

CHAPTER

18

INLAND
RAIL 

Cultural Heritage

CALVERT TO KAGARU ENVIRONMENTAL IMPACT STATEMENT

**ARTC**

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Contents

18. CULTURAL HERITAGE	18-1	Tables	
18.1 Scope of chapter	18-1	Table 18.1: Terms of Reference Compliance Table—Cultural Heritage	18-3
18.1.1 Cultural heritage study area	18-1	Table 18.2: Cultural heritage regulatory context	18-3
18.2 Terms of Reference	18-3	Table 18.3: Indigenous consultation summary	18-5
18.3 Legislation, policies, standards and guidelines	18-3	Table 18.4: Inspection areas of interest	18-6
18.4 Methodology	18-4	Table 18.5: Queensland State heritage significance assessment criteria	18-10
18.4.1 Indigenous heritage	18-4	Table 18.6: Levels of cultural heritage significance	18-10
18.4.2 Non-Indigenous heritage	18-5	Table 18.7: Levels of cultural heritage sensitivity	18-11
18.5 Existing heritage conditions	18-12	Table 18.8: Determining magnitude of change	18-11
18.5.1 Indigenous cultural heritage	18-12	Table 18.9: Estimating impact significance	18-11
18.5.2 Non-Indigenous heritage	18-12	Table 18.10: Aboriginal Party for the cultural heritage study area	18-12
18.6 Potential impacts	18-16	Table 18.11: Cultural Heritage Management Plans with ARTC	18-12
18.6.1 Indigenous cultural heritage	18-16	Table 18.12: Department of Aboriginal Torres Strait Islander Partnerships sites within 1 km of the cultural heritage study area	18-12
18.6.2 Non-Indigenous cultural heritage	18-16	Table 18.13: Summary of register searches	18-13
18.7 Mitigation measures	18-17	Table 18.14: Local heritage places within 1 km of the Project	18-13
18.7.1 Design considerations	18-18	Table 18.15: Non-Indigenous site inspection results	18-13
18.7.2 Proposed mitigation measures	18-18	Table 18.16: Summary assessment indicating threshold of significance	18-15
18.8 Impact assessment	18-21	Table 18.17: Sensitivity of identified heritage sites	18-16
18.8.1 Indigenous heritage	18-21	Table 18.18: Heritage places at risk of direct impact	18-17
18.8.2 Non-Indigenous heritage	18-21	Table 18.19: Heritage places at risk of indirect impact	18-17
18.9 Cumulative impacts	18-24	Table 18.20: Initial mitigations of relevance to cultural heritage	18-18
18.9.1 Non-Indigenous heritage	18-24	Table 18.21: Proposed mitigations measures	18-18
18.10 Conclusion	18-24	Table 18.22: Assessment of significance of impacts	18-22
		Table 18.23: Non-Indigenous cultural heritage summary significance and impact assessment	18-24
Figures			
Figure 18.1: Cultural heritage study area	18-2		
Figure 18.2a: Non-Indigenous cultural heritage areas of interest	18-7		
Figure 18.2b: Non-Indigenous cultural heritage areas of interest	18-8		
Figure 18.2c: Non-Indigenous cultural heritage areas of interest	18-9		

18. Cultural Heritage

18.1 Scope of chapter

The purpose of this chapter is to identify the potential impacts of the Calvert to Kagaru Project (the Project) on cultural heritage, and to develop appropriate mitigation measures to address such impacts.

Section 11 of the Terms of Reference (ToR) for the Project states:

‘The construction and operation of the Project should aim to ensure that the nature and scale of the Project does not compromise the cultural heritage significance of a heritage place or heritage area.’

In accordance with the requirements of the ToR and relevant legislation, this assessment:

- ▶ Identifies known and potential non-Indigenous cultural heritage values
- ▶ Assesses the significance of these values
- ▶ Assesses the Project’s potential impacts on these values
- ▶ Recommends measures to manage or mitigate impacts on cultural heritage values.

Indigenous cultural heritage will be managed under a Cultural Heritage Management Plan (CHMP).

CHMPs (CLH017009) for the Project were developed in 2017 and 2018 between ARTC and the relevant Aboriginal Parties. These CHMPs have been approved under the *Aboriginal Cultural Heritage Act 2003* (Qld) (ACH Act) and meet all the requirements for the identification, assessment and management of Aboriginal heritage under the Project’s ToR. As such, this EIS defers to the CHMPs in all matters related to the management of Aboriginal cultural heritage.

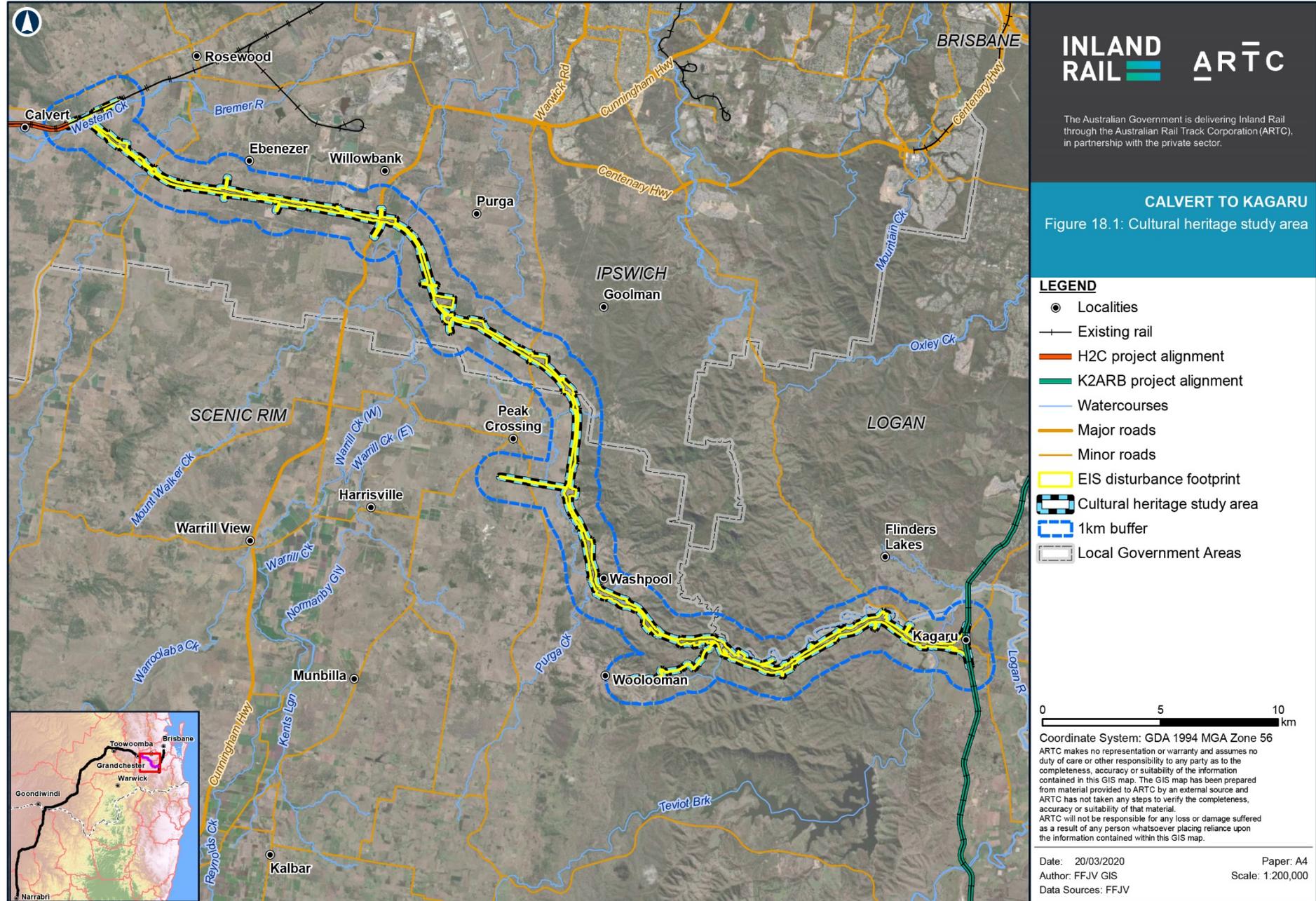
CHMPs are a confidential agreement between the relevant Aboriginal Parties and ARTC and will not be released as part of the EIS.

18.1.1 Cultural heritage study area

The following terms are adopted for this assessment:

- ▶ Disturbance footprint—as defined in Chapter 6: Project Description. The disturbance footprint encompasses the rail corridor (minimum width of 40 m with wider areas to accommodate earthworks and local topography), utility works, roadworks, and temporary access tracks, laydown areas, drainage structures, and erosion and sediment controls. The disturbance footprint captures the extent of ground-disturbing works for the Project
- ▶ Cultural heritage study area—the area of impact assessment, which encompasses the disturbance footprint plus a 50 m buffer to capture indirect impacts on cultural heritage from factors such as increased dust, vibration, or flooding (refer Figure 18.1).

