PART 2 RESPONDING TO THE SCOPING REQUIREMENTS

9 Effects on Social and Cultural Values

9.1 Overview

9.1.1 Introduction

This chapter discusses the potential impacts on social and cultural values during the design, construction, operation and maintenance phases of the Project. Potential impacts would be managed through an Environmental Management Framework, as required by the Environment Effects Statement (EES) Scoping Requirements and relevant Evaluation Objectives.

In the context of the Project, key social and cultural values are considered to be landscape values, remnant, planted and regenerated vegetation, Aboriginal cultural heritage and historical heritage values.

Social and cultural value

Australia's International Council on Monuments and Sites (ICOMOS) defines cultural significance as 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations' (Australian ICOMOS, Burra Charter Article 1.2, 2013).

When judged against these criteria, culturally valuable vegetation can be defined as landscape components that contribute to their environment, over and above the accepted values of other vegetation. Culturally valuable vegetation helps us understand the past or enrich the present, while being of value to future generations.

This chapter has been informed by the following specialist technical assessments, as well as the peer review report (refer to Technical Report P – *Social and Cultural Values Peer Review* by Lovell Chen) and the risk report that can be found in Attachment III *Environmental Risk Report:*

- Technical Report B1 – *Biodiversity Existing Conditions Report* (WSP 2020), informing assessment of landscape values and remnant, planted and regenerated vegetation
- Technical Report B2 – *Biodiversity Impact Assessment* (SMEC 2020), informing assessment of impacts to landscape values and remnant, planted and regenerated vegetation
- Technical Report C – *Arboriculture Assessment* (C&R Ryder Consulting 2020), informing assessment of landscape values and remnant, planted and regenerated vegetation
- Technical Report D – *Social Impact Assessment* (WSP 2020), informing assessment of remnant, planted and regenerated vegetation
- Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* (Ecology & Heritage Partners 2020), informing assessment of Aboriginal cultural heritage and historical heritage values
- Technical Report G – *Landscape Strategy* (Arup 2020), informing assessment of landscape values and remnant, planted and regenerated vegetation.

An integrated assessment that considers specific local context has been undertaken in the development of this chapter to explore social and cultural values in the context of the Project. Impacts of vegetation removal and loss on biodiversity values are discussed in Chapter 8 *Effects on Biodiversity.* Social impacts that may arise from the proposed land acquisition and access realignment are discussed in Chapter 10 *Effects on Land Uses, Businesses and Social Assets.*

This EES recognises that the Project would have potential impacts on key biodiversity, social and cultural values as a result of the proposed removal of trees, vegetation and habitat. Tree removal has been identified as a significant biodiversity impact; however, the EES assessment also reflects the multi-faceted value of vegetation (beyond solely biodiversity value) and incorporates this into the Project's landscape response, in the form of a Landscape Strategy (refer to Technical Report G for full details of the Strategy).

Any potential impacts on Aboriginal cultural heritage (VAHR Registered 1: Stone Artefact Scatter and VAHR Registered 2: Low Density Artefact Distribution) would be mitigated through compliance with the Cultural Heritage Management Plan.

The removal of remnant, planted and regenerated vegetation would have an impact on social and landscape values, as vegetation can play an important role in the community by contributing to public open space, providing screening, and contributing to the sense of place. The clearing of vegetation associated with the Project is expected to increase the visibility of the widened road corridor.

The removal of vegetation would also impact on cultural values. Culturally valuable vegetation can be defined as landscape components that contribute to their environment, over and above the accepted biodiversity values of other vegetation. Two River Red Gums on the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection (referred to as the Doreen River Red Gums) have been identified as having heritage value within the project area (Heritage Overlay – Schedule HO191 under the Nillumbik Planning Scheme). The Project has been designed to retain these two trees.

To address potential adverse impacts on trees and vegetation throughout the project area, mitigation measures have been incorporated into Environmental Performance Requirements (EPRs) identified for the Project, including implementation of the Project's Landscape Strategy. With the aim of realising opportunities to maximise the enhancement of social and cultural values, the Landscape Strategy addresses how vegetation can be protected (where feasible) and if not, how identified values can be reinforced and rehabilitated within new landscape treatments.

Along with standard project controls such as the Cultural Heritage Management Plan and Construction Environmental Management Plan, implementation of the Landscape Strategy would ensure that the Project responds effectively to the local context of Yan Yean Road, community interests and environmental sensitivities.

Landscape Strategy vision statement

Yan Yean Road Stage 2 would act as a **safe**, well **vegetated** transport corridor, **stitching** together the urbanising suburbs to the west with the existing rural landscape to the east.

The road would provide a **climate resilient** landscape approach that delivers a legacy of **environmental benefits** and improved **amenity** for users and the wider community, while respecting, **protecting** and **enhancing** the **cultural values** of the existing landscape.

(Technical Report G – *Landscape Strategy*)

9.1.2 EES Scoping Requirements

On 14 October 2018, the Minister for Planning determined under the *Environment Effects Act 1978*, that an Environment Effects Statement (EES) would be required for the Project to assess the potential environmental effects of the Project.

The Scoping Requirements, including draft Evaluation Objectives, for the EES were issued by the Minister for Planning in June 2019. The Minister's decision to require an EES for the Project was largely due to the potential significant effects on biodiversity, social and cultural values as a result of the Project's proposed clearance of a very large number of trees and habitat, including potential cumulative effects on the habitat of the Swift Parrot.

The Minister also required the EES to examine the following key matters:

- Projected traffic growth volumes and related uncertainties for Yan Yean Road and related roads in the network
- Design alternatives and refinements and their associated impacts, particularly how they avoid and minimise native tree loss with proposed locations of tree and vegetation removal, no go zones and offset requirements and a demonstration that avoid and minimise principles have been applied
- Consideration of carriageways, medians, shared pathways, footpaths, intersections and other treatments to minimise the loss of preferred foraging trees for the critically endangered Swift Parrot (*Lathamus discolor)* and avoidance of high retention trees of ecological and cultural value.

The EES Scoping Requirements set out by the Minister for Planning give particular attention to the assessment of specific environmental effects related to transport capacity and connectivity (refer to Chapter 7 *Effects on Transport Capacity and Connectivity*), biodiversity (refer to Chapter 8 *Effects on Biodiversity*) and social and cultural values. The draft Evaluation Objective and key issues relating to social and cultural values as set out in the Scoping Requirements is provided in the extract below.

Effects on social and cultural values

Evaluation Objective – To avoid or minimise the adverse effects on social and cultural values, including landscape values, Aboriginal and historical cultural heritage values, and remnant, planted and regenerated vegetation, and to maximise the enhancement of these values where opportunities exist.

Key issues

- Potential for adverse impacts on social and cultural values of trees, such as the Doreen River Red Gums located on the corner of Yan Yean Road and Doctors Gully Road
- Potential for adverse impact on local amenity including visual impact, such as through reduction in canopy cover
- Potential adverse effects on Aboriginal cultural heritage places and values
- Potential adverse effects on historical cultural heritage values, especially buildings, properties, trees, archaeological sites and precincts
- Potential adverse effects on the urban landscape that provide a range of functions (e.g. visual amenity, cooling from vegetation and shade).

9.2 Methodology

This section summarises the methodology used to assess the Project's impacts on social and cultural values, particularly in relation to landscape values, remnant, planted and regenerated vegetation, Aboriginal cultural heritage and historical heritage values. As outlined above, six separate specialist technical assessments were completed to inform the development of this chapter.

The same project area was used for each specialist technical assessment, as described in Chapter 5 *Project Description* and shown in Figure 5.1.

9.2.1 Existing conditions assessment

In each specialist technical assessment, the first step was to assess the existing conditions of the project area and, if required, the wider context. The purpose of the existing conditions assessment was to characterise the existing social and cultural context of the area surrounding the Project, which formed the baseline for the risk and impact assessments.

The scope of existing conditions assessments is described below.

Desktop assessment

Desktop studies were undertaken using various web-based resources and publicly available data such as previous investigations, aerial images, topographic data, demographic data, historical records, relevant GIS data if available (such as areas of Aboriginal Cultural Heritage sensitivity) and relevant information in the Nillumbik and Whittlesea Planning Schemes (such as Heritage Overlays). The desktop assessment also reviewed feedback from community and stakeholder engagement.

Site investigations

Where the desktop assessment found that further information was required, site surveys and investigations were undertaken to develop an understanding of the existing social and cultural values, including:

- **Landscape values** – A site walkover was undertaken on 11 March 2020 to inform the landscape character and visual impact assessments. This involved observation of aesthetic vegetation (such as large and / or old landmark trees) and assessment of view locations to determine landscape value. Refer to Figure 5.31 in Technical Report G – *Landscape Strategy* for view locations across the project area
- **Remnant, planted and regenerated vegetation –** A site visit on 19 August 2019 and consultation with City of Whittlesea and Shire of Nillumbik were undertaken to inform the impact assessment of culturally significant trees within the project area. Refer to Figure 3 in Appendix D of Technical Report D – *Social Impact Assessment* for the location of the culturally significant Doreen River Red Gums
- **Aboriginal cultural heritage –** The standard assessment required to inform the Cultural Heritage Management Plan (CHMP) for the Project included a ground survey of the project area to detect both the potential for and the presence of Aboriginal cultural heritage in or associated with the project area. The project area was initially surveyed on 18 December 2017, and subsequently surveyed on 8 November 2019 and 8-9 April 2020 due to revisions to the project area. Refer to Map 9 in Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* for an overview of the standard assessment survey results, noting for the purposes of field recording and reporting during the standard assessment, the project area was divided into seven sections
- **Historical heritage values –** A site inspection was undertaken to identify any additional historical heritage places within the project area.

