Foreword

On behalf of Major Road Projects Victoria (MRPV), I am pleased to present the Environment Effects Statement (EES) for Stage 2 of the Yan Yean Road Upgrade.

Upgrading Yan Yean Road will make it easier and safer to travel through Melbourne's outer northern suburbs. Stage 1 of the Yan Yean Road Upgrade in Plenty was completed in 2019, providing a much-needed capacity boost and delivering safety improvements to 3.9 kilometres of this frequently used arterial corridor. Continuing the road upgrade along the next 5.5 kilometres section of Yan Yean Road between Kurrak Road and Bridge Inn Road will significantly improve traffic flow and safety for road users in Yarrambat and Doreen.

Stage 2 of the Yan Yean Road Upgrade is an important project for road users and the local community. Adding an extra lane in each direction and upgrading eight intersections along the alignment will ease traffic congestion by increasing the capacity of the road and improving traffic flow. In addition, safety barriers will be installed in the centre medians and by the roadside to reduce the risk of head-on collisions and run off road crashes.

The safety barriers will also prevent risky uncontrolled right turns and direct traffic to controlled intersections, further improving safety along Yan Yean Road. New walking and cycling paths will improve connectivity and encourage active transport in the area, connecting to the almost 4 kilometres of walking and cycling paths built as part of Stage 1 of the upgrade.

In late 2018, the Minister for Planning determined that an EES would be required due to the potential impacts the Project could have on the surrounding environment. MRPV has prepared this EES to provide an assessment of the potential environmental, social, cultural and economic impacts associated with the proposed construction and operation of the upgraded road.

MRPV recognises that widening the road requires significant land acquisition, tree and vegetation removal. Through the development of this EES, the Project is aiming to strike a balance between minimising impacts to the surrounding environment while delivering this important road upgrade for the community.

Community and stakeholder feedback has continued to be a central element in the development of this EES. Feedback provided has been incorporated into the studies that have been completed, the environmental management approach presented in this EES and most importantly, the changes that have been adopted into the design. Some of these significant design changes include a wide road shoulder to provide safer access for residents living between Laurie Street and Bannons Lane and a wide median to reduce the impact to trees at this location that may provide foraging habitat for the endangered Swift Parrot.

Most significantly, the Project is proposing to construct the Bridge Inn Road intersection to the north east of its current position in order to retain two River Red Gum trees and an old post office building that the community told us were local landmarks and an important part of the area's identity and heritage.

MRPV was assisted in preparing this EES by a Technical Reference Group (TRG) convened by the Department of Environment, Land, Water and Planning (DELWP). MRPV would like to thank the TRG and everyone who has contributed to this EES. This consultation led to design improvements that facilitate wildlife movement, preserve habitat and reduce the likelihood and severity of potential impacts to local businesses and residents.

The EES enclosed includes an Environmental Management Framework (EMF), which recommends Environmental Performance Requirements (EPRs) that define the environmental outcomes the Project must achieve during the design, construction and operation of the road upgrade to avoid, mitigate or manage identified impacts.

I encourage you to read this EES in detail, including the main report, associated technical appendices, map book, summary reports and draft Planning Scheme Amendment. These documents are important in detailing that all potential impacts have been identified and will be managed appropriately.

To make a submission, you can follow the instructions provided in the Summary Report for this document. I am confident that this important road project will provide the best outcome for the community and future generations.

Allen Garner
Chief Executive Officer
Major Road Projects Victoria

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Executive Summary

Introduction

Melbourne's north is home to some of Australia's fastest-growing suburbs, with further substantial growth forecast over the next 15 years. By 2036, the population of the City of Whittlesea will be approaching 364,500 (an increase of 141,000 from 2019), led by significant residential expansion in the suburbs of Doreen and Mernda.

This substantial population growth is putting the area's road network under increasing pressure and constraining connections to places of employment, education and recreation both within Melbourne's north and across the city.

Yan Yean Road is located approximately 25 kilometres north-east of Melbourne's Central Business District (CBD) within the municipalities of Whittlesea and Nillumbik. It is a significant north-south arterial road servicing the northern suburbs and providing connectivity for residents of Doreen and Mernda to the townships of Plenty and Yarrambat, and to jobs and services in established neighbouring suburbs such as Greensborough and Diamond Creek.

Originally designed as a local road, Yan Yean Road is now an increasingly important arterial link that is struggling to cater for significantly higher traffic volumes.

While an upgrade of the southern section of Yan Yean Road has improved capacity and safety, the rest of the road runs in an undivided two-lane configuration through hilly terrain, consisting of sections with steep vertical grades and poor sight lines.

The majority of intersections only have 'give way' or 'stop' priority controls and direct access to adjacent land is generally uncontrolled. The road's shoulders are unsealed and there is insufficient space or infrastructure for cyclists and pedestrians. With between 20,000 to 24,000 vehicles travelling along Yan Yean Road each weekday, it is currently operating beyond its capacity. There has also been an increase in the number of crashes recorded along the road between 2006 and 2018, with the majority being rear end crashes commonly associated with congestion.

The Yan Yean Road Upgrade – Stage 2 Project (the Project) proposes to duplicate a 5.5 kilometre section of Yan Yean Road (between Kurrak Road and Bridge Inn Road) from two lanes to four lanes to safely cater for the growing daily volumes of traffic and cyclists and pedestrians. This includes the construction of five new signalised intersections to improve road safety and control access to the road.

Why is the Project needed?

The Project would address congestion and safety issues along Yan Yean Road, as well as providing new and improved infrastructure to encourage and support higher rates of cycling, walking and public transport use.

The Project would deliver transport, economic and social benefits. These benefits include:

- Improved road safety
- Improved road capacity and network efficiency
- Greater connection of people to places.

As with all public infrastructure investments, these benefits must be evaluated against the Project's potential adverse effects and environmental risks.

Improved road safety

Yan Yean Road is presently operating beyond its traffic carrying capacity with an increasing number of crashes. Crash data from VicRoads' Roads Crash Information System reveals 38 crashes have been recorded from 2014 to 2018 along the single carriageway section of Yan Yean Road from Kurrak Road to Bridge Inn Road, including one fatal crash and nine serious injury crashes. The majority of these incidents can be related directly to congestion caused by higher traffic volumes, the complexity of the road environment (such as poor sight lines due to hills and sharp bends) and the lack of safe and timely access from side streets and driveways.

Black Spot Program funding ($1.78 million) was allocated to improve safety at the intersection of Yan Yean Road and Jorgensen Avenue following a head-on collision that resulted in a fatality in 2014. Yan Yean Road's undulating topography, non-signalised intersections and uncontrolled access points means there is potential for further crashes of this kind to occur if the road is not upgraded and traffic volumes continue to increase.

Without the Project, intersections are forecast to operate very poorly during morning and afternoon peak hours in 2031. All intersections controlled by signage along the route are also expected to perform very poorly, with motorists coming out of these residential areas expected to encounter difficulty in finding suitable gaps in traffic along Yan Yean Road.

The Project provides road safety improvements that would significantly reduce risks to drivers, pedestrians and cyclists. These include:

- Upgrading the roadway from a single carriageway to a divided carriageway. Divided carriageway roads have a substantially improved road safety record compared to single carriageway roads in terms of reducing fatal crashes and injury crashes, being able to better absorb and react to adverse events in case one lane has to be closed and discouraging 'rat running' through the local road network
- Upgrading intersections to traffic signals or roundabouts, improving safety for turning movements
- Restricting local access to left in / left out movements only, by diverting traffic to U-turning facilities at traffic signals or roundabouts
- Isolating road users from hazards through the construction of continuous safety barriers. Kerbside safety barriers would protect road users from roadside hazards and minimise the severity of run-off-road crashes, while median safety barriers would reduce the potential for head-on crashes and minimise the severity of crashes if they do occur
- Providing a walking and cycling path to improve safety for pedestrians and cyclists, and encourage cyclists to travel off the road and reduce the risk of cyclist accidents
- Providing safe crossing points at each of the six traffic signals between North Oatlands Road and Bridge Inn Road.

