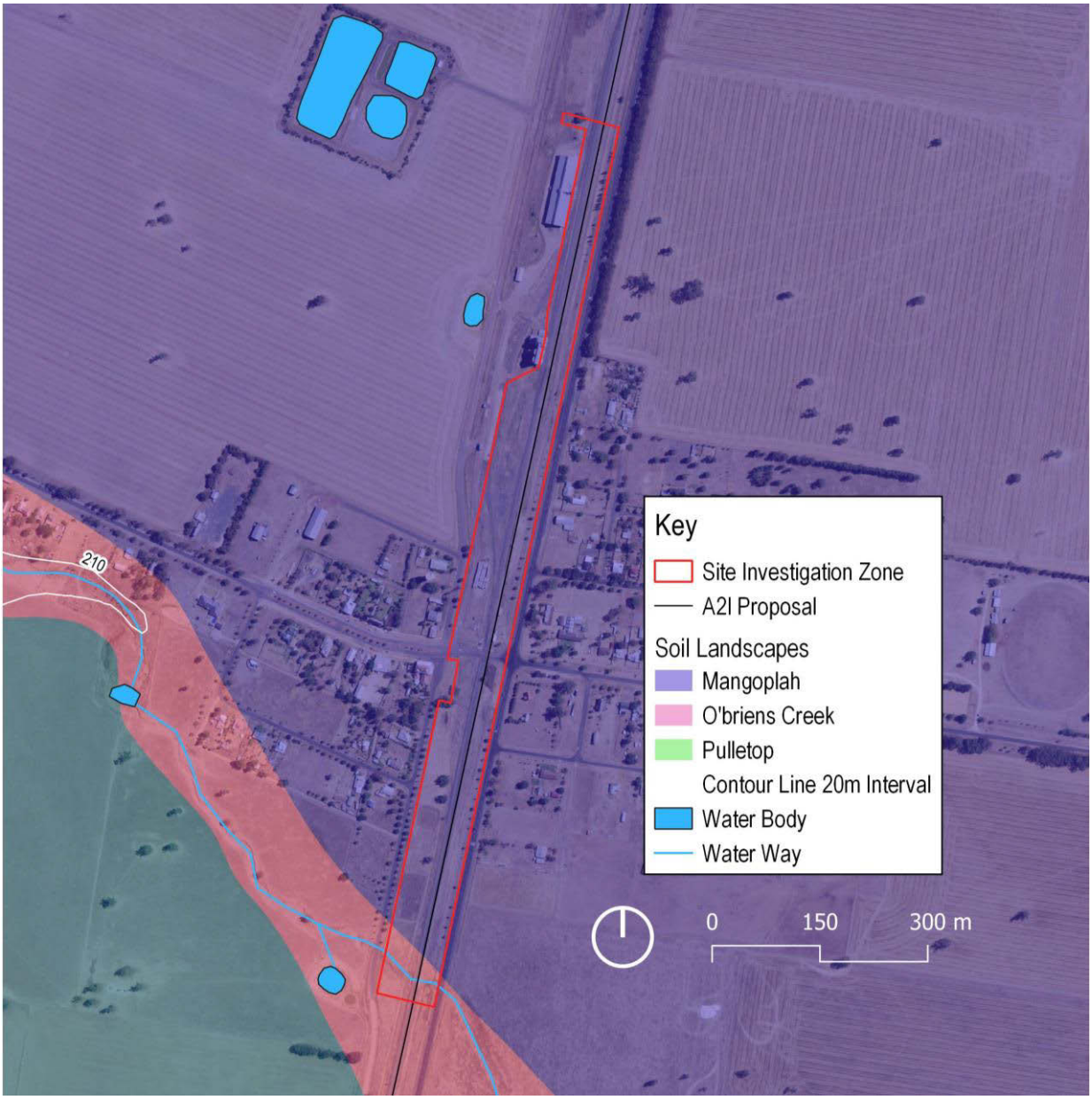

Figure H.5 Soil landscapes, hydrology and topography of Zone 6 (Yerong Creek area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 7

Zone 7 (Figure 0.6) is located at The Rock, and comprises four small separate investigation areas between Yerong Street and The Rock Mangoplah Road. This zone lies within the Vincent Road and Mangoplah soil landscapes. As noted in the Zone 6 description above, Mangoplah is an alluvium soil landscape and is conducive to the preservation of formed archaeological deposits. This landscape incorporates Burkes Creek, a major creek 250 metres to the north of the zone.