To contextualise the heritage assessment process, register searches and an analysis of historical mapping was undertaken over a wider area, comprising the disturbance footprint plus a 1 km buffer.



18.2 Terms of Reference

The ToR describes the matters the proponent must address in the EIS for the Project. The matters relating to cultural heritage are contained in ToR 11.177 and 11.178 (refer Table 18.1).

TABLE 18.1: TERMS OF REFERENCE COMPLIANCE TABLE—CULTURAL HERITAGE

Terms of Reference requirements	Where addressed
Information requirements	
11.177 Unless section 86 of the ACH Act applies, the proponent must develop a CHMP in accordance with the requirements of Part 7 of the ACH Act. The EIS should provide details of the CHMP and any associated agreements that has been developed or reached or steps taken up to that point to develop or reach such a plan or agreement	Sections 18.4.1, 18.5.1, 18.6.1, 18.7.2 and 18.8.1
11.178 For non-Indigenous historical heritage, undertake a study of, and describe, the known and potential historical cultural and landscape heritage values of the area potentially affected by the project. Any such study should be conducted by an appropriately qualified cultural heritage practitioner. Provide strategies to mitigate and manage any negative impacts on non-Indigenous cultural heritage values and enhance any positive impacts.	Sections 18.5.2, 18.6.2, 18.7.2 and 18.8.2 Appendix D: Study Team Appendix T: Non-Indigenous Heritage Technical Report

Appendix B: Terms of Reference Compliance Table provides a cross-reference for each ToR against relevant sections in this EIS.

18.3 Legislation, policies, standards and guidelines

The relevant Commonwealth and State legislation and local government planning schemes, policies, plans and guidelines that regulate and manage cultural heritage are outlined in Table 18.2.

Further information on relevant Commonwealth and State legislation and local government planning schemes, policies, plans and guidelines relevant to the Project are outlined in Chapter 3: Project Approvals.

TABLE 18.2: CULTURAL HERITAGE REGULATORY CONTEXT

Legislation, policy or guideline	Relevance to the Project
Commonwealth	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act)	<ul style="list-style-type: none"> ▶ Provides protection for items listed on the World and Commonwealth Heritage List ▶ Provides framework for consideration of impacts to heritage as part of Commonwealth or Commonwealth-supported activities ▶ On 21 June 2017, the Commonwealth Minister for the Department of the Environment and Energy (Cth) (DotEE) (now the Department of Agriculture, Water and Environment (DAWE)) determined the Project is a 'controlled action' under the EPBC Act (reference number EPBC 2017/7944) due to potentially significant impacts on listed threatened species and communities.
State	
<i>Queensland Heritage Act 1992</i> (Qld) (QH Act)	<ul style="list-style-type: none"> ▶ Principal piece of State legislation that protects non-Indigenous heritage ▶ Items of importance to the people of Queensland (QLD) are nominated for State Heritage Listing ▶ Allows for the protection of items of local heritage significance in a local government register ▶ Protects historical archaeological discoveries that may be an important source of information about an aspect of QLD's history.

Legislation, policy or guideline

Relevance to the Project

<i>Aboriginal Cultural Heritage Act 2003</i> (Qld) (ACH Act)	<ul style="list-style-type: none">▶ Principal piece of State legislation that protects Aboriginal cultural heritage▶ Seeks to provide effective recognition, protection and conservation of Aboriginal cultural heritage▶ Requires that every person who carries out an activity 'take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage (the cultural heritage duty of care)'▶ Establishes a database of reported Aboriginal cultural heritage places but does not guarantee that the 'information is up-to-date, comprehensive or otherwise accurate'▶ Mandates the development and approval of a CHMP for any project requiring an EIS▶ Confirms that acting under an approved CHMP will ensure compliance with the cultural heritage duty of care in relation to Aboriginal cultural heritage covered by the CHMP.
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Cultural heritage planning frameworks, strategies and statutory guidelines

Ipswich City Planning Scheme 2006	<ul style="list-style-type: none">▶ Queensland legislation requires all local governments to:<ul style="list-style-type: none">▶ identify places of local cultural heritage significance in a planning scheme or a local heritage register▶ develop provisions for the management of such heritage.
Logan Planning Scheme 2015	
Beaudesert Shire Planning Scheme 2007	
Boonah Shire Planning Scheme 2006	
Scenic Rim Local Planning Scheme 2020	
<i>The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance</i> (2013)	<ul style="list-style-type: none">▶ Internationally adopted standards for heritage conservation practice.
<i>Assessing cultural heritage significance: Using the cultural heritage criteria</i> (2013)	<ul style="list-style-type: none">▶ Document prepared by Department of Environment and Heritage Protection (DEHP) (now Department of Environment and Science (DES))▶ Provides guidance on applying the QH Act criteria to significance assessments of State and local heritage places.
<i>Cultural Heritage Management Plan Guidelines</i> (2005)	<ul style="list-style-type: none">▶ Document prepared by Department of Aboriginal Torres Strait Islander Partnerships (DATSIP)▶ Provides guidance on the development of a CHMP.

18.4 Methodology

18.4.1 Indigenous heritage

The Indigenous cultural heritage ToR requires that one or more CHMPs be developed with the relevant Aboriginal Party for the Project area and approved by the Chief Executive of DATSIP.

This process was undertaken by ARTC between February 2017 and July 2017 (Jagera People #2, amended in March 2019), and again between February 2018 and June 2018 (Yuggera Ugarapul People) in accordance with the requirements of Part 7 of the ACH Act, and the *Cultural Heritage Management Plan Guidelines* (DATSIP, 2005). The resulting CHMPs (CLH017009) entered into with the Yuggera Ugarapul People Registered Native Title Claimant as the Aboriginal Party for the vast majority of the cultural heritage study area will allow for the identification, assessment and management of Aboriginal cultural heritage in the study area.

This CHMP replaced a previous CHMP, which ARTC had entered into in July 2017 with the former Registered Native Title Claimant for the Jagera People #2 native title claim (Jagera Claim). The former Registered Native Title Claimant for the Jagera Claim was the Aboriginal Party for the study area until they were replaced by the Yuggera Ugarapul People Registered Native Title Claimant very shortly after approval of the Jagera People CHMP, in August 2017. Since the approval of the Yuggera Ugarapul People CHMP, the area of the Jagera People CHMP has been varied to exclude the area of overlap with the Yuggera Ugarapul People CHMP. The Jagera People CHMP now applies only in respect of the very small part of the study area that is not the subject of the Yuggera Ugarapul People CHMP.

In preparation for the above negotiations, ARTC carried out a search of the DATSIP Database and Register to identify:

- ▶ Aboriginal parties and/or cultural heritage bodies for the cultural heritage study area
- ▶ Any registered Aboriginal cultural heritage within the cultural heritage study area.

In developing the CHMPs, ARTC engaged with the relevant Aboriginal parties to establish methods for investigating Indigenous cultural heritage that may be affected by the Project. This includes implementing detailed surveys within the cultural heritage study area to identify any significant Aboriginal objects, significant Aboriginal areas or evidence of archaeological or historic significance of Aboriginal occupation of an area and manage these accordingly under the agreement.

18.4.1.1 Consultation

Aboriginal community consultation acknowledges the right of Aboriginal people to be involved, through direct participation, on matters that directly affect their heritage. Involving Aboriginal people in all facets of the assessment process ensures that they are given adequate opportunity to share information about cultural values, and to actively participate in the development of appropriate management and/or mitigation measures. The successful identification, assessment and management of Aboriginal cultural heritage values are dependent on an inclusive and transparent consultation process. Aboriginal community consultation for the current assessment was undertaken in accordance with the *Cultural Heritage Management Plan Guidelines* (DATSIP, 2005).

A summary of consultation undertaken for the CHMPs relevant to the Project is provided in Table 18.3.

Consultation has included negotiation regarding CHMPs with the aim of identifying:

- ▶ A process for undertaking cultural heritage surveys for the Project
- ▶ A process for including the Traditional Owners, associated with the area, in assessing Indigenous cultural heritage values and the protection and management of Indigenous cultural heritage
- ▶ A process for mitigating, managing and protecting identified cultural heritage and objects during both construction and operational phases of the Project.

Details of these CHMPs are confidential to the signatories and are not provided within this chapter.

18.4.2 Non-Indigenous heritage

The historical heritage assessment has been informed by the legislative and ToR requirements for the Project, as well as the guideline *Assessing cultural heritage significance: Using the cultural heritage criteria* (DEHP, 2013). This guideline provides a framework for identifying and managing historical significance under the QH Act. In keeping with this framework, the key elements of the assessment were:

- ▶ Background research
- ▶ Non-Indigenous cultural heritage inspection
- ▶ Significance assessment
- ▶ Impact assessment
- ▶ Management recommendations.