Improved traffic flows, road capacity and network efficiency

Reliable travel times are important for improved safety, efficient business transport and freight deliveries, and improved quality of life for road users who experience fewer delays and less frustration and uncertainty when planning journeys.

Without the Project, it is likely that existing congestion levels along Yan Yean Road will be exacerbated and capacity reached for longer periods of the day, with traffic also being forced down Plenty Road and more rural roads in the Shire of Nillumbik. Traffic performance along Yan Yean Road is expected to deteriorate significantly by 2031, with the average travel speeds forecast to drop to 20 kilometres per hour in the peak direction of travel.

Additional capacity provided by the Project would significantly improve speeds and travel times on Yan Yean Road. Once the Project is constructed, peak direction travel speed improvements of between 20-30 kilometres per hour during the morning and afternoon peak periods are forecast along Yan Yean Road for 2031. The Project would also improve average travel speeds for vehicle trips across the local road network at peak times by between 6-10 percent.

Travel times along Yan Yean Road would improve, particularly in the peak southbound direction in the morning peak and northbound direction in the evening peak, and travel times along Plenty Road and Epping Road are also expected to see improvement with the Project in place.

The Project provides road safety improvements that would significantly reduce risks to drivers, pedestrians and cyclists.

Greater connection of people to places, including new walking and cycling links

The Project would provide community benefits by connecting people to places in the northern suburbs. In line with Plan Melbourne, the Project would support growth in capacity by improving road network and effective public transport connections, improve access from the northern suburbs to job-rich areas across Melbourne and reduce congestion and enhance the resilience of the road network to reduce business and personal costs of travel.

The Project would support access to Mernda Station, the Mernda Major Activity Centre and growing residential, educational and recreational centres in Melbourne's north, creating greater employment opportunities, increasing economic activity in the area and improving access to social services, recreational activities and other valued places. Forecast travel time improvements for 2031 also show that accessibility to the key activity centres of the Melbourne CBD, LaTrobe National Employment and Innovation Cluster, Greensborough and Eltham would be improved with the Project in place.

The lack of appropriate infrastructure to support active and public transport has led to low levels of walking, cycling and public transport use in the area. This also represents a safety risk for road users, pedestrians and cyclists, and constrains social connectedness for locals, especially vulnerable users such as the elderly and children.

Yan Yean Road does not provide sufficient space or infrastructure for on-road cyclists and there are no walking and cycling paths, and limited and disconnected footpaths. The northern section of Yan Yean Road (Jorgensen Avenue to Bridge Inn Road) is part of the Principal Bicycle Network – a network of bicycle routes that provide access to major destinations across Melbourne. This section is currently underused due to the lack of dedicated and appropriate cycling facilities, with the narrow width of the road likely to discourage use by cyclists.

The provision of a new 5.5 kilometre separated shared walking and cycling path on the western side of Yan Yean Road, a footpath on the east side and safe crossing points would link Doreen to Diamond Creek, improve access to a range of places of interest for active transport modes and promote greater travel by these modes.

Requirement for an EES

On 14 October 2018, the Victorian Minister for Planning determined that an Environment Effects Statement (EES) was required for the Project under the *Environment Effects Act 1978*. This EES describes the potential effects of the Project on environmental values and identifies the means of avoiding, minimising and managing adverse effects. The EES process is not an approval process in itself; rather, it allows an assessment of potentially significant effects and their acceptability to inform key decision-makers.

The Minister determined an EES was required for the Project due mainly to the potential significant effects on biodiversity and social and cultural values as a result of the proposed clearance of a very large number of trees and habitat, including potential cumulative effects on the critically endangered Swift Parrot *Lathamus discolor*. The Minister also required this EES to assess other potential effects of the Project, such as on land use, community amenity and planning, and the specific effects on transport capacity and connectivity across Melbourne's northern outer suburbs.

The Project was also referred to the Australian Government under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The delegate for the Commonwealth Minister for the Environment determined on 2 April 2019 that the Project is a 'controlled action' under the EPBC Act and requires assessment and approval under the Act.

This decision was made due to potential impacts on Matters of National Environmental Significance (MNES), including the Swift Parrot and Matted Flax-lily *Dianella amoena*. The EES assessment process has been accredited to assess the Project for the purposes of the EPBC Act, in accordance with the Commonwealth and Victorian EPBC Act bilateral agreement.

The Project

The Project would duplicate a 5.5 kilometre section of Yan Yean Road between Kurrak Road and Bridge Inn Road, increasing the existing two lanes to four lanes, with two lanes in each direction. The existing road alignment has been retained due to topographic and road reserve constraints.

The Project includes:

- Five new signalised intersections and two new roundabouts
- Upgrades to the existing signalised intersection at Ironbark Road
- New street lighting at all intersections, road signage and landscaping
- A new walking and cycling path on the western side and a footpath on the eastern side of Yan Yean Road
- Continuous safety barriers running along the Project's length
- A wide median between Bannons Lane and Jorgensen Avenue to provide for additional landscaping opportunities and potential avoidance of existing biodiversity values and large trees.

The key components of the Project are shown in Figure 1 and the project area is shown in Figure 2.

