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## PART 1 INTRODUCTORY CHAPTERS

# 2 Project Rationale

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# 2.1 Introduction

This chapter outlines the rationale for developing the Project and also examines how the Project aligns with relevant State and local government policies. It identifies the main transport, economic and social benefits that would be delivered by the Project, discusses the Project's interaction with other relevant transport projects underway, and concludes with the Project objectives.

The upgrade of Yan Yean Road would service the Shire of Nillumbik and the City of Whittlesea, providing connectivity for the City of Whittlesea's 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. The City of Whittlesea is one of Australia's fastest growing municipalities, expected to grow from 223,320 to 364,450 residents between 2018 and 2036 (Victoria in Future 2019). This substantial population growth means rapid land use change and a growing travel demand within the suburbs in the area serviced by and surrounding Yan Yean Road.

Despite the growth in and around the City of Whittlesea, the transport network is significantly less developed than many other parts of Melbourne. The ongoing expansion of the suburbs in the area has substantially increased demands for transport, creating a disparity between the rate of residential development and the provision of adequate road infrastructure.

Yan Yean Road is currently operating beyond its traffic carrying capacity and there has been an increase in the number of crashes recorded between 2006 and 2018, with the majority being rear end crashes commonly associated with congestion. The forecast population increase of approximately 63% for the City of Whittlesea from 2018 to 2036 suggests the existing congestion and safety issues will become significantly worse if not addressed, highlighting the need for the Project as Melbourne's northern suburbs continue to grow.

# 2.2 Challenges the Project is addressing

Three key challenges have been identified by the Victorian Government:

- A congested and complex road environment has led to a number of crashes
- Yan Yean Road is struggling to accommodate traffic volumes leading to frustrating and congested conditions
- Low rates of cycling, walking and public transport usage constrain physical activity and social connectedness.

#### 2.2.1 Congestion and safety issues

Yan Yean Road between Kurrak Road and Bridge Inn Road was initially designed to carry local traffic and is now struggling to cater for higher daily volumes of traffic. Yan Yean Road was declared an arterial road in 2015 and typically carries between 20,000 to 24,000 vehicles per weekday (Monday to Friday average) through the project area (Technical Report A – *Transport Impact Assessment*). Crash data from VicRoads' Roads Crash Information System reveals there has been 38 crashes recorded from 2014 to 2018 along the 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 directly related to congestion, the complexity of the road environment and the lack of access control.

Yan Yean Road is currently an undivided two-lane road through hilly terrain, consisting of sections with steep vertical grades and poor sight lines. The cross section is rural in nature with unsealed shoulders, adjacent open table drains and existing trees close to the road's edge. Direct access to abutting land use is generally uncontrolled and a majority of intersections are priority controlled via 'give way' or 'stop' controls.

The undulating topography of Yan Yean Road and the high number of intersections and access points means there is potential for further crashes of this kind to occur if the road is not upgraded, particularly as the population and traffic demand increases.

## 2.2.2 Population growth and increasing traffic volumes

Large population growth has occurred in the City of Whittlesea which is putting pressure on local roads within the municipality, as well as the green wedge area of the Shire of Nillumbik. Population projections from 2018 to 2036 indicate that the City of Whittlesea needs to accommodate an additional 141,130 residents (Victoria in Future 2019).

Projections also highlight extensive continued residential growth that is expected to occur in the suburbs of Doreen, Mernda and South Morang, which lie immediately adjacent to the north and west of the Project. However, limited residential growth is expected to occur to the east of the project area as this land is designated Green Wedge, which is a non-urban area of metropolitan Melbourne that lies outside of the Urban Growth Boundary.

The congestion on the existing Yan Yean Road is causing major delays and longer, unreliable travel times with direct impacts on residents and businesses, increasing the cost of travel and affecting productivity. If development and population growth on and around Yan Yean Road continues, the road will not accommodate projected travel demand and this will have an effect on commuters, the efficiency of businesses and employment development in the northern suburbs.