Most of the western part of this zone is situated on the Vincent Road soil landscape—a transferral landscape on a relatively flat plain. Transferral landscapes are formed on deep deposits of mostly eroded parent materials washed from areas upslope. In this case, Zone 7 occurs across the plains extending from the lower slopes of a ridgeline location 1.8 kilometres to the south of the site investigation area. The combination of nearby high ground, proximity to a stable source of water at Burkes Creek, and its status as a transferral landscape would typically result in the potential for intact archaeological sites and deposits.

However, all four of the investigation areas within Zone 7 have been subject to substantial disturbance and as a consequence are unlikely to have any remaining archaeological potential.

Figure H.6 Soil landscapes, hydrology and topography of Zone 7 (The Rock area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 8

Zone 8 (Figure 0.7) is located at Uranquinty and traverses three soil landscapes in the Kapooka area—Belfrayden, O'Briens Creek and Pearson. The topography of this area is very flat, punctuated only by the course of Sandy Creek through the surrounding plains.

The centre of this zone straddles the O'Briens Creek soil landscape, which encompasses Sandy Creek, and is made up of transferred slope wash sediments from other areas, such as the adjacent Pearson and Belfrayden alluvial plains.

The Belfrayden and Pearson soil landscapes are generally very similar and flank either side of the O'Briens Creek landscape in the area. While Belfrayden is a gently undulating plain of thick alluvial clay sequence with extensive plains, and shallow drainage lines, Pearson has the same characteristics but has formed as a low tableland across an extensive area to the southwest of Uranquinty.

All three soil landscapes would favour the preservation of archaeological sites. The general proximity of the zone to Sandy Creek indicates the possibility of archaeological potential in the area. However, the majority of this investigation zone is within previously disturbed and developed land. A relatively undisturbed area remained to the southeast side of the rail lines within this investigation zone.

