



Appendix I

Complementary Projects

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Executive summary

The North East Link Project (the project) will have a significant influence on Melbourne's north, east and south east. This document identifies complementary projects with the potential to leverage off the project to enhance benefits and create value for areas adjacent and along the new corridor.

North East Link forms part of a suite of transport projects, including the Hurstbridge railway line upgrade, removal of level crossings, Mernda railway line extension, M80 Ring Road upgrade, widening of Chandler Highway, and Plenty Road and Yan Yean Road upgrades. When implemented, these projects will improve the capacity and efficiency of the transport network in Melbourne's north and east.

Preliminary investigations, traffic analysis and initial consultation with VicRoads, Transport for Victoria, Public Transport Victoria and local councils in the north and east have been undertaken to identify the areas along and surrounding North East Link's corridor that may benefit from:

- 1 Improved productivity, employment and economic growth
- 2 Improved competitiveness of the State
- 3 Increased economic opportunity for households in the north, east and south east
- 4 Improved liveability and thriving communities in the north east.

Complementary projects

Initially identified complementary projects, while not exhaustive or endorsed by the Victorian Government, have been selected from a longer list of opportunities that directly or indirectly maximise the overall benefits of North East Link. These projects are:

- Arterial road improvement opportunities
 - E6 Transport Corridor
 - Rosanna Road upgrade
 - Diamond Creek Road upgrade
 - Templestowe Road upgrade
 - Grimshaw Street upgrade
- Active transport improvement opportunities
 - Shared use path improvement works
 - Other shared use path improvement works
- Public transport improvement opportunities
 - Bus service improvement opportunities
 - Doncaster Busway
 - Watsonia railway station improvement (proposed projects 1 and 2)
 - Greensborough railway station improvement
- Other opportunities.

Recommendation

Doncaster Busway was initially identified as a complementary project; however, the North East Link Concept Design has evolved to incorporate Doncaster Busway as an integral component of the Eastern Freeway modernisation that is essential to realising the expected project benefit of improved access to jobs for key residential locations in Melbourne’s north and east (refer to Chapter 8 of the business case). Accordingly, the Doncaster Busway is part of the project scope for North East Link and is included in the project’s cost estimate and core economic appraisal (discussed in Chapter 10 of the business case).

The complementary projects listed in the table below are also recommended for inclusion as part of the North East Link project scope.

Recommended complementary projects for inclusion in North East Link project scope

Project	Scope description	Benefits	Indicative cost (real)
Shared Use Path improvement works	Construction of: <ul style="list-style-type: none"> Greensborough Road SUP North East Bicycle Corridor Bulleen Road SUP Includes pedestrian and cycling crossings of North East Link and land bridges at Watsonia Road, Yallambie Road, Blamey Road and Drysdale Road	Increased access for residents living in the north and east by improving local and wider walking and cycling network surrounding North East Link	*
Watsonia railway station improvement: Proposed project 1	Additional car parking to facilitate loss of parking at Greensborough railway station due to Hurstbridge Rail Line Upgrade Stage 2	Improved access for residents in the north by increasing the capacity of carpark adjacent to North East Link	*

These complementary projects have been fully considered in North East Link’s cost estimate and funding request.

The remaining complementary projects are recommended for further development, stakeholder engagement and separate funding requests from government.

* Redacted – commercial-in-confidence

1 Introduction

North East Link will have a significant influence on Melbourne's north, east and south east, and provides opportunities leverage off the project's benefits to:

- 1 Improve productivity, employment and economic growth
- 2 Improve the competitiveness of the State
- 3 Increase economic opportunity for households in the north, east and south east
- 4 Improve liveability and thriving communities in the north east

North East Link is one of a suite of transport projects – including the Hurstbridge railway line upgrade, removal of level crossings, Mernda railway line extension, widening of Chandler Highway, and Plenty Road and Yan Yean Road upgrades – that will improve the capacity and efficiency the transport network in Melbourne's north and east.

Preliminary investigations, traffic analysis and initial consultation with VicRoads, Transport for Victoria, Public Transport Victoria and local councils in the north and east have identified arterial road network and public transport improvement opportunities in areas along the project corridor (and more broadly in the north and east) that may enhance the benefits of the project.

