chapter 13

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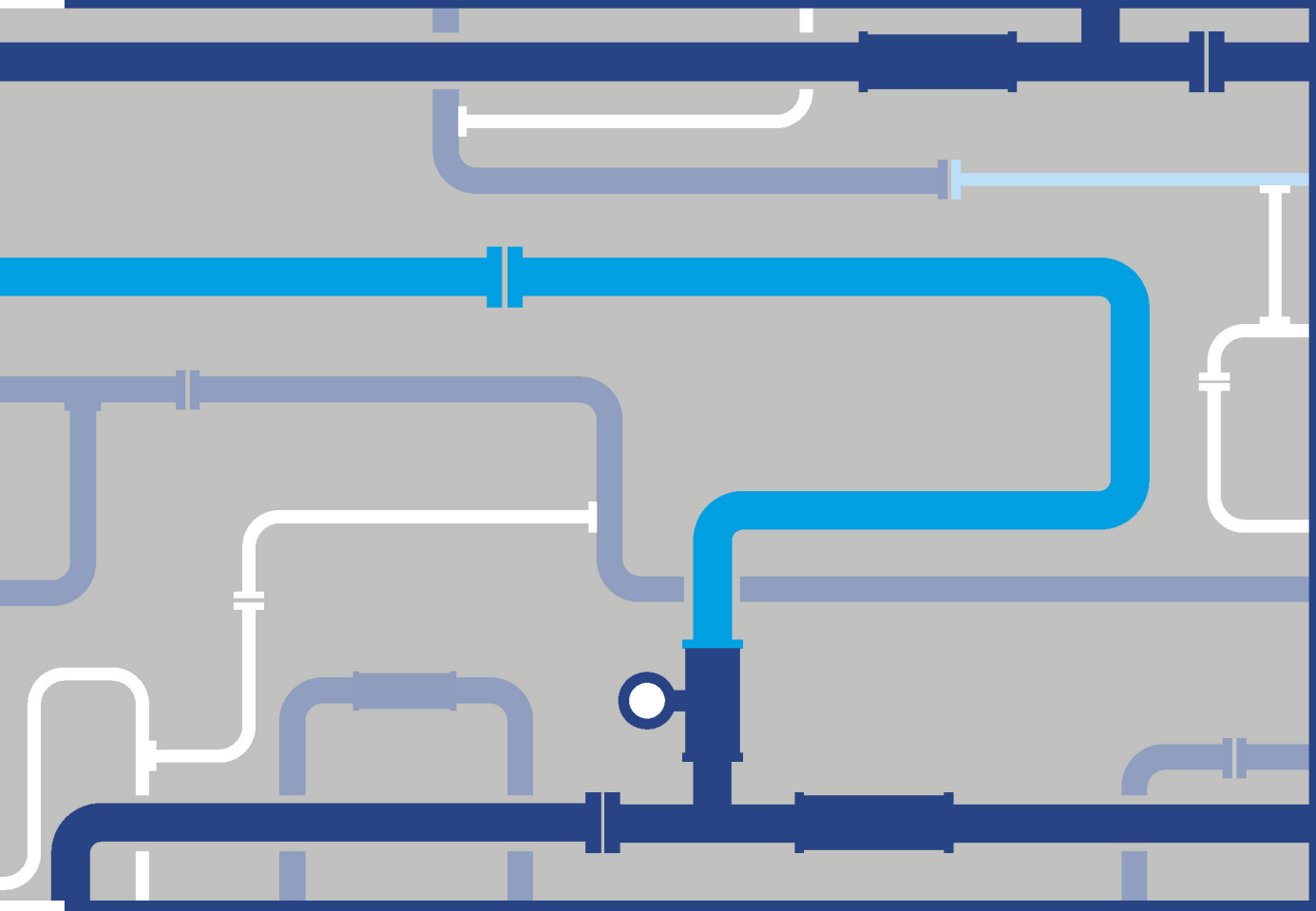

Environment Effects Statement | May 2021

western outer ring main

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13.1 Introduction

This chapter provides an assessment of the cultural heritage impacts associated with the construction and operation of the Western Outer Ring Main (WORM) gas pipeline project (the Project).
This chapter is based on the impact assessment presented in Technical report I *Cultural heritage.*
The term cultural heritage addresses both Aboriginal and historic (non-Aboriginal) heritage.

The cultural heritage assessment describes potential Aboriginal and historic heritage impacts resulting from the Project. Aboriginal and historic heritage assessments identify and investigate the significance of Aboriginal and/or historic places within the construction corridor and help preserve links to the past land use of Victoria.

The *Aboriginal Heritage Act 2006* seeks to provide protection for Aboriginal cultural heritage in Victoria. Understanding the Aboriginal cultural heritage and historical heritage sites within or near the Project allows for risk and potential impact from the Project to be identified and appropriate avoidance or mitigation measures incorporated within the Project.

The EES scoping requirements set out the following evaluation objective:

- *Avoid, or minimise where avoidance is not possible, adverse effects on Aboriginal and historic cultural heritage values*

To assess the potential impact on cultural heritage as a result of the Project, a cultural heritage assessment was undertaken. The study area was assessed in terms of landform and geomorphology, land use, previous investigations and Aboriginal places and historic heritage sites to gain an understanding of the conditions in the construction corridor. Potential impacts of Project activities were identified, potential cultural heritage values were assessed, and measures identified to avoid or minimise impacts.

Historic heritage assessments are based on a site's land use and associations to understand the significance of the site.

Aboriginal cultural heritage assessments are undertaken in conjunction with the Registered Aboriginal Parties (RAP) and Traditional Owners of the land. Cultural Heritage Management Plan (CHMP) assessments are primarily undertaken through the CHMP. The CHMP allows for Aboriginal groups with connections to country to be involved in decision making processes around Aboriginal heritage.

A CHMP is required when a project requires an EES.
Two CHMPs are in preparation separately to the EES for this Project and have informed the Aboriginal cultural heritage assessment for the EES. CHMP 16593 covers the area between for KP 8.29 – KP 51.04 and is being undertaken with the Registered Aboriginal Party Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWCHAC).
CHMP 16594 covers KP 0 – KP 8.29 and is being undertaken in consultation with Aboriginal Victoria (AV) and the Traditional Owners. Substantial work has been completed on the investigations and assessment for these two CHMP.

What is a Cultural Heritage Management Plan?

A CHMP is a three-tiered framework for the assessment of Aboriginal cultural heritage.

A CHMP describes the existing environment and identifies existing or potential Aboriginal places.

Once the identification process has occurred, the nature and significance of the identified Aboriginal places and how proposed works may avoid or minimise impacts can be determined.

Finally, management conditions and mitigation measures are established to guide the proposed works and must be followed.

A CHMP cannot be approved until after the completion of the EES process.