Figure 1 **Key components of the Project**

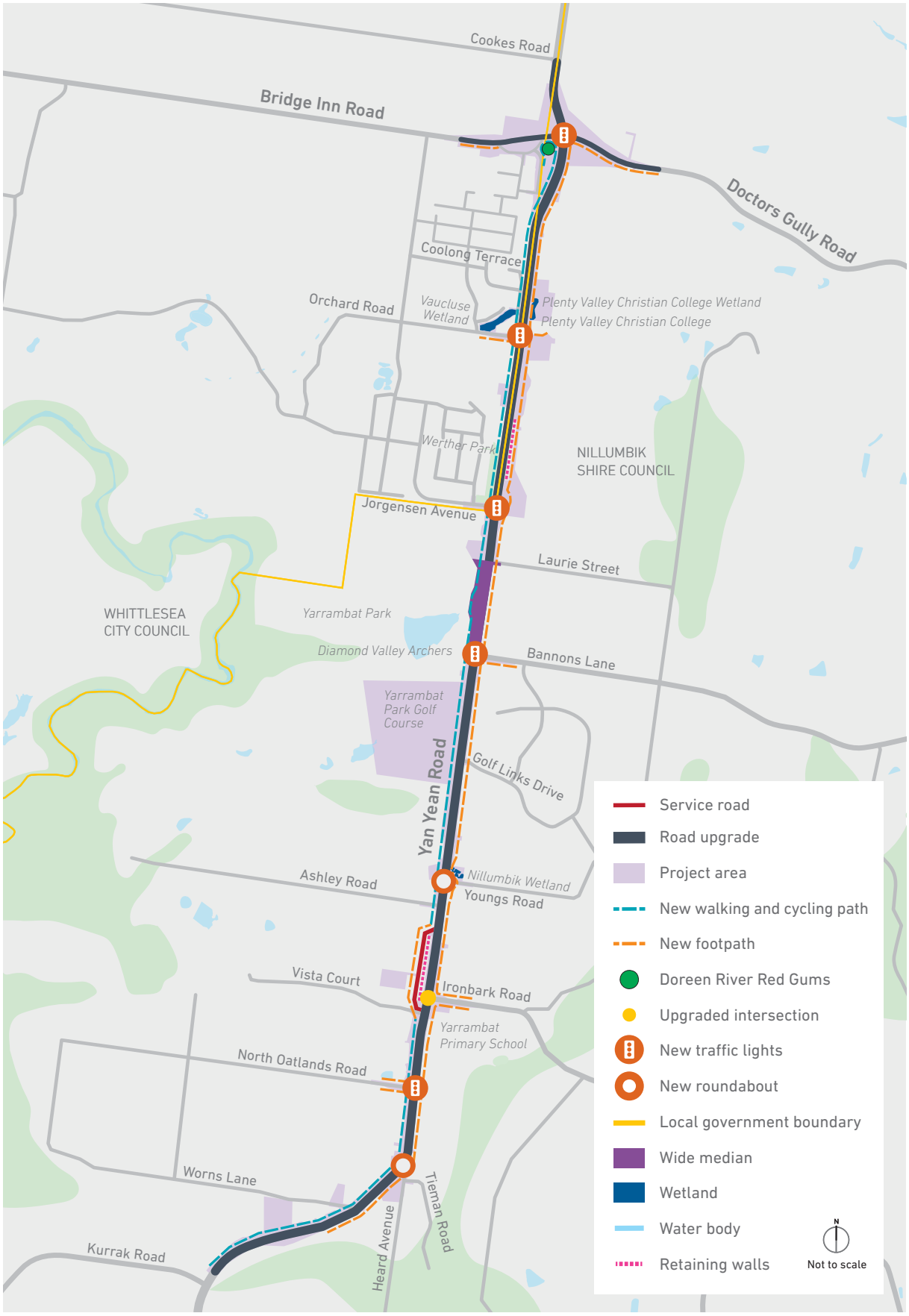
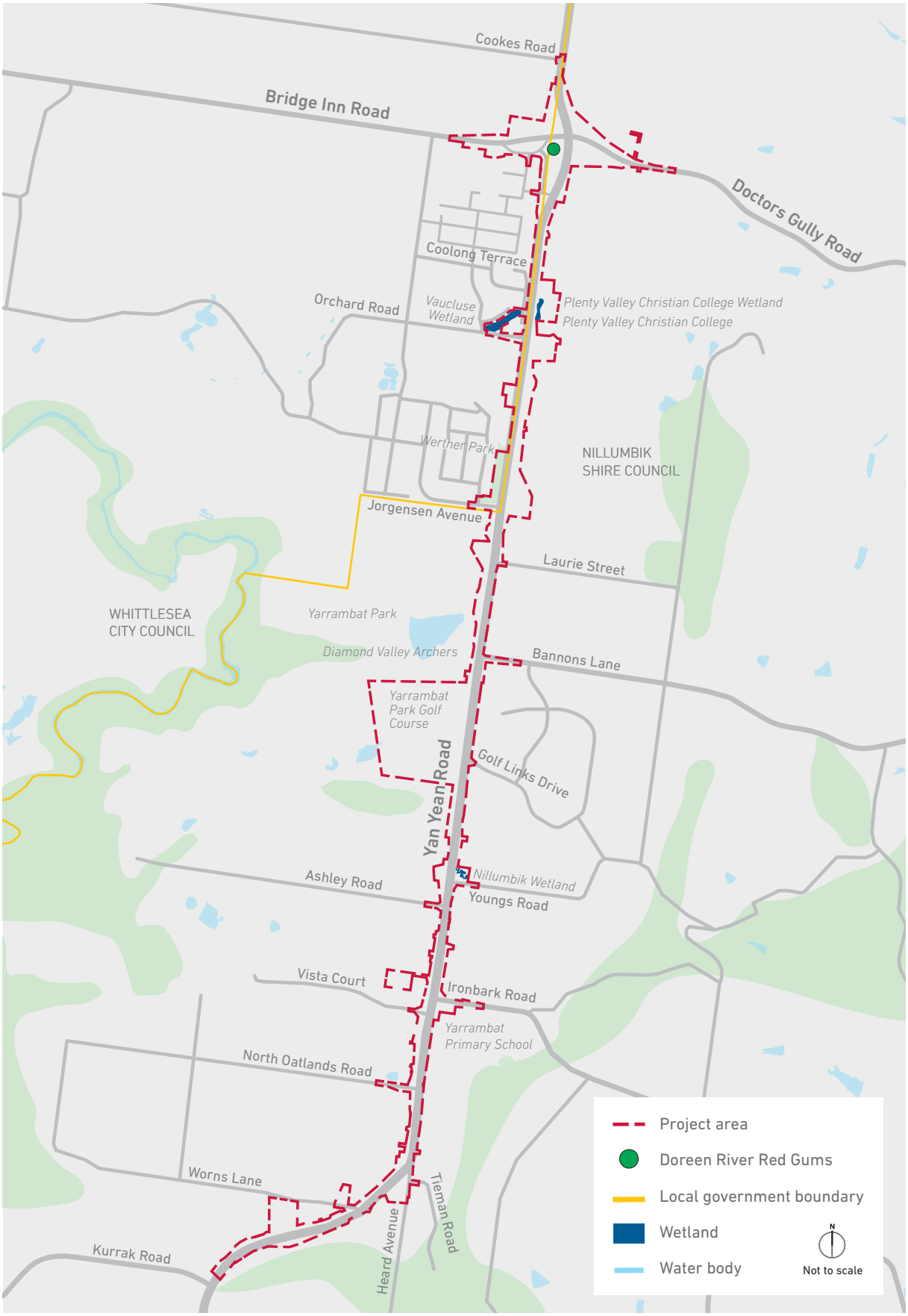


Figure 2 Project area

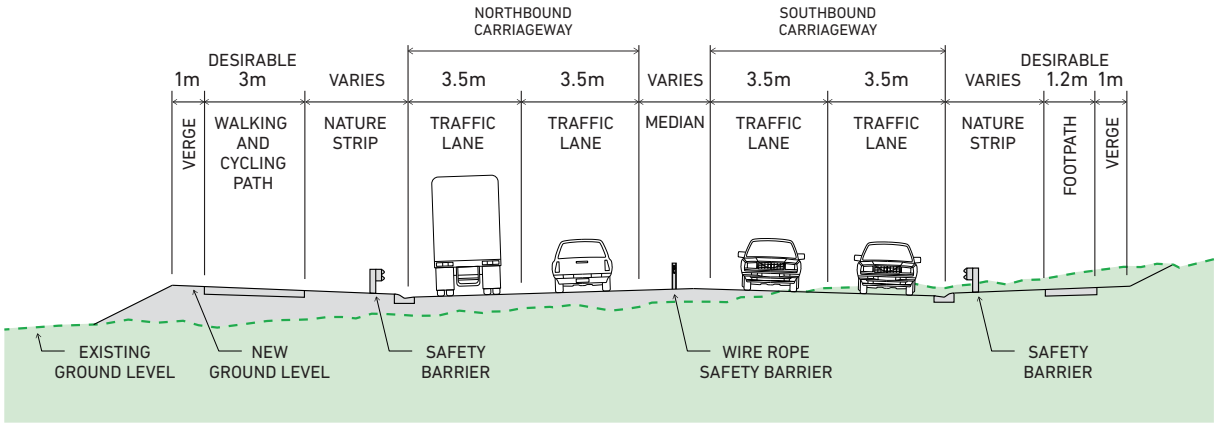


Typical cross-section

The preferred mid-block cross section design for the Project allows for duplication with a 2.2 metre median with safety barriers. At some locations along the alignment, such as intersections or roundabouts, this cross section would be slightly different and wider.

The installation of safety barriers provides opportunities for tree planting in closer proximity to the road carriageway than would be otherwise permissible, in accordance with the Project's Landscape Strategy. The total road reserve width along most of the proposed design is 24.2 metres increasing to 33 metres between Bannons Lane and Jorgensen Avenue to accommodate the widened median at this location. The current typical roadway width is eight metres. Figure 3 shows the typical cross-section of the road design for the Project.