9.2.2 Peer review

An independent peer review was carried out by Lovell Chen to consider whether the Project has adequately responded to the following key risk items:

- The cultural value of trees
- Consideration of context sensitive design and whether it reflects a balance of social and environmental objectives.

This involved review of the following documents:

- Technical Report D – *Social Impact Assessment* (WSP 2020)
- Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* (Ecology & Heritage Partners 2020)
- Technical Report G – *Landscape Strategy* (Arup 2020).

The report of the independent peer review can be found in this EES as Peer Review P – *Social and Cultural Values Peer Review.*

9.2.3 Risk assessment

As required by the EES Scoping Requirements, a risk-based approach was adopted to understand the key risks and impact pathways with the potential to lead to significant impacts on the environment and / or on local communities. The risk assessment included assessing impact pathways identified as relevant to the Project, evaluating the significance of any potential environmental effects, and investigating additional design options to minimise environmental impact.

Chapter 4 *Environment Effects Statement Assessment Framework* and Attachment III *Environmental Risk Report* provide more details about the risk assessment methodology.

9.2.4 Impact assessment

Impact assessments were completed to determine the potential impacts on social and cultural values during the construction, operational and maintenance phases of the Project. As part of the assessments, potential positive impacts (benefits) associated with the Project were also identified.

Specialists applied their own methods (defined by relevant legislation, policies, standards and guidelines and their professional judgement and experience) to assess the magnitude of the key impacts, taking into consideration management and mitigation measures where appropriate, which informed the development of EPRs. As a result, the approach to impact assessment was specific to each of the specialist aspects. Key legislation and policies that guided the impact assessments are detailed in Attachment II *Legislation and Policy*.

A summary of the specialists' methods for impact assessment is provided in Table 9.1.

Table 9.1 Specialists' methods for impact assessment

Key aspect	Summary of impact assessment methodology
Landscape values	• Collection of information through professional analysis, vegetation surveys, stakeholder engagement and community consultation • Consideration of strategy context (State and local policies) to provide relevant direction • Rating of landscape components against five value criteria: aesthetic, historic, scientific, social and spiritual (Australian ICOMOS, Burra Charter Article 1.2, 2013) • Mapping of outcomes of the data assessment under each of the five value criteria to highlight where vegetation triggered multiple values • For both landscape character and visual amenity, assessment of the overall impact rating of the Project on any given Landscape Character Zone or 11 view locations, based on the themes of magnitude and sensitivity (refer to Section 9.3.1) • Findings from the value assessment of landscape components and the visual impact assessment used to inform mitigation measures in the Landscape Strategy, which informed the development of the EPRs. This included opportunities to maximise enhancement of social and cultural values. Refer to Technical Report G – *Landscape Strategy* for more details. It is noted that data from Technical Report B1 – *Biodiversity Existing Conditions Report,* Technical Report B2 – *Biodiversity Impact Assessment*, Technical Report C – *Arboriculture Assessment* and Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* also informed the Landscape Strategy.
Remnant, planted and regenerated vegetation	An integrated assessment that considers specific local context was undertaken to explore the social and cultural values of vegetation in the context of the Project. This assessment was informed by the findings of numerous specialist technical assessments, including: • Technical Report D – *Social Impact Assessment*, as per methodology below: – Review of the existing conditions and Project design – Identification of social and cultural values of trees, through assessment of the Nillumbik and Whittlesea Planning Schemes, stakeholder views and applying the Australian Heritage Commission's (AHC) criteria to determine the presence of culturally significant trees – Assessment of risk, considering the existing local context and possible impacts generated by the proposed Project – Assessment of potential impacts on local communities against the assessment criteria developed in response to the Scoping Requirements – Consideration of standard controls and recommendation of management and mitigation measures to address impacts identified, which informed the development of the EPRs • Technical Report G – *Landscape Strategy* (as per the methodology described above) • Technical Report B1 – *Biodiversity Existing Conditions Report* and Technical Report B2 – *Biodiversity Impact Assessment* (refer to Chapter 8 *Effects on Biodiversity* for more details) • Technical Report C – *Arboriculture Assessment* (refer to Chapter 8 *Effects on Biodiversity* for more details).

Key aspect	Summary of impact assessment methodology
Aboriginal cultural heritage	• Review of the existing conditions • Assessment of the potential for impacts on Aboriginal cultural heritage based on the construction methods likely to be employed for the Project • Assessment of how operation and maintenance activities undertaken in relation to the Project could potentially impact on known and unknown Aboriginal Places • Consideration of standard controls and recommendation of management and mitigation measures to address impacts identified, which informed the development of the EPRs. Refer to Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* for more details.
Historical heritage values	• Review of the existing conditions • Assessment of the potential for impacts on historical heritage based on the construction methods likely to be employed for the Project • Assessment of how operation and maintenance activities undertaken in relation to the Project could potentially impact on known and unknown Historical Places • Consideration of standard controls and recommendation of management and mitigation measures to address impacts identified, which informed the development of the EPRs. Refer to Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* for more details.

9.2.5 Consultation

Consultation has been ongoing throughout the different stages of the Project's development and preparation of this EES. This included community consultation to gain an understanding of the concerns and preferred outcomes of local residents, businesses and other interested parties, as well as ongoing engagement with Councils and relevant government agencies to identify the key issues and policy priorities of State and local government.

The exhibition of the draft Scoping Requirements was advertised following the requirements of the regulatory process during April and May 2019 and 76 submissions were provided to the Department of Environment, Land, Water and Planning (DELWP). Of the 76 submissions, 64 referred to the Doreen River Red Gums at the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection, with other submissions noting concerns about the total vegetation loss from a flora and fauna perspective.

In response to previous community concerns, community engagement in May 2020 focused on design options and landscape values, asking for community feedback on design options that minimised the potential impacts of the Project, particularly around the Doreen River Red Gums. Following stakeholder and community engagement, an option was selected at the Bridge Inn Road intersection that would retain the two Doreen River Red Gums and the Doreen General Store (former post office), which were identified as having heritage and social value. Chapter 6 *Communications and Engagement* and Appendix IV – *Stakeholder and Community Engagement Report* provide further information regarding the Project's consultation process and outcomes.

Engaging the local community and relevant stakeholders ensured that concerns specific to particular places, values, design preferences and future plans could be incorporated into the Landscape Strategy. The following engagement activities were undertaken to inform the Landscape Strategy:

- Community feedback from online engagement
- Stakeholder Workshop 1, held on 2 April 2020, including pre-workshop online survey
- Stakeholder Workshop 2, held on 6 May 2020
- Stakeholder reviews of the draft Landscape Strategy.

Stakeholder workshops involved attendees from Shire of Nillumbik, City of Whittlesea, Department of Transport, DELWP, Office of the Victorian Government Architect, Parks Victoria, Wurundjeri Land Council and MRPV. In addition, an individual session was held with the Wurundjeri Land Council, who expressed a preference for indigenous planting and noted that the removal of non-native vegetation would be seen as a benefit to landscape character. Opportunities for the reuse of timber, employment of indigenous staff and use of interpretative signage were also discussed, with relevant design guidelines updated in the Landscape Strategy to address the concerns raised.

Findings from the engagement process are summarised in Technical Report G – *Landscape Strategy*, including a description of how the information received has helped shape the ultimate Landscape Strategy. Further detail on consultation can also be found in Section 3.1: Stakeholder Engagement of Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* and Section 3.6: Stakeholder Engagement and Community Feedback of Technical Report D – *Social Impact Assessment*.

9.3 Existing conditions

The project area encompasses a section of the existing Yan Yean Road that is an important north-south arterial road providing connectivity for City of Whittlesea's growing suburbs of Doreen and Mernda to the townships of Plenty and Yarrambat in the Shire of Nillumbik. The area has a distinct and evolving landscape and urban character, with rural and suburban land uses lining the road corridor including several large areas of public open space and the township of Yarrambat. The Project's consultation and engagement process has identified the local community's desire to maintain the character of the area.

In this section, the existing conditions have been identified in accordance with the Minister's Scoping Requirements in relation to landscape values, remnant, planted and regenerated vegetation, Aboriginal cultural heritage and historical heritage values.

9.3.1 Landscape values

The project area and surrounding landscape form an undulating terrain with a series of rolling, moderate to steep hillsides and pronounced ridges. These hills enclose plains and flats that form a distinctive landscape character across the wider project area, which is a mix of existing modified rural landscapes and rapidly urbanising growth precincts.

The land use history of the wider project area forms an important component of its character and continues to influence the existing landscape of the region. Historical land uses and landscape features such as tree plantings, remnant vegetation, mining works, dams and field boundaries provide a tangible connection to history and form part of the cultural narrative of the project area.

Landscape Character Zones (LCZ)

Defined as areas having a distinct, recognisable and consistent pattern of elements making one character zone different from another. This includes broad areas of common physical, environmental, ecological and cultural characteristics, such as landscape value.

Landscape sensitivity

The sensitivity of an LCZ is based on the extent to which it is considered able to accommodate change of the type and scale of a given proposal without adverse effects on its character.

Sensitivity of an LCZ includes its inherent landscape value and the likely compatibility of the proposed change.