More detail on the methodology and results of the non-Indigenous heritage assessment is available in the technical report, provided in Appendix T: Non-Indigenous Heritage Technical Report.

As per ToR 11.178, the non-Indigenous heritage assessment was undertaken by a suitably qualified heritage practitioner. Refer Appendix D: Study Team for further details.

TABLE 18.3: INDIGENOUS CONSULTATION SUMMARY

Organisation	Response received	Method	Summary
Jagera Daran	Yes	Meetings and written notices	Consultation and negotiation completed in accordance with Part 7 of the ACH Act resulting in approved CHMP.
Yuggera Ugarapul People	Yes	Meetings and written notices	Consultation and negotiation completed in accordance with Part 7 of the ACH Act resulting in approved CHMP.

18.4.2.1 Background research

Background research for the assessment included:

- ▶ Review of the relevant Commonwealth, State and local heritage registers to identify previously registered heritage and archaeological sites, including:
 - ▶ World Heritage List; National Heritage List; Commonwealth Heritage List; Register of the National Estate (non-statutory)
 - ▶ Queensland State Heritage Register
 - ▶ Heritage registers of relevant local governments (Ipswich, Logan, Beaudesert, Boonah and Scenic Rim)
 - ▶ Queensland World War II Heritage Register (non-statutory)
 - ▶ Queensland Rail Heritage Register
- ▶ Collation and review of other relevant previous heritage assessments and documents held by state organisations, including the State Library of Queensland, Queensland State Archives and National Archives of Australia
- ▶ Examination and review of current and historical mapping and aerials for the cultural heritage study area
- ▶ Consultation with relevant key stakeholders, including The Historical Society of Beaudesert, Queensland Transport Museum and Ipswich Rail Museum (refer Chapter 5: Stakeholder engagement for more information).

18.4.2.2 Site inspections

Given the extent of the cultural heritage study area, it was neither practical nor desirable to inspect the entire study area. Instead, a targeted survey strategy was used, which focused on areas of highest heritage potential (refer Table 18.4 and Figure 18.2a–c).

These areas of interest were identified during the background research, and included:

- ▶ Registered heritage places (statutory and non-statutory)
- ▶ Previously identified but unregistered places
- ▶ New places identified during historical research.

Pedestrian inspections were conducted for each of the areas of interest for which access was granted, and any standing structures, significant views, garden plantings, surface archaeological deposits, or areas of subsurface archaeological potential were identified and recorded using GPS, written notes and photography.

Those sites for which access was not granted were viewed from adjacent public areas, and photographs taken if possible.

TABLE 18.4: INSPECTION AREAS OF INTEREST

Inspection ID	Description	Lot/Plan	Access
C2K-19-H1	Brooklands Homestead	1/RP180942	Yes
C2K-19-H2	Kagaru Station	232/SP130091	No
C2K-19-H3	Kenny's Hut	22/RP908750	Yes
C2K-19-H4	Hut and yards	1/SP163227	Yes
C2K-19-H5	O'Neill's Hut	259/RP809310	Yes
C2K-19-H6	Creamery and dairy	76/SP131580	Yes
C2K-19-H7	Washpool	146/CC3359	Yes
C2K-19-H8	Yards and shed	94/SP157507	Yes
C2K-19-H9	House	53/SP148223	No
C2K-19-H10	House	2/RP22586	No
C2K-19-H11	Multiple structures	77/RP218829	Yes
C2K-19-H12	Dairy and creamery	4/RP186730	Yes
C2K-19-H13	Homestead complex	256/CH3159	Yes



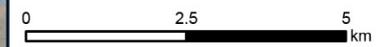
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Figure 18.2a: Non-Indigenous cultural heritage areas of interest

- LEGEND**
- Heritage AOI
 - Localities
 - Existing rail
 - H2C project alignment
 - Watercourses
 - Major roads
 - Minor roads
 - EIS disturbance footprint
 - Cultural heritage study area
 - 1km buffer
 - Local Government Areas

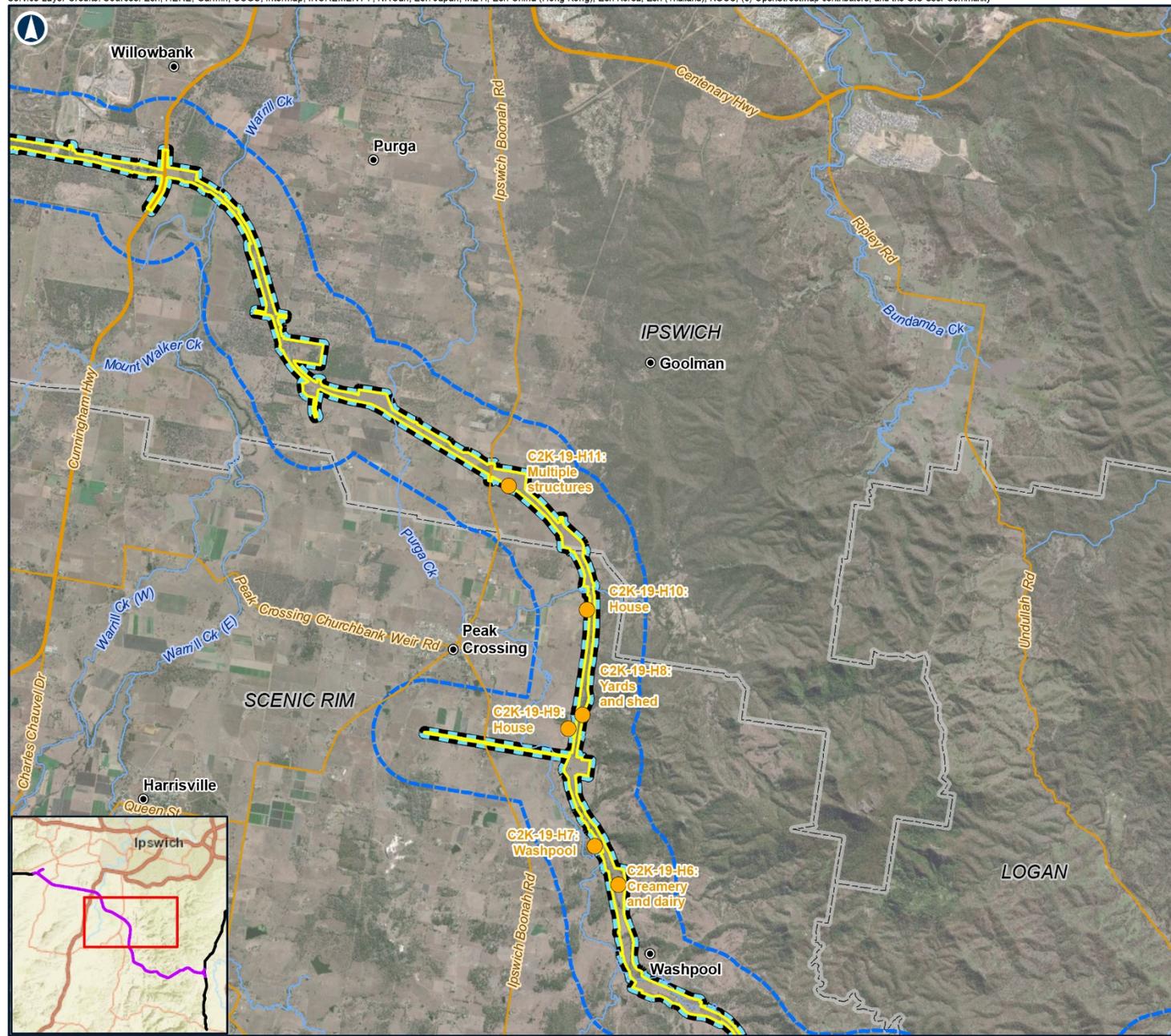


Coordinate System: GDA 1994 MGA Zone 56
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Date: 20/03/2020 Paper: A4
 Author: FFJV GIS Scale: 1:105,000
 Data Sources: FFJV

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CALVERT TO KAGARU
Figure 18.2b: Non-Indigenous cultural heritage areas of interest



LEGEND

- Heritage AOI
- Localities
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint
- Cultural heritage study area
- 1km buffer
- Local Government Areas