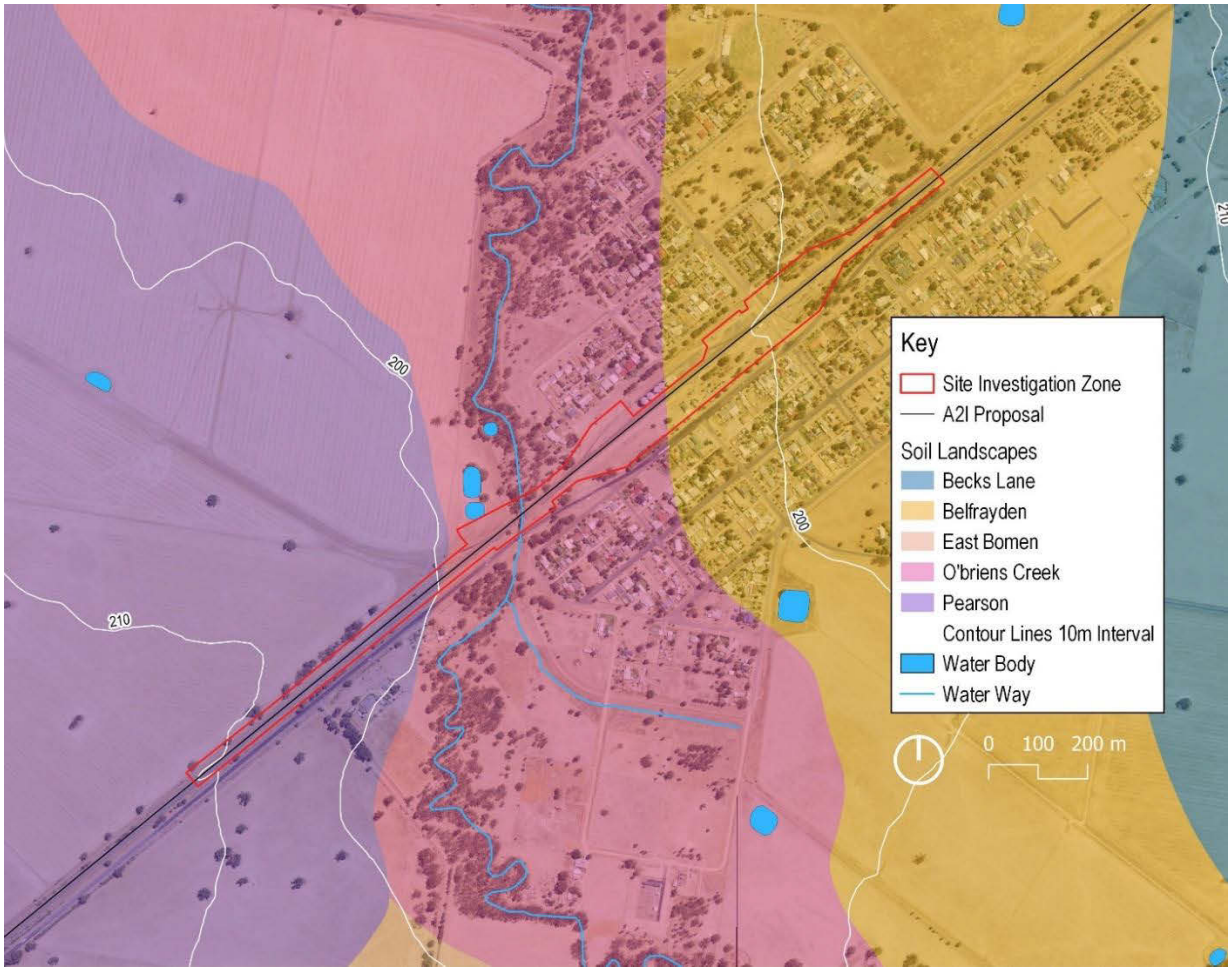

Figure H.7 Soil landscapes, hydrology and topography of Zone 8 (Kapooka area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zones 9 and 10

Both Zones 9 and 10 (Figure 0.8 and Figure 0.9) are located within Wagga Wagga, straddling the dense urban area. Zone 9 relates to the Pearson Street enhancement site, and Zone 10 relates to the following enhancement sites: Cassidy Parade shared user bridge, Edmondson Street bridge, Wagga Wagga Station yard clearances and Wagga Wagga Station shared user bridge).

The Becks Lane soil landscape characterising the region would have been highly modified by artificial drainage, industrial buildings, roads, as well as the rail line. There is no indication that there would be any remaining intact soils.

Figure H.8 Soil landscapes, hydrology and topography of Zone 9 (west Wagga Wagga area). (Source: NSW LRS with GML additions, 2021)

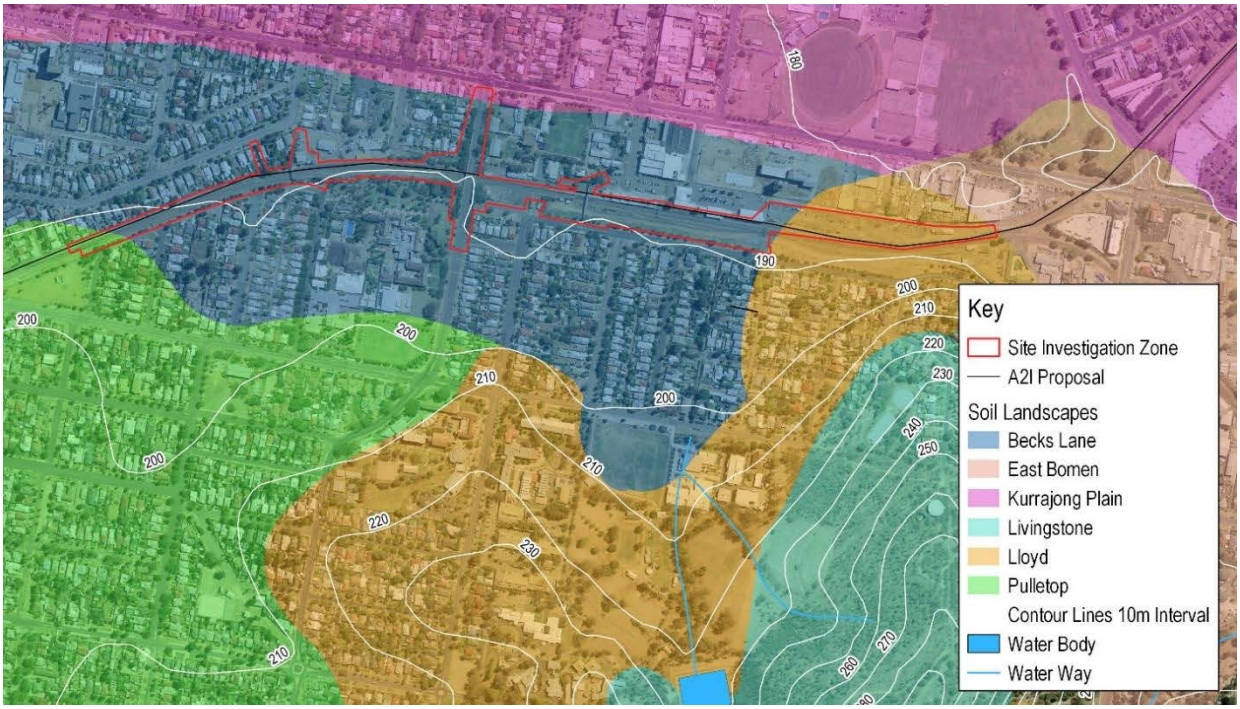

Figure H.9 Soil landscapes, hydrology and topography of Zone 10 (east Wagga Wagga area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 11

Zone 11 (Figure 0.10) consists of a 1.2 kilometre long investigation area centred on Bomen Station. It is also situated on the East Bomen and Currawarna soil landscapes. These landscapes are both Aeolian (wind-deposited) sands originating from areas north of the Murrumbidgee floodplain, several kilometres north of Wagga Wagga. The Currawarna soil landscape has a slightly lower elevation, of around 210 metres, and is dominated by sand to depths of over one metre. On the other hand, the East Bomen soil landscape has sand elements but also consists of earthy loam and clay. The high sand content of both the East Bomen and Currawarna landscape makes both soil landscapes vulnerable to wind and sheet erosion, especially when exposed due to widespread de-vegetation.