Each complementary project scope is discussed in further detail in section 3. As the North East Link Project proceeds, further opportunities may be identified for consideration by government.

Section 4 summarises the complementary project scope, benefits, rationale, indicative costs and recommendations for inclusion or exclusion within North East Link's project scope.

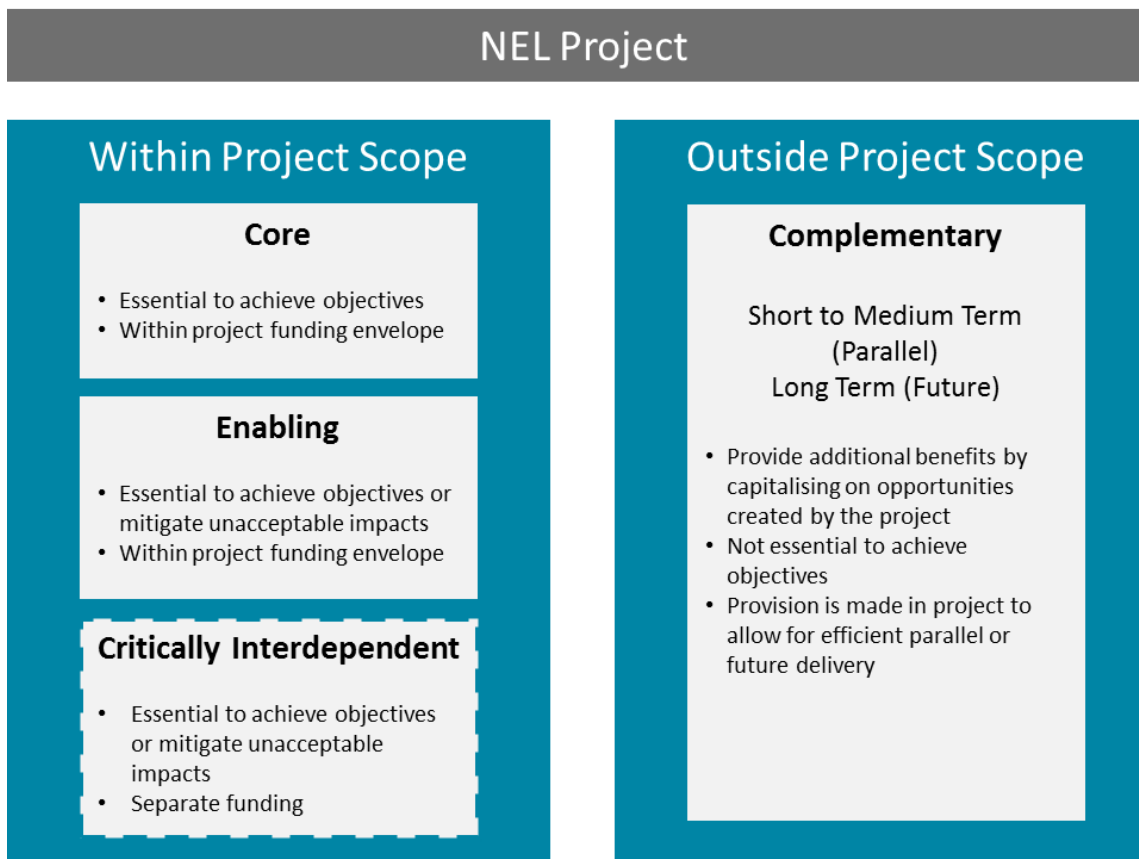
The funding and timing for the delivery of the complementary projects is discussed in section 5.

2 Scope framework

North East Link has been developed in consideration of the broader transport network. When developing the project, potential projects or opportunities that may enhance the project benefits or provide additional benefits to the transport network were identified.

The scoping framework shown in Figure 1, required by the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) guidelines was used to guide the identification of potential projects or opportunities. The framework classifies scope elements of options as either core, enabling, critically interdependent or complementary. This document discusses the complementary projects that have been initially identified for North East Link.