Technical Report G – *Landscape Strategy* identified Landscape Character Zones (LCZ) as key to the assessment of inherent landscape values across the project area based on themes of sensitivity and magnitude. Landscape Character Zones (refer to Figure 9.1) were consistent with the developing nature of the region and included:

- LCZ 1 – Suburban Rural. Valued locally for its scenic undulating topography, patches of remnant vegetation and rural vistas
- LCZ 2 – Undulating Agriculture. High landscape sensitivity as it is valued regionally for its scenic undulating topography, distant vistas and patches of remnant vegetation
- LCZ 3 – Yan Yean Road corridor. Although functional, is valued for scenic undulating topography, views to surrounding rural landscape and patches of remnant vegetation
- LCZ 4 – Doreen Urban Area. Mostly urban character with a reduced sensitivity to change due to density of built form and presence of existing road infrastructure
- LCZ 5 – Parkland. Has an increased sensitivity due to its use as public open space.

➔ **Magnitude** – The magnitude of the effects of the development within the landscape. Magnitude refers to the physical scale of the development, how distant it is and the contrast it presents to the existing conditions.

Yan Yean Road is identified as a 'Key Viewing Corridor' within the *Shire of Nillumbik Landscape Character Assessment (Planisphere 2009)*. The existing Yan Yean Road corridor was found to have a strong visual presence within the immediate landscape, as did other service infrastructure such as transmission lines and power lines. These elements were visible from adjacent residential, commercial and educational land uses. The visual experience along Yan Yean Road is varied, ranging from panoramic views towards distant mountain ranges from elevated positions to filtered, narrow views, framed by dense roadside tree planting.

One of the key visual characteristics of the project area was identified in the Landscape Strategy as vegetation, with types including hedgerows, groups of canopy trees and single specimen trees enhancing visual amenity. In addition, trees, shrubs and groundcovers were found to provide visual enclosure, frame views and signify focal points. The intrinsic value of vegetation was highlighted further during the community consultation process, contributing to residents' sense of place and connection to the local area.

9.3.2 Remnant, planted and regenerated vegetation

Socio-ecological systems are complex, multi-scale, dynamic and adaptive. Humans are part of ecological systems, with vegetation providing services such as:

- Regulating air quality, temperature, climate change and water quality
- A range of functions to support human wellbeing including visual amenity, cooling from vegetation and shade, and mental and physical health and wellbeing
- Provisioning for food, water and materials
- Supporting habitat for plants and animals
- Cultural value including social interaction and cohesion, recreation, tourism and a sense of, and connection to, place.

➔ **Socio-ecological systems –** Complex, integrated systems in which humans are part of nature. Socio-ecological systems encompass a range of biophysical and social factors, capturing the interface of people and the natural landscape.

The landscape surrounding Yan Yean Road is characterised by open space, remnant patches of vegetation in the road reserve, planted vegetation and a number of large trees (Technical Report B1 – *Biodiversity Existing Conditions Report*). While much of the wider project area's native vegetation was cleared by European settlers for agriculture, large quantities of native vegetation on both public and private land remain of varying quality, consisting of seven Ecological Vegetation Classes. Areas of intact native flora provide a high level of fauna habitat, supporting a wide range of native animals (refer to Figure 9.2).

A total of 7,030 trees were recorded in the project area project area, comprising 2,775 native trees, 707 understorey trees, 2,113 planted native or indigenous trees, and 1,435 exotic trees (discussed further in Chapter 8 *Effects on Biodiversity*). Technical Report G – *Landscape Strategy* identified 2,399 out of 7,039 vegetation components analysed within the project area as having some form of social and cultural value.

One Studley Park Gum (identified in Technical Report C – *Arboriculture Assessment* as tree 230) listed on the Victorian Threatened Species Advisory List was recorded within the project area. This tree, an uncommon hybrid between Swamp Gum and River Red Gum, was assessed to be in good health and identified as having a very high retention value, as well as social value.

➔ The Doreen River Red Gums were identified in Technical Report C – *Arboriculture Assessment* as trees 1264 (on Doctors Gully Road) and 1265 (on Yan Yean Road). The Doreen River Red Gums are both recognised as having community sentimental value due to their historical significance as landmarks for the area in a rural landscape subject to ongoing urbanisation.

Tree 1264 was identified as significant and considered to have a high retention value, while tree 1265 was identified as highly significant and considered to have a very high retention value. However, significant disturbance from prior installation of underground utilities and stormwater drainage is evident for both trees, which has likely caused damage to the tree root systems and impacted tree health. In particular, tree 1264 was assessed as having poor health, with a Useful Life Expectancy of 10 to 20 years.

Figure 9.1 Landscape Character Zones across the project area

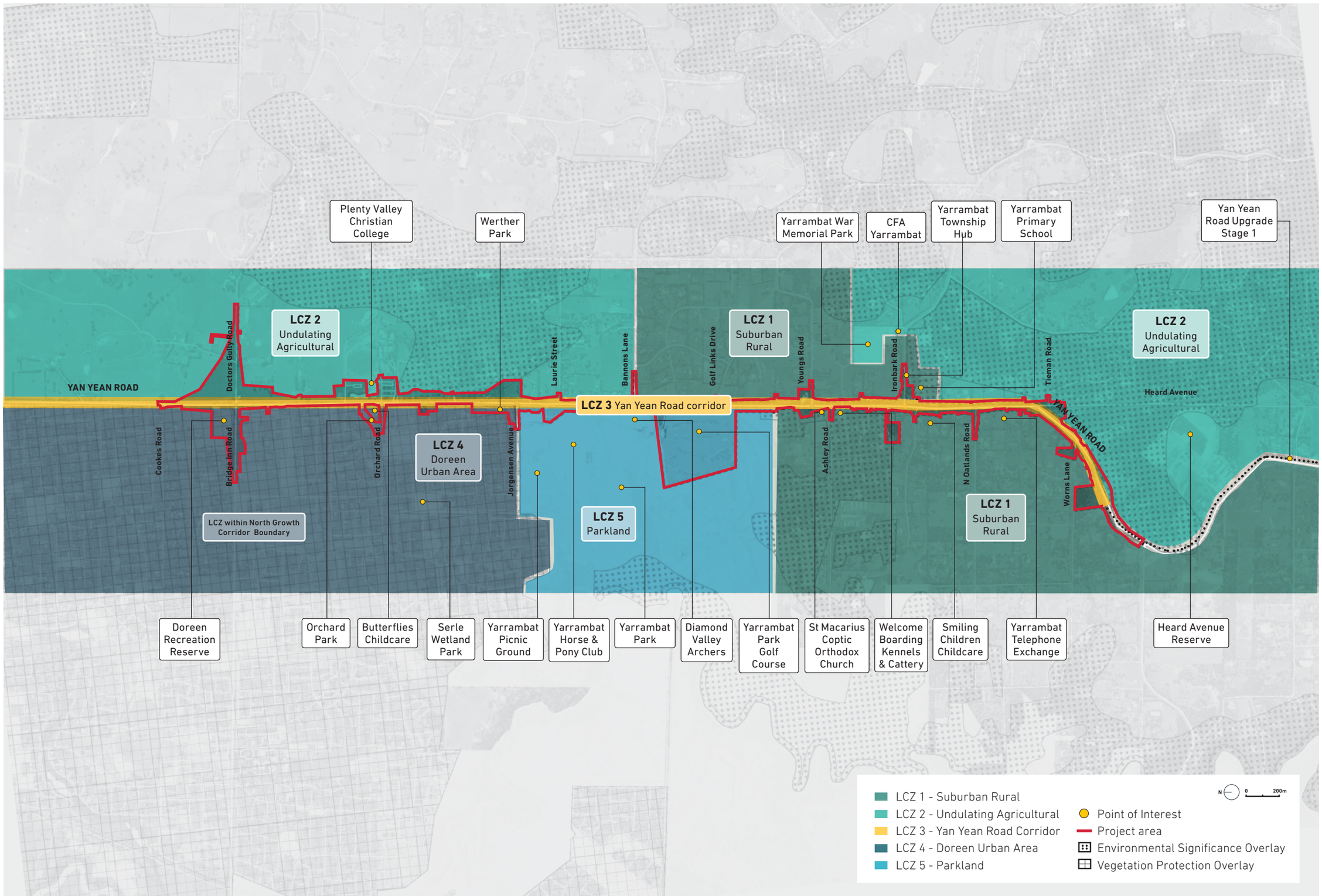


Figure 9.2 Vegetation across the project area

9.3.3 Aboriginal cultural heritage

The Yarrambat and Doreen areas and surrounding region lay within the traditional lands of people from the Woi wurrung language group. The Woi wurrung country is rich in resources as it is located in the temperate south zone of Australia. The Registered Aboriginal Party for the project area is the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (Wurundjeri).

Heritage forms an important component of landscape character and visual amenity, providing a sense of history and cultural narrative. The presence of heritage values can increase the sensitivity of a landscape or viewpoint to change.

Low Density Artefact Distribution

A category of Aboriginal place type in the Victorian Aboriginal Heritage Register comprising single stone artefacts and / or distributions of multiple stone artefacts at concentrations of less than 10 artefacts in a 10 x 10 metre area.

Stone Artefact Scatter

Stone artefact scatters consist of more than one stone artefact. Activities associated with this place type include stone tool production, hunting and gathering or domestic places associated with campsites. Stone artefacts may be flakes of stone, cores or tools. Some scatters may also contain other material such as charcoal, bone, shell and ochre.

Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* identified two Aboriginal places within the project area which are registered on the Victorian Aboriginal Heritage Register (VAHR):

- VAHR Registered 1 – Stone Artefact Scatter
- VAHR Registered 2 – Low Density Artefact Distribution.

Four Aboriginal places on the VAHR are located within 50 metres of the project area, including:

- VAHR Registered 3 – Low Density Artefact Distribution
- VAHR Registered 4 – Low Density Artefact Distribution
- VAHR Registered 5 – Low Density Artefact Distribution
- VAHR Registered 6 – Low Density Artefact Distribution.

Approximate locations of Aboriginal cultural heritage within the project area are shown in Figure 9.3. Refer to Section 5: Existing Conditions of Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* for further information on the broader Aboriginal cultural heritage values outside the project area.

Considering the number of previously recorded places in the region, there is potential for further Aboriginal places to be located within the project area. These are most likely to consist of low-density artefact distributions made from a variety of raw stone types such as silcrete, quartz and quartzite on areas of raised ground close to natural water sources.

Scarred trees

No scarred trees were identified within the project area; however, the Aboriginal cultural heritage desktop assessment found that scarred trees might occur where there are remnant stands of mature box or red gum trees.

Discussion with the Wurundjeri Land Council to inform the Project's Landscape Strategy did not identify any specific vegetation as having Aboriginal cultural heritage values.

➔ **Scarred trees** – It is known that the wood and bark of trees have been used for a variety of purposes by Aboriginal people, such as carrying implements, shields or canoes. The removal of this raw material from a tree produces a 'scar'.

9.3.4 Historical heritage values

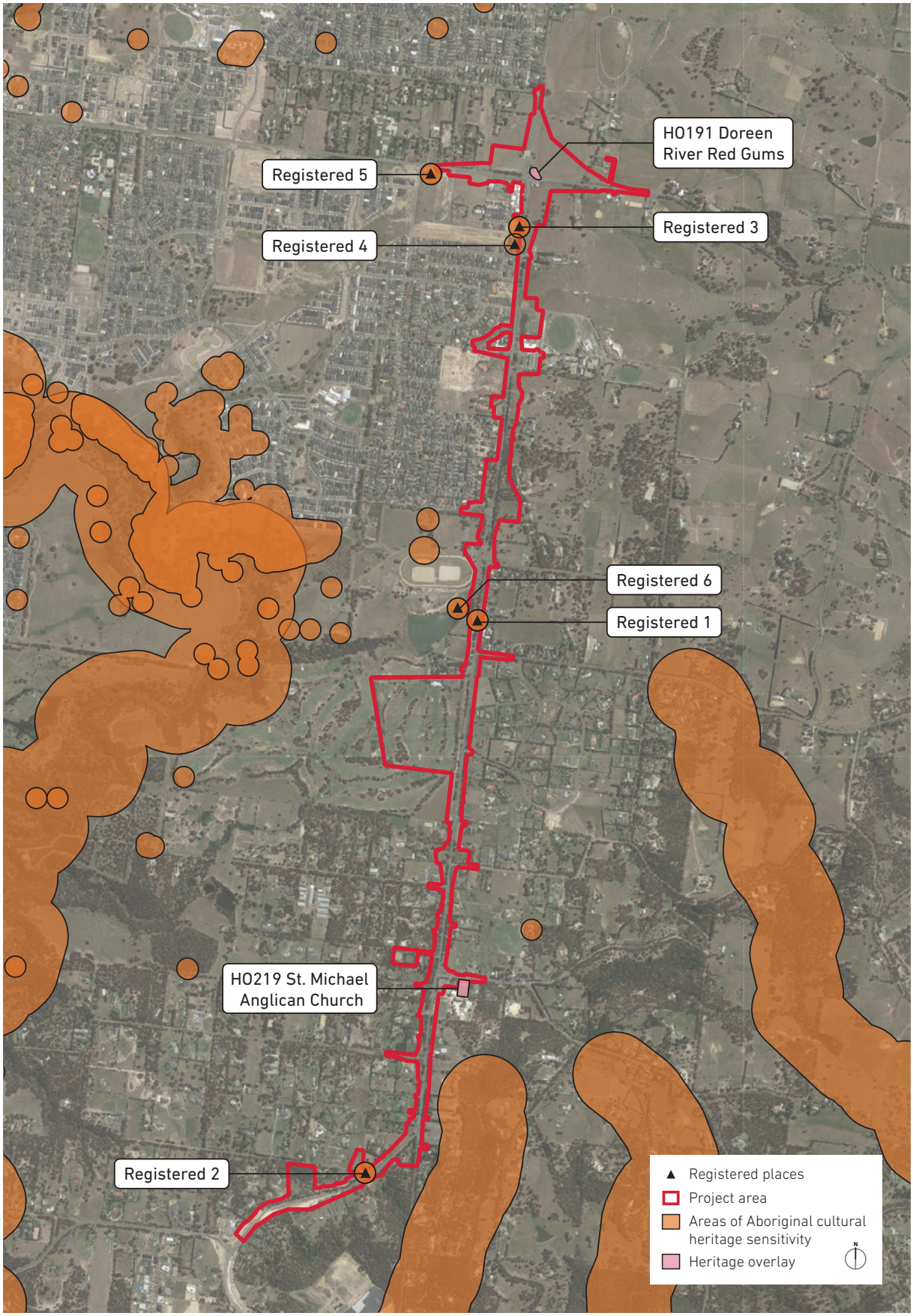
The Doreen River Red Gums (refer to Figure 9.3) are listed under Heritage Overlay – Schedule HO191 of the Nillumbik Planning Scheme. As highlighted during community consultation and identified in the Landscape Strategy's value assessment (provided in Technical Report G), these trees have a further inherent social, aesthetic, scientific and heritage value.

A search of the National Trust Register conducted on 18 March 2020 did not identify any registered historical heritage places in the project area. However, a letter was sent from the National Trust to the Major Projects Environmental and Planning Coordinator dated 6 December 2018 advising that HO191 (River Red Gums (2) 25 Doctors Gully Road) had been classified by the National Trust as 'significant for aesthetic and social reasons at regional level'.

In addition, Technical Report F – *Aboriginal and Historical Cultural Heritage Impact Assessment* identified one historical heritage place within the project area. St. Michael's Anglican Church is located in proximity to the Ironbark Road / Yan Yean Road intersection and Yarrambat State School and comprises a church and church grounds (refer to Figure 9.3). The Church is listed under Heritage Overlay – Schedule HO219 of the Nillumbik Planning Scheme.

Despite not having any statutory protection, it is noted that the former Post Office and General Store located within the project area may have heritage potential, as identified in the City of Whittlesea Heritage Study 1990.

Figure 9.3 Aboriginal and historical cultural heritage within the project area



9.4 Risk assessment

A risk assessment was undertaken in relation to the environmental aspects of the existing conditions discussed in Section 9.3. For more information on the risk assessment process, refer to Chapter 4 *Environment Effects Statement Assessment Framework* and Attachment III *Environmental Risk Report*. Key risks are defined as those having an initial rating of 'significant' and above and are shown in Table 9.2 below.

Refer to Attachment III *Environmental Risk Report* for the complete list of initial and residual risks. These risks require management through the Project and are addressed through the EPRs listed in Section 9.6 and the Environmental Management Framework described in Chapter 12.

A discussion of the impact pathways and the likely effectiveness of the proposed EPRs to minimise risk of impacts is provided in Section 9.5.

Table 9.2 Key risks

Risk #	Aspect	Impact pathway	Project Phase	Initial rating	EPR #	Residual rating
1, 21, 41	Aboriginal cultural heritage	Disturbance of known or previously unrecorded Aboriginal cultural heritage potentially impacting on heritage values	Site establishment, earthworks, civils and structures	Significant	EPR ACH1	Medium
30, 50	Historical heritage	Potential impact on the values of heritage places and/or archaeological sites	Earthworks, civils and structures	Significant	EPR HH1, EPR HH2, EPR HH3	Medium
12	Landscape and visual	Potential adverse impacts from construction activities on visual and/or landscape values experienced from sensitive receptors including residential areas, recreational and open spaces, hospitals, educational institutes and community facilities	Site establishment	High	EPR LV1, EPR LV2	High
32, 52			Earthworks, civils and structures	Significant	EPR LV1, EPR LV2	Medium
20, 40, 60, 80	Vegetation – Social and cultural values	Loss of or damage to remnant, planted or regenerated vegetation during construction impacting on social and cultural values	Site establishment, earthworks, civils and structures, reinstatement	High	EPR V1	Significant

9.5 Impact assessment

This section describes the potential impacts on social and cultural values during the design, construction, operation and maintenance phases of the Project and appropriate mitigation measures to avoid or otherwise minimise adverse impacts. The mitigation measures inform the EPRs, which set out the desirable outcomes for different phases of the Project.

The technical specialists have assessed the potential impacts of the Project by using the methods described in Table 9.1. An integrated assessment has been undertaken to explore social and cultural values, which in the context of the Project are considered to be landscape values, remnant, planted and regenerated vegetation, Aboriginal cultural heritage and historical heritage.

Landscape Strategy

The Project's landscape design is a key component in minimising impacts and enhancing the area's existing social and cultural values for current and future generations.

The implementation of the Landscape Strategy would ensure that the Project responds effectively to the local context of Yan Yean Road, community interests and environmental sensitivities.

Refer to Technical Report G and the EPRs in Chapter 12 *Environmental Management Framework* for more details.