Zone 11 had been highly disturbed by infrastructure development, including the stripping of vegetation, which means many of the original soils potentially containing archaeological deposits would have been removed or impacted.

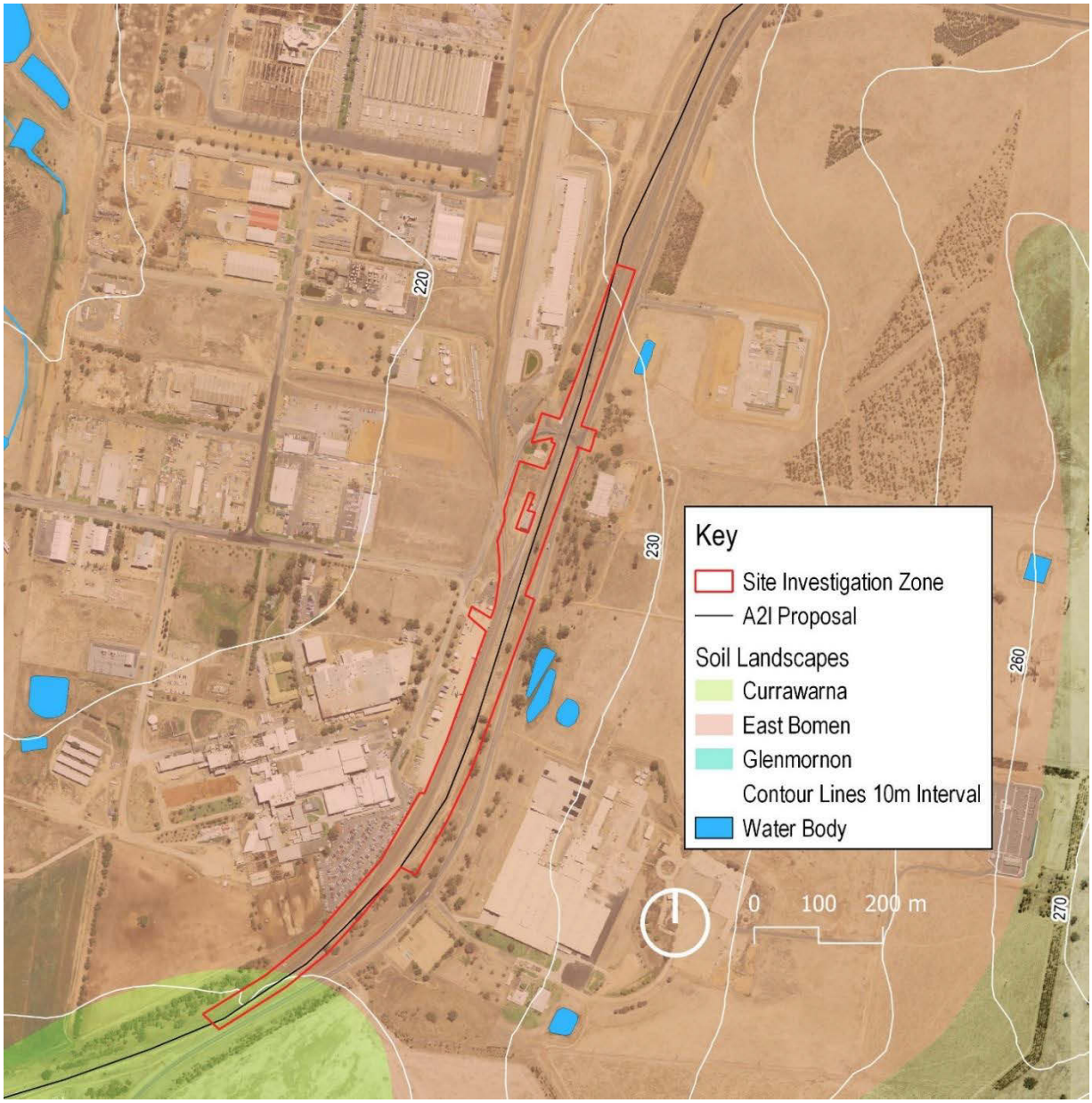

Figure G.10 Soil landscapes, hydrology and topography of Zone 11 (Bomen area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 12