Other aspects closely related to the cultural heritage evaluation objective include ground movement and land stability, noise and vibration, landscape and visual, biodiversity and habitats. These are addressed in the following reports:

- Technical report A and Chapter 7 *Biodiversity and habitats*
- Technical report D and Chapter 9 *Land stability and ground movement*
- Technical report F and Chapter 12 *Noise and vibration*
- Technical report J and Chapter 14 *Landscape and visual.*

13.2 Method

The cultural heritage impact assessment comprised the following key tasks:

- Review relevant legislation and policy at a national, state and local level.
- Establish a study area for cultural heritage, defined as the Project construction corridor (which encompasses the operation easement) and a 500 metre buffer. Determine the buffer to include potential Aboriginal places, historic sites or potential cultural heritage values that could be within the construction corridor. The study area is shown in Figure 13-1.
- Desktop assessment and baseline data review to characterise existing conditions relating to landform and geomorphology, land use, Aboriginal places and historic heritage sites.
- Review all previous investigations that were in or in proximity to the construction corridor.
- Site survey to assess all previously recorded Aboriginal places, attempt to locate any unidentified surface Aboriginal cultural heritage located within the study area during the preparation of CHMPs 16593 and 16594 and consider historic heritage values.
- Consultation with AV and the Traditional Owner groups, Bunurong Land Council Aboriginal Corporation (BLCAC), Boon Wurrung Land and Sea Aboriginal Corporation (BLaSC) and WWCHAC for CHMP 16594. Consultation with WWCHAC is ongoing for CHMP 16593. Consultation with AV, Heritage Victoria (HV), WWCHAC and councils for the EES report and chapter through the Technical Reference Group established for the EES. Community information session with a focus on cultural heritage to ascertain potential community interests.
- Risk-based review of potential impacts to prioritise the focus of the impact assessment. The risk assessment methodology included analysing the consequence and likelihood of the identified risk based on a consequence guide and a likelihood guide. The Aboriginal and historic heritage consequence criteria include minor consequence where there is an impact on local significance or lower value place due to poor condition, moderate consequence where there is loss of a common occurrence or locally significant place, or major consequence where there would be loss of a rare place or substantial reduction in heritage values. The risk assessment confirmed that no operation phase activities were relevant for detailed assessment.
- Assess impacts focusing on those key risks identified and/or where additional management/mitigation measures to treat risks could be considered.
- Assess potential cultural heritage impacts during Project construction undertaken by assessing the construction phase activities in the context of the results of the research of historic heritage values (desktop) and Aboriginal cultural heritage (research and findings from CHMPs 16593 and 16594). The impact of clearing the construction corridor and open trench construction would involve removal of Aboriginal cultural heritage deposits within the construction corridor and the impact on historical and research significance of Aboriginal places was assessed based on the nature of the known places and impact of Project activities to them.

- Identify intangible (non-material) heritage values through consultation with Aboriginal stakeholders and historical research recorded as part of the CHMP process, undertake ongoing Cultural Values Recording with WWCHAC to assess and protect intangible cultural heritage values of the Project Area during construction and document Indigenous cultural values within the Project Area.
- Ascertain cultural heritage values by a process of identifying values, eliciting their importance and consolidating information into a statement of significance. Determining cultural heritage values requires a collaborative approach with key knowledge holders and requires flexible tools to collect and elicit information. Indigenous people are primary knowledge holders of Aboriginal cultural values and it is critical that they are involved in all processes of a cultural values assessment.
- Undertake desktop components of CHMP 16593 and 16594 and characterise the existing conditions. Ongoing pedestrian survey and excavation component of the fieldwork associated with the preparation of CHMP 16593. The process of cultural values assessment including identifying the nature and extent of Aboriginal places and residual impacts have not yet been confirmed with WWCHAC and AV. The impact assessment and mitigation measures to Aboriginal places are under ongoing assessment with WWCHAC and AV and will be confirmed in the final CHMPs 16593 and 16594 which will be approved by WWCHAC and AV after the EES process.
- Develop environmental management measures (EMMs) in response to the impact assessment. Refer to Section 13.8.1 and Chapter 19 *Environmental management framework* and Technical report I *Cultural heritage* for the full list of environmental management measures.
- Ascertain residual impacts assuming implementation of the environmental management measures, based on known residual impacts and in-progress assessment of impacts and mitigation strategies in the CHMPs.
- Consider the monitoring required to evaluate whether the Project meets the environmental management measures and detailing contingency measures as required.

13.3 Existing conditions

The following section outlines the existing conditions of the Project study area in relation to cultural heritage.

The existing cultural heritage conditions were assessed in terms of landform and geomorphology, land use, Aboriginal places and historic heritage sites.

13.3.1 Landforms and geomorphology

Predicting the potential for Aboriginal places to be located within the construction corridor is informed by landforms and geomorphology units (GMU). Archaeologically sensitive landforms include waterways, natural tributaries and drainage lines, stony rises, hills, escarpments and slopes.

The landform within the construction corridor is generally characterised by a flat and undulating plain, with small stony rises and waterways including the Merri Creek, Jacksons Creek, Deep Creek and Kalkallo Creek.

What is a geomorphological unit?

Geomorphological units are the classification of landforms and the environmental processes that have shaped landscapes.

Environmental processes may include climate changes, tectonic shifts, volcanic eruptions, erosion, geology and soil profiles.

In Victoria, geomorphological units are classified under the three-tiered Victorian Geomorphological Framework (VGF) system.

The Project transects multiple creeks and tributaries that have the potential to contain Aboriginal cultural heritage material. According to ethnographic accounts, Aboriginal places are often located along permanent waterways and stony rises with regular camp sites, meeting places and ceremonial places established along creeks and tributaries throughout the region. Land adjacent to creeks and tributaries have been shown to yield Aboriginal archaeological places such as stone artefact scatters and scarred trees.

The landforms (GMUs) listed in Table 13-1 are present within the construction corridor.

Table 13-1 Third tier GMU descriptions in the Project Area

GMU	Brief description	Location	Cultural heritage potential
6.1.2 Stony rises	Soils are characterised by volcanic clay soils.	Encompasses majority of the study area (KP 3–KP 16; KP 18–KP 30; KP 34–KP 51). Accounts for 82.99% of construction corridor.	Stony rises would have provided a dry vantage point to observe long distances over the lower lying plains that would likely have been swamps or wetlands at the time of occupation, while the trees that grow on them would have provided shelter from the wind of the plains. The landscape is likely to have potential for unidentified Aboriginal cultural heritage.
2.1.1 Ridges, escarpments, mountains on non-granitic Palaeozoic rocks	Typically comprise strike ridges and valleys, complexes of hills and low hills, intermixed with surrounding rises and plains.	Encompasses a small section of northern extent of study area between KP 30 and KP 34, near Kalkallo Creek. Accounts for 8.45% of construction corridor.	Areas close to and associated with waterways/waterbodies or areas that provide good aspect across the landscape have potential for unidentified Aboriginal cultural heritage.
6.1.3 Plains with poorly developed drainage and shallow regolith	Characterised by thin regolith (weathered material between the soil and hard rock).	Encompasses the south-western extent of the study area, between KP 0 and KP 3, near Plumpton and Fraser Rise. Accounts for 5.79% of construction corridor.	Areas close to and associated with waterways/waterbodies or areas that provide good aspect across the landscape have potential for unidentified Aboriginal cultural heritage.
6.2.2 Dissected plains	Associated soil types include acidic mottled texture contrast soil (Kurosols), acidic gradational soils (Dermosols), some sandy, some with high organic matter content (Podosols).	Encompasses small section where the construction corridor crosses Deep Creek, between KP 16 and KP 18. Accounts for 2.78% of construction corridor.	Areas close to and associated with waterways/waterbodies such as Deep Creek have potential for unidentified Aboriginal cultural heritage.