### 2.2.3 Low rates of cycling, walking and public transport usage

The lack of appropriate infrastructure to support active and public transport has led to low levels of walking, cycling and public transport use. It is also a safety risk for road users, pedestrians and cyclists and creates constrained social connectedness for locals, especially vulnerable road users such as the elderly or 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 in the Melbourne metropolitan area. This section is currently underutilised due to the lack of formal and appropriate cycling facilities, with the narrow width of the road likely to discourage use by cyclists.

Yan Yean Road is currently serviced by two public bus routes subject to the same congestion as private vehicles: the 381 (Mernda Station to Diamond Creek Station) and 385 (Greensborough to Mernda North).

→ The lack of appropriate infrastructure to support active and public transport has led to low levels of walking, cycling and public transport use. It is also a safety risk for road users, pedestrians and cyclists and creates constrained social connectedness for locals, especially vulnerable road users such as the elderly or children.

## 2.3 Strategic context and need for the Project

#### 2.3.1 Inadequate transport capacity in the North Growth Corridor

The need to upgrade Yan Yean Road to a secondary arterial road has been identified in various plans that have shaped land use and settlement patterns within Doreen and also identified the need for this Project. These include:

- Plenty Valley Strategic Plan 1990: Identified and supported the development of the North Growth Corridor
- **Transport for Victoria's Movement and Place Framework:** Identified the upgrade of Yan Yean Road as important to the operation of the broader transport network, as it provides connections to other municipalities in conjunction with upgrades to Plenty Road and Epping Road
- **Planning for Mernda-Doreen:** Identified the need to upgrade Yan Yean Road and the use and development framework for this area was established by the Mernda Strategy Plan 2004 (amended 2016).

Yan Yean Road is shown as an arterial road in the North Growth Corridor Plan released in 2012 (refer to Figure 2.1). This Plan also shows Mernda as a Principal Town Centre, the development of which is expected to increase traffic volumes along Yan Yean Road.

The Mernda Rail Extension Project was completed in August 2018 and strategic plans have been approved to guide the land use and development framework for the Mernda Town Centre. Population and urban growth have outpaced the capacity of the arterial road network in the area and in recognition of this, the Commonwealth and Victorian governments are investing in significant transport upgrades in Melbourne's outer northern suburbs.

The upgrade of Yan Yean Road is required in conjunction with other upgrades (such as Plenty Road) to support north-south travel and reduce congestion along the arterial road network. Both the City of Whittlesea and the Shire of Nillumbik identify the lack of arterial road capacity and connectivity as a significant constraint to future growth.

# Traffic performance and road safety will deteriorate without the Yan Yean Road Upgrade – Stage 2

Variability in travel time is a significant problem for road users. As traffic demand increases, travel times increase leading to less travel time savings. Without the Project:

- Traffic performance along Yan Yean Road is expected to deteriorate significantly by 2031, with the average travel speeds forecast to drop to 20 km/h in the peak direction of travel
- Intersections are forecast to operate very poorly during the 2031 AM and PM peaks. 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 forecast increases in traffic volumes and poor operational performance, combined with the many uncontrolled access points and substandard road infrastructure provisions is expected to bring about a deterioration in road safety along Yan Yean Road and increase the likelihood of crashes.

Source: Technical Report A – Transport Impact Assessment.