Zone 12 (Figure 0.11) is located at Harefield and can be divided into two soils landscapes: Currajong and Houlaghans Creek (variant A). The Currajong soils landscape consists of gentle to undulating foot slopes and colluvial plains. These soils descend into Houlaghans Creek, an alluvial plain associated with a large creekline of the same name, found six kilometres west of the current site investigation zone. Zone 12 is associated with the Reedy Creek drainage depression and stream (less than 200 metres away). The foot slopes of the Currajong landscape to the south of the investigation area would have provided mildly elevated and drained land on which Aboriginal occupation could have occurred in the past. Although most of the site investigation zone looks modified, its southwestern portion appears less disturbed and might have potential for intact archaeology.

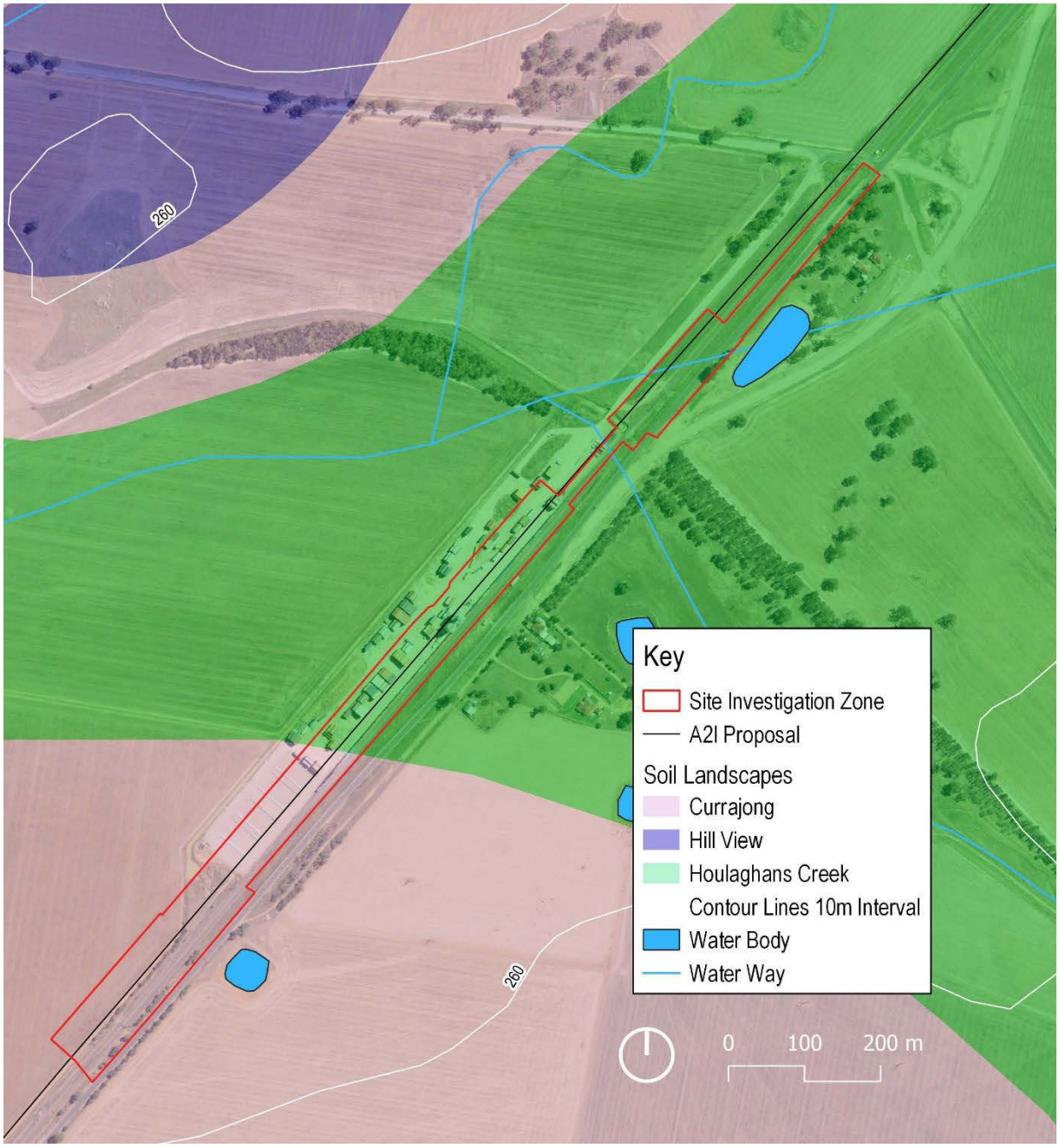

Figure G.11 Soil landscapes, hydrology and topography of Zone 12 (Harefield area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 13