13.3.2 Land use

The rapid spread of European colonisation altered Victorian Aboriginal society, with the increased presence of settlers resulting in dispossession of Aboriginal people from their traditional land and diminished access to resources. These factors, combined with population decline from introduced diseases and conflict, transformed Aboriginal society.

For about a decade, early squatters lived among the Aboriginal people, sometimes engaging them to help run the herds, but by the 1850s, the increasing white population and more stringent enforcement of British law meant Aboriginal people were rarely seen in the district. The locations chosen for the homesteads were often those that had previously been important camp sites of Aboriginal people.

From the 1840s and 1850s, the construction corridor was predominantly used for larger sheep and cattle runs until the 1880s when the land was subdivided into smaller runs and dry stone walls were constructed from the rocky outcrops.

During the 1880s, the geographic region was central to a land boom with syndicates purchasing large estates within the region. As much of the study area had limited tree cover, timber was scarce but the rocky ground provided stone for constructing dry stone walls, which are an extensive feature of the study area. Between 1880 and 1945 there was an increase in dairying in the region.

The study area is still predominately used for agricultural purposes. The study area also crosses, or runs adjacent to, a number of transport links including two major roadways (the Calder Freeway and the Hume Highway) and follows the alignment of Gunns Gully Road and Parkland Crescent.

The development of roads and infrastructure as well as the ‘de-rocking’ and extensive past agricultural, pastoral activities and settlement have likely altered the archaeological record. However, the likelihood for archaeology still remains despite previous land use history.

KP 0 – KP 10

This portion of the construction corridor is located within the western extent around the regions of Fraser Rise, Plumpton and Diggers Rest, with the construction corridor largely continuing to be used as small pastoral estates. The Project primarily transverses through W. J. T. Clarke's 'Deanside' run. Clarke was the first European to take up a large portion of this section in the 1850s.

Previously, a subsurface gas transmission line and associated above ground infrastructure was installed between KP 0 and KP 9. Cultural heritage was assessed and disturbance approved as part of construction of the existing pipeline and infrastructure, affecting the potential likelihood of Aboriginal or historic cultural heritage material in this area.

KP 10 – KP 20

This portion of the construction corridor is located in the region of Sunbury, Bulla and Oaklands Junction. The first Europeans to enter the region included Flemings and Grimes in 1802–3, John Batman in 1823 and Hume and Howell in 1824. European settlement within the area began in 1836, when a number of pastoral runs were established across the construction corridor. Since 1910, the region has had associations with Bulla Cream Corporation.

KP 20 – KP 30

This portion of the construction corridor is located in the region of Mickleham and was developed by European settlers into pastoral runs owned by James Pearson. This portion of the construction corridor continues to be used for agriculture.

KP 30 – KP 40

This portion of the construction corridor is located in the region of Kalkallo and was initially used for agricultural. The region has a strong history of being a major arterial route, particularly following the discovery of gold when it became an important travel route to the goldfields. The region continues to be a major thoroughfare, with the township of Kalkallo being altered for the expansion of the Hume Highway in the 1930s.

KP 40 – KP 51

This portion of the construction corridor is located in the region of Donnybrook, Woodstock and Wollert. Following European settlement, the majority of the study area was initially owned by John Hunter Patterson. The construction corridor was comprised of smaller pastoral properties and infrastructure associated with the town of Donnybrook. This region continues to be a rural setting but is within an approved Precinct Structure Plan area. A pipeline corridor exists within a portion of the construction corridor within this region, which was constructed in 1975 and is owned by APA.

13.3.3 Aboriginal places

A search of the Victorian Aboriginal Heritage Register (VAHR) identified 109 previously registered Aboriginal Places within the study area, including 13 places within the construction corridor, two of which were registered during the preparation of CHMP 16594 (fieldwork and registration completed for this CHMP). These VAHR places are listed in Table 13-3. The landforms within which these Aboriginal places are located are described in Section 13.3.1.

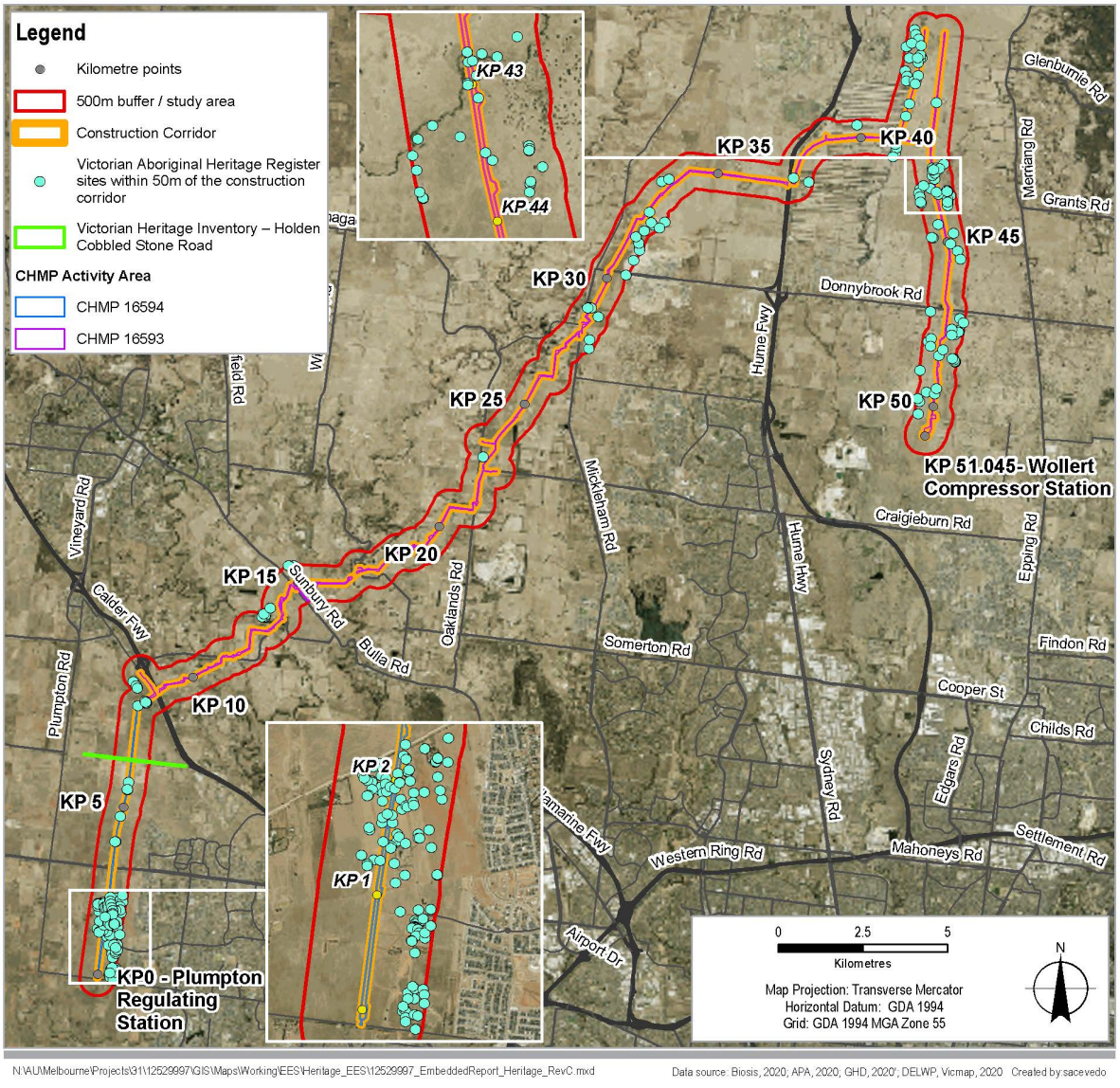
Areas of cultural heritage sensitivity are defined in the *Aboriginal Heritage Regulations 2018* and relate to landforms and soil types where Aboriginal places are more likely to be located and include land within 50 metres of registered Aboriginal places. Twenty-four Aboriginal cultural heritage sensitivity buffer zones associated with registered Aboriginal places transect the construction corridor.