Figure 1 DEDJTR scope framework



Source: DEDJTR Guidelines for Transport Modelling and Economic Appraisal in Victoria V3.03, December 2016

3 Complementary projects

This section describes the scope of the following complementary projects, which were identified initially from a longer list of opportunities that directly or indirectly maximise the overall benefits of North East Link:

- Arterial road improvement opportunities
 - E6 Transport Corridor
 - Rosanna Road upgrade
 - Diamond Creek Road upgrade
 - Templestowe Road upgrade
 - Grimshaw Street upgrade
- Active transport improvement opportunities
 - Shared use path improvement works
 - Other shared use path improvement works
- Public transport improvement opportunities
 - Bus service improvement opportunities
 - Doncaster Busway
 - Watsonia railway station improvement (proposed projects 1 and 2)
 - Greensborough railway station improvement
- Other opportunities.

3.1 Arterial road network improvement opportunities

North East Link provides opportunities to enhance local access by improving key arterial roads that connect communities and employment hubs. Many road network improvement opportunities have been identified that will address major constraints in Melbourne's existing transport network and better manage the increasing number of trips along these routes. These initiatives are not integral elements of this business case but could be delivered independently, or in advance of the project, as part of an early works package. This would provide considerable benefits in conjunction with the North East Link Project.

Identified arterial road network opportunities will need to be assessed within the context of broader network impacts and wider transport network planning, which will be the subject of refined modelling undertaken during the next phase of development work. Some opportunities will also require further community and stakeholder engagement to finalise scope definition.

3.1.1 E6 transport corridor

Situation and opportunity

Melbourne's outer north is one of the fastest growing areas in Australia. The region plays an international and interstate gateway role through the presence of Melbourne Airport, the Hume Freeway and the Melbourne-Sydney-Brisbane rail line. South Morang was Australia's fastest growing suburb in 2015-16, with Epping also making the top 10. These two suburbs accommodated an additional 8,000 people in that year, representing eight percent of Melbourne's growth¹.

New suburbs proposed in the outer north including Lindum Vale, Northern Quarries, Beveridge North West, Beveridge Central, Donnybrook, Woodstock and Wollert. Current projections forecast that the municipalities of Hume and Whittlesea combined will grow by more than 200,000 people or 50 percent between 2016 and 2031².

The road network in Melbourne's north is already struggling to keep up with this growth. The network is congested, with limited opportunities for expansion. Growth areas north of M80 are currently serviced by the Craigieburn Bypass and the Hume Freeway. These roads are at capacity, which is expected to continue to place the surrounding local road network under pressure. Even with proposed upgrades for Plenty Road, Yan Yean Road and the Suburban Roads Upgrade (SRU) Northern Package, the outer northern road network will require additional capacity to meet escalating travel demands.

Proposed project

The E6 Transport Corridor (E6) is part of the broader Outer Metropolitan Ring (OMR), a reservation intended to accommodate a 100-kilometre long high-speed transport link for people and freight in Melbourne's north and west. The E6 component is planned as a new freeway connection from the Hume Freeway, near Kalkallo to the M80 at Thomastown. The E6 has been reserved through a Public Acquisition Overlay in the planning scheme as part of the OMR.

The proposed E6 has strong alignment with North East Link's project objectives, particularly around improving access and growth in Melbourne's north for businesses, households and freight. The delivery of the E6 is expected to provide significant benefit to Melbourne's rapidly growing population in the outer north, through improved accessibility and network operation.

The proposed E6 Transport Corridor complementary project scope, is shown in Figure 2 and includes:

- Three lanes in each direction from the M80 to Findon Road
- Two lanes in each direction from Findon Road to Hume Freeway (PAO for 3 lanes)
- Interchanges at:
 - Hume Freeway
 - Donnybrook Road
 - Bridge Inn Road
 - Findon Road
 - Childs Road
 - M80 interchange

¹ Australian Bureau of Statistics (ABS), 2016

² DELWP, Victoria in Future 2016

- Overpasses at:
 - Melbourne Sydney railway line
 - Terminal Road (future interchange provision maintained)
 - Epping Road (future interchange provision maintained)
 - Lehmans Road (future interchange provision maintained)
 - Summerhill Road (future interchange provision maintained)
 - Derby Drive
 - McDonalds Road
 - South Morang railway
 - Mckimmies Road
- Arterial road upgrades at:
 - Bridge Inn Road (Plenty Road to Epping Road)
 - Epping Road (Lehmans/Craigieburn to Bridge Inn Road)
- Widening the M80 between the E6 and North East Link to include new collector-distributor lanes.