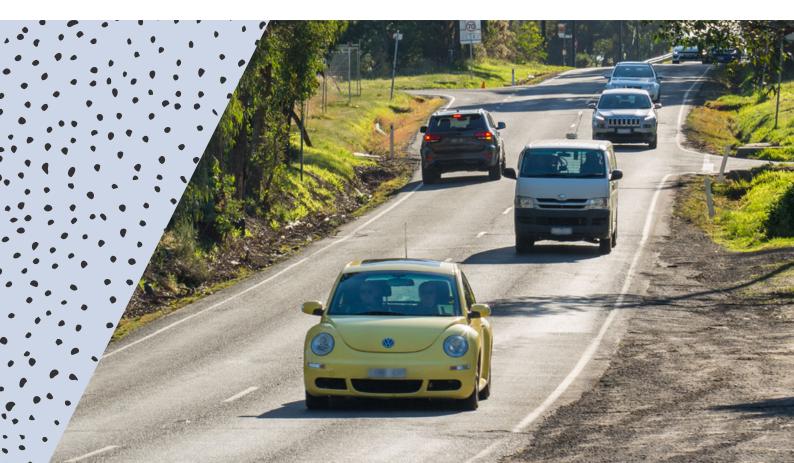
### 2.3.2 Poor safety record of single carriageways

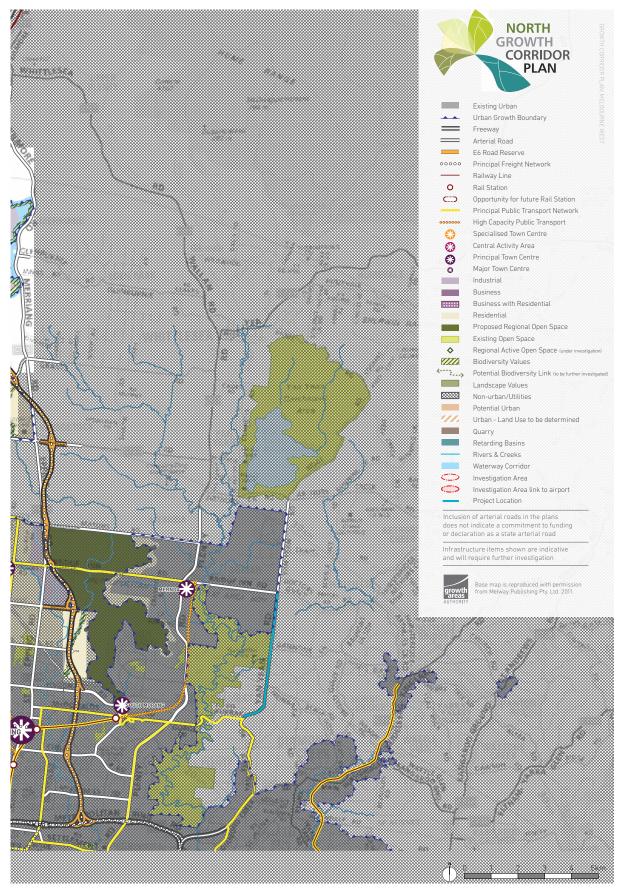
Single carriageways, such as Yan Yean Road, experience nearly twice the crash rate on average than divided carriageways, and more than twice the fatality rate (Austroads Road Safety Engineering Risk Assessment Part 7: Crash Rates Database). As noted in Section 2.2.1, from 2014 to 2018 there were 38 crashes recorded along the section of Yan Yean Road from Kurrak Road to Bridge Inn Road (VicRoads CrashStats database).

In April 2014, a head-on crash involving a truck to the north of Jorgensen Avenue resulted in a fatality, leading to an allocation of Federal Black Spot Program funding (\$1.78 million) to improve safety at the Jorgensen Avenue / Yan Yean Road intersection.

Higher traffic volumes, increased congestion and the complex road environment, such as poor sight lines due to hills and sharp bends, are contributing to the poor safety record on the existing single carriageway road.

Divided carriageways, as proposed by the Project, isolate road users from hazards. Improved access control through signalised intersections also improves safety and reduces the potential for crashes. Post-completion evaluation of the nearby Plenty Road Duplication (2016, three years after completion) demonstrated the safety benefits of duplication, with crash rates found to decrease. Typically, duplicated roads have a 40 percent lower crash rate involving a fatality or serious injury than single carriageways (Austroads Road Safety Engineering Risk Assessment Part 7: Crash Rates Database).