Aligned with this integrated approach, the Landscape Strategy developed for the Project has undertaken a value assessment of the landscape components along the alignment against five value criteria: aesthetic, historic, scientific, social and spiritual. This enabled an assessment of cultural values and impacts on the landscape. Legislative protections around cultural and historic heritage values were also identified.

Figure 9.4 illustrates 'value hot spots' identified in the Landscape Strategy and indicates where vegetation components triggered multiple value criteria. The 'warmer' the colour, the greater the number of value criteria apply to a vegetation component, demonstrating cumulative vegetation value.

Vegetation makes a contribution to the landscape character, visual amenity and / or placemaking qualities of a particular location. This includes notable individual trees that are prominent visual markers, as well as clusters of trees and other vegetation that provide structure to the landscape. As identified in the Landscape Strategy's value assessment of landscape components, areas of public open space (including Doreen Recreational Reserve, Orchard Park, Werther Park and Yarrambat Park) recorded social value for their contribution to amenity.

Value hot spots included the Doreen Red River Gums at the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection, 'Avenue of Honour' WW1 memorial plantings at Yarrambat Primary School and important aesthetic / social value trees within Yarrambat Township. Cultural value was elevated at locations along the Project corridor that combined social and scientific value within screen plantings.

➔ The Landscape Strategy would further act as a key mitigating element of the Project, with the aim of realising opportunities to maximise the enhancement of social and cultural values. Figure 9.5 shows existing conditions on Yan Yean Road (between Youngs Road and Golf Links Drive) against a photomontage of proposed landscape maturity after reinstatement has occurred in accordance with the Landscape Strategy.

Figure 9.4 Social and cultural values of vegetation across the project area

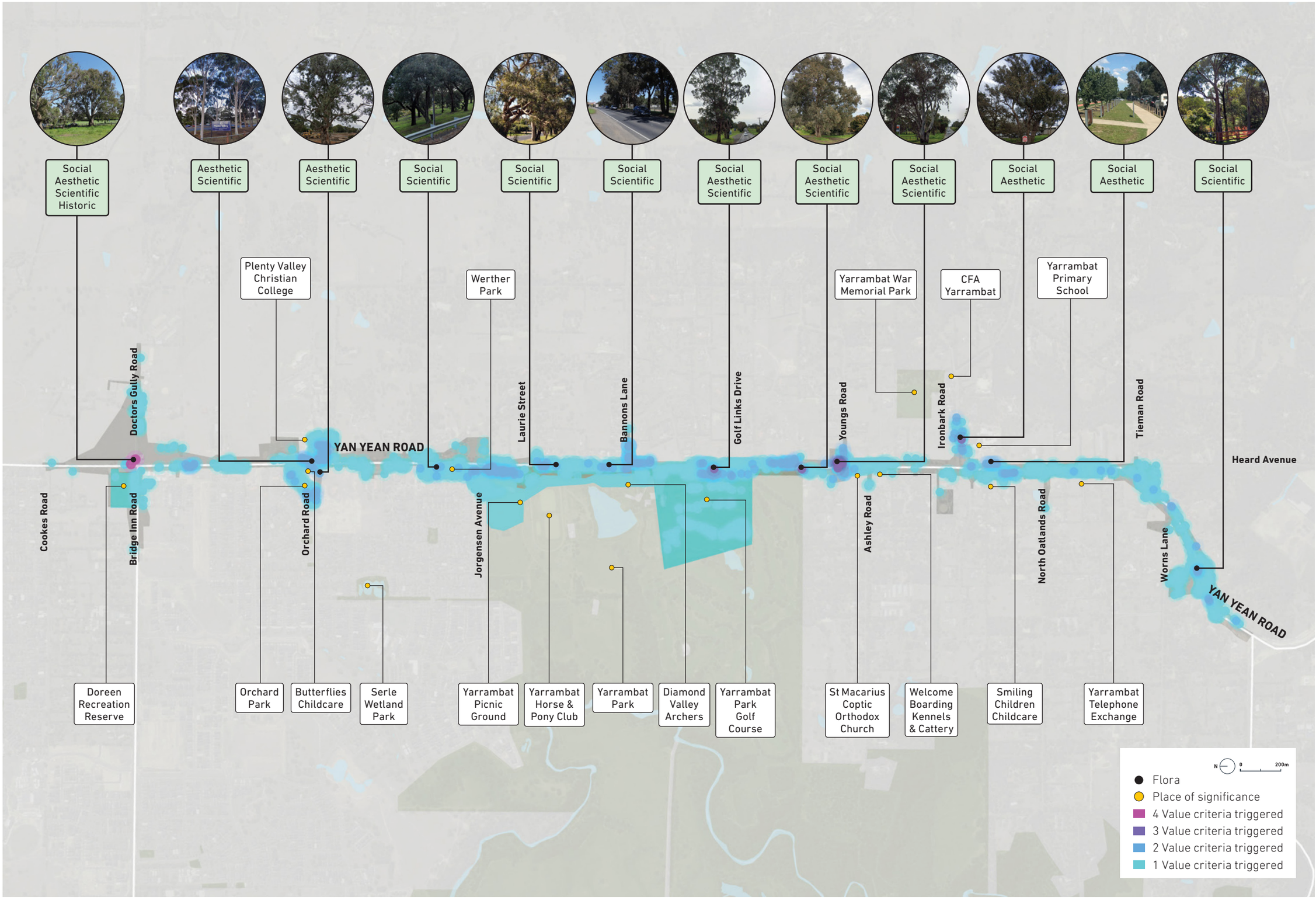
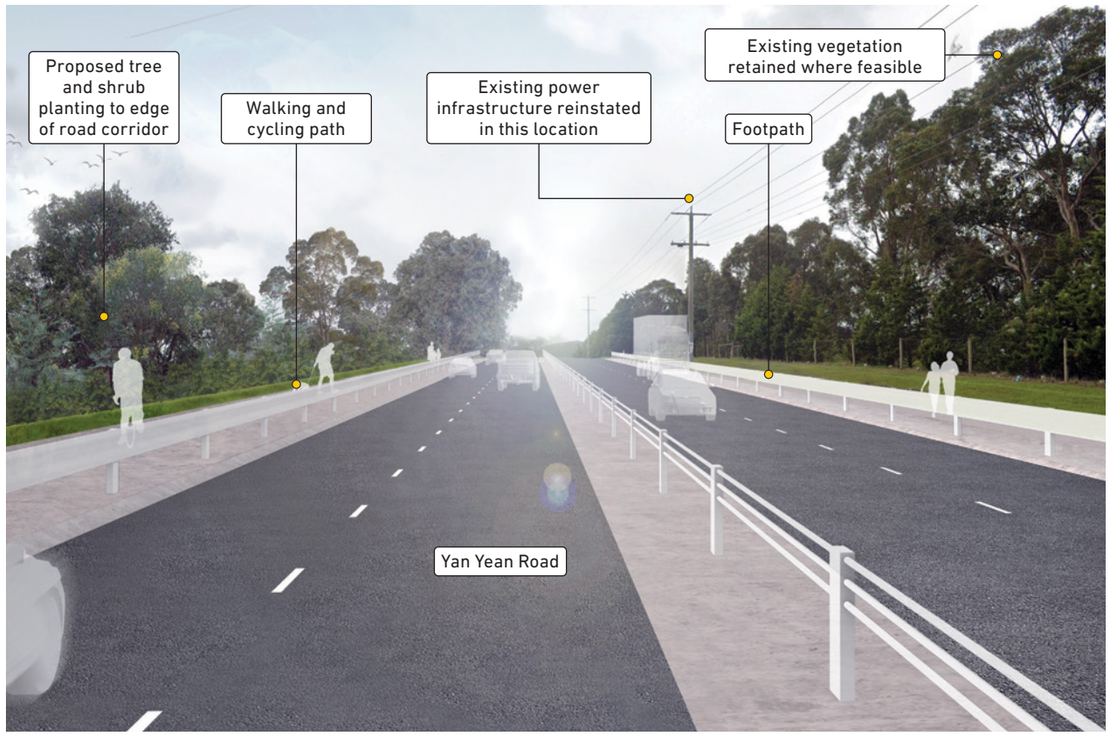


Figure 9.5 Existing and proposed landscape maturity on Yan Yean Road between Youngs Road and Golf Links Drive



9.5.1 Landscape values

Impacts on landscape values are likely to be experienced during the initial construction phases of the Project (site establishment, civils and structures and earthworks). However, these impacts are expected to be mitigated during the reinstatement phase through the Project's Landscape Strategy.

Direct landscape character impacts as a result of construction were found to be limited to the edges of Landscape Character Zones in close proximity to the project area (refer to Figure 9.1), with impacts reducing as distance from the project area increased. Given the permanent reduction in tree canopy extent and an increase in the road corridor footprint, residual impacts on receptors in close proximity to the road would also likely be experienced during the operational phase of the Project.

Key findings of the landscape character assessment include:

- LCZ 1 – Suburban Rural and LCZ 5 – Parkland: Moderate / low impacts are expected during construction due to their existing exposure to built form
- LCZ 1 – Suburban Rural, LCZ 2 – Undulating Agricultural and LCZ 3 – Yan Yean Road Corridor: Moderate / low to low residual impacts are expected where there would be a permanent reduction in tree canopy extent and an increase in the road corridor footprint
- LCZ 2 – Undulating Agricultural and LCZ 3 – Yan Yean Road Corridor: Moderate / high to moderate operational impacts are expected where the removal of vegetation and increase in road footprint would reduce the naturalistic / rural qualities of the existing landscape and increase the dominance of road infrastructure.