Expected benefits

The E6 is expected to improve accessibility for communities and businesses in the north, as well as for freight moving to and from or through the north. This supports North East Link's objectives of improving access for business, households and freight in the north, east and south-east.

The key transport benefits expected from the delivery of the E6 are:

- **Improved accessibility to metropolitan activity centres for households and local businesses**

The delivery of the E6 provides additional north-south capacity to the road network in the northern growth corridor. This additional capacity is expected to redistribute many trips from existing north-south arterial roads travelling to and from the northern growth corridor onto the E6.

This traffic redistribution would result in reduced volumes and travel times for north-south routes, thereby improving accessibility for the northern growth corridor. The routes that are expected to realise the most benefits are:

- Sydney Road
- Hume Freeway
- Edgars Road
- Epping Road
- Dalton Road
- Plenty Road.

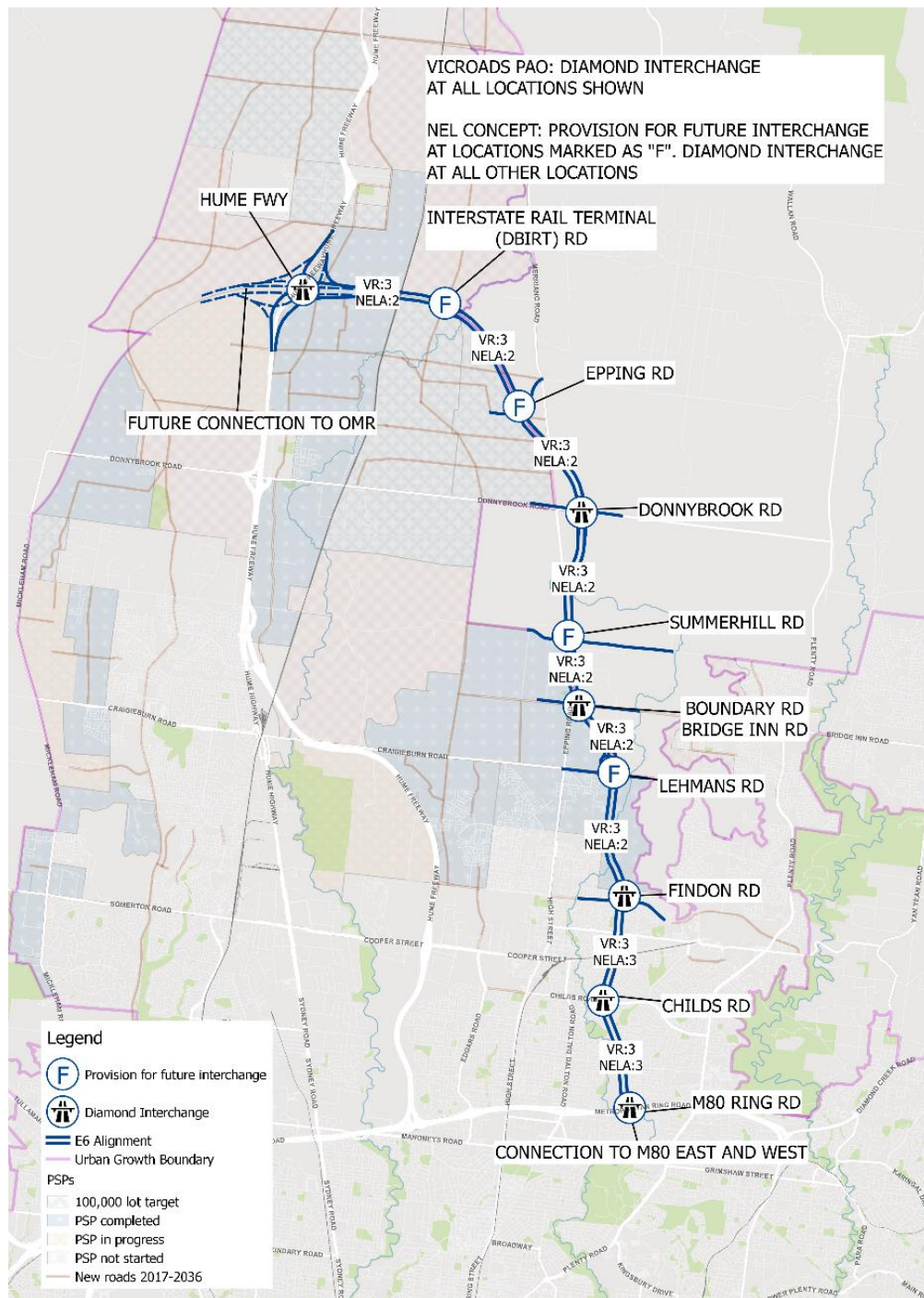
The benefits are greatest east and west of the Hume Freeway between Craigieburn Road and Donnybrook Road, increasing accessibility to current and proposed activity centres such as Epping, Wollert, Broadmeadows, Mernda, South Morang and Lockerbie for residents and businesses in the outer north.