#### Figure 2.1 North Growth Corridor Plan – location of the Project shown in light blue

Source: Victorian Planning Authority

The Project would provide better access to social and economic opportunities by increasing capacity along Yan Yean Road, providing a designated walking and cycling path and upgrading existing public transport facilities.

# 2.4 Policy context

This section summarises the policy context for the Project. It describes relevant State and local government policies and plans and how the Project would contribute to their objectives and desired outcomes. Further details of policies relevant to the Project are provided in Attachment II *Legislation and Policy*.

## 2.4.1 Victorian Government policies and legislation

#### **Transport Integration Act 2010**

The key policy principles and objectives that underpin the development of the Victorian transport system are enshrined in the *Transport Integration Act 2010*. Under the *Transport Integration Act 2010*, a transport body must have regard to the transport system objectives and decision-making principles in the Act when exercising its powers and performing its function and making any decision under transport legislation.

The *Transport Integration Act 2010* outlines six objectives for the transport system. A high-level summary of how the Project is expected to address each objective is provided in Table 2.1.



Transport system objective	Project response
Social and economic inclusion	• The Project would provide better access to social and economic opportunities by increasing capacity along Yan Yean Road, providing a designated walking and cycling path and upgrading existing public transport facilities
	<ul> <li>Greater accessibility to community networks, services and places of / opportunities for work and education afforded by the Project would benefit active users and road users</li> </ul>
	<ul> <li>For example, the Project would provide greater access to the M80, La Trobe National Employment and Innovation Cluster, Melbourne Airport and the Northern Industrial Precinct</li> </ul>
	The Project would also improve amenity for all users.
Economic prosperity	• The Project would facilitate access for the local community to Mernda Station, Mernda Major Activity Centre and growing residential, educational and recreational centres, creating greater employment opportunities and increased economic activity in the area
	• A safer and more reliable road would benefit freight and business transport for businesses located in proximity to Yan Yean Road. This would contribute to greater economic outcomes for these businesses and the local community
	<ul> <li>A safer road also contributes to economic prosperity by reducing costs associated with vehicle crashes.</li> </ul>
Environmental sustainability	<ul> <li>The Project's Environmental Management Framework would provide a transparent and integrated framework for managing environmental impacts</li> </ul>
	<ul> <li>Environmental Performance Requirements developed for the Project would avoid and minimise impacts and achieve acceptable environmental outcomes</li> </ul>
	• Implementation of the Project's Landscape Strategy would identify how social and cultural values can be managed during construction and then reinforced and rehabilitated within new landscape treatments.
Integration of transport	• The Project would support the changing land use character of the area, and especially the growth associated with the Mernda Strategy Plan
and land use	<ul> <li>Provision for a range of transport mode choices, including active transport modes, would improve connectivity and accessibility to employment and for residential, community, business and service uses beyond the project area</li> </ul>
	<ul> <li>The Project would also support the implementation of the relevant land use strategies / policies / plans at State and local levels.</li> </ul>
Efficiency, coordination	• The Project would improve efficiency and reliability for road users by significantly improving speeds and travel times on Yan Yean Road
and reliability	<ul> <li>Improving Yan Yean Road would also result in improvements in speed and travel times on other key north-south arterial routes across the local network</li> </ul>
	• By increasing the capacity of Yan Yean Road, the Project would also result in greater resilience across the local network, meaning fewer delays and disruptions as a result of an incident.
Safety and health and wellbeing	• The Project would improve safety for road users by providing a divided carriageway to separate opposing traffic flows, upgrading intersections, controlling turning movements and minimising conflict points
	• The Project would improve safety for active users through the provision of an off-road walking and cycling path and a footpath along the entire alignment
	• Provision of active transport links would increase social connectedness and improve amenity within the local community.

### Table 2.1 Transport Integration Act 2010 transport system objectives and Project response

#### Plan Melbourne

Plan Melbourne is a strategy to help the Victorian Government to achieve the vision for Melbourne to become a global city of opportunity and choice. It will guide the growth of Melbourne over the next 35 years. It has been designed to support jobs, housing and transport, while keeping Melbourne distinctive, liveable and sustainable.