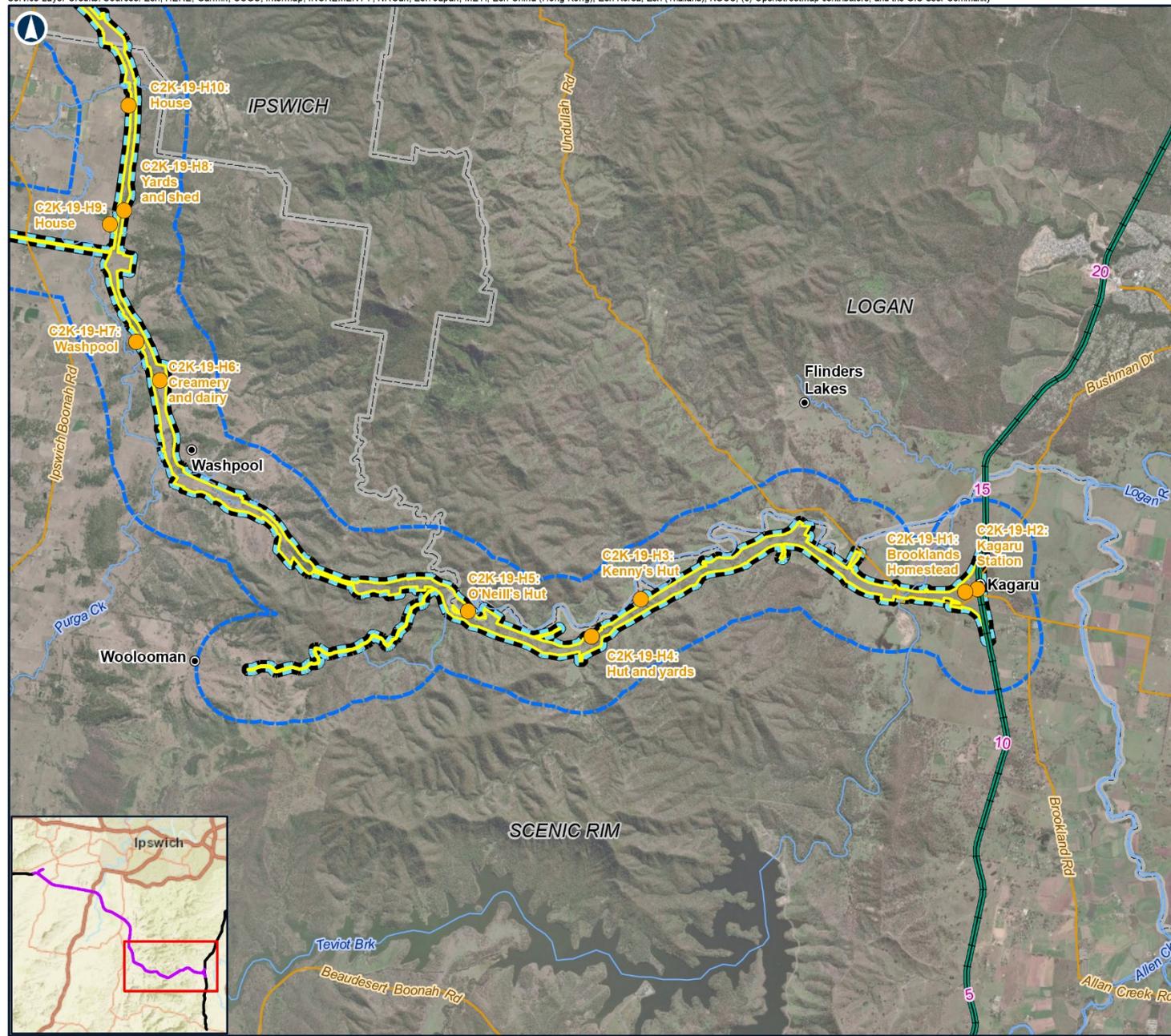


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CALVERT TO KAGARU
Figure 18.2c: Non-Indigenous cultural heritage areas of interest



LEGEND

- Heritage AOI
- Localities
- Existing rail
- K2ARB project alignment
- Watercourses
- Minor roads
- EIS disturbance footprint
- Cultural heritage study area
- 1km buffer
- Local Government Areas

0 2.5 5 km

Coordinate System: GDA 1994 MGA Zone 56

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Data Sources: FFJV

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18.4.2.3 Significance assessment

The significance of historical heritage places are assessed in accordance with the QH Act and *Assessing cultural heritage significance: Using the cultural heritage criteria* (DEHP, 2013). In general, a place may be considered to be of heritage significance if it meets one or more of the criteria stipulated in the QH Act (Section 35), as outlined in Table 18.5.

TABLE 18.5: QUEENSLAND STATE HERITAGE SIGNIFICANCE ASSESSMENT CRITERIA

Criterion	Description
A— historical	The place is important in demonstrating the evolution or pattern of history
B— rarity	The place demonstrates rare, uncommon or endangered aspects of cultural heritage
C— research	The place has potential to yield information that will contribute to an understanding of history
D— representativeness	The place is important in demonstrating the principal characteristics of a particular class of cultural places
E— aesthetic	The place is important because of its aesthetic significance
F— creative/technical	The place is important in demonstrating a high degree of creative or technical achievement at a particular period
G— social	The place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
H— associational	The place has a special association with the life or work of a particular person, group or organisation of importance.

These criteria may be fulfilled at a number of thresholds, ranging from world to local, depending on the importance of the place, and the contribution it makes to our understanding of the past (refer Table 18.6).

TABLE 18.6: LEVELS OF CULTURAL HERITAGE SIGNIFICANCE

Significance	Description
World	Heritage values contribute to our understanding of the pattern and evolution of world history and heritage and the place is considered to be of outstanding value to humanity.
National	Heritage values make an outstanding contribution to our understanding of the pattern and evolution of Australia's history and heritage.
State	Heritage values contribute to our understanding of the wider pattern and evolution of Queensland's history and heritage.
Local	Heritage values contribute to our understanding of the pattern and evolution of local history and heritage.

Source: DEHP, 2013

18.4.2.4 Impact assessment

The potential impacts on the heritage values were assessed using criteria developed from the *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (International Council on Monuments and Sites (ICOMOS), 2011) along with the standard impact assessment methodology used for the Project (refer Chapter 4: Assessment Methodology).

Under the ICOMOS guidelines, two key elements are required to assess impacts on heritage places: the value of the place, and the extent of the change to this value. The value of the place is a measure of its importance, also referred to as its significance. As outlined in Section 18.4.2.3, places can be of differing levels of importance, or significance: local, State, national or world significance (refer also ICOMOS (Australia), 2013). Places of local significance are important only to their immediate community, places of State significance to the wider region, and places of national significance to the country as a whole. Places of world significance are important to all of humanity, possessing one or more Outstanding Universal Values. The more valuable a place is, the more vulnerable it is to change. Therefore, value, or significance as it is used here, is a measure of sensitivity.

The differing significance of a place and its associated sensitivity to impact is summarised in Table 18.7

TABLE 18.7: LEVELS OF CULTURAL HERITAGE SENSITIVITY

Sensitivity	Justification	Significance
Extreme	Attributes that convey Outstanding Universal Values of World Heritage Place	Fulfils criteria for local, State, national and international listing
Very high	Exceptional, rare or outstanding attributes demonstrating important themes in national or international history and heritage	Fulfils criteria for local, State, national or potentially international listing
High	Attributes demonstrating important themes in state history and heritage	Fulfils criteria for local and State listing
Moderate	Attributes demonstrating important themes in local history and heritage	Fulfils criteria for local listing and may fulfil criteria for State listing
Low	Attributes demonstrating minor themes in local history and heritage	May fulfil criteria for local listing and does not fulfil criteria for State listing
Negligible	Attributes that have no heritage significance	Does not fulfil criteria for local or State listing

The degree of impact an activity will have on a heritage place is assessed in terms of the magnitude of change to the acknowledged heritage values of a place as summarised in Table 18.8. These impacts may be direct, such as the demolition of heritage buildings, or indirect, such as changes to the views or setting of a heritage place. In some cases, indirect impacts might also cause physical damage to a heritage place, such as excessive vibration causing structural damage, or excessive pollution causing damage to surfaces.

TABLE 18.8: DETERMINING MAGNITUDE OF CHANGE

Magnitude	Example criteria
Major	Change to all or most significant aspects of the place, such that its heritage values are substantially reduced or destroyed
Medium	Change to some significant aspects of the place, such that some of its heritage values are partially reduced
Low	Minor change to significant aspects of the place, such that some of its heritage values are slightly reduced
Negligible	Changes to insignificant aspects of the places, such that its heritage values are not reduced
No Change	No change

The final assessment of the significance of impact on a heritage place is a factor of the cultural heritage sensitivity of the place, combined with the predicted magnitude of change, as outlined in Table 18.9. A prediction of impact significance can be made both before and after the implementation of identified mitigation measures, allowing the efficacy of the measures to be assessed and revealing residual impacts that need to be taken into account.