Zone 13 (Figure 0.12) follows the current rail line through Junee along the Currajong soil landscape. This soil landscape consists of gentle to undulating foot slopes and colluvial plains. In the study area, it is flanking the drainage depression along Junction Street, which has been artificially manipulated to avoid flowing into urban locations. The surrounding landscape includes watercourses to the north and west of the investigation area which would have provided a stable water supply for habitation of this area by Aboriginal people in the distant past. Lower slopes of undulating plains, through which the investigation area passes, would have also provided an ideal semi-drained zone for habitation.

However, most of the site investigation zone has been cleared and disturbed from urban development in Junee and the current rail line, although there appear to be pockets of intact soils on the western side and to the northwest of the site investigation zone. These intact pockets may have archaeological potential.

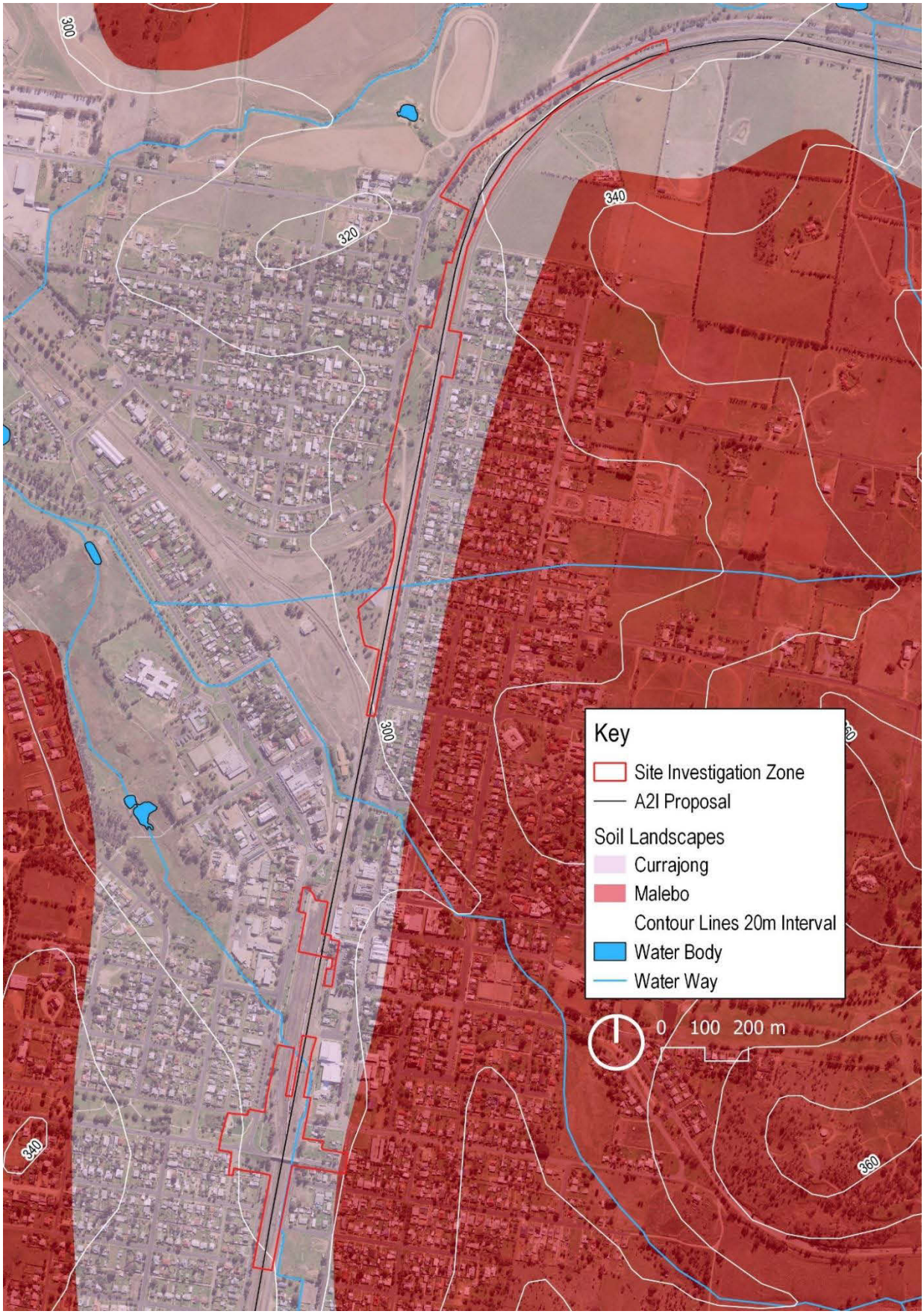

Figure G.12 Soil landscapes, hydrology and topography of Zone 13 (Junee area). (Source: NSW LRS with GML additions, 2021)

Site Investigation Zone 14

Zone 14 (Figure 0.13) stretches along the current rail line through the Illabo region across gentle to undulating hills and plains.