Plan Melbourne sets seven outcomes for Melbourne's development. To varying degrees, improved transport connectivity will contribute to achieving these objectives including creating liveable communities and neighbourhoods, delivering jobs and investment, maximising the growth and potential of Victoria, and enhancing Victoria's connectivity.

In the context of a more connected Melbourne, Plan Melbourne sets out strategies to meet the objective of providing an integrated transport system connecting people to jobs and services and goods to market. The Project would contribute to the direction and strategies of Plan Melbourne by delivering improved transport in one of Melbourne's fastest growing areas. The following directions and policies are relevant to the Project:

- Direction 3.1 Transform Melbourne's transport system to support a productive city
- Policy 3.1.3 Improve arterial road connections across Melbourne for all road users
- Direction 3.2 Improve transport in Melbourne's outer suburbs
- Policy 3.2.1 Improve roads in growth areas and outer suburbs
- Direction 3.3 Improve local travel options to support 20-minute neighbourhoods
- Policy 3.3.1 Create pedestrian-friendly neighbourhoods
- Policy 3.3.2 Create a network of cycling links for local trips.

The Project is consistent with Plan Melbourne as it would:

- Support growth in capacity by improving road network and effective public transport connections
- Improve access from northern suburbs to job-rich areas across Melbourne
- Reduce congestion and enhance the resilience of the road network to reduce business and personal costs of travel.

#### Victorian Cycling Strategy 2018-28

The Victorian Cycling Strategy 2018-28 aims to increase the number, frequency and diversity of Victorian cycling for transport by:

- Investing in a safer, lower-stress, better-connected network
- Prioritising strategic cycling corridors
- Making cycling a more inclusive experience.

The Project would support and encourage the use of the Principal Bicycle Network by providing better planned and connected infrastructure. By developing a walking and cycling path, the Project would encourage cyclists off the road and reduce the risk of cyclist accidents.

#### Infrastructure Victoria Strategy

The Victorian Government established Infrastructure Victoria in 2015 as an independent statutory authority to provide advice and guidance on the state's infrastructure. Infrastructure Victoria has released a 30-Year Infrastructure Strategy which outlines a pipeline of initiatives to be delivered with the objective of connecting people to jobs, education and services and to each other, and supporting Victoria's businesses, industries and communities.

The 30-Year Infrastructure Strategy includes a recommendation (Recommendation 1.3.5) to roll out a program of upgrades to the arterial road network over 5-15 years, focusing on congested roads in outer metropolitan areas.

The Yan Yean Road Upgrade – Stage 2 Project is part of the Victorian Government's response to this recommendation. The focus of the Victorian Government's response is areas of high population growth, with objectives to facilitate access to activity to major metropolitan employment clusters and central Melbourne.

Cycling corridors, arterial road capacity improvements and improving accessibility to public transport through compliant access points (for example, connecting the footpath network) are some of the Infrastructure Victoria recommendations the Project would help to address.

#### 2.4.2 Planning Policy Framework

The Planning Policy Framework provides overarching policy guidance across all Victorian planning schemes. It ensures the objectives of planning in Victoria are fostered through appropriate land use and development policies and practices that integrate environmental, social and economic factors in the interest of net community benefit and sustainable development.

Of particular relevance to the Project is Clause 18 Transport, which states that 'Planning should ensure an integrated and sustainable transport system that provides access to social and economic opportunities, facilitates economic prosperity, contributes to environmental sustainability, coordinates reliable movements of people and goods, and is safe'.

The Project aims to better integrate multiple modes of transport that use arterial roads - freight, cars, public transport, walking and cycling - and to deliver a transport system that elevates sustainable transport modes and ensures equitable access to social and economic opportunities. It would improve connections to existing walking and cycling paths and public transport, which would support the delivery of improved public transport services, connect communities and support employment and access to goods and services.