Residual impacts (post-landscape maturity)

The Landscape Strategy's operational impact assessment has been undertaken on the expected state of the Project on the day of opening, including immature landscape treatments. The residual impact rating assumes a fully matured landscape – approximately 10-20 years post-construction.

In addition, visual impact assessment of 11 view locations found that temporary construction phase visual impacts would be moderate / high for the majority of view locations. Key findings of the visual impact assessment include:

- The clearing of vegetation and the increase of the road corridor footprint in proximity to sensitive receptors has the greatest potential to cause visual impacts, as removal of vegetation during the construction phase is likely to increase visibility of both existing and proposed infrastructure
- The topography and existing vegetation would limit the majority of views of the Project to an area approximately 100 metres either side of the road corridor
- Visual exposure to existing road infrastructure has further reduced the sensitivity of a number of view locations in close proximity to Yan Yean Road, including residential dwellings between Bannons Lane and Laurie Street.

The most significant operational phase visual impacts are expected on residential receptors in close proximity to the road corridor where existing screening vegetation is likely to be removed. Key findings include:

- High and moderate / high impacts are expected on properties near the Youngs Road intersection and south of North Oatlands Road
- Moderate impacts are expected at the northern end of Ironbark Road within Yarrambat township where there would be a noticeable increase in the scale of the intersection, including a new retaining wall
- Minor impacts are expected on Yarrambat Park and Yarrambat Park Golf Course, limited to their eastern boundaries, adjacent to Yan Yean Road.

Mitigation measures

The Project's Landscape Strategy has been developed to ensure that the planning, design and management of the Project responds effectively to the local context of Yan Yean Road, community interests and environmental sensitivities. The strategy seeks to limit the identified potential impacts of the Project and enhance existing landscape values where feasible.

An overarching landscape vision for the Project is supported by five key moves and design guidelines that seek to ensure that landscape works and various Project elements exhibit quality in design, material and finish. These include:

- Protect: The design process should first seek to avoid impacts on the existing landscape by protecting the identified values of the project area where possible
- Reduce: Reduction of impacts through design development seeks to minimise Project impacts, with a focus on sensitive landscape locations and areas of important user amenity
- Reinforce: Reinforcing the identified values of the project area ensures a landscape design that respects the local context and provides ongoing benefits during the operational phase of the Project
- Rehabilitate: Rehabilitation of the Project corridor ensures that sensitive landscape zones and environmental areas are repaired to their existing condition
- Enhance: Enhancing the identified values of the project area ensures a lasting legacy for road users and the local community, contributing to the overall quality of the public domain.

It should be noted that opportunities to reduce impacts have already been undertaken during the current Project design (refer to EPR LV1), including:

- Incorporation of a walking and cycling path on the western boundary with only a footpath on the eastern side to minimise the width of the project area
- Retaining walls and steeper batters than usual for arterial roads to minimise the project area width
- Median width has been reduced from the standard six metres, down to 2.2 metres, using a wire rope between the carriageways to minimise the project area. Refer to Technical Report G – *Landscape Strategy* for design guidelines on median and verge planting.

Landscape treatments and planting are expected to reduce the visual impacts of the Project for all Landscape Character Zones and view locations as they mature over time (refer to EPR LV2). While visual amenity is subjective, screening vegetation plays an important function in reducing exposure to undesirable visual, noise and wind impacts for adjacent properties and public open space (refer to EPR LV2).

The Project would seek to retain existing desirable views and consider reinstating a resilient, predominately indigenous plant selection that reinforces local landscape character (refer to EPR LV1 and EPR LV2). Refer to Figures 6.3 and 6.4 of the Landscape Strategy in Technical Report G for further detail on key landscaping opportunities along the road corridor. General treatments include canopy trees, amenity trees, shrub mix, grasses (planted) and groundcover mix.

Ongoing monitoring and maintenance of the completed landscape works would be equally important in the successful delivery of the landscape vision over the entire lifetime of the Project. It is expected that the following maintenance responsibilities would apply:

- Road carriageway from kerb to kerb – the Department of Transport (refer to EPR EMF5)
- Back of kerb to property boundary and service roads – relevant Council
- Planting within private property – landowner.

Documents including the Project's Environmental Management Framework (refer to Chapter 12), Tree Protection Management Plan, Landscape Management Plan, Construction Environmental Management Plan, Landscape Maintenance Plan, relevant Roadside Management Plans and Standards, and relevant local Council Tree Management Policies would guide the future management of the Project's landscape works.

9.5.2 Remnant, planted and regenerated vegetation

The Project would result in permanent changes to the local environment and valued attributes of local character in the public realm and private residences along the length of the project corridor due to tree loss and road widening. Trees with scientific value are spread throughout the project area and often appear as clusters of native trees that provide Swift Parrot foraging habitat (discussed further in Chapter 8 *Effects on Biodiversity*). The scale of associated tree loss may impact the association residents have with their local area and community.

The total number of remnant, planted and regenerated trees within the project area, along with those potentially impacted, is shown in Table 9.3.

The total number of trees impacted has been reduced through the development of the Project by refining the project design and creating no go zones. Design measures include:

- Realigning the Bridge Inn Road intersection to avoid the two river red gums
- Use of retaining walls to minimise project footprint (for example at Jorgensen Avenue)
- Realigning the Youngs Road intersection to minimise impacts on a wetland in that location
- Creating a wider median around the Bannons Lane intersection.

No go zones have also been established to minimise impacts, 114 in total – no trees will be removed in the identified no go zones which are shown in Attachment VI – *Map Book*. Further reduction of impacts would be pursued during the construction phase as specific design and detailed construction methods are developed by the contractors building the project.

All impacts on native trees will be offset in accordance with DELWP's Guidelines for the removal, destruction or lopping of native vegetation 2017 (DELWP 2017c). This will result in areas of native vegetation being protected outside the project alignment so that the Project results in 'no net loss' to Victoria's biodiversity.

Table 9.3 Trees within the project area

		Native							
	Understorey trees	**Large trees (patch)**	**Large trees (scattered)**	**Small trees (patch)**	**Small trees (scattered)**	**Exotic**	**Planted Native**	**Planted Indigenous**	**Total**
Impacted	470	134	40	1650	164	1097	1088	134	4777
Not impacted	237	53	18	668	48	338	713	178	2253
Total	707	187	58	2318	212	1435	1801	312	7030

As identified in the Landscape Strategy's value assessment of landscape components, the Doreen River Red Gums triggered four value criteria: social, aesthetic, scientific and historic. The value of the Doreen River Red Gums was also highlighted through the community consultation process, as the potential loss of the two trees may impact the association residents have with their local area and community (refer to Technical Report D – *Social Impact Assessment*). Similarly, those who may transit through or visit the area regularly may be impacted by the loss of a local landmark that is used as a community identifier. The Project has been designed to retain the two Doreen River Red Gums.

The Landscape Strategy's value assessment of landscape components also assessed the social value of vegetation as it relates to human use patterns and amenity (refer to Section 5: Value assessment of Technical Report G for further information on visual amenity impacts). It is recognised that vegetation can provide shade and shelter in an urban landscape, as well as help to screen views from private and public areas. Key vegetation components identified included shade provisions along footpaths, windbreaks along property boundaries and grass, shrubs and tree planting in public open space including Doreen Recreation Reserve, Orchard Park, Werther Park, Yarrambat Park and Yarrambat Park Golf Course.

Given the permanent reduction in vegetation cover and an increase in the road corridor footprint, residual impacts on receptors in close proximity to the road would also likely be experienced during the operational phase of the Project.

Mitigation measures

The Project corridor has a unique vegetated character with many large mature trees lining the road. Protection and retention of this existing vegetation is the most efficient way of achieving the Landscape Strategy's vision of a 'well vegetated corridor' that delivers 'a legacy of environmental benefits' while 'respecting the cultural values of the existing landscape'.

Tree planting, including species selection, would also be undertaken in consultation with relevant stakeholders including the Shire of Nillumbik, the City of Whittlesea and the Department of Transport, with prioritised replacement of trees identified as having value in accordance with the Landscape Strategy (refer to EPR LV2). Contextual planting along roads and walking and cycling paths would further enhance vegetation values to achieve tree canopy cover for shade, shelter and habitat creation and connectivity (refer to EPR LV2).

Community expectations around the removal of remnant, planted and regenerated vegetation may also be addressed through the following mitigation measures:

- Development and implementation of the Project's Communications and Stakeholder Engagement Plan (refer to EPR S2), including:
  - Investigation of community engagement opportunities
  - Consultation with the City of Whittlesea and Shire of Nillumbik
  - Attendance by MRPV at local initiatives or events
  - Issue of monthly construction updates to provide residents with information on upcoming tree removal.
- Implementation of the Project's Landscape Strategy, including phased removal of vegetation during construction to minimise visual impacts (refer to EPR V1)
- Implementation by the Contractor(s) of the Construction Environmental Management Plan (refer to EPR EMF2) and Tree Protection Management Plan, which would set out management practices for trees and vegetation during construction (refer to EPR AR2).

Future management of reinstated vegetation during the operational and maintenance phase of the Project would be undertaken in accordance with standard Department of Transport maintenance requirements (refer to EPR EMF5).