TABLE 18.9: ESTIMATING IMPACT SIGNIFICANCE

Significance of impact		Magnitude of change				
		Major	Medium	Low	Negligible	No change
Cultural heritage sensitivity	Extreme	Very large	Large/very large	Moderate/large	Slight	Neutral
	Very high	Very large	Large/very large	Moderate/large	Slight	Neutral
	High	Large/very large	Moderate/large	Slight/moderate	Slight	Neutral
	Moderate	Moderate/large	Moderate	Slight	Neutral/slight	Neutral
	Low	Slight/moderate	Slight	Neutral/slight	Neutral/slight	Neutral
	Negligible	Slight	Neutral/slight	Neutral/slight	Neutral	Neutral

18.5 Existing heritage conditions

This section includes a description of each relevant Indigenous and non-Indigenous value or condition, informed by desktop research and field investigations.

18.5.1 Indigenous cultural heritage

An updated search of the DATSIP Database was undertaken on 13 March 2019 (Search ID 50536) and returned the following details of the relevant Aboriginal party and CHMPs with ARTC for the cultural heritage study area (refer Table 18.10 and Table 18.11).

TABLE 18.10: ABORIGINAL PARTY FOR THE CULTURAL HERITAGE STUDY AREA

QC ref number	QUD ref number	Name	Contact details
QC2017/005	QUD213/2017	Yuggera Ugarapul People	Tim Wishart Queensland South Native Title Services Limited Level 10, 307 Queen Street BRISBANE QLD 4000 Telephone: (07) 3224 1200 Facsimile: (07) 3229 9880
QC2017/007	QUD331/2017	Danggan Balun (Five Rivers) People	Andrea Olsen Queensland South Native Title Services Limited Level 10, 307 Queen Street BRISBANE QLD 4000 Telephone: (07) 3224 1200 Facsimile: (07) 3229 9880

TABLE 18.11: CULTURAL HERITAGE MANAGEMENT PLANS WITH ARTC

CHL number	Sponsor	Party	Approved
CLH017009	ARTC Inland Rail	Yuggera Ugarapul People	9 April 2018
CLH017009	ARTC Inland Rail	Jagera People #2	20 July 2017

The DATSIP search also indicates there are 45 reported Aboriginal cultural heritage sites within 1 km of the cultural heritage study area (refer Table 18.12). The majority of these sites consist of stone artefacts—either isolated finds or clustered in scatters—followed by landscape features, resource areas and grinding grooves.

TABLE 18.12: DEPARTMENT OF ABORIGINAL TORRES STRAIT ISLANDER PARTNERSHIPS SITES WITHIN 1 KM OF THE CULTURAL HERITAGE STUDY AREA

Site type	Count	Per cent of the total
Artefact scatter	31	68.89%
Isolated find	6	13.33%
Landscape feature	5	11.11%
Resource area	2	4.44%
Grinding grooves	1	2.22%
Total	45	100.00%

18.5.2 Non-Indigenous heritage

18.5.2.1 Register searches

A search of all relevant statutory and non-statutory heritage registers in May 2019 indicated five local heritage places within 1 km of the Project, but none in the cultural heritage study area (refer Table 18.13 and Table 18.14).

Two of the local heritage places are included on the current Ipswich heritage register—Rockton and 1137 Ipswich Boonah Road—but they are actually located within the Scenic Rim Regional Council local government area (LGA) and have not been included in the Scenic Rim Planning Scheme. These items currently have no legislative protection under either the Ipswich, Boonah, Beaudesert or the new Scenic Rim Planning Scheme. However, as the sites have previously been identified as being of local heritage significance, they have been included here for the sake of completeness.

None of these local heritage places are within the cultural heritage study area, and so are not considered further in this assessment.

TABLE 18.13: SUMMARY OF REGISTER SEARCHES

Register	Within 1 km of the Project	In cultural heritage study area
World Heritage List	None	None
National Heritage List	None	None
Commonwealth Heritage List	None	None
Register of the National Estate (non-statutory)	None	None
State Heritage Register	None	None
Cultural Heritage Information Management System (non-statutory)	None	None
Ipswich Planning Scheme 2006	4	None
Logan Planning Scheme	1	None
Boonah Shire Planning Scheme 2006	None	None
Beaudesert Shire Planning Scheme 2007	None	None
Scenic Rim Planning Scheme 2020	None	None

TABLE 18.14: LOCAL HERITAGE PLACES WITHIN 1 KM OF THE PROJECT

Name	Description	Planning Scheme	Location	Proximity to Project
Rockton*	Farmhouse, main house	Ipswich	2/RP187329	Within 1 km
1137 Ipswich Boonah Road, Peak Crossing*	Dwelling, main house	Ipswich	3/RP851801	Within 1 km
Lot 1 Middle Road, Purga	Farmhouse, main house	Ipswich	1/RP168958	Within 1 km
Dwelling	House and rear wing	Ipswich	23/RP123059	Within 1 km
Cameron Family Graves	Three individual grave sites	Logan	200/SP133189	Within 1 km

Table notes:

* Originally recorded on the Ipswich Planning Scheme, now located within Scenic Rim Regional Council LGA and currently not listed on the local planning scheme

18.5.2.2 Site inspection results

Thirteen non-Indigenous areas of interest were identified within the cultural heritage study area and were subsequently inspected and their heritage values recorded and assessed. None of these places are currently recorded on any heritage register, but 10 were found to be of potential local heritage significance. The majority of these places are related to the local pastoral and dairying industries, and include yards, huts, creameries and dwellings (refer Table 18.15).

A full description of each area of interest is provided in the Appendix T: Non-Indigenous Heritage Technical Report.

TABLE 18.15: NON-INDIGENOUS SITE INSPECTION RESULTS

Site ID	Site name	Site description	Lot/Plan	Proximity to project
C2K-19-H1	Brooklands Homestead	The site of Brooklands established in 1898. The original homestead was demolished in mid-20th century, but other original elements remain, including garden plantings and a ruined dairy.	1/RP180942	Cultural heritage study area
C2K-19-H2	Kagaru Station	Location of former Kagaru Station, constructed c.1930 as a part of the Sydney to Brisbane Line. The site could not be inspected due to access and safety constraints, but a number of elements were noted from adjacent areas, including a timber road bridge, water standpipes and remnant plantings.	232/SP130091	Cultural heritage study area
C2K-19-H3	Kenny's Hut	Location of site referred to as 'Kenny's Hut' on a 1927 topographic map. Situated on a low-lying creek flat on the eastern side of Woollaman Creek. No evidence of a dwelling was found at this location, but a well-built set of yards was identified, along with an isolated bottle that may mark the former hut site.	22/RP908750	Cultural heritage study area

Site ID	Site name	Site description	Lot/Plan	Proximity to project
C2K-19-H4	Hut and yards	Location of site referred to as a 'Stock Yard' on a 1927 topographic map. Situated on a creek flat approximately 200 m south of the confluence of Wild Pig Creek and Woollaman Creek, and consists of a small hut, built partially of timber slabs, and a dilapidated set of yards.	1/SP163227	Cultural heritage study area
C2K-19-H5	O'Neill's Hut	Location of a site referred to as 'O'Neill's Hut' on a 1927 topographic map. Situated on a creek flat on the southern side of Dugandan Creek. The site includes a corrugated iron clad hut and a sprawling set of yards and cattle dip. The area is littered with a variety of modern refuse, and it is possible that the remnants of other structures are located in the dense lantana the surrounds the site.	259/RP809310	Disturbance footprint
C2K-19-H6	Creamery and dairy	Location of a structure on a 1927 topographic map. Situated on a rise approximately 500 m east of Purga Creek, and includes a creamery, a concrete slab marking the location of a former dairy, a set of building stumps, and a row of fence posts, likely from the dairy yard.	76/SP131580	Disturbance footprint
C2K-19-H7	Washpool	Location of site referred to as 'The Washpool' on a 1927 topographic map, and of a cluster of buildings shown on a 1944 aerial photograph. Situated on the low-lying flats 100 m north of Purga Creek and is most likely a relict creek line. No evidence of historical structures or other heritage items was identified during the survey.	146/CC3359 1/RP22592	Disturbance footprint
C2K-19-H8	Yards and shed	Location of a structure on a 1927 topographic map. Situated in a low-lying area 1 km east of Purga Creek and 50 m south of an unnamed intermittent creek. Key elements noted include a large shed, a set of yards, and the remains of a horse-drawn wagon.	94/SP157507	Disturbance footprint
C2K-19-H9	House	Location of multiple structures shown on 1927 topographic map. The site on could not be inspected due to access constraints, but it would appear to contain a house and a number of out-buildings.	53/SP148223	Cultural heritage study area
C2K-19-H10	House	Location of multiple structures shown on 1928 topographic map. The site could not be inspected due to access constraints, but it would appear to contain a house and a number of out-buildings.	22/RP22586	Cultural heritage study area
C2K-19-H11	Multiple structures	Location of a structure on a 1927 topographic map. Situated in a low-lying area 2 km east of Purga Creek and features 12 buildings ranging from large sheds to small huts. Analysis of historical aerials suggests that only two of these buildings are original to the site.	77/RP218829	Disturbance footprint
C2K-19-H12	Dairy and creamery	The location of two structures on a 1928 topographic map. Key elements include the remains of a dairy and creamery, the former of which appears to have been adapted from an earlier slab hut.	4/RP186730	Cultural heritage study area
C2K-19-H13	Homestead complex	The location of two structures on a 1928 topographic map. The site is predominately archaeological in nature, with four main zones noted: <ul style="list-style-type: none"> ▶ Dairy and yard ▶ Cattle yards and crush ▶ Possible house site ▶ Possible shed site. 	157/CH3159 256/CH3159	Disturbance footprint

18.5.2.3 Heritage significance

An assessment of significance is undertaken to explain why a particular site is important and to enable the appropriate site management and curtilage to be determined. Cultural significance is defined in the Burra Charter (ICOMOS (Australia), 2013) as meaning ‘aesthetic, historic, scientific or social value for past, present or future generations’ (Article 1.1). Cultural significance may be derived from a place’s fabric, association with a person or event, or for its research potential. The significance of a place is not fixed for all time, and what is of significance to us now may change as similar items are located, more historical research is undertaken and community tastes change.