Figure 3 Yan Yean Road preferred cross section design

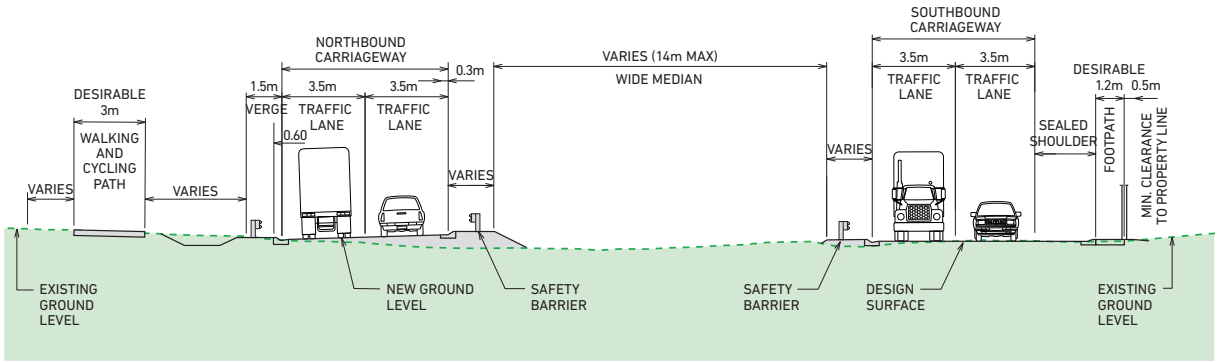


For illustrative purposes only.

Wide median

A divided carriageway (boulevard design) increases the median width of Yan Yean Road from 2.2 metres to approximately 14 metres by aligning the northbound carriageway between Bannons Lane and Jorgensen Avenue (shown in Figure 4). The maximum road reserve width at this point would be approximately 33 metres, although the cross section would taper at either end to tie back into the standard cross section of 24.2 metres, as described above. A wider median at this location would provide for additional landscaping opportunities and potential avoidance of existing biodiversity values (including Matted Flax-lily) and large trees in accordance with the Project's Landscape Strategy.

Figure 4 Wide median cross section design



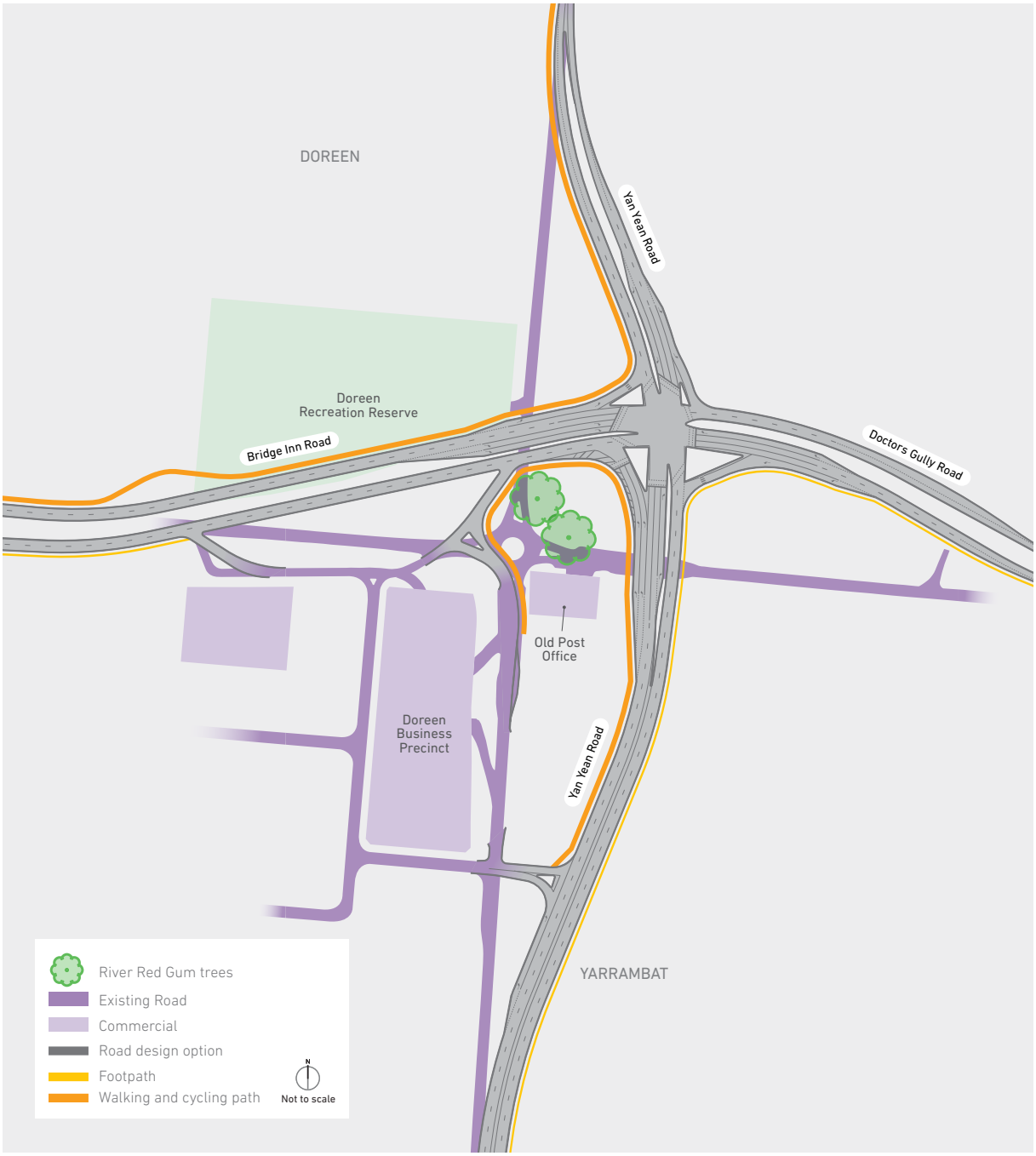
For illustrative purposes only.

Bridge Inn Road intersection

The project design at Bridge Inn Road would retain the two Doreen River Red Gums situated adjacent to the Bridge Inn Road and Yan Yean Road T-intersection and the General Store / former post office on the corner of Doctors Gully Road.

The design shifts the whole intersection to the north east corner of Yan Yean Road / Bridge Inn Road with two lanes in each direction (refer to Figure 5). This project design at Bridge Inn Road has been refined following community consultation and in response to additional arboriculture advice on the Doreen River Red Gums, which are situated south west of the proposed intersection.

Figure 5 Bridge Inn Road intersection design



For illustrative purposes only and subject to change.

Landscaping and urban design

A Landscape Strategy (provided in EES Technical Report G) has been developed in consultation with the City of Whittlesea, Shire of Nillumbik and other key stakeholders. The strategy seeks to limit the identified potential impacts of the Project and enhance existing landscape values where feasible. It aims to ensure that landscaping undertaken as part of the Project is well designed, appropriate to local conditions and, wherever possible, includes opportunities to increase canopy cover and improve public amenity.

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.