- **Improved accessibility to freight centres for industries**

The northern growth corridor is one of the most important industrial regions in Australia, linking metropolitan markets in Victoria to New South Wales (via the Sydney rail line and the Hume Freeway) and to wider national and international markets via Melbourne Airport.

Shorter and reliable travel times is of significant value to the freight industry, which works on delivering goods within prescribed timeframes. Increased reliability and efficiency can result in reduced costs for businesses through fuel and maintenance savings and potentially reduced fleet numbers, which may in turn decrease the number of trucks on the roads. The E6 is anticipated to improve reliability and efficiency on the Hume Freeway and Sydney Road for freight travelling to and from freight centres in the north, including Melbourne Markets in Somerton, Melbourne Airport and the future Beveridge Interstate Freight Terminal (BIFT), as well as interstate to New South Wales.

Figure 2 Outer Metro Ring Road (E6)



3.1.2 Rosanna Road upgrade

Situation and opportunity

Rosanna Road is an important link between Greensborough Highway and Lower Plenty Road, with more than 45,000 vehicles using the road daily. It provides access to schools, services and shops for the local community and businesses in the north east. North East Link is expected to attract large freight vehicles from Rosanna Road and free the road for local traffic. This allows an opportunity for upgrades on Rosanna Road to enhance local connectivity and improve safety.

Rosanna Road passes through a lively shopping precinct and multiple schools, and is historically a high crash area. Over a five-year period ending in mid-2017, a total of 85 crashes were recorded in the area, 16 of which resulted in hospitalisation. Of these recorded crashes, many involved rear-end collisions, turning vehicles at intersections and vehicles running off the road.

Proposed project

There are opportunities to:

- Remove existing overhead power poles on both sides of Rosanna Road over the 2.2 km length from Burgundy Street to Lower Plenty Road to address the safety issues with vehicles side-swiping the power poles
- Relocate the electrical and communications cabling underground along the same length
- Replace street lighting on impact absorbing poles
- General road safety improvements

Expected benefits

The following benefits are expected to be realised following the upgrade works:

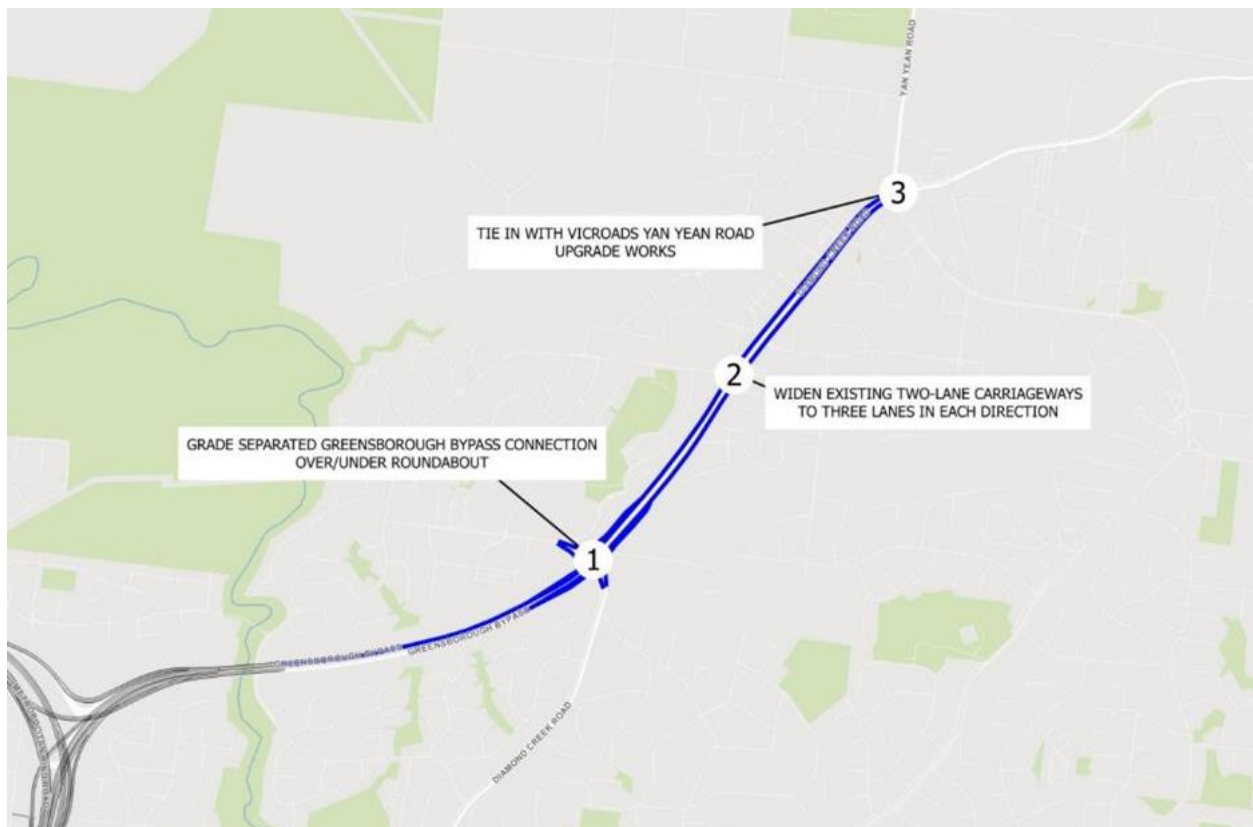
- Improved road safety and operations through impact absorbing poles, extra lighting, modifying the existing signalised intersection and other general road safety improvements
- Enhanced visual amenity along Rosanna Road through the removal of power poles
- Better environmental outcomes from the introduction of new energy efficient street lighting being installed at key locations.

Expected benefits

By upgrading Diamond Creek Road, the following benefits are expected to be realised:

- Improved access to the M80, North East Link and Greensborough Activity Centre through travel time savings, with additional lanes and increased traffic throughput along the east-west route from Civic Drive to Yan Yean Road
- Enhanced road safety along Greensborough Bypass.

Figure 4 Diamond Creek Road upgrade



3.1.4 Templestowe Road upgrade

Situation and opportunity

Templestowe Road is a major east-west arterial road, carrying 24,000 vehicles in a two-lane two-way cross-section. Traffic flows during the peak periods are heavy and exceed desirable maximum volumes for this type of road. There are also numerous direct access points onto the road, with many intersections lacking in-turn lanes and poor conditions for right turns onto Templestowe Road due to the high traffic volumes. It is likely that North East Link would attract greater demands for Templestowe Road, acting as a feeder to the Banksia Street interchange.

Proposed project

The opportunity to upgrade Templestowe Road would include the following scope:

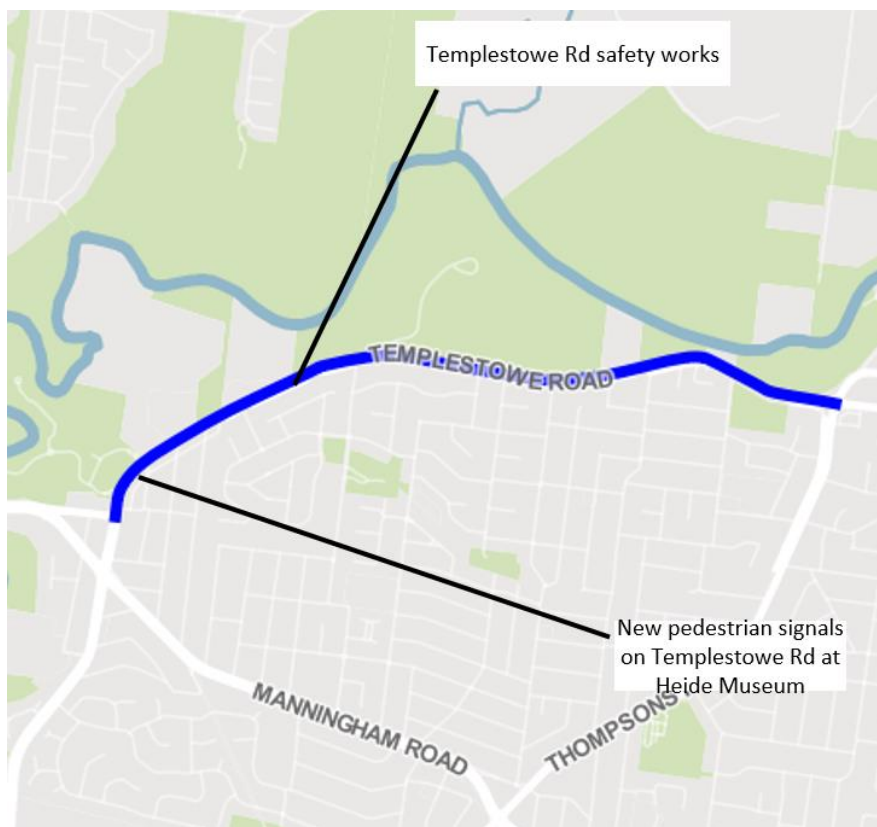
- Removal of existing overhead power poles at selected high risk locations on both sides of Templestowe Road from Bridge Road and Thompsons Road
- Relocation of the electrical and communications cabling underground at selected locations at high risk locations, over the same length
- Replacement street lighting on impact absorbing poles at selected high risk locations
- A new shared use path.
- A new signalised intersection at Templestowe Road/Bulleen Road/Bridge Street.
- New pedestrian signals at Heide Museum.

Expected benefits

The following benefits are expected to be realised from the upgrade:

- Improved road safety and road operation through impact absorbing poles, extra lighting and the signalised intersection at Bridge Street
- Improved access to schools, social clubs and shopping precincts
- Enhanced pedestrian connectivity via modifying the existing signalised intersection
- Better environmental outcomes through the introduction of new energy efficient lighting infrastructure.

Figure 5 Templestowe Road upgrade



3.1.5 Grimshaw Street upgrade

Situation and opportunity

Grimshaw Street is a key link to the Greensborough Activity Centre (The Circuit). North East Link provides an opportunity to improve safety and operations along Grimshaw Street between Greensborough Highway and Main Street, where heavy traffic flow has been a major constraint to efficient vehicle movement and access. There have been numerous pedestrian and bicycle accidents concentrated at Greensborough Road and Grimshaw Street, and in the vicinity of the schools on Grimshaw Street³.

Proposed project

The upgrade works on Grimshaw Street consists of the following:

- Removal of existing overhead power poles at selected key high risk locations from Greensborough Highway to Main Street
- Relocation of the electrical and communications cabling underground at selected key high risk locations, over the same length
- Replacement street lighting on impact absorbing poles at selected key high risk locations
- Traffic signal improvements at Henry Street and Main Street
- Safety and operational improvements as required on the western approach of Grimshaw Street to North East Link intersection.