9.5.3 Aboriginal cultural heritage

In addition to the cultural values assessed through the Landscape Strategy, construction activities may result in adverse impacts to Aboriginal cultural heritage within the project area. The Project is not expected to impact on Aboriginal Places or areas of Aboriginal cultural heritage sensitivity outside the project area. Project activities that could result in impacts on two known Aboriginal Places (VAHR Registered 1: Stone Artefact Scatter and VAHR Registered 2: Low Density Artefact Distribution) include:

- Duplication of Yan Yean Road to two lanes in each direction
- A new walking and cycling path on the western side of Yan Yean Road and a new footpath on the eastern side of Yan Yean Road
- Ancillary works as required.

Given the highly disturbed area, the likelihood of encountering unknown Aboriginal cultural heritage is reported as low throughout the project area. However, there is still potential for Aboriginal cultural heritage to be present and therefore potentially subject to impacts during the construction and operational phases. The potential occurrence of Aboriginal cultural heritage is more likely to occur in those areas that have been previously undisturbed, such as new road lanes and walking and cycling paths. Any potential impacts to Aboriginal cultural heritage would be managed through the implementation of standard controls, including compliance with the Project's Cultural Heritage Management Plan (CHMP).

Mitigation measures

As required in accordance with the *Aboriginal Heritage Act 2006* and the Aboriginal Heritage Regulations 2018, a CHMP #15169 is in progress to address specific management conditions.

Standard controls such as compliance with the CHMP #15169, once approved by Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (the Registered Aboriginal Party), are expected to minimise impacts on Aboriginal cultural heritage (refer to EPR ACH1). Standard conditions likely to be part of the CHMP include a Cultural Heritage Awareness Induction to be undertaken by all personnel on site prior to commencing work and implementation of contingency plans for the discovery of Aboriginal cultural heritage, such as a stop work protocol. All management conditions and contingencies would need be adhered to.

Any maintenance activities with the potential to impact on Aboriginal cultural heritage must be undertaken in compliance with the Cultural Heritage Management Plan #15169.

9.5.4 Historical heritage values

Construction activities are unlikely to impact on historical heritage within the project area, as the Project has been designed to retain the two Doreen River Red Gums (HO191) at the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection.

As identified in the Landscape Strategy, the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection has elevated visual sensitivity due to the presence of the Doreen River Red Gums and the Doreen General Store (former Post Office). Despite not being heritage listed, the Doreen General Store has been identified as having value through the community consultation process, and also forms a distinctive local landmark. The Project has also been designed to retain the Doreen General Store.

St. Michael's Anglican Church is subject to a Heritage Overlay – Schedule HO219 in the Nillumbik Planning Scheme. The Project may impact the Heritage Overlay via a splay to the front of the parcel that is expected to be required for temporary construction works. The area impacted within the Heritage Overlay contains trees and maintained vegetation at the front boundary of the parcel. The Church itself would not be subject to impact from the Project.

The risk of impact on historical heritage during the operation and maintenance phases of the Project was considered to be low, with any potential impacts to be managed by Department of Transport.

Mitigation measures

To avoid and minimise adverse effects on the two Doreen River Red Gums that are identified in Heritage Overlay – Schedule HO191, the Project has been designed to retain these two trees. For works within the Heritage Overlay that impact historic heritage, a Heritage Impact Statement would be prepared in consultation with the Shire of Nillumbik and no-go zones would be implemented (refer to EPR HH1).

Prior to any works, a detailed Tree Protection Plan would be prepared by a suitably qualified arborist and must be signed off by MRPV (refer to EPR AR3). The plan would include a no-go zone for works within the vicinity of the two trees informed by detailed arborist investigations and specific controls for works (including excavation, utility installation and lighting) within the calculated Tree Protection Zones of the Doreen River Red Gums, including:

- The maximum depth of excavation must not exceed 800 millimetres below the existing ground surface within the Tree Protection Zones identified in the Tree Protection Plan
- There must be no damage to the tree canopy of the Doreen River Red Gums
- Arrangements for appropriate long-term access to water are to be provided to the Doreen River Red Gums
- Reinstatement of the area that is available must include conversion to mulched garden bed with complementary indigenous plantings such as acacias.

The Project has been designed to avoid and minimise adverse effects on the heritage values of the St. Michael's Anglican Church that are identified in the Heritage Overlay – Schedule HO219 (refer to EPR HH2).

In addition, the Construction Environmental Management Plan (CEMP) would include processes and measures to manage historical heritage (refer to EPR HH3), such as:

- An archaeological discovery protocol that specifies measures to avoid and minimise impacts on any previously unidentified historical archaeological sites and values discovered during construction in accordance with the *Heritage Act 2017*
- All personnel on site must undertake a Cultural Heritage Awareness Induction prior to commencing work, which will include information on the Doreen River Red Gums.

The Project's Landscape Strategy would also play a role in protecting historical heritage values within the project area, as it seeks to avoid and minimise impacts as part of its vision to respect the cultural values of the existing landscape.

Standard controls for impacts on historical heritage would be applied during the design and construction phase of the Project. Any potential impacts during operation and maintenance would be managed in accordance with the Department of Transport's environmental management system and standards for managing declared roads in Victoria (refer to EPR EMF5).

9.6 Environmental Performance Requirements

This EES includes an Environmental Management Framework (refer to Chapter 12 *Environmental Management Framework*) which provides a transparent and integrated framework for managing environmental risk for the Project. It contains Environmental Performance Requirements, which set the environmental outcomes that must be achieved during the design, construction and operation of the Project.

Initial EPRs for the Project were prepared to inform the environmental risk assessment. This performance-based approach defines the relevant legislative requirements, standards, limits and processes that the Project must meet or follow, while still providing flexibility to accommodate minor modifications during the design process – provided the outcomes specified in the EPRs are achieved.

In developing the EPRs, the following hierarchy of control was used to identify potential mitigation and management measures:

- Avoidance through design refinements
- Minimisation through timing of the activities
- Mitigation or management through physical/engineering controls
- Mitigation or management through operational controls
- Induction, training and awareness
- Monitoring and measurement
- Adaptive management and contingency protocols.

EPRs relevant to social and cultural values have been grouped by Evaluation Objective and are shown in Table 9.4.

Table 9.4 Environmental Performance Requirements

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Environmental Management Framework To provide a transparent framework with clear accountabilities for managing and monitoring the environmental effects associated with the Project	Legislation and policy as identified in all EPRs	These EPRs are relevant for all impact pathways across the Project.	EMF2	**Environmental Management Plans** Prepare and implement a Construction Environmental Management Plan (CEMP) and other relevant plans as required by the EPRs and in accordance with this Environmental Management Framework (EMF). The development of the CEMP and sub-plans must include consultation with relevant stakeholders as listed in this EMF and as required under any statutory approvals. The CEMP and all sub-plans shall be approved by MRPV before construction commences (excluding preparatory buildings and works permitted under the Incorporated Document).	Design and construction
			EMF5	**Operation and maintenance** Any potential impacts during operation and maintenance will be managed in accordance with the Department of Transport's environmental management system and standards for managing declared roads in Victoria.	Operation and maintenance

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Effects on biodiversity – To avoid or, at least, minimise adverse effects on native vegetation (including remnant, planted, regenerated and large old trees), listed migratory and protected species/ecological communities and then to address offset requirements consistent with relevant state and commonwealth policies.					
Arboriculture To avoid where possible, and otherwise minimise adverse impacts on remnant, planted, regenerated, or large old trees	Australian Standard 4970-2009 Protection of Trees on Development Sites	Loss of or damage to remnant, planted or regenerated trees, reducing canopy cover which can affect air temperature, climate, landscape, biodiversity, aesthetic, and recreational values	AR2	**Tree Protection Management Plan** Prior to construction commencing, develop and implement a Tree Protection Management Plan (see also EPRs E3 and AR3) based on the recommendations of Australian Standard 4970-2009 Protection of Trees on Development Sites. This will be in consultation with the City of Whittlesea and Shire of Nillumbik and informed by a project arborist (with a minimum qualification of Diploma in Arboriculture (AQF level 5 or equivalent), which covers: • Trees to be removed or retained which will be informed by Tree Impact Assessment • Condition or significance of trees to be removed • Options for relocation and reinstatement of trees if feasible • All tree protection zones and structural root zones • All tree protection fenced off areas and areas where ground protection systems will be used • All services to be located within the tree protection zone. All services will either be located outside of the tree protection zone or bored under the tree protection zone • Location of tree protection measures and ground protection • To reduce tree removal and retain trees for as long as possible, tree removal will be undertaken as late as possible during construction works.	Design and construction

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Continued:	**Continued:**	**Continued:**	AR3	**Doreen River Red Gums**	Design and construction
Arboriculture	As above	As above		At the Bridge Inn Road intersection, the two Doreen River Red Gums will be retained. Prior to any works, a detailed Tree Protection Plan will be prepared by a suitably qualified arborist and must be signed off by MRPV. This will include tree protection measures relevant to proposed works such as a calculated no-go zone and Tree Protection Zones and specific controls for works (including excavation, utility installation, lighting) within the calculated Tree Protection Zones of the Doreen River Red Gums as follows: • Works must not occur within the no-go zone determined in the Tree Protection Plan • The maximum depth of excavation must not exceed 800 millimetres below the existing ground surface within the Tree Protection Zones identified in the Tree Protection Plan • There must be no damage to the tree canopy of the Doreen River Red Gums • Fence/crash barrier, signage footings and road furniture can be installed within the identified Tree Protection Zones identified in the Tree Protection Plan but are not to be more than one metre below the existing ground surface level and must not be strip footings or similar if they exceed 800 millimetres below the existing ground surface level • Any utilities or services such as conduits or pipes to be installed within the Tree Protection Zones identified in the Tree Protection Plan, but outside of the no-go zone identified in the Tree Protection Plan, are to be bored with a minimum of one metre cover to the existing ground surface and are to be no greater than 500 millimetres in diameter • Arrangements for appropriate long-term access to water are to be provided to the Doreen River Red Gums • The finished level of any surface adjacent to the no-go zone must be +/- 200 millimetres of the existing road and no additional fill can be placed within the undisturbed areas of the Tree Protection Zones identified in the Tree Protection Plan • Reinstatement – the area that is available, must be converted to mulched garden bed with complementary indigenous plantings such as acacias. Reinstatement of existing pavement areas within the Tree Protection Zones identified in the Tree Protection Plan shall be to a minimum depth of 500 millimetres.	