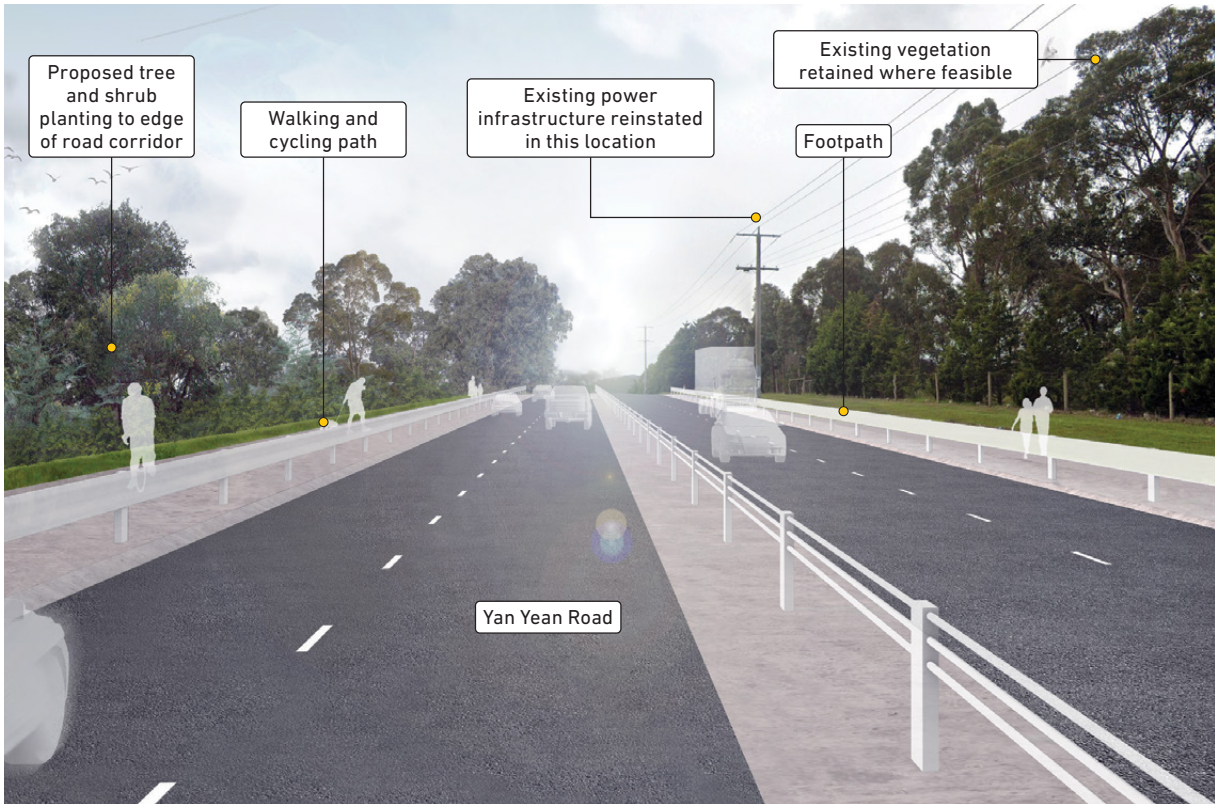
Implementation of the Landscape Strategy would ensure that the Project responds effectively to the local context of Yan Yean Road, community interests and environmental sensitivities.

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

- 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.

➔ Figure 6 shows existing conditions on Yan Yean Road (between Youngs Road and Golf Links Drive) and the same view once the landscape has matured following reinstatement in accordance with the Landscape Strategy.

Figure 6 **Existing and proposed landscape maturity on Yan Yean Road between Youngs Road and Golf Links Drive**



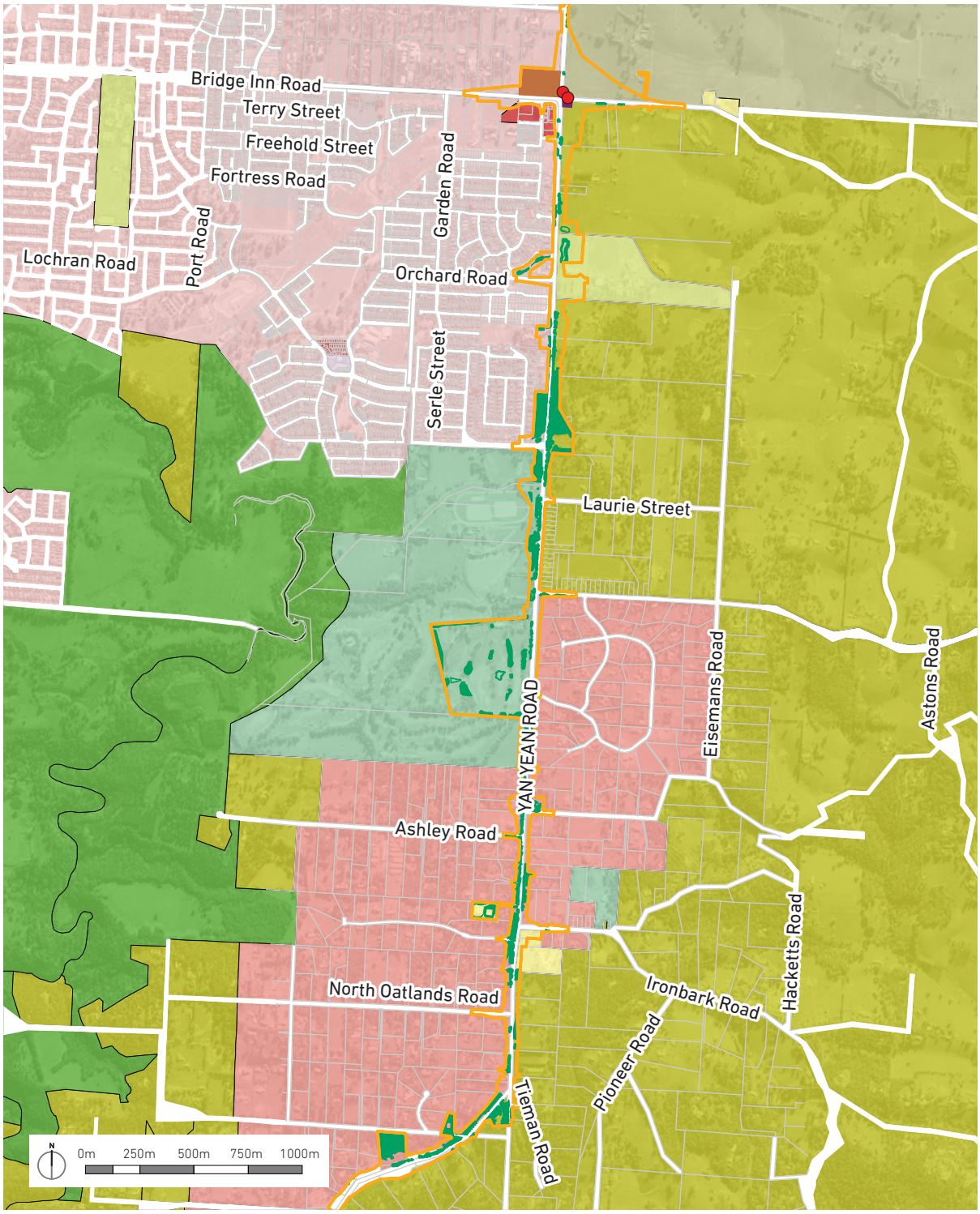
Existing conditions

An important part of this EES is to identify existing environmental assets, values and uses in the vicinity of the Project, which then enables a full assessment of the likely impacts on these conditions.

The Project is largely within an existing road reserve, with the surrounding environment characterised by low density residential and rural living areas such as farmland and agricultural areas (refer to Figure 7). Much of the project area has been cleared, with approximately 20% of the project area supporting remnant native vegetation patches.

The northern and western end of the project area, within the suburb of Doreen, is experiencing rapid change from rural living to higher density suburban residential.

Figure 7 Existing conditions



Risk-based approach to assessing impacts

Effective environmental risk management is a continuous, collaborative and forward-looking process that anticipates potential impacts so that project activities can be planned to avoid, minimise, manage and, where applicable, mitigate adverse impacts. Environmental risk is a function of the likelihood of an adverse event occurring and the consequence of the event.

The environmental risk assessment for the Project was undertaken in accordance with the MRPV Environmental Risk Management Guideline (2019). An iterative risk assessment process, involving technical specialists, identified and evaluated potential interactions between the Project's components and existing sensitive assets, values and uses.

Key risks were defined as having an initial rating of 'significant' and 'high' and were found to align with the potentially significant impacts identified in the Minister for Planning's EES Scoping Requirements. The risk assessment process identified 40 key risks, including the following aspects:

- Effects on transport capacity and connectivity:
  - Transport – Road users: Potentially significant impacts during the earthworks and civils and structures phases of construction
- Effects on biodiversity:
  - Ecology (native vegetation, threatened species and communities, or their habitat, and wildlife): Potentially high and significant impacts during the site establishment, earthworks and civils and structures phases of construction. In addition, potentially high impact on wildlife during the operation phase of the Project
  - Arboriculture: Potentially high impacts during the site establishment, earthworks and civils and structures phases of construction
- Effects on social and cultural values:
  - Aboriginal cultural heritage: Potentially significant impacts during the site establishment, earthworks and civils and structures phases of construction
  - Historical heritage: Potentially significant impacts during the earthworks and civils and structures phases of construction
  - Landscape and visual: Potentially high and significant impacts during the site establishment, earthworks and civils and structures phases of construction
  - Vegetation - Social and cultural values: Potentially high impacts during the site establishment, earthworks, civils and structures and reinstatement phases of construction
- Effects on land uses, businesses and social assets:
  - Land use planning: Potentially high and significant impacts during the site establishment, earthworks, civils and structures and reinstatement phases of construction
  - Business: Potentially significant impacts during the site establishment, earthworks and civils and structures phases of construction
  - Social: Potentially high and significant impacts during the site establishment, earthworks, civils and structures and reinstatement phases of construction
- Effects on physical environment:
  - Noise and vibration: Potentially significant impacts during the earthworks and civils and structures phases of construction.