Many of the elevated slopes and crests in the region are made up of the Stony Hill landscape, consisting of highly variable and complex erosional soils. The lower slopes of these rises are characterised by Eurongilly, Mimosa and Currajong transferral slopes formed on Quaternary colluvium. These deep soils are subject to sheet erosion, particularly when they are heavily cleared for agriculture. A small edge of the site investigation zone falls within the Ironbong Creek soil landscape, with gently undulating alluvial plains around Ironbong Creek and its tributaries.

The whole study area has been cleared for agriculture or disturbed while building the railway line. Despite this, there is potential for archaeology, if present in the area, to be located within the deep subsurface soils on either side of the rail track. In situ deposits are also likely to occur in the Ironbong Creek landscape, which would present a favourable landscape due to the abundant freshwater from the creekline.

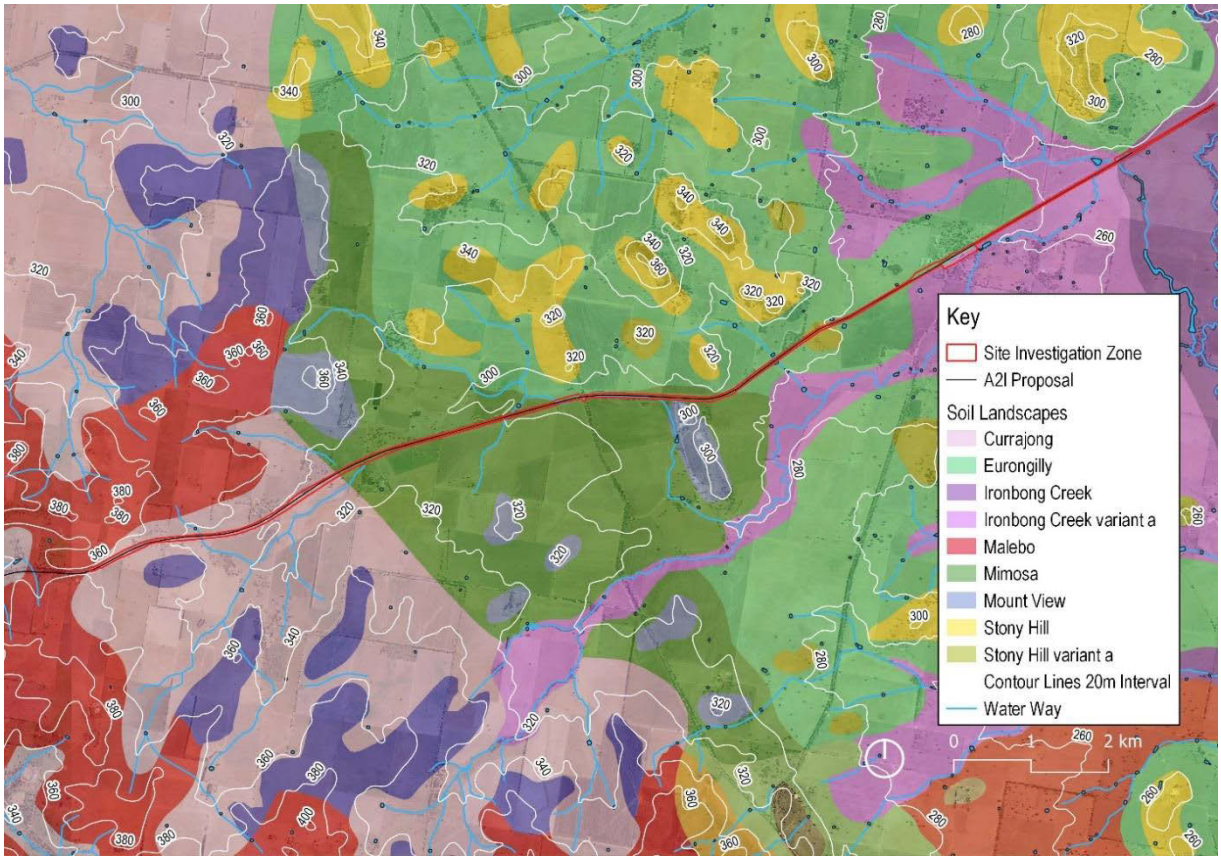

Figure 0.13 Soil landscapes, hydrology and topography of Zone 14 (Illabo area). (Source: NSW LRS with GML additions, 2021)

Endnotes

1 https://datasets.seed.nsw.gov.au/dataset/published-soil-landscapes-of-central-and-eastern-nsw37d37>.