The Project would support the rapid growth of Mernda, Doreen and South Morang in northern Melbourne and improve regional arterial road network capacity and connectivity, complementing the existing arterial north-south network upgrades of Plenty Road and Epping Road. This would provide greater access to the M80, the La Trobe National Employment and Innovation Cluster, Melbourne Airport and the Northern Industrial Precinct.

#### 2.4.3 Local policies

The Project is located within the Shire of Nillumbik and the City of Whittlesea. Yan Yean Road partially forms the boundary between these two Councils (refer to Chapter 5 *Project Description* for a project area map showing Council boundaries).

#### Shire of Nillumbik

The Local Planning Policy Framework of the Shire of Nillumbik has transport and roadside management objectives, which include providing safe and efficient roads and road links with municipalities and the wider region, increasing public transport usage to ensure access for and meet the mobility needs of people of all abilities, and to maintain and enhance the environmental, historical and landscape values of the roadsides in the Shire.

The Project would improve the safety and efficiency of Yan Yean Road and the Landscape Strategy would ensure that the Project fits sensitively into the built, natural and cultural environment of Doreen and Yarrambat, in consideration of the Nillumbik Green Wedge Management Plan.

#### **City of Whittlesea**

The Local Planning Policy Framework of the City of Whittlesea has transport policies that focus on the integration of transport systems to improve transport options and accessibility for residents. A priority of the City of Whittlesea is to facilitate efficient and safe movement of freight, and provide infrastructure to promote the use of walking, cycling and public transport to residents. The City of Whittlesea also aims to ensure that development of existing and future urban and rural areas considers the presence of and plans for the retention, enhancement and long-term viability of River Red Gum trees, as well as heritage places.

The Project would provide a walking and cycling path and a pedestrian path, along with an upgrade of existing bus stops to promote walking, cycling and use of public transport on Yan Yean Road. The Project's Landscape Strategy would identify opportunities to maximise the enhancement of social and cultural values, including the Doreen River Red Gums and heritage places in the context of Yan Yean Road.

# 2.5 Project benefits

This section outlines the transport, economic and social, community and amenity benefits that would be delivered by the Project.

## 2.5.1 Transport benefits

Upgrading Yan Yean Road would improve road safety by isolating road users from hazards and improving access control. As described in Section 2.2.1, congestion and the complex road environment are contributing to the poor safety record on Yan Yean Road. The Project would deliver improved road safety via:

- Upgrading intersections, controlling turning movements and minimising conflict points, which would improve safety of the intersections
- Improving and controlling the number of access points to properties by reducing conflict points and improving sight and stopping distances
- Providing safety barriers to isolate hazards and separating opposing traffic flows by constructing centre medians to reduce the hazard of other road users.

Additional capacity provided by the Project would significantly improve speeds and travel times on Yan Yean Road and improve speeds on other key north-south routes across the local network, including Plenty Road and Epping Road. The Project would also take pressure off local roads and, by limiting access to these local roads, would remove the ability for people to 'rat run'. Less variability in travel time would generate productivity benefits, as motorists and commuters could reduce their allowance for extra travel time when planning trips or deliveries in the area. Reliable travel times are related to improved safety, efficiencies for freight and business transport, and improved quality of life for road users with less delays, frustration and uncertainty when planning journeys.

Strategic traffic forecasting for the year 2031 shows the Project is expected to result in a reduction in traffic along alternate north-south routes. Conversely, travel speed improvements along Yan Yean Road are forecast to be heavily constrained by congestion in 2031 if the road is not upgraded (Technical Report A – *Transport Impact Assessment*). Improving the performance of intersections along Yan Yean Road would also contribute to better traffic flow. Once the Project is constructed, peak direction travel speed improvements of between 20-30 kilometres per hour are forecast along Yan Yean Road for 2031 (Technical Report A – *Transport Impact Assessment*). A new walking and cycling path and footpath and associated connectivity improvements would also improve travel times and safety for pedestrians and cyclists.