These risks were given the greatest attention in this EES. Where community consultation identified key issues of particular concern or importance, these were also given careful consideration. For example, the Project's design has been refined to avoid impact on the two Doreen River Red Gums.

The specialist technical assessments undertaken for this EES identified mitigation measures to reduce impacts associated with these risks, which informed the development of Environmental Performance Requirements. Following consideration of these mitigation measures, there were 21 'significant' and 'high' residual risks. With the exception of potential impacts on wildlife during the Project's operation, these residual risks all related to potential construction impacts to ecology (native vegetation, threatened species and communities or their habitat, and wildlife), arboriculture, land use planning, and landscape and visual, social and vegetation – social and cultural values.

Impact assessment and mitigations

Potential impacts were identified in the EES specialist technical assessments. Mitigation measures that could be adopted to reduce these impacts have informed the development of the Project's Environmental Performance Requirements, which specify the fundamental requirements for environmental performance that would govern the further design, construction and operation of the Project.

Effects on transport capacity and connectivity

The Project is expected to bring about improvements in transport capacity and connectivity during operation. This is due to benefits such as improved road safety and better traffic flow along Yan Yean Road, improved speeds and travel times along Yan Yean Road and other key north-south routes such as Plenty Road and Epping Road, and reduced pressure on local roads.

One of the most effective avenues in reducing vehicle crashes is by improving safety at intersections, primarily by installing control measures such as traffic lights and roundabouts. Safety barriers also provide greater safety for road users. Therefore, the Project would result in safer conditions for road users as all key intersections would be upgraded with control measures, right-turns would only occur at key intersections along the alignment and as a result of the installation of continuous safety barriers in the centre median and on either side of the road.

Delivering transport infrastructure projects in constrained urban corridors typically results in a level of disruption to access and mobility during construction. Aspects of construction that have been identified as having the greatest potential to result in adverse impacts include construction traffic and temporary closures of Yan Yean Road, pedestrian crossings, footpaths and informal paths.

Key to avoiding and minimising impacts is the development and implementation of a Traffic Management Plan in consultation with the Department of Transport, Shire of Nillumbik and City of Whittlesea. This plan would set out measures to minimise disruption to all road users during construction, including providing detour routes as required, maintaining property access (or providing alternative access) and giving advance notice of changed traffic conditions. The plan would provide appropriate haulage routes for construction equipment and materials and, where possible, schedule these movements to occur at times that minimise impacts on other road users. The Project would also be completed in phases to minimise impacts on road users, cyclists and pedestrians, as detailed in the Environmental Performance Requirements.

Traffic Management Plan

A Traffic Management Plan would be developed in consultation with the Department of Transport, Shire of Nillumbik and City of Whittlesea to minimise construction activity impacts on road users, cyclists and pedestrians.

The effective implementation of these and other mitigation measures would assist in providing for the efficient and safe operation of the transport network during construction. However unavoidable temporary closures and the volume of construction traffic necessary to construct the Project means that some short-term impacts would be felt by road users, cyclists and pedestrians. These impacts are mostly associated with changes to existing access arrangements and detours and delays to traffic flow. This disruption would be mitigated by the implementation of the Traffic Management Plan.

During operation, the Project's expected benefits and opportunities include improved safety and access along the project corridor for road users and pedestrians, as well as improved efficiency for bus services and greater amenity for walking and cycling in the area. Access to key activity and employment centres would be enhanced for residents of the communities adjacent to Yan Yean Road through improved traffic flow and a reduction in travel times.

This EES recognises that there would be an increase in travel distance and time incurred by some local traffic through limiting (but not removing any) direct property access and local road access to left in / left out traffic movements. However, these changes would be required to deliver the safety benefits of the Project and to comply with the access management principles of an arterial road.

Effects on biodiversity

'Avoid and minimise' has been the guiding principle used when designing the Project to reduce impacts on the environment. The Project would impact existing biodiversity values as a result of the proposed clearance of trees, native vegetation and habitat. Native vegetation unable to be retained would be offset according to the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017).

The following refinements have been incorporated during the design development process to avoid and minimise impacts on biodiversity values, while achieving road safety objectives:

- The Project has been designed to retain the two Doreen River Red Gums at the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection
- The project area has been designed to be as narrow as possible to accommodate the road alignment and areas required for construction activities
- 144 no-go zones have been established to avoid impacts on native vegetation and scattered trees. This includes 20 no-go zones at Yarrambat Park Golf Course comprising potential Swift Parrot foraging trees. Impacts on native vegetation and trees are expected to be reduced further as the Project's design and construction methods are refined
- A wide median between Bannons Lane and Jorgensen Avenue would provide for additional landscaping opportunities and potential avoidance of existing biodiversity values (including Matted Flax-lily) and large trees.

The Project would impact up to 11.888 hectares of native vegetation, 134 large trees in patches and 204 scattered trees (40 large, 164 small) that provide habitat for a range of flora and fauna species. A total of 4,777 trees would be removed, including native, planted and exotic trees.

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.

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

Native vegetation and tree removal would primarily consist of low-quality patches of Grassy Dry Forest (EVC 22), which has a bioregional conservation status of least concern and is widespread within the Highlands Southern Fall bioregion. With adequate environmental protection measures implemented, vegetation removal from the Project is not expected to result in a significant impact on Victoria's biodiversity.

The key findings of the EES impact assessment in relation to threatened species are:

- Despite the removal of occasional foraging habitat used by Grey-headed Flying-fox, the species is not expected to be impacted due to the presence of adequate suitable foraging habitat outside the project area
- If impacted by construction works, two Matted Flax-lily would be translocated to a site containing suitable habitat in accordance with a translocation plan that would be developed for the Project
- Impacts on a Studley Park Gum likely to be removed would be offset in accordance with the DELWP Guidelines
- The Project would remove up to 1,593 potential Swift Parrot foraging trees, including 354 key foraging trees (14 large, 340 small) and 1,239 secondary foraging trees (74 large, 1,165 small). The removal of this habitat may reduce foraging opportunities for the species; however, annual observed habitat use by Swift Parrot over the last 10 years occurs outside the project area in higher quality habitat areas. The Project would not remove or impact any critical foraging or breeding habitat for the species, as it breeds exclusively in Tasmania. In the local area, Swift Parrot largely use the Plenty River corridor for foraging when migrating to core habitat areas in central and north eastern Victoria
- Habitat fragmentation is a potentially threatening process to Swift Parrot, and the Project would exacerbate this at a local level. Habitat fragmentation resulting from tree loss as part of the Project is very small compared to the total Swift Parrot habitat distribution area across Victoria, and the threat of reduced connectivity is likely to be low for Swift Parrot given its high mobility and the continued presence of higher quality habitat in the local area. Vegetation and preferred foraging tree species losses resulting from the Project are unlikely to contribute to a cumulative impact on the Swift Parrot population
- A Swift Parrot Management Plan would be prepared and implemented to minimise potential impacts on the species during construction.

The Project is likely to impact common fauna, which are likely to reside within, or regularly use, habitats contained within the project area – with the key impact being habitat loss. Impacts on common fauna are expected to be mitigated through the installation of fauna bridges, fauna sensitive lighting and adequate signage to alert motorists to crossing fauna.