Existing registered Aboriginal places within 50 metres of the construction corridor are identified in Figure 13-1.

Fieldwork and analysis is well-progressed but has not yet been completed for CHMP 16593 (delays in 2020 due to Covid-19 restrictions). Additional Aboriginal places within the area covered by CHMP 16593 will be finalised through the ongoing CHMP process and it is predicted to lead to the formal registration of a number of additional Aboriginal places. In addition, the extent of places within 50 metres of the construction corridor is subject to analysis through CHMP 16593. This assessment is focused on existing registered places and knowledge from the in-progress CHMP 16593.

While at the time of writing, no intangible heritage relating to the Project Area has been identified, consultation with the RAP is ongoing.

Figure 13-1 Cultural heritage places and sites



13.3.4 Historic heritage sites

A total of 27 historic heritage places were identified within the study area, though only one place, the Victorian Heritage Inventory (VHI) site Holden Cobbled Stone Road (VHI H7822-2283), is located within the construction corridor. Holden Cobbled Stone Road comprises an early roadway, with remnant stone road foundation including large bluestone cobbles. The stone road foundation is visible to the east of Plumpton Road. The road is significant for representing the development of road making technology and early transport routes from the early 20th century. Figure 13-1 identifies Holden Cobbled Stone Road crossing the construction corridor between KP 6 and KP 7. Figure 13-2 provides a view from a site inspection undertaken in December 2020, at which it found that large amounts of road foundations were exposed, resulting from gravel spread eroding over the top of the road foundations.

Figure 13-2 View of section of Holden Cobbled Stone Road

Source: Technical Report I Cultural heritage, *(L. Tepper, 17/12/20)*

During fieldwork associated with CHMPs 16593 and 16594, the construction corridor was assessed for areas of potential historic heritage. No potentially new historic heritage places or values were documented during the survey. While broader field surveys of the historic places in proximity to the construction corridor were not completed in the reporting period, based on field survey completed and knowledge of the broader area, there is unlikely to be any unknown historic heritage places or values in the vicinity of the construction corridor.

A dry stone wall listed as part of HO55 (Melton Planning Scheme) is located approximately 32 metres from the construction corridor, near KP 3. The dry stone wall associated with HO55 was inspected on 17 December 2020. The section of dry stone wall within the Heritage Overlay area was several courses high with posts and barbed wire and found to be in good condition. Sections of wall outside the Heritage Overlay area were found to be located within the construction corridor. These sections of wall were in poor condition, being highly fragmented sections of only one to two courses, with entire sections removed for access.

A total of four historic sites are located within 100 metres of the construction corridor (two sites) or the existing access tracks which will be used in the north of the Project (two sites):

- House (H055) is an architecturally and historically significant example of an unassuming Victorian-style house with some of the remaining farm complex including dry stone wall described above

- Warlaby (HO273) is a historically, socially and architecturally significant representation of early farming industry in the area located approximately 89 metres away from KP 21
- Beveridge Gangers House Ruins and Brick Scatter (H7823-0052) is located approximately 75 metres from the access track extending from KP 41
- Former Beveridge Station Complex (H7823-0054) is located approximately 20 metres from the access track extending from KP 41.

13.4 Risk assessment

The risk assessment identified the risks associated with cultural heritage as a result of the Project's construction and operation in accordance with the method described in Chapter 5 *Evaluation and assessment framework*. A summary of the risk assessment and ratings is provided in Table 13-2.

The risk assessment identified seven risks to heritage associated with the construction of the Project. These risks are related to known Aboriginal places and historic heritage places within the construction corridor and potential places or values.

The risk assessment did not identify any risks to heritage associated with the operation of the Project.

The risk ratings in Table 13-2 considered an initial set of mitigation measures (where relevant), which are based on compliance with legislation and approval requirements that are typically incorporated into the delivery of similar projects. Risk ratings were applied to each of the identified risk pathways assuming that these mitigation measures were in place.

The higher risk ratings were a focus of the impact assessment.

Additional mitigation measures have not been identified. This is due to the initial mitigation measures identifying all relevant measures, and WWCHAC and AV being the appropriate decision-makers in relation to the protection and mitigation of Aboriginal cultural heritage as part of the CHMP process.

Mitigation measures and management conditions associated with Aboriginal cultural heritage are specified within CHMPs 16593 and 16594 currently being prepared for the Project. These measures and management conditions are agreed during consultation with the RAP WWCHAC (CHMP 16593) and AV with Traditional Owner groups BLCAC, BLaSC and WWCHAC considerations (CHMP 16594).

Management conditions become legal requirements following the approval of the CHMPs, and must be implemented before, during and after construction. Mitigation measures are likely to include surface collection of artefacts, subsurface salvage, inductions for construction staff and compliance checks. Mitigation and contingency measures are also contained within the CHMPs which aims to protect unidentified Aboriginal cultural heritage found during the Project.

Historic heritage places have mitigation measures and management conditions specified within Consent applications to HV and within the Construction Environment Management Plan (CEMP) being prepared for the Project. It is noted that the CHMPs and Consent process is ongoing, therefore the mitigation measures and management conditions are subject to change during the assessment by AV and/or the RAP and HV.

While specifics are yet to be confirmed, the general measures are standard and anticipated mitigation measures which were applied in undertaking the risk assessment.

Risk ID CH1 identifies that impacts on registered Aboriginal places and the associated loss of heritage values will occur during construction of the pipeline. CH1 is assigned a high risk rating as works associated with the Project will destroy or remove known Aboriginal places from the original context. This risk retains a high residual risk following mitigation measures, due to the unavoidable removal of Aboriginal places from their original context. Management conditions such as salvage and inductions will occur before and during construction of the Project.

Risk ID CH2 relates to the impacts on potentially unidentified Aboriginal places and the associated loss of heritage values that may occur during construction of the pipeline. CH2 has been assigned a 'Medium' risk rating as the works associated with the Project may destroy or impact Aboriginal places which have not been identified during the CHMP. Aboriginal cultural heritage material identified during construction is often referred to as an unexpected find. Unexpected finds have contingency procedures outlined in the CHMPs and CEMPs that must be followed, including liaison with the RAP or other agencies as appropriate, and procedures for salvage.

What is a salvage?

A salvage is a management measure to recover the physical remains of an Aboriginal place and to record Aboriginal cultural heritage material before it is destroyed.

Following salvage, the significance of the place is not reduced and the place and buffer zone is still included within the VAHR.

The salvage implementation and methodology are part of the CHMP and must be undertaken according to the conditions agreed upon with the RAP or AV.