As discussed in Section 18.4.2.3, the QH Act prescribes eight criteria that may be used to measure the heritage value of a place and determine its significance: historical, rarity, research, representativeness, aesthetic, creative/technical, social and associational. A place need only fulfil one of these criteria to be considered to be of heritage significance (DEHP, 2013).

The relative heritage significance of places in Queensland is measured as a series of thresholds representing the importance of the place: world, national, State and local. As defined by DES (DEHP, 2013), local heritage places contribute to our understanding of important themes in local history, while State heritage places contribute to our understanding of themes and processes that are of broader relevance. Places need to be of at least regional relevance to be considered of State significance (DEHP, 2013).

A total of 13 non-Indigenous areas of interest were identified during background research and subsequently inspected. The heritage significance of the heritage elements recorded at each of these sites was assessed. The significance of the heritage elements recorded at each of these sites was assessed against the QH Act criteria, and the threshold indicators provided by DES (DEHP, 2013) (refer Section 18.4.2.3).

As summarised in Table 18.16, this assessment found that ten of the areas of interest are of local heritage significance. A full significance assessment of each area of interest is provided in Appendix T—Non-Indigenous Heritage Technical Report.

TABLE 18.16: SUMMARY ASSESSMENT INDICATING THRESHOLD OF SIGNIFICANCE

Site ¹	Description	A—historical	B—rarity	C—research	D—representativeness	E—aesthetic	F—creative/technical	G—social	H—associational
C2K-19-H1	Brooklands Homestead	Local	Not met	Not met	Not met	Not met	Not met	Not met	Not met
C2K-19-H2	Kagaru Station	Local	Not met	Local	Not met	Not met	Not met	Not met	Not met
C2K-19-H3	Kenny’s Hut	Local	Local	Local	Not met	Not met	Not met	Not met	Not met
C2K-19-H4	Hut and yards	Local	Local	Local	Not met	Not met	Not met	Not met	Not met
C2K-19-H5	O’Neill’s Hut	Local	Not met	Local	Not met	Not met	Local	Local	Not met
C2K-19-H6	Creamery and dairy	Local	Not met	Local	Local	Not met	Not met	Not met	Not met
C2K-19-H7	Washpool	Not met	Not met	Not met	Not met	Not met	Not met	Not met	Not met
C2K-19-H8	Yards and shed	Not met	Not met	Not met	Not met	Not met	Not met	Not met	Not met
C2K-19-H9	House	Local	Not met	Not met	Not met	Not met	Not met	Not met	Not met
C2K-19-H10	House	Local	Not met	Not met	Not met	Not met	Not met	Not met	Not met
C2K-19-H11	Multiple structures	Not met	Not met	Not met	Not met	Not met	Not met	Not met	Not met
C2K-19-H12	Dairy and creamery	Local	Local	Local	Not met	Not met	Local	Not met	Not met
C2K-19-H13	Homestead complex	Local	Not met	Local	Not met	Not met	Not met	Not met	Not met

Table notes:

1. Site descriptions provided in Table 18.15

18.6 Potential impacts

A description of project activities that have the potential to impact heritage places or sites is provided in Chapter 6: Project Description.

18.6.1 Indigenous cultural heritage

Impacts to Indigenous cultural heritage will be identified, assessed and managed under the CHMPs (CLH017009).

18.6.2 Non-Indigenous cultural heritage

18.6.2.1 Sensitivity

The degree of impact an activity will have on a heritage place is partly a factor of the place's heritage significance: the more significant a place is, the more sensitive it will be to change. An assessment of the sensitivity of each heritage place within the cultural heritage study area is provided in Table 18.17 in accordance with the methodology provided in Section 18.4.2.4.

TABLE 18.17: SENSITIVITY OF IDENTIFIED HERITAGE SITES

Site ID	Description	Significance	Number of criteria met	Sensitivity
C2K-19-H1	Brooklands Homestead	Local	1	Low
C2K-19-H2	Kagaru Station	Local	2	Moderate
C2K-19-H3	Kenny's Hut	Local	3	Moderate
C2K-19-H4	Hut and yards	Local	3	Moderate
C2K-19-H5	O'Neill's Hut	Local	4	Moderate
C2K-19-H6	Creamery and dairy	Local	3	Moderate
C2K-19-H7	Washpool	None	None	Negligible
C2K-19-H8	Yards and shed	None	None	Negligible
C2K-19-H9	House	Local	1	Low
C2K-19-H10	House	Local	1	Low
C2K-19-H11	Multiple structures	None	None	Negligible
C2K-19-H12	Dairy and creamery	Local	4	Moderate
C2K-19-H13	Homestead complex	Local	2	Moderate

18.6.2.2 Potential impacts and magnitude of change

Potential impacts on cultural heritage values can be divided into two main types: direct and indirect.

- ▶ Direct impacts occur if a cultural heritage place or site is located directly in a development area and/or would be physically impacted by development. Such impacts include the demolition or substantial alteration of a building, or the disturbance of an archaeological site.
- ▶ Indirect impacts, alternatively, are those that alter the surrounding physical environment in such a way that a cultural heritage place or site is affected. Indirect impacts might include extra vibration from construction activities or subsequent traffic load, as well as additional water runoff or sediment deposition due to changing hydrology.

The effects of direct or indirect impacts are measured in terms of the extent to which they alter the heritage values of a cultural heritage place. Project activities that have the potential to impact heritage values are described in Chapter 6: Project Description.

Direct impacts

Direct impacts to heritage are most likely to occur during site preparation as a part of the construction phase. At this time, clearing and stripping activities will require the demolition of heritage structures and the destruction of archaeological sites within the disturbance footprint. The heritage places that are within this footprint are listed in Table 18.18 along with the potential nature of impact and magnitude of change.

TABLE 18.18: HERITAGE PLACES AT RISK OF DIRECT IMPACT

Site ID	Description	Potential impact	Likely magnitude of change
C2K-19-H4	Hut and yards	Removal and hut and yards and related archaeological deposits	Major
C2K-19-H5	O'Neill's Hut	Removal of yards	Major
C2K-19-H6	Creamery and dairy	Removal of creamery and dairy and related archaeological deposits	Major
C2K-19-H7	Washpool	Disturbance of entire site	Negligible
C2K-19-H8	Yards and shed	Removal of yards and wagon	Negligible
C2K-19-H11	Multiple structures	Removal of all buildings aside from dip	Negligible
C2K-19-H13	Homestead complex	Removal of archaeological deposits relating to house, yards and sheds	Major

Indirect impacts

Indirect impacts may occur during any phase of the Project, when construction, operation or decommissioning activities result in excessive dust, noise or vibration that damages heritage structures. Sites at risk of indirect impacts are listed in Table 18.19, along with the potential nature of impact and magnitude of change.

TABLE 18.19: HERITAGE PLACES AT RISK OF INDIRECT IMPACT

Site ID	Description	Potential impact	Likely magnitude of change
C2K-19-H1	Brooklands Homestead	Vibration from construction and operation may speed dilapidation of dairy ruin	Medium
C2K-19-H2	Kagaru Station	Vibration from construction and operation may speed dilapidation of bridge	Low
C2K-19-H3	Kenny's Hut	Vibration from construction and operation may speed dilapidation of yard ruin	Medium
C2K-19-H5	O'Neill's Hut	Vibration from construction and operation may speed dilapidation of hut Removal of yards will alter setting of hut, diminishing its heritage value	Major
C2K-19-H9	House	Dust and vibration from construction and operation may speed dilapidation of house. However, elements most likely impacted—such as the roofing iron—are not original	Negligible
C2K-19-H10	House	Dust from construction and operation may speed dilapidation of house. However, elements most likely impacted—such as the roofing iron—are not original	Negligible
C2K-19-H12	Dairy and creamery	Vibration from construction and operation may speed dilapidation of structures Dairy structure is particularly unsound, and at risk of collapse	Major
C2K-19-H13	Homestead complex	Vibration from construction and operation may speed dilapidation of homestead	Major

18.7 Mitigation measures

This section describes the measures that either have been, or will be adopted by the Project to avoid, minimise or mitigate potential impacts on heritage places. In the case of local heritage places, it is recommended that the provisions of the local planning scheme be considered where possible. Although the Project is exempt from such requirements, the planning scheme does provide a benchmark of the heritage protections expected by the local community.