Implementation of the Project's Environmental Performance Requirements would help to further avoid and minimise impacts on native vegetation, trees and threatened species habitat. This includes a requirement to design permanent and temporary works to retain as many trees as possible, a Tree Protection Management Plan to protect trees during construction and further detailed arborist assessments to protect specific trees.

The multi-faceted value of vegetation has been understood and incorporated into the Project's Landscape Strategy, with mitigation measures relevant to biodiversity including:

- Native vegetation to be retained in the project area where possible and areas adjacent to the new road would be enhanced by supplementary planting undertaken as part of the landscape works
- Landscape plantings would use plants belonging to Ecological Vegetation Classes naturally occurring in the local area and favour species used by native fauna, including threatened species such as Swift Parrot
- Reinstatement would be undertaken in consultation with relevant stakeholders including Shire of Nillumbik and City of Whittlesea. Where possible, the local community and property owners would be consulted to achieve optimal results.

Effects on social and cultural values

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. Consultation with key stakeholders and the community has been undertaken throughout planning of the Project to gain an understanding of the concerns and preferred outcomes of local residents, businesses and other interested parties.

Social and cultural value

Cultural significance is defined as 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations.' (Australian ICOMOS, Burra Charter Article 1.2, 2013)

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 Project corridor as a result of road safety and capacity improvements. 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. The removal of remnant, planted and regenerated vegetation associated with the Project is also expected to increase the visibility of the widened road corridor.

Socially and culturally valuable vegetation can be defined as landscape components that contribute to their environment, over and above the accepted values of other vegetation. A value assessment was undertaken as part of the Project's Landscape Strategy to highlight where vegetation triggered multiple value criteria, including aesthetic, historic, scientific, social and spiritual criteria.

Two River Red Gums on the Bridge Inn Road / Yan Yean Road / Doctors Gully Road intersection (known as the Doreen River Red Gums) have been identified as having social, aesthetic, scientific and heritage value within the project area (Heritage Overlay 191 under the Nillumbik Planning Scheme). The Project has been designed to retain these two trees.

Despite not being heritage listed, the Doreen General Store (former post office) has been identified as having value through the community consultation process, and also forms a distinctive local landmark. The Project has been designed to retain the Doreen General Store.

Other 'value hot spots' identified included 'Avenue of Honour' WW1 memorial plantings at Yarrambat Primary School and important aesthetic / social value trees within Yarrambat Township. Areas of public open space (including Doreen Recreational Reserve, Orchard Park, Werther Park and Yarrambat Park) recorded social value for their contribution to amenity, while cultural value was elevated at locations along the Project corridor that combined social and scientific values within screen plantings.

The Project also has the potential to impact on two Aboriginal Places (VAHR Registered 1: Stone Artefact Scatter and VAHR Registered 2: Low Density Artefact Distribution) within the road corridor. A Cultural Heritage Management Plan is being prepared for the Project in consultation with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation to ensure these places are managed appropriately and to mitigate any potential impacts on Aboriginal cultural heritage.

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**, 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*)

Impacts on social and cultural values would be mitigated through implementation of the Environmental Performance Requirements and the Project's Landscape Strategy. The Project would be required to design permanent and temporary works to minimise adverse visual impacts, particularly in relation to heritage values, existing and proposed landmark elements, community and recreational centres and open space, and residential and business interfaces with the Project.

To maximise the enhancement of social and cultural values, the Landscape Strategy addresses how high value vegetation can be protected (where feasible) and if not, how identified values in the vicinity of the Project can be reinforced and rehabilitated within new landscape treatments.

Effects on land uses, businesses and social assets

While design of the Project has sought to minimise impacts on existing land uses, businesses and social assets where possible, the acquisition of private and public land is required to facilitate the Project. The existing road corridor is not sufficiently wide to accommodate the duplication and supporting infrastructure such as service roads, the walking and cycling path, and drainage. In most cases, partial acquisition of the land would be required along the frontage of landholdings.

The Project would require the partial or full acquisition of 96 parcels of land. This land acquisition would be limited in extent and would not result in long-term land use change. The potential loss of land has caused concern for some affected land owners and residents as it may result in unanticipated changes to their properties. This includes permanent changes to access, which may lead to some land owners and occupiers having longer travel times.

Compensation would be provided for all land acquired for the Project. Land acquisition would be undertaken sensitively and in accordance with the *Land Acquisition and Compensation Act 1986*. Consultation with potentially affected land owners has already commenced and MRPV continues to undertake one-on-one consultation with affected land owners and tenants.

Businesses and community facilities - including a veterinary hospital, golf course, primary and secondary schools, childcare facility, a horse and pony club, and a slate wholesale business - would not be displaced by the Project. However, in some cases, these facilities would experience changed access arrangements or reduced land area. Similarly, while the Project has been designed to retain the Doreen General Store and a pet and stock supply retail store located at 920 / 920A Yan Yean Road, there would be changed access arrangements at these properties.

Implementation of the Project's Environmental Performance Requirements would assist in mitigating any adverse impacts on businesses. A Trader Engagement Plan would be prepared to engage with businesses throughout the construction phase, including the provision of timely information on key project milestones, signage to notify customers of proposed changes to business operations, measures to maintain access to businesses for customers, deliveries and waste removal, and a process for registering and managing complaints from affected businesses.

Impacts associated with permanent access changes to residential, education and commercial land uses are expected to be managed appropriately through consultation with land managers and / or responsible authorities. While there may be some changes in access arrangements, permanent access to and parking for business and commercial facilities affected by the Project works would be restored, including associated landscaping and restoration works.

The Environmental Performance Requirements would require the Project's design to protect and, where practicable, improve access to amenity for potentially affected residents, users of the transport corridor (pedestrians, cyclists, horse riders and motorists), open space and social and community infrastructure.

Effects on physical environment

As with all major road projects undertaken in Victoria, the Project would adhere to stringent environmental standards, statutory requirements, best practice measures and well-tested techniques and methods to mitigate impacts on the physical environment.

The impact assessments undertaken by technical specialists for this EES concluded that aspects of the physical environment typically resulting in high risk ratings on construction projects would be limited to potential noise and vibration impacts during the Project's construction phase. Potential impacts from construction activities on physical environmental aspects including air quality, contaminated land, groundwater and surface water are expected to be minimal.

The Project would be managed in accordance with a Construction Environmental Management Plan, which would set out details of all planned construction activities and describe how the Project would identify, manage and mitigate environmental risks and impacts on the physical environment during construction.

By its nature, construction can be a noisy activity, which can cause annoyance to neighbouring communities. Activities such as bulk earthworks, vegetation clearing and road paving can all generate noise. Additionally, there is potential for vibration impacts associated with driven piling works and the compaction of road surfaces. Any potential noise and vibration impacts during the Project's construction phase would be managed in accordance with EPA Victoria guidelines and other relevant statutory requirements.

The Construction Environmental Management Plan would include well-tested mitigation measures that are best practice on road construction projects, such as providing noise attenuation screens where appropriate, restricting operating hours where an activity is likely to cause a noise nuisance to nearby residents, undertaking monitoring of especially noisy activities and advising residents of unavoidable out-of-hours work.

A Noise and Vibration Communications Sub-Plan would set out arrangements for informing the community of work scheduling and working hours. The community would also have the opportunity to raise any issues or concerns through a 24-hour phone number.

Once the Project is operational, the increase in traffic on the new road is unlikely to lead to an increase in noise levels. Noise modelling has indicated that the majority of sensitive uses along Yan Yean Road would experience an increase of no more than three decibels as a result of the Project. This is characterised as 'barely perceptible'. Operational noise would be addressed by designing the Project in accordance with VicRoads *Traffic Noise Reduction Policy (2005)*.

Managing the Project's impacts

The Project would be designed, constructed and maintained in accordance with an Environmental Management Framework, included as Chapter 12 of this EES. The Environmental Management Framework outlines governance arrangements, roles and responsibilities, and clear lines of accountability for environmental management during delivery of the Project.