This risk retains a medium residual risk following the mitigation measures based on existing known heritage (registered sites), Aboriginal cultural heritage material found during CHMP investigations, the extent of the construction corridor already investigated and the potential for further Aboriginal cultural heritage material to be located during construction works and/or Aboriginal places being removed from their original context.

Risk ID CH3 is associated with the impact to intangible cultural heritage values and the associated loss of the heritage values that may occur during construction of the pipeline. CH3 is assigned a high risk rating as works associated with the Project will have a significant impact on the landscape, particularly in areas which have previously been undisturbed. Consultation is ongoing with WWCHAC, AV and Traditional Owners to identify potential intangible cultural heritage values, though none were identified at the time of writing, and produce a Cultural Values Recording with WWCHAC. There is still potential for intangible cultural heritage values to be present across the study area and due to the potential significance of any identified values, there is a high residual risk. However the risk rating may change following the outcome of the Cultural Values Recording.

Risk ID CH4 recognises the potential impacts on archaeologically sensitive landforms, including land close to waterways and stony rises. These are landforms with the potential to contain Aboriginal cultural heritage material. CH4 is assigned a low risk rating. During preparation of the two CHMPs, subsurface testing was undertaken across these landforms to understand and resolve their archaeological potential. Following subsurface testing, the risk retains a low residual risk due to the sensitive landforms being targeted for testing. Should an unknown historic heritage site, value or object be discovered during construction, the unexpected finds procedure, outlined in the CEMP, will be followed.

Risk ID CH5 relates to the potential impact to the listed VHI historic heritage site, Holden Cobbled Stone Road (VHI-H7822-2283). CH5 is assigned a low risk rating. A Consent application is required for works that occur to the listed site or within the site's curtilage. A primary mitigation measure is the design in this location to bore under the road from the private properties on either side of the road and not disturb the surface of the road. Other standard mitigation measures such as temporary fencing around the heritage site would be set out in the Consent application and documented within the CEMP. Following these measures, CH5 retains a low residual risk due to minor potential that works may impact the site.

Risk ID CH6 is associated with the potential impact on sites within Heritage Overlays under the relevant Planning Scheme. CH6 is assigned a low risk rating, as there are no Heritage Overlays that intersect the construction corridor. Mitigation measures include temporary fencing be included in the CEMP. CH 6 retains a low residual risk due to the minor potential that the Project would impact the site outside the construction corridor.

Risk ID CH7 assesses the potential for unlisted historic heritage sites to be impacted directly or indirectly during the Project. CH7 is assigned a low risk rating as the majority of the Project Area has been previously used for agricultural purposes and not been subject to historic development. Mitigation measures are in the CEMP in the event that previously unknown historic heritage sites, values or objects are identified during construction. CH7 retains a low residual risk due to knowledge of historic heritage in the area, no potentially new historic heritage sites identified during survey of the construction corridor as part of the two CHMPs, and an assessment that there is only minor potential that the Project would impact previously unknown heritage sites.

Table 13-2 Risk assessment summary

Risk ID	Works area	Risk pathway	Initial mitigation measures	Initial risk rating	Additional mitigation measures	Residual risk rating
Construction						
CH1	All	**Registered Aboriginal places** The construction activities may impact registered Aboriginal places resulting in the loss of heritage values.	CHMPs 16593 and 16594 detail the specific management and mitigation measures (EMM CH1).	High	No additional measure identified	High
CH2	All	**Unidentified Aboriginal places** The construction activities may impact unidentified Aboriginal places resulting in the loss of heritage values.	CHMPs 16593 and 16594 detail the specific requirements associated with unexpected finds (EMM CH1).	Medium	No additional measure identified	Medium
CH3	All	**Intangible cultural heritage values** The construction activities may impact on intangible cultural heritage values resulting in the loss of heritage values.	CHMPs 16593 and 16594 detail the specific management and mitigation measures to alleviate the loss of intangible cultural heritage (EMM CH1).	High	No additional measure identified	High
CH4	All	**Archaeologically sensitive landforms** The construction activities may impact archaeologically sensitive landforms.	CHMPs 16593 and 16594 identify archaeologically sensitive landforms. The CHMPs include subsurface testing of the sensitive landforms located within the construction corridor (EMM CH2).	Low	No additional measure identified	Low

Risk ID	Works area	Risk pathway	Initial mitigation measures	Initial risk rating	Additional mitigation measures	Residual risk rating
CH5	All	**Listed historic heritage sites – Holden Cobbled Stone Road (VHI H7822-2283)** The construction activities may impact listed historic heritage sites.	Consent from Heritage Victoria is required in advance of any works which have the potential to impact listed heritage places. A CEMP is also required to document management measures, including temporary fencing of the site during works.	Low	No additional measure identified	Low
CH6	All	**Listed historic heritage sites – Heritage Overlay** The construction activities may impact listed historic heritage sites which have heritage overlays.	A CEMP is required to document management measures including temporary fencing of the site during works (EMM CH3).	Low	No additional measure identified	Low
CH7	All	**Unlisted historic heritage sites** The construction activities may impact unlisted historic heritage sites.	The CEMP will outline the unexpected finds procedure required to be followed in the event that previously unknown historic heritage sites, values or objects are identified during construction (EMM CH4).	Low	No additional measure identified	Low

13.5 Construction impact assessment

Following the risk assessment which identified the issues for assessment, the construction impact assessment focused on construction risks with a higher rating and/or where additional management/mitigation measures to treat risks could be considered. This section presents a discussion of the construction impacts associated with the Project in relation to cultural heritage and are grouped according to Aboriginal cultural heritage values and historic heritage values.

13.5.1 Aboriginal cultural heritage

Previously registered Aboriginal places are identified within or near the construction corridor (Risk ID CH1). Thirteen places are located within the construction corridor and 24 are located within 50 metres of the construction corridor. The impact to these places has yet to be finalised as CHMPs 16593 and 16594 are still ongoing, however, it is predicted that impacts would occur to the places within the construction corridor. Any impacts to registered Aboriginal cultural heritage must be undertaken in accordance with the management conditions of CHMPs 16593 and 16594.

The places within the construction corridor are low density artefact distributions or artefact scatters with a significance from extremely low to high, as outlined in Table 13-3. Some places have previously been removed or salvaged.

The works would involve the removal and grading of 50–100 millimetres of topsoil, which would impact Aboriginal cultural heritage material. All registered Aboriginal places within the construction corridor would be impacted. The places located at the access tracks are located in ground previously disturbed when the existing tracks were developed. No new ground disturbing works are proposed as part of this Project for use of the access tracks. These places are therefore not expected to be impacted, but this will be confirmed through CHMP 16593, along with any relevant management measures.

The CHMP process aims to mitigate impacts by determining the extent, nature and significance of any Aboriginal places within a study area and how the Project can be undertaken in a way that avoids, minimises and mitigates harm. Once Aboriginal cultural heritage material is identified, further management and mitigation measures, such as archaeological salvage, are undertaken prior to construction works. These mitigation measures and management conditions are agreed upon in consultation with WWCHAC (CHMP 16593) and AV with Traditional Owner input (CHMP 16594), and become a legal requirement once the CHMP is approved.

The assessment for CHMP 16593 is ongoing, and the testing and assessment of impacts on Aboriginal places and confirmation of mitigation and management measures is not yet finalised. Following the fieldwork component, any Aboriginal cultural heritage material identified will be registered as either a new Aboriginal place or added as a component of an existing Aboriginal place. Once the place is registered and its significance determined, the impacts of the Project on the places is assessed through the CHMP and management conditions will be developed with WWCHAC.