18.7.1 Design considerations

The mitigation measures and controls presented in Table 18.20 have been factored into the design of the Project. These design considerations are proposed to minimise the environmental impacts of the Project and therefore contribute to a lowering of the initial impact risk rating for each potential impact.

TABLE 18.20: INITIAL MITIGATIONS OF RELEVANCE TO CULTURAL HERITAGE

Aspect	Initial mitigation measures
All heritage	<p>The design has responded to the recommendations of the cultural heritage assessment. For example, in the Teviot Range area the alignment has moved approximately 1.5 km north of the original SFRC corridor to reduce the potential for heritage impacts on known cultural heritage sites (Rocky Pool) following a multi-criteria analysis and consultation with the Traditional Owners. The new alignment also reduces the impact on environmentally sensitive sites, which include protected vegetation and habitats.</p> <p>The Project extents are minimised to avoid impacts to previously undisturbed areas as far as practicable.</p>

18.7.2 Proposed mitigation measures

Aboriginal cultural heritage will be protected and managed through agreed mitigation strategies following the Project Activity Assessment by a survey. This survey will be undertaken by the Traditional Owners in line with the terms and conditions of the CHMPs.

Development of the design for the Project has progressed in parallel with the impact assessment process. As a consequence, design solutions for avoiding, minimising or mitigating impacts have been incorporated into the design as appropriate and where possible. A series of proposed mitigations have also been developed as part of a Project wide response. These overarching mitigations are summarised in Table 18.21.

TABLE 18.21: PROPOSED MITIGATIONS MEASURES

Delivery phase	Aspect	Proposed mitigation measures
Detailed design	All heritage	<ul style="list-style-type: none"> ▶ Design to avoid direct impacts to identified Indigenous and non-Indigenous heritage significance, where practicable. ▶ Design to respond to the outcomes of any further cultural heritage surveys.
Pre-construction	All heritage	<p>Construction planning avoids directly impacting on identified sites of Indigenous and non-Indigenous heritage significance where practicable.</p> <p>The Heritage Management Sub-plan will be developed and will detail mitigation and management measures to be implemented during construction in relation to cultural heritage. It is expected to include:</p> <ul style="list-style-type: none"> ▶ Requirements for site induction, training, heritage monitors, inspections, audits, corrective actions, notification and classification of environmental incidents, record keeping, monitoring and performance objectives for handover on completion of construction ▶ Heritage management actions to be undertaken by suitably qualified persons ▶ Specific requirements for cultural heritage sites/items that cannot be avoided during construction ▶ Unexpected finds procedure, including assessment by a suitably qualified person and notification obligations under the applicable legislation ▶ Procedure for encountering potential burial sites or potential human skeletal material including notification obligations under applicable legislation ▶ Any other requirements necessary to comply with conditions of approval, subsequent approvals, regulatory requirements or ARTC cultural heritage management plans/agreements.

Delivery phase	Aspect	Proposed mitigation measures
Pre-construction (continued)	Vibration	<p>Building condition surveys will be undertaken at all vibration-sensitive receptors identified during detailed design as being subject to potential vibration impacts, which may include structures of heritage value. Surveys will occur before and after undertaking vibration generating works (e.g. pile-driving), with the potential for monitoring during the construction activities as per noise and vibration plans:</p> <ul style="list-style-type: none"> ▶ Tailor construction methodology to limit vibration impacts to heritage structures ▶ Vibration at heritage places to be kept below 2.5 mm/sec wherever possible (in accordance with DIN4150) ▶ Pre-construction and post-construction condition dilapidation surveys to be undertaken at all heritage places at risk of vibration impact ▶ Vibration to be monitored at places where thresholds exceedances are possible ▶ Where vibration exceedances occur, change design/construction methodology where possible to reduce impact.
	Non-Indigenous built heritage	<p>If impacts cannot be avoided, the following pre-construction measures may be implemented:</p> <p>Archival recording</p> <ul style="list-style-type: none"> ▶ Undertake archival photographic recording in accordance with Department of Environment and Heritage Protection <i>Guideline: Archival Recording of Heritage Places</i> (DEHP, 2013) ▶ Copies of archival records to be lodged with the John Oxley Library, and local libraries or historical societies as appropriate. <p>Relocation</p> <ul style="list-style-type: none"> ▶ Relocation of heritage items is generally undesirable, as setting forms an intrinsic part of heritage value (ICOMOS (Australia), 2013). ▶ However, if impacts cannot be managed in any other way, it may be appropriate to relocate buildings or items of moveable heritage to another location, such as a local historical society. The approach for any such requirements will be defined in the Heritage Management Sub-plan.
	Non-Indigenous archaeological heritage	<p>If impacts to non-Indigenous cultural heritage places cannot be avoided, the following pre-construction measures may be implemented by suitably qualified historical archaeologists:</p> <p>Archaeological survey</p> <ul style="list-style-type: none"> ▶ Undertake archaeological survey to map all elements of complex sites and identify areas of possible subsurface deposit. <p>Archaeological excavation</p> <ul style="list-style-type: none"> ▶ If warranted by results of archaeological survey, undertake a two-stage archaeological excavation: <ul style="list-style-type: none"> ▶ Stage 1—test excavation to confirm subsurface deposit ▶ Stage 2—salvage excavation of subsurface deposits (if required). <p>Archaeological surface collection</p> <ul style="list-style-type: none"> ▶ Collect archaeological artefacts on the ground surface ▶ Depending on nature of site may be undertaken in conjunction with, or in place of, excavation.
	Indigenous heritage	<p>Cultural heritage to be managed in accordance with CHMPs. This might include:</p> <ul style="list-style-type: none"> ▶ Undertaking comprehensive cultural heritage surveys for both early works and project activities with the Traditional Owners ▶ Undertaking archaeological survey (including excavations where necessary) ▶ Generating survey reports to provide detailed assessment and management recommendations ▶ Assessing significance of any cultural heritage ▶ Recording (where project activities may have a direct impact on cultural heritage values). <p>Archaeological investigations will only be undertaken by archaeologists qualified and experienced in Aboriginal heritage, in consultation with the Aboriginal Parties, in accordance with the CHMPs.</p>

Delivery phase	Aspect	Proposed mitigation measures
Construction and commissioning	All heritage	<p>Where impacts can be avoided to known Indigenous or non-Indigenous heritage, appropriate precautionary measures, such as informing relevant staff and contractors of the nature and location of the items and need to avoid impacts, detailing location on site maps, along with temporary protective fencing and signage will be implemented for those sites within close proximity of the area of works.</p> <p>Works will not be performed on known or potential heritage items without required approvals and appropriate management plans.</p> <p>If a suspected Aboriginal or historical heritage item or site is identified, any works that may impact the item or site will stop, and the unexpected finds procedure in the Heritage Management Sub-plan will be followed.</p> <p>Any responses to chance finds will only be undertaken by archaeologists qualified and experienced in the relevant discipline.</p> <p>In the event of the discovery of potential human remains, all work in the area will cease and the relevant statutory process for the notification and management of human remains will be instigated, in accordance with the Heritage Management Sub-plan and other relevant plans.</p>
	Non-Indigenous built heritage	<p>Vibration monitoring will be undertaken at vibration-sensitive receptors where the potential for building/structural damage risk is identified during the detailed design phase or as part of pre-construction building surveys. Vibration monitoring will be undertaken by a suitably qualified person, in accordance with relevant standards and guidelines. Where monitoring is required occur at a heritage structure, placement of equipment will be carried out on advice from a suitably qualified person (heritage practitioner).</p> <p>Any damage that occurs at heritage places as a result of vibration or other Project activity will be repaired in accordance with Burra Charter principles (Article 1.4)</p>
	Non-Indigenous archaeological heritage	<p>Depending on the outcome of archaeological assessments undertaken during pre-construction, groundbreaking activities may be subject to archaeological monitoring by a suitably qualified person.</p> <p>In the case of unexpected archaeological finds anywhere in the Project, the protocol included in the Heritage Management Sub-plan is to be followed.</p>
	Indigenous heritage	<p>Cultural heritage values to be managed in accordance with the CHMPs. This will include:</p> <ul style="list-style-type: none"> ▶ Constraining of all surface disturbance to areas which have been previously surveyed for cultural heritage ▶ Establishing buffer zones around areas of heritage value that are to be retained ▶ Monitoring of groundbreaking where warranted by the presence of known or potential archaeological values. <p>In the case of unexpected archaeological finds anywhere in the Project, the protocol included in the Heritage Management Sub-plan is to be followed.</p> <p>Archaeological investigations will only be undertaken by archaeologists qualified and experienced in Aboriginal heritage, in consultation with the Aboriginal Parties, in accordance with the CHMPs.</p>

18.8 Impact assessment

18.8.1 Indigenous heritage

Impacts to Indigenous cultural heritage will be identified, assessed and managed under the CHMPs (CLH017009).