## 2.5.2 Economic benefits

The Project has the potential to provide economic benefits to the community including travel time savings, vehicle operating costs, public transport benefits, crash cost savings and a reduction in air pollution.

Additional economic benefits include reduced road deaths, injury and trauma and construction employment.

#### 2.5.3 Social, community and amenity benefits

The Project would improve user experience through improving access and safety, network connectivity and amenity for public transport, walking and cycling. Access to local and growing residential, recreational and service centres in the North Growth Corridor would also be improved. Households would have more job choices and better access to services, and businesses would have better access to workers, supply chains and professional services.

Specific benefits include:

- Lower levels of frustration due to congestion, which can contribute to unpredictable driver behaviour such as overtaking where unsuitable
- Improved safety on residential streets for pedestrians and cyclists due to less congestion and 'rat running'
- · Improved access into and out of properties would make it easier and safer for residents to access their properties
- Improved access to schools and parks would make it easier and safer for people to access education and recreational opportunities along Yan Yean Road
- Better access to jobs, study and other opportunities from growing suburbs such as Doreen and Mernda, including to locations such as the La Trobe National Employment and Innovation Cluster, La Trobe University, Melbourne Airport and the Northern Industrial Precinct
- A new walking and cycling path would encourage more travel by these modes, improve connectivity to the Principal Bicycle Network and increase social connectedness
- Reduction of air pollution due to reduced congestion.

# 2.6 Relationship with other transport projects

The Project is consistent with other Victorian Government initiatives including:

- Yan Yean Road Upgrade Stage 1: The Victorian Government invested \$131.2 million to upgrade Yan Yean Road between Diamond Creek Road and Kurrak Road in Plenty. The Project would tie into this upgrade
- Mernda Rail Extension Project: Mernda Station is located along Bridge Inn Road near the proposed Mernda Town Centre, approximately 3.3 kilometres from the intersection of Bridge Inn Road and Yan Yean Road. The bus routes servicing Yan Yean Road provide connectivity to Mernda Station, while access by private vehicle is most directly gained via Bridge Inn Road at the northern end of the project area
- **Principal Bicycle Network:** The northern section of the Project is currently designated as part of the Principal Bicycle Network, but it is underutilised and in need of improvements to cater for cyclists
- Northern Roads Upgrade: This project is part of duplication and upgrade works to six main arterial roads in Melbourne's north, including Bridge Inn Road from Plenty Road to Yan Yean Road and Epping Road from Craigieburn Road East to Memorial Avenue. Delivered through the Suburban Roads Upgrade program, these works will transform the arterial road network in the northern suburbs
- Plenty Road Upgrade: This project will provide additional lanes, upgraded intersections and pedestrian and cycling facilities between McKimmies Road in Mill Park and Bridge Inn Road in Mernda, and is expected to be complete by mid-2021. Plenty Road runs parallel and approximately four kilometres west of Yan Yean Road and is the nearest north-south running arterial route to the Project
- North East Link: This major new road link will connect Melbourne's freeway system, alleviating congestion in the north-eastern suburbs, improving travel times and removing trucks from local roads. The northern end of the North East Link lies around eight kilometres south of the Project and will be accessible from the project area via Yan Yean Road and the Diamond Creek Road-Greensborough Bypass.

## 2.7 Project objectives

Objectives have been established for the Project that are expected to deliver measurable benefits in response to the key challenges identified by the Victorian Government. The objectives of the Project are:

- Improved road safety The Project would achieve this by isolating road users from hazards through construction of continuous safety barriers and by improving access control through traffic lights at intersections. Congestion and the complex road environment (poor sight lines due to sharp hills and bends) are presently contributing to the poor safety record on Yan Yean Road
- **Improved customer experience** The Project would achieve this by improving access and network connectivity, and providing opportunities for active transport and more road capacity
- **Improved network efficiency** The Project would achieve improved traffic flow and a reduction in travel times by increasing road capacity and reducing congestion.