Indirect effects on Aboriginal cultural heritage values have been considered, and no indirect effects have been identified. Indirect effects are impacts from vibration and ground movement, as well as impacts to visual values. Vibration and ground movement are not expected to affect any Aboriginal places within the construction corridor beyond the natural movement of artefacts, as it is the nature of artefacts on the volcanic plain to move both vertically and horizontally due to natural depositional processes. As the pipe is subsurface and the ground reinstated as part of the construction phase, there is also no visual impact of relevance to heritage values.

The process for the two CHMPs, including extensive field testing, means that unidentified Aboriginal places have a lower likelihood of occurring. However, there remains the potential for loss of heritage values as a result of disturbing a previously unidentified Aboriginal place (Risk ID CH2). It is standard practice for CHMPs to contain extensive contingency procedures in the case of unexpected finds during construction including liaison with the RAP or other agencies as appropriate, and procedures for salvage.

During the preparation of the two CHMPs, archeologically sensitive landforms (Risk ID CH4) such as waterways and stony rises which have the potential to contain Aboriginal cultural heritage material have been identified, assessed and tested. Identifying and investigating archaeological potential and sensitive landforms is a key focus for targeted assessment of the CHMP. Investigation and subsurface testing has been undertaken across these landforms in consultation with Traditional Owners. The potential impact is therefore low, but CHMP conditions will provide contingency measures should an unknown value be discovered during construction.

Consultation is ongoing with the WWCHAC, AV and Traditional Owners to identify potential intangible cultural heritage values associated with the area. Cultural Values Recording is underway with WWCHAC and will document Indigenous cultural values. While no intangible heritage has been identified to date and no impacts recorded (Risk ID CH3), consultation is ongoing.

Table 13-3 Registered Aboriginal places within construction corridor, impacts and mitigation

Aboriginal place	Description	Scientific significance rating of place (based on original recording)	Nearest KP	Landform	Assumed construction impact	EMM/mitigation	Significance of residual impact
235 Beattys Road, Plumpton LDAD 1 VAHR 7822-4185 -4, -5, -7, -9, -13, -14, -15, -18, -19, -20	Low density artefact distribution Surface salvage program was undertaken (7822-4185-5, -9 and -13) as per CHMP 15341 and artefacts removed	Low	KP 1, 2	Lowland plains	Disturbance of places resulting in loss of heritage values would occur as a result of earthworks during construction.	EMM CH1 CHMP 16594 - no specific mitigation measures	Minor
Rutland Square LDAD 1 VAHR 7822-4440 Registered through CHMP 16594	Low density artefact distribution	Low	KP 4, 5, 6	Stony rise crests and low rises	Disturbance of places resulting in loss of heritage values would occur as a result of earthworks during construction.	EMM CH1 CHMP 16594 – a surface salvage program must be undertaken prior to works commencing	Minor
Rutland Square Artefact Scatter VAHR 7822-4439 Registered through CHMP 16594	Artefact scatter	Moderate	KP 8	Stony rise crest	Disturbance of places resulting in loss of heritage values would occur as a result of earthworks during construction.	EMM CH1 CHMP 16594 – subsurface salvage required	Moderate
Tamboore 20 VAHR 7822-3408	Artefact scatter Mechanical salvage program undertaken as per CHMP 11705 and surface/subsurface salvage program undertaken as per CHMP 14627	Moderate	KP 29	Crest of moderate volcanic rise	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Moderate

Aboriginal place	Description	Scientific significance rating of place (based on original recording)	Nearest KP	Landform	Assumed construction impact	EMM/mitigation	Significance of residual impact
Tamboore 1 7822-3406	Artefact scatter A surface salvage was required as part of the condition of CHMP 11705, it is unclear if this has been completed	Low	KP 31	Dam wall	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Minor
Melbourne Sydney Passing Lane 2–3 VAHR 7823-0189	Artefact scatter	Low-moderate	Access track to be used near KP 41	Stony rise	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Moderate
Wollert Low Density Artefact Distribution VAHR 7823-0305	Low density artefact distribution	Extremely low	KP 42	Volcanic plain	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Minor
Wollert Low Density Artefact Distribution VAHR 7822-3647	Low density artefact distribution A mechanical salvage program was undertaken as per CHMP 12259	Extremely low	KP 43, 48, 49	Volcanic plain	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Moderate
Wollert Stone Artefact Scatter 1 VAHR 7822-3654	Artefact scatter A mechanical salvage program was undertaken as per CHMP 12259	Extremely low	KP 43	Slight rise in floodplain on volcanic plain	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Moderate

Aboriginal place	Description	Scientific significance rating of place (based on original recording)	Nearest KP	Landform	Assumed construction impact	EMM/mitigation	Significance of residual impact
Wollert LDAD VAHR 7822-3659	Low density artefact distribution A mechanical salvage program was undertaken as per CHMP 12259 A salvage program was undertaken as per CHMP 12653	Extremely low	KP 42	Slight rise in floodplain on volcanic plain	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Moderate
Donnybrook Road Aboriginal Place 2 VAHR 7822-3650	Artefact scatter	Moderate	KP 43	Stony rise	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Moderate
Donnybrook Road Aboriginal Place 4 VAHR 7822-3760	Artefact scatter	High	KP 43	Stony rise	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Major
Summerhill Road Low Density Artefact Distribution VAHR 7822-3842	Low density artefact distribution	N/A	KP 49	Removed from find location before recording	Consultation, assessment of extent and mitigation for CHMP 16593 is ongoing, so impacts to the place are subject to change. It is predicted that construction would partially or fully destroy the place due to earthworks.	EMM CH1 CHMP 16593	Minor

13.5.2 Historic heritage

Holden Cobbled Stone Road (H7822-2283): the Victorian Heritage Inventory (VHI) site located within the construction corridor is not anticipated to be impacted by the construction of the Project (Risk ID CH5). The construction of the pipeline is proposed to be undertaken with a trenchless construction method (shallow horizontal boring), to be undertaken at depths that are not anticipated to impact the historic site. To avoid construction disturbance within sensitive areas, trenchless construction method will be undertaken in certain areas such as beneath the VHI site (H7822-2283).

Surface excavation would occur outside the extent of the VHI site. Boring under the road would minimise potential impact compared to open trench construction, both through avoiding direct physical impact on the VHI site and to minimise potential vibration impacts. The section of Holden Cobbled Stone Road that the pipeline crosses does not have remnant foundations nearby. In this location, boring at 2 metres below surface would be through stiff clay and has the least chance of collapse and vibration compared to drilling through the underlying basalt or gravel. After drilling, all space will be filled reducing the potential for movement. There will be 2 metre depth of cover in this location achieving approximately 1.6 metre minimum clearance from the typical depth of cobblestones for road construction from this period.

Additionally, blasting activities are not planned in this section of the pipeline so there is no risk of structural damage to the VHI site from vibration from blasting. As such, it is expected that no adverse effects to the VHI site would occur due to vibration.

While access from the mainline valve site to Holden Cobbled Stone Road will remain during operation, its use would not result in adverse impact on heritage values. Occasional vehicle traffic accessing the site would have no impact further to everyday vehicle use of Holden Cobbled Stone Road.