ARTC will change the location of its early works or Project activities to avoid any restricted area. All changes to Project activities will consider the significance of the cultural heritage impact (as assessed during the cultural heritage assessment), engineering constraints and Project delivery implications (e.g. time and costs). It is recognised that this is more likely to be practical for early works than for Project activities.

In undertaking early works and Project activities, ARTC will erect appropriate temporary barriers to ensure that the Project does not impact on the restricted area. Where ARTC, acting reasonably, does consider it impractical to change the location of early works or Project activities to avoid any restricted area, the appropriate management measures set out in Section 18.7 will be employed.

18.8.2 Non-Indigenous heritage

An assessment of the initial and residual significance of potential impacts to heritage sites is presented in Table 18.22 using sensitivity, magnitude and significance criteria established in previous sections of this chapter.

Initial significance of impact assumes that no mitigations have been put in place. The mitigation and management measures from Table 18.21 were then applied to reduce the significance of potential impacts. The residual significance was then assessed and compared to the initial significance to gauge the effectiveness of proposed additional mitigations.

TABLE 18.22: ASSESSMENT OF SIGNIFICANCE OF IMPACTS

ID	Description	Initial significance			Proposed mitigation	Residual significance	
		Sensitivity	Magnitude	Significance		Magnitude of change after mitigation	Significance of impact after mitigation
C2K-19-H1	Brooklands Homestead	Low	Medium	Slight	<ul style="list-style-type: none"> ▶ Archival recording of garden and building remnants 	Low	Neutral
C2K-19-H2	Kagaru Station	Moderate	Low	Slight	<ul style="list-style-type: none"> ▶ Avoid site ▶ Archival recording of bridge ▶ If avoidance is not possible ▶ Discuss any additional measures with infrastructure owner 	Low	Slight
C2K-19-H3	Kenny's Hut	Moderate	Medium	Moderate	<ul style="list-style-type: none"> ▶ Archival recording ▶ Manage indirect impacts ▶ May require the stabilisation of the yards ▶ If any direct impacts are anticipated: <ul style="list-style-type: none"> ▶ Archaeological survey ▶ Archaeological excavation 	Low	Slight
C2K-19-H4	Hut and yards	Moderate	Major	Large	<ul style="list-style-type: none"> ▶ Avoid site ▶ Archival recording ▶ If avoidance is not possible: <ul style="list-style-type: none"> ▶ Archaeological survey ▶ Archaeological excavation 	Low	Slight
C2K-19-H5	O'Neill's Hut	Moderate	Major	Large	<ul style="list-style-type: none"> ▶ Archival recording of yard 	Low	Slight
C2K-19-H6	Creamery and dairy	Moderate	Major	Large	<ul style="list-style-type: none"> ▶ Avoid site ▶ Archival recording ▶ If avoidance is not possible <ul style="list-style-type: none"> ▶ Evaluate options for relocating creamery to historical society 	Low	Slight
C2K-19-H7	Washpool	Negligible	Negligible	Neutral	<ul style="list-style-type: none"> ▶ Unexpected finds procedures 	Negligible	Neutral
C2K-19-H8	Yards and shed	Negligible	Negligible	Neutral	<ul style="list-style-type: none"> ▶ Archival recording ▶ Consider relocating wagon to historical society 	Negligible	Neutral
C2K-19-H9	House	Low	Negligible	Slight-Neutral	<ul style="list-style-type: none"> ▶ Archival recording ▶ Manage indirect impacts ▶ If indirect impacts cannot be effectively managed: <ul style="list-style-type: none"> ▶ Evaluate options for relocation to residential area with heritage or character protection provisions. 	Negligible	Neutral

ID	Description	Initial significance			Proposed mitigation	Residual significance	
		Sensitivity	Magnitude	Significance		Magnitude of change after mitigation	Significance of impact after mitigation
C2K-19-H10	House	Low	Negligible-Low	Slight-Neutral	<ul style="list-style-type: none"> ▶ Archival recording ▶ Manage indirect impacts ▶ If indirect impacts cannot be effectively managed: <ul style="list-style-type: none"> ▶ Evaluate options for relocation to residential area with heritage or character protection provisions. 	Negligible	Neutral
C2K-19-H11	Multiple structures	Negligible	Negligible	Neutral	<ul style="list-style-type: none"> ▶ Archival recording 	Negligible	Neutral
C2K-19-H12	Dairy and creamery	Moderate	Major	Large	<ul style="list-style-type: none"> ▶ Archival recording of creamery and dairy ▶ Manage indirect impacts ▶ May require the stabilisation of the dairy ▶ If any direct impacts are anticipated: <ul style="list-style-type: none"> ▶ Archaeological survey ▶ Archaeological excavation. 	Low	Slight
C2K-19-H13	Homestead complex	Moderate	Major	Large	<ul style="list-style-type: none"> ▶ Avoid site ▶ Archival recording ▶ If avoidance is not possible: <ul style="list-style-type: none"> ▶ Archaeological survey ▶ Archaeological excavation. 	Low	Slight

18.9 Cumulative impacts

18.9.1 Non-Indigenous heritage

All of the assessable projects identified within Chapter 22: Cumulative Impacts were considered as part of the non-Indigenous heritage cumulative impact assessment for the Project. The potential for cumulative impacts on heritage values arises when concurrent or consecutive activities bring about incremental change to heritage places and values. These changes may not be captured in an assessment for any single project, and instead need to be considered on a wider physical and temporal scale (ICOMOS, 2011).

Mitigation measures that can be implemented across all of the projects considered within the cumulative impact assessment (refer Chapter 22: Cumulative Impacts) to minimise potential cumulative impacts from project interactions on non-Indigenous cultural heritage values include:

- ▶ Avoidance
- ▶ Minimisation
- ▶ Archival recording
- ▶ Relocation
- ▶ Archaeological survey and/or excavation
- ▶ Archaeological surface collection.

Based on implementation of the above mitigation measures, the resulting non-Indigenous cumulative impact of the Project is considered to be of 'medium significance'.

18.10 Conclusion

This chapter addresses the Indigenous and non-Indigenous cultural heritage values of the Project, outlining the Project's existing environment, potential impacts, potential mitigations and providing a significance impact assessment.

In accordance with the ToR and the ACH Act, Indigenous cultural heritage values and Project impacts to these values will be managed under approved CHMPs that have been developed with the Aboriginal parties for the Project.

The assessment of non-Indigenous heritage values and impacts has been undertaken by a team of appropriately qualified heritage specialists and has used a combination of register searches and historical and archival research to identify areas of high cultural heritage potential within the cultural heritage study area. Through this process, 13 areas of interest were identified, inspected, and assessed against standard significance criteria (refer Table 18.23).

Potential Project impacts on these places were assessed using ICOMOS standard guidelines both before and after the implementation of mitigations (refer Table 18.23). These impact assessments found that, with appropriate measures, Project impacts could be reduced to neutral/slight for all places.

TABLE 18.23: NON-INDIGENOUS CULTURAL HERITAGE SUMMARY SIGNIFICANCE AND IMPACT ASSESSMENT

Site ID	Description	Cultural heritage significance	Significance of impact before mitigation	Significance of impact after mitigation
C2K-19-H1	Brooklands Homestead	Local	Slight	Neutral
C2K-19-H2	Kagaru Station	Local	Slight	Slight
C2K-19-H3	Kenny's Hut	Local	Low	Slight
C2K-19-H4	Hut and yards	Local	Large	Slight
C2K-19-H5	O'Neill's Hut	Local	Large	Slight
C2K-19-H6	Creamery and dairy	Local	Large	Slight
C2K-19-H7	Washpool	None	Neutral	Neutral
C2K-19-H8	Yards and shed	None	Neutral	Neutral
C2K-19-H9	House	Local	Slight-Neutral	Neutral
C2K-19-H10	House	Local	Slight-Neutral	Neutral
C2K-19-H11	Multiple structures	None	Neutral	Neutral
C2K-19-H12	Dairy and creamery	Local	Large	Slight
C2K-19-H13	Homestead complex	Local	Large	Slight