Detailed documentation and regular reporting would be required to review compliance with the framework and the Environmental Performance Requirements. Compliance with all relevant environmental laws, approvals and guidelines would ensure that the environmental risks and impacts of the Project are managed appropriately and effectively, and that potentially adverse impacts are avoided or minimised.

The Environmental Performance Requirements set the environmental outcomes that must be achieved during design, construction and operation of the Project. This performance-based approach defines the legislative requirements, standards, limits and processes that the Project must meet, while still providing flexibility to accommodate minor modifications during the design and construction – provided the outcomes specified in the Environmental Performance Requirements are achieved.

In developing the Environmental Performance Requirements, 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.

As part of complying with the Environmental Performance Requirements, the Construction Contractor(s) would be required to operate in accordance with an environmental management system that is compliant with AS/NZS ISO 14001.

The Construction Contractor(s) would also be required to prepare a Construction Environmental Management Plan consistent with the Environmental Management Framework for the design and delivery of the Project. As a minimum, the plan must meet the requirements of all relevant environmental laws, approvals, approval conditions and the Environmental Performance Requirements.

The plan would set out responsibilities and detailed actions for meeting these requirements and include procedures for reviewing compliance with the plan before construction commences, monitoring its effectiveness during construction and reviewing and updating the plan at least every six months. Relevant stakeholders must be consulted in the development of the Construction Environmental Management Plan (and sub-plans), which would be approved by MRPV before construction commences.

The Environmental Performance Requirements specify the preparation and implementation of key strategies, plans and sub-plans. MRPV Plans include:

- Landscape Strategy (included in this EES as Technical Report G)
- Cultural Heritage Management Plan
- Swift Parrot Management Plan
- Yan Yean Road Upgrade – Stage 2 Environment Effects Statement Engagement Plan

Contractor Plans include:

- Construction Environmental Management Plan
- Traffic Management Plan
- Tree Protection Management Plan
- Communications and Stakeholder Engagement Plan, including a Trader Engagement Plan and a Noise and Vibration Communications Sub-Plan.

An Independent Environmental Auditor would be appointed for the Project to conduct audits of compliance with the Project's Environmental Management Framework, relevant Environmental Performance Requirements, the Construction Environmental Management Plan, any other plans required by the Environmental Performance Requirements, and conditions of Project approvals.

Once the Project is operating, 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.

Communications and engagement

COVID-19

During the development of the EES for the Project, the Australian and Victorian Governments (based on advice from the Chief Health Officer) developed physical distancing restrictions with the intent to manage the spread of COVID-19.

Due to this, public gatherings were restricted and face-to-face engagement was not allowed for some consultation milestones.

To ensure compliance with the government requirements, from April 2020 consultation was shifted to an online interactive forum. MRPV recognises that parts of the community may not have online access and has maintained some traditional forms of communication, including hardcopy communications (such as letter box drops and hard copy feedback forms).

As the Project proceeds, MRPV's consultation approach will remain flexible in compliance with the current health advice from the Victorian Government.

Community and stakeholder engagement has played a vital role in developing the Project. Across all phases of the Project, MRPV has undertaken dedicated engagement activities to keep the community and stakeholders informed about the Project, seek input on project design and development, and identify and respond to community and stakeholder concerns.

Feedback received from these activities has helped to identify areas of community interest and highlight areas of concern, and also provided ideas to improve the Project design. Community and stakeholder feedback has also been considered by the specialist technical assessments conducted for the EES. Key issues raised by the community have been addressed through further specialist investigations and have also helped to identify and refine certain Environmental Performance Requirements for the Project.

The EES Scoping Requirements required MRPV to prepare a consultation plan to familiarise the public and stakeholders with the Project and EES investigations, as well as provide opportunities for input on specific issues. In response, MRPV has implemented the Yan Yean Road Upgrade – Stage 2 Environment Effects Statement Engagement Plan, which aims to build awareness of the Project and the requirement of an EES, explain the EES process, present the EES specialist technical assessments and provide information about formal avenues through which to make submissions on the EES. This has been available on the DELWP website since April 2019.

Consultation and engagement will continue throughout the planning and environmental approvals process, as well as during the continued development and construction of the Project. During construction, the Environmental Performance Requirements would require the Project Contractor(s) to develop and implement a Communications and Stakeholder Engagement Plan that must include measures to:

- Maintain community safety, such as providing convenient and safe access across Yan Yean Road at all bus stops, activity nodes and places of community significance
- Notify communities of construction activities well in advance of works commencing
- Provide onsite signage for affected properties that provide a service to the local or regional community
- Engage residents, businesses and landholders in the preparation of a landscaping plan to offset the impacts of trees removed through acquisition and construction, and help to ensure that the landscaping adds to the valued character of the local area.

The Contractor(s) would also be required to prepare and implement a process for recording, managing and resolving complaints received from affected stakeholders during construction.

Finalising the EES process

This EES has been placed on public exhibition. During this time, members of the public can view this EES and make written submissions. At the end of this period, the Minister for Planning is expected to appoint an EES Inquiry and Advisory Committee to evaluate the effects of the Project, having regard to this EES, the proposed Planning Scheme Amendment required to deliver the Project and public submissions.

Following receipt of the Inquiry and Advisory Committee's report, the Minister for Planning would prepare an assessment of the environmental effects of the Project that considers the EES documents, public submissions, the proponent's response and the Inquiry and Advisory Committee's report. This assessment is usually provided within 25 days of the Inquiry and Advisory Committee's report being finalised. The Minister's Assessment may conclude that the Project:

- Would have an acceptable level of environmental effects, or
- Would have an unacceptable level of environmental effects, or
- Would need major modifications and / or further investigations to establish that acceptable outcomes would be achieved.

Chapter 12 *Environmental Management Framework* and Attachment II *Legislation and Policy* outline the statutory approvals required for the Project if the Minister's Assessment concludes that the Project would be acceptable.

Subject to the outcomes of the Minister's Assessment, it is expected that the Minister for Planning will exercise his powers under the *Planning and Environment Act 1987* to amend the Whittlesea Planning Scheme and the Nillumbik Planning Scheme to introduce special planning controls for the Project called an 'Incorporated Document'. The special planning control will be limited to an area called a 'Specific Controls Overlay' that will be shown in the planning scheme maps of each municipality affected by the Project.

The Minister for Planning would also apply the 'Public Acquisition Overlay' to the extent required to facilitate the acquisition of land for the purposes of the Project. Upon publishing notice of the Planning Scheme Amendment in the Victorian Government Gazette, MRPV would then be able to commence the land acquisition and compensation process. Attachment I *Draft Planning Scheme Amendment* provides the draft conditions under which planning approval would be implemented, including maps showing land affected by the Project.

The Minister's Assessment will also be provided to the Commonwealth Minister for the Environment who will then determine whether or not to grant approval for the Project under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Conclusion

The Project aims to improve safety, access and connectivity for drivers, public transport users, pedestrians and cyclists using Yan Yean Road.

The additional road capacity provided by the Project would improve speeds and travel times on Yan Yean Road, as well as on other key north-south routes in Melbourne's north-east. By better connecting people to residential, recreational and service centres, the Project would significantly improve access to social and economic opportunities. In particular, the Project would provide connectivity for the City of Whittlesea's strongly growing suburbs of Doreen and Mernda to the townships of Plenty and Yarrambat in the Shire of Nillumbik and to jobs and services in established neighbouring suburbs such as Greensborough and Diamond Creek.

This EES for the Yan Yean Road Upgrade - Stage 2 Project provides a comprehensive assessment of the potential environmental impacts associated with the Project's design, construction and operation, guided by the Evaluation Objectives set out in the Minister for Planning's Scoping Requirements.

The benefits of the Project have been evaluated against the overall significance of the likely adverse effects and environmental risks of the Project, within the context of applicable legislation, policy, strategies and guidelines. Where impacts have been identified, technical specialists have developed mitigation measures in the form of Environmental Performance Requirements to avoid, minimise and manage adverse environmental impacts.