What is the Victorian Heritage Inventory?

The Victorian Heritage Inventory (VHI) is a list of all known historical (non-Aboriginal) archaeological or potential archaeological sites in Victoria as well as archaeological sites over 75 years old.

The places on this list and those which have yet to be identified are protected under the *Victorian Heritage Act 2017.*

It is noted that a Consent application under Section 124 of the *Heritage Act 2017* would be required before the Project commences. While standard mitigation measures would be included in the CEMP (such as fencing the site), additional measures may also be determined with Heritage Victoria as part of the Consent process (EMM CH3).

A dry stone wall was recorded within the construction corridor, west of HO55 and outside the Heritage Overlay area (Risk ID CH6). The dry stone wall within the construction corridor is not intact and is in poor condition, with some sections of the wall removed completely. Due to the condition of the wall in this location, there would be no adverse impact to the heritage value associated with HO55. As this wall is not deemed to be significant and is not within the Heritage Overlay area, no permit is required.

No other historic heritage sites or potential heritage values have been identified that would be impacted by construction (Risk ID CH7). All other historic heritage sites in the study area are clear of the construction corridor and would not be impacted. However, contingency measures would be included in the CEMP with unexpected finds procedures should unlisted heritage be discovered during construction (EMM CH4). In discussion with HV, Technical report I *Cultural heritage* addresses the requirement of an archaeological management plan. Any unexpected finds will be managed under the unexpected finds procedure.

13.5.3 Summary of residual impacts

Impacts on Aboriginal cultural heritage values will be managed through CHMP 16593 and 16594 for the Project. The CHMP assessments will provide management conditions for the Aboriginal places which will avoid, minimise and mitigate harm and allow disturbance to the physical remains of the Aboriginal places following the completion of testing and approval of CHMPs 16593 and 16594 (EMM CH2). With implementation of the CHMP management conditions (such as salvage and inductions) and contingency measures (such as fencing, notification of unexpected finds) during construction, direct impacts would be minimised (EMM CH1). No indirect impacts have been identified.

Residual impacts remain as there would be a loss of Aboriginal cultural heritage values as a result of the Project. The extent of impact is determined by the number and location of registered places in the construction corridor, with some of the 13 places fully destroyed, some partially destroyed, and some previously salvaged or removed. However, even with partial destruction, there is a loss of heritage values.

Of the 13 registered places within the construction corridor, one is of high significance and three are of moderate significance. The remaining nine are less than moderate significance or already removed. While mitigation measures will manage the impact to places, the residual impact on the Aboriginal cultural heritage values could be moderate to high for some of the places but will be confirmed with Traditional Owners through the CHMP assessment and mitigation measures. APA will continue to work with AV, WWCHAC RAP, and all Traditional Owners to assess the significance of the impacts and avoid and mitigate impacts as far as practicable (EMM CH1 and EMM CH2).

In addition to the 13 registered Aboriginal places within the construction corridor, there are 24 registered Aboriginal places within 50 metres of the construction corridor. Construction is not expected to impact these 24 registered Aboriginal places.

One VHI listed site is located within the construction corridor however avoidance of impacts on the heritage values is largely achieved by the HDD construction methodology preserving the heritage fabric. As the works intercept (under) the listed site, a Consent would be required and may determine additional mitigation measures to be applied (EMM CH3).

There would be no adverse impact to the heritage value of a dry stone wall associated with HO55 due to its condition within the construction corridor. No other historic heritage sites or potential heritage values have been identified that would be impacted by construction.

A total of 27 historical heritage places are located within the study area, and five sites, including one delisted historic site, located within 100 metres of the construction corridor. No direct or indirect residual impact to the heritage values of these places is predicted.

While no intangible heritage has been identified to date and no residual impacts recorded, APA is working with WWCHAC, AV and Traditional Owners to identify potential intangible cultural heritage values and document values.

The residual impact on unidentified Aboriginal cultural heritage values is medium due to the comprehensive testing and assessment through the CHMP process, the type and significance of places known to be in the area, and the contingency measures put in place through the CHMP should there be unexpected finds during construction (EMM CH1).

An unexpected finds procedure would also be part of the CEMP for the discovery of any unknown historic heritage site, value or object during construction (EMM CH4). The potential for unknown historic heritage values is very low based on the site survey, the narrow Project corridor, and assessment of historic heritage records.

13.6 Operation impact assessment

This section presents a discussion of the operational impacts associated with the Project in relation to Aboriginal places and historic heritage places.

Following the construction of the pipeline, a 15 metre corridor would be maintained by APA and the land would be returned to its pre-construction form. The maintenance and inspections of the pipeline infrastructure and Wollert Compressor Station would include vegetation management and routine maintenance.

For the 13 registered Aboriginal heritage places located within the construction corridor, the impacts would occur during construction disturbance, with no operation impacts identified. During the CHMP process and through consultation with AV and WWCHAC, any specific mitigation measures for the operation phase would be determined.

No operation impacts were identified to Holden Cobbled Stone Road (VHI H7822-2283), as the operation of the pipeline would not result in any Project related increase of traffic along the heritage site. Subsequently, no further impacts are expected when the pipeline is operational.

In summary, there are no anticipated operational residual impacts to Aboriginal cultural heritage values or historic heritage values.

13.7 Cumulative impact assessment

The cumulative impact assessment is based on the overall impact of the Project within the geographic region and its expected impact on Aboriginal cultural heritage and historic heritage places, in addition to impacts from other developments on Aboriginal cultural heritage and historic heritage within the region.

The cumulative impact assessment for the Project must rely on cultural heritage material that has been identified, recorded and preferably preserved in situ in order to determine a calculation of loss. Cumulative impacts on Aboriginal cultural heritage are assessed following the completion of subsurface testing and after the significance of new Aboriginal places is confirmed, which occurs during the CHMP process.

CHMPs 16593 and 16594 are currently in preparation, so cumulative impacts (particularly for CHMP 16593) will be confirmed through those assessments. Two Aboriginal places located within the construction corridor for CHMP 16594 would be destroyed during the construction of the Project. The destruction of these Aboriginal places would contribute to the count of destroyed places in the geographic region, although it should be noted that VAHR 7822-4440 was recorded in disturbed surface contexts and was not identified in situ. While cumulative impacts are still to be confirmed through the CHMP, this Project would have a cumulative impact to the archaeological record of the geographic region.

Four major projects within the region have been identified as potentially causing cumulative impacts with the Project. As outlined in Chapter 5 *Evaluation and assessment framework*, these projects are the Outer Metropolitan Ring/E6 transport corridor, Sunbury Road upgrade, Melbourne Water Bald Hill to Yan Yan pipeline, and AusNet Western Victoria Transmission Network project. These projects may result in the removal of Aboriginal cultural heritage and historic heritage during their associated works. All available knowledge in the vicinity of these projects has been taken into account in the assessment of the Project. Each new CHMP prepared for these future projects would include an assessment of cumulative impacts and successively consider the cumulative impacts based on knowledge developed through those assessments at the time when project activities are defined.

13.8 Environmental management

13.8.1 Environmental management measures

Table 13-4 lists the recommended environmental management measures (EMMs) relevant to cultural heritage. In developing the environmental management measures, the cultural heritage assessment adhered to the mitigation hierarchy that is, an obligation to first avoid, minimise and then restore any impacts on cultural heritage. Where avoidance could not be achieved, due to the nature of the Project, the existing conditions and/or the type of impacts, minimisation is the next level in the mitigation hierarchy proposed. Application of the mitigation hierarchy for each environmental management measure is identified in Table 13-4.