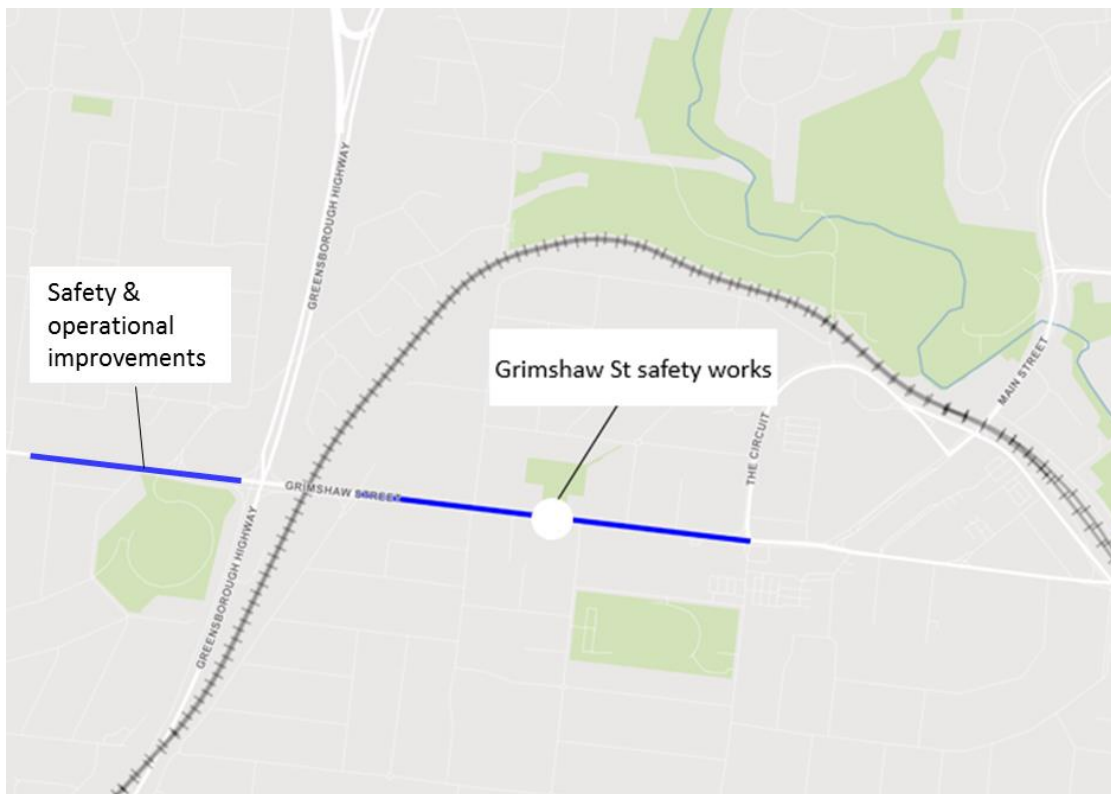
Expected benefits

The following benefits are expected to be realised following the upgrade works:

- Improve road safety and operations along Grimshaw Street
- Enhanced pedestrian connectivity and interchange facilities between the Greensborough railway station and bus services via modifying the existing signalised intersection
- Improved amenity, pedestrian and public transport access to and within the Greensborough Activity Centre
- Better environmental outcomes through the introduction of new energy efficient lighting infrastructure.

³ Banyule City Council Road Safety Strategy

Figure 6 Grimshaw Street upgrade



3.2 Active transport improvement opportunities

3.2.1 Shared use path improvement works

Situation and opportunity

The construction of North East Link unlocks numerous opportunities to improve walking and cycling facilities within the North East.

Proposed projects

Active transport initiatives in the north east identified in consultation with Transport for Victoria are:

- Greensborough Road Shared Use Path – completion of the missing Greensborough Road walking and cycling link, including:
 - A new shared use path connection between Grimshaw Street and the existing path at Yallambie Road
 - A new shared use path on the southern side of the M80 and western side of North East Link to improve walking and cycling accessibility to and from Watsonia
 - On road cycling routes to improve accessibility to Heidelberg, Watsonia, Greensborough and La Trobe University
 - Grade separated crossings of the Greensborough Road path at Grimshaw Street and Lower Plenty Road

- Completion of the North East Bicycle Corridor – a new walking and cycling link between Merri Creek and Chandler Highway on the north side of the Eastern Freeway to improve access between the eastern suburbs and the inner city
- Bulleen Road Shared Use Path – a new shared use path parallel to Bulleen Road between Manningham Road and the Eastern Freeway to improve accessibility to the schools and recreational facilities on Bulleen Road, including new walking and cycling bridges over the Yarra River at Manningham Road and the Eastern Freeway, and grade separation of the Koonung Creek Trail at the Bulleen Road intersection near the Eastern Freeway.

Opportunities to improve connections across the North East Link corridor include:

- A new shared use path structure near Elder Street over North East Link and Greensborough Road