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Effects on social and cultural values – To avoid or minimise the adverse effects on social and cultural values, including landscape values, Aboriginal and historical cultural heritage values, and remnant, planted and regenerated vegetation, and to maximise the enhancement of these values where opportunities exist.					
Aboriginal cultural heritage To avoid where possible, and otherwise minimise adverse effects on Aboriginal cultural heritage values, and to maximise the enhancement of these values where opportunities exist	*Aboriginal Heritage Act 2006* Aboriginal Heritage Regulations 2018	Disturbance of known or previously unrecorded Aboriginal cultural heritage potentially impacting on heritage values	ACH1	Implement and comply with the Cultural Heritage Management Plan approved under the *Aboriginal Heritage Act 2006*.	Design and construction
Historical heritage To avoid where possible, and otherwise minimise adverse effects on historical heritage values, and to maximise the enhancement of these values where opportunities exist	*Heritage Act 2017* *Planning and Environment Act 1987*	Potential impact on the values of heritage places and/or archaeological sites	HH1	**Doreen River Red Gums** At the Bridge Inn Road intersection, retain the two Doreen River Red Gums that are identified in the Heritage Overlay HO191 (see also EPR AR3). For works within the Heritage Overlay that impact historic heritage, prepare a Heritage Impact Statement in consultation with Shire of Nillumbik and implement no-go zones in accordance with the CEMP (see also EPR AR3).	Design and construction
			HH2	**St. Michael's Anglican Church** Design permanent and temporary works to avoid where possible, and otherwise minimise, potential impacts on the heritage values of the St. Michael's Anglican Church that are identified in the Heritage Overlay HO219. The CEMP must include processes and measures to manage historical heritage, such as implementation of no-go zones, within the Construction Environmental Management Plan.	Design and construction

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Continued: Historical heritage	**Continued:** As above	**Continued:** As above	HH3	**Archaeological discovery protocol** The CEMP must include an archaeological discovery protocol that specifies measures to avoid and minimise impacts on any previously unidentified historical archaeological sites and values discovered during construction. The management protocol must be consistent with the requirements of the *Heritage Act 2017* and include procedures for ceasing work if human remains or archaeological artefacts are discovered, notifying Heritage Victoria of the find, obtaining consent to deal with the find, and dealing with the find in accordance with the consent. All personnel on site must undertake a Cultural Heritage Awareness Induction prior to commencing work, which will include information on the Doreen River Red Gums.	Design and construction
Landscape and visual To avoid where possible, and otherwise minimise adverse effects on landscape values, and to maximise the enhancement of these values where opportunities exist	*Heritage Act 2017* *Planning and Environment Act 1987*	Potential adverse impacts from construction activities on visual and/or landscape values experienced from sensitive receptors including residential areas, recreational and open spaces, hospitals, educational institutes and community facilities	LV1	**Implement the Landscape Strategy** Implement the Landscape Strategy (refer to Technical Report G) during detailed design and construction to minimise adverse effects on landscape values and visual impacts, particularly in relation to: • Retaining and reinforcing key existing views as identified within the Landscape Strategy • Heritage values • Existing and proposed landmark elements across the Project • High value vegetation as identified within the Landscape Strategy's 'Cultural Value of Vegetation Assessment' • Community and recreational centres and open space, including existing Council masterplans for Doreen Recreational Reserve, Yarrambat Park & Golf Course and Yarrambat Township • Residential and business interfaces • See also EPRs E6, AR1, AR4, LV2 and V1.	Design and construction

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Continued: Landscape and visual	**Continued:** As above	**Continued:** As above	LV2	**Replanting and reinstatement of vegetation** Replanting and reinstatement of vegetation must occur in accordance with the Project's Landscape Strategy (see also EPRs E6, AR1, AR4, LV1 and V1) in consultation with the relevant land manager, including: • Ensure tree planting is fully coordinated with services, easements and utilities including required height limits and offsets • Ensure new tree planting is climate resilient and suitable for the local context • Maximises the enhancement of landscape, Aboriginal and historical cultural heritage, and vegetation and habitat connectivity values, where opportunities exist • Provide replacement screening vegetation where feasible to reduce impacts to visual amenity • Enhance existing vegetation along the road corridor and around infrastructure elements • Provide contextual planting along roads and walking and cycling paths where feasible to achieve tree canopy cover for shade, shelter and habitat creation and connectivity • Seek to improve user amenity through identifying opportunities within public open space in accordance with relevant Council masterplans • Enhance intersections and identified gateways with distinctive native plantings to act as visual marker along the road corridor.	Design and construction
Vegetation To avoid where possible, and otherwise minimise adverse effects on remnant, planted or regenerated vegetation, and maximise the enhancement of these values where opportunities exist	*Planning and Environment Act 1987*	Loss of or damage to remnant, planted or regenerated vegetation during construction impacting on social and cultural values	V1	Design permanent and temporary works to avoid where possible, and otherwise minimise adverse effects on, high value vegetation as identified within the Landscape Strategy's 'Cultural Value of Vegetation Assessment'. Removal of vegetation will be phased wherever practicable to temporarily reduce visual impacts (see also EPRs E3 and AR4).	Design and construction

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Effects on land use planning- Identify other potential adverse environmental effects of the project, such as on land use, and planning, and canvass an environmental management approach and performance measures to ensure any effects are identified and avoided, minimised or mitigated.					
Social To avoid where possible, and otherwise minimise adverse effects on social and cultural values, and maximise the enhancement of these values where opportunities exist	*Planning and Environment Act 1987* *Land Acquisition and Compensation Act 1986*	Potential impacts on social and cultural values such as community, educational, religious or recreational facilities due to changes to access or amenity	S2	**Implement a Communications and Stakeholder Engagement Plan** Prior to construction, develop and implement a Communications and Stakeholder Engagement Plan to engage and consult the community and affected stakeholders and discuss progress of construction activities. The Communications and Stakeholder Engagement Plan must include measures to: • Identify a process for identifying community issues and the recording, management and resolution of complaints from affected stakeholders including business owners, community service providers, education providers, public and active transport key user groups and residents, consistent with Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations • Communicate and engage with the community and potentially affected stakeholders in relation to: – Construction activities including temporary works and impacts that may affect the community, businesses or individual stakeholders (e.g. dust, noise, vibration and light) and relevant mitigation – Changes to transport conditions and relevant mitigation (e.g. road closures, detours)	Design and construction

Performance objective	Applicable legislation, policy and guidelines	Impact pathway	EPR code	Environmental Performance Requirement	Project phase
Continued: Social	**Continued:** As above	**Continued:** As above	**Cont.** As above	• Ensure that communities are notified of construction and changes well in advance of works commencing as approved by MRPV • Ensure that the consultation program includes provision for onsite signage of affected properties that provide a service to the local or regional community • Continue consultation with people affected by the relocation of memorials • Outline the timing of works that will affect particular local areas, to be updated to reflect current and anticipated conditions • Communicate incidents and emergencies, including notification methods and timeframes in the event of a major incident or overrun • Ensure the workforce has appropriate community awareness and sensitivity • Implement innovative communications tools and methods to enhance the Project's ability to effectively communicate and engage with the community and stakeholders including best available technology in addition to conventional means • Make provision for a 24-hour phone number to be available to the community to report concerns.	**Continued:** As above

9.7 Conclusion

This chapter summarises the findings of the technical assessments that have been undertaken to determine the Project's impacts on social and cultural values, including landscape values, remnant, planted and regenerated vegetation, Aboriginal cultural heritage and historical heritage values.

An integrated assessment that considers specific local context has explored the social and cultural values of vegetation in the context of Yan Yean Road. It was found that impacts on social and cultural values are likely to result from the clearance of trees and vegetation during the construction phase of the Project.

Aboriginal cultural heritage values along the corridor have been identified and would be protected and managed through a CHMP approved by the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation.

The key to mitigating potential adverse impacts along the Project corridor is implementation of the Project's Landscape Strategy, CHMP and CEMP, which would address how vegetation and cultural heritage sites can be protected (where feasible) and if not, how identified values can be managed during construction and then reinforced and rehabilitated within new landscape treatments.

The implementation of these strategies and plans would ensure that the Project responds effectively to the local context of Yan Yean Road, community interests and cultural and environmental sensitivities. Mitigation measures have informed the development of EPRs, which set the environmental outcomes that must be achieved during design, construction and operation of the Project.

Therefore, the Project is considered to respond the EES Scoping Requirements relevant to social and cultural values by:

- Identifying the potential adverse environmental effects in all key aspects using a risk-based approach
- Proposing a comprehensive environmental management approach including appropriate performance measures to avoid, otherwise minimise and mitigate adverse environmental impacts.

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