While the CHMPs and Heritage Act Consent will outline the detailed measures once those processes are complete, it is expected that standard measures would apply such as:

- Site induction
- Cultural heritage awareness training
- Pegging, fencing, or marking in other ways where works are restricted to protect places or sites
- Salvage of some registered places (refer Table 13-3 where CHMP 16594 would require salvage of VAHR 7822-4440 and VAHR 7822-4439) and associated analysis and reporting
- Compliance inspections by the RAP
- Removal, custody, curation and management of Aboriginal cultural heritage (artefacts) identified during the CHMP
- Availability of CHMP at site office
- Notification procedure for unexpected finds.

Table 13-4 Cultural heritage environmental management measures

EMM #	Environmental Management Measure	Stage	Mitigation hierarchy
CH1	**Cultural Heritage Management Plans** Implement and comply with the Cultural Heritage Management Plans (CHMP 16594 and CHMP 16593) management conditions to preserve registered and unidentified Aboriginal places and values.	Construction	Minimisation
CH2	**Archaeologically sensitive land forms** Identify and complete subsurface testing in all archaeologically sensitive areas within the Project area during the completion of Cultural Heritage Management Plans (CHMP 16594 and CHMP 16593) in consultation with AV and WWCHAC.	Construction	Minimisation
CH3	**Listed historic heritage sites** For any potential impact to VHI sites, obtain consent from Heritage Victoria in advance and implement management measures required in the consent, including fencing off the site during works, monitoring and recording.	Construction	Avoidance/ minimisation
CH4	**Unlisted historic heritage sites** Should an unknown historic heritage site, value or object be discovered during construction, follow the unexpected finds procedure, outlined in the CEMP.	Construction	Minimisation

13.8.2 Monitoring

Construction activities near registered Aboriginal places would be monitored and reported in accordance with the management conditions in the CHMPs. Conditions would include site inspections with the WWCHAC and reporting on the unexpected finds procedure. Monitoring would occur for CHMP 16593, if required by WWCHAC.

Construction activities near the Holden Cobbled Stone Road site would be monitored and reported in accordance with the conditions of the Heritage Act Consent. This may include photographic recording prior to construction.

A copy of relevant CHMP and approvals would be kept at the site office and Project personnel involved in cultural heritage inductions outlining relevant values and requirements. Compliance with conditions of the CHMPs and Heritage Act Consent will be managed and monitored through APA's environmental management system and CEMP (refer Chapter 19 *Environmental Management Framework*).

13.9 Conclusion

This chapter has identified and assessed existing conditions, impacts and mitigation to cultural heritage for the Project, as summarised below.

13.9.1 Aboriginal cultural heritage

CHMP 16594 (KP 0 – KP 8.2) identified impacts to three registered Aboriginal places: VAHR 7822-4185, -4439 and -4440. VAHR 7822-4185 has previously had a salvage undertaken to remove Aboriginal cultural heritage material from the Aboriginal place. VAHR 7822-4439 and -4440 would require a salvage prior to being impacted during construction of the Project. VAHR 7822-4400 is in disturbed contexts such as exposed ground or adjacent to a large rubbish dumping pile, and therefore not considered to be in situ. The CHMP development and implementation process would minimise adverse effects in consultation with the Traditional Owners WWCHAC, BLCAC and BLaSC, and AV. EMM CH1 would implement the approved CHMPs.

The full extent of the impacts on Aboriginal places located within the construction corridor is subject to detailed assessment and liaison with the WWCHAC RAP for the in-progress CHMP 16593 (KP 8.2 – KP 51). However, it is anticipated that construction impacts would occur to registered Aboriginal places and mitigation measures and management conditions including salvage excavations would be required prior to works commencing. There are 10 existing registered Aboriginal places in this area and further places will be registered through the CHMP process.

The CHMPs will outline the necessary processes to manage any proposed harm to identified Aboriginal places and will also include appropriate mechanisms and processes to manage any potential impact on unidentified Aboriginal places and cultural heritage values, with a particular focus on the potential for ancestral remains.

In addition to the 13 registered Aboriginal places within the construction corridor, there are 24 registered Aboriginal places within 50 metres of the construction corridor. Construction is not expected to impact these 24 registered Aboriginal places.

Residual impacts remain as there would be a loss of Aboriginal cultural heritage values as a result of the Project, with some of the 13 registered places in the construction corridor being fully destroyed, some partially destroyed, and some previously salvaged or removed. However, even with partial destruction, there is a loss of heritage values.

Of the 13 registered places within the construction corridor, one is of high significance and three are of moderate significance. The remaining nine are less than moderate significance or already removed. While mitigation measures will minimise the impact on places, the residual impact on the Aboriginal cultural heritage values could be moderate to high for some of the places. This will be confirmed with Traditional Owners through the CHMP assessment and mitigation measures. APA will continue to work with AV, WWCHAC RAP, and all Traditional Owners to assess the significance of the impacts and avoid and mitigate impacts as far as practicable (EMM CH1 and EMM CH2).

No intangible heritage has been identified to date, and no residual impacts recorded, noting that consultation with the RAP about intangible heritage is ongoing.

The residual impact on unidentified Aboriginal cultural heritage values is moderate due to the comprehensive testing and assessment through the CHMP process, the type and significance of places known to be in the area, and the contingency measures put in place through the CHMP should there be unexpected finds during construction.

There are no anticipated operational residual impacts to Aboriginal places.

13.9.2 Historic heritage

A total of 27 historical heritage sites are located within the study area – five are within 100 metres of the construction corridor, including one delisted historic site, and one VHI site, Holden Cobbled Stone Road (VHI H7822-2283) located within the construction corridor. No direct or indirect residual impact to the heritage values of these sites is predicted. Holden Cobbled Stone Road was inspected for potential impacts, and during the fieldwork undertaken for the CHMPs, the construction corridor was assessed for potential historic heritage values.

Based on the Project's construction methodology, there are no anticipated residual construction impacts to Holden Cobbled Stone Road. However, as the Project works are being undertaken within the curtilage of a listed historic site, a Consent application is required and any conditions on the Consent would be implemented through the Project CEMP (EMM CH3). There are no anticipated operational impacts to Holden Cobbled Stone Road (VHI H7822-2283).

No other historic heritage sites or potential heritage values have been identified that would be impacted by construction. There are no anticipated construction or operational impacts to historic heritage sites located outside the construction corridor. The drystone wall associated with HO55 does not have heritage value within the construction corridor and the listed site does not extend into the construction corridor. An unexpected finds procedure within the CEMP would provide the contingency measures that would be followed if any unknown historic heritage site, value or object is identified during construction (EMM CH4).

There are no anticipated operational residual impacts to historic heritage values.

In summary, application of the Project construction methodology and Project environmental management measures would avoid or minimise or manage the potential impacts on Aboriginal cultural heritage and historic heritage places within the construction corridor.

In response to the EES evaluation objective described at the beginning of this chapter, effects of the Project on cultural heritage have been assessed and EMMs have been identified to avoid, or minimise where avoidance is not possible, adverse effects on Aboriginal and historic cultural heritage values.