TECHNICAL PAPER

02

Aboriginal cultural heritage assessment report

Appendix I Site photographs

ALBURY TO ILLABO ENVIRONMENTAL IMPACT STATEMENT

Appendix I

Site Photographs

Site Investigation Zone 1

Figure I.1 View into the property adjacent to the rail corridor.

Figure I.2 View into the property adjacent to the rail corridor.

Site Investigation Zone 3

Figure I.3 Access track across part of Zone 3.

Figure I.4 Grass cover and vegetation in Zone 3.

Figure I.5 View across Zone 3.

Figure I.6 View across Zone 3.

Figure I.7 Disturbance areas in Zone 3.

Figure I.8 Disturbance areas in Zone 3.

Figure I.9 View across the eastern part of Zone 3.

Figure I.10 View across the eastern part of Zone 3.

Figure I.11 View across the eastern part of Zone 3.

Figure I.12 View across the eastern part of Zone 3.

Figure I.13 View across the eastern part of Zone 3.

Figure I.14 View across the eastern part of Zone 3.

Figure I.15 View across the eastern part of Zone 3.

Figure I.16 View across the eastern part of Zone 3.

Figure I.17 View across revegetation area.

Figure I.18 View across revegetation area.

Figure I.19 View across revegetation area.

Figure I.20 View across revegetation area.

Figure I.211 Zone 3 near Sanctuary Lane.

Figure I.22 Zone 3 near Sanctuary Lane.

Site Investigation Zone 4

Figure I.23 Wetland at Culcairn, Zone 4.

Figure I.24 Wetland at Culcairn, Zone 4.

Site Investigation Zone 5

Figure I.25 Survey area at south Henty.

Figure I.26 Survey area at south Henty.

Figure I.27 Survey area at north Henty.

Figure I.28 Survey area at north Henty.

Site Investigation Zone 6

Figure I.29 Disturbed western side of the survey area at Yerong Creek Zone 6z.

Figure I.30 Disturbed western side of the survey area at Yerong Creek Zone 6.

Figure I.31 Artefact A2I-1.

Figure I.32 Eastern side of the survey area at Yerong Creek..

Site Investigation Zone 8

Figure I.33 Survey area at Zone 8, Uranquinty.

Figure I.34 Survey area at Zone 8, Uranquinty.

Figure I.35 Survey area at Zone 8, Uranquinty.

Figure I.36 Survey area at Zone 8, Uranquinty.

Site Investigation Zone 12

Figure I.37 Survey area within the rail corridor at Zone 12.

Figure I.38 Disturbance within the survey areas at Zone 12.

Site Investigation Zone 13

Figure I.39 Survey area in parkland south of the Olympic Highway Bridge, Junee, Zone 13.

Figure I.40 Survey area in parkland south of the Olympic Highway Bridge, Junee, Zone 13.

Figure I.41 Drainage landscaping adjacent to Olympic Highway Bridge, Junee, Zone 13.

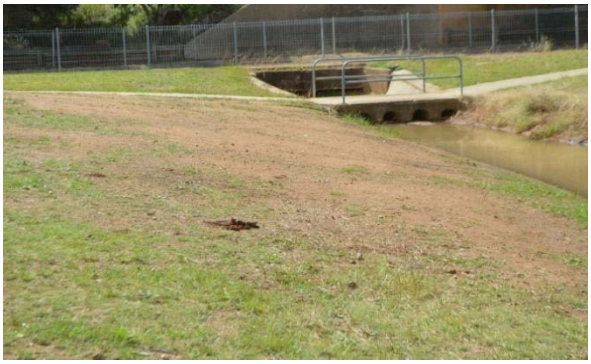

Figure I.42 Drainage landscaping adjacent to Olympic Highway Bridge, Junee, Zone 13.

Figure I.43 Artefact A2I-2.

Figure I.44 Survey area in parkland south of the Olympic Highway Bridge, Junee, Zone 13.

Figure I.45 Zone 13 grassed paddock north of Olympic Highway.

Figure I.46 Zone 13 between the Olympic Highway and Waterworks Road.

Figure I.47 North end of Zone 13.

Figure I.48 North end of Zone 13.

Site Investigation Zone 14

Figure I.49 Survey area at the south end of Zone 14.

Figure I.50 Survey area at the south end of Zone 14.

Figure I.51 Survey area at the north end of Zone 14.

Figure I.52 Survey area at the north end of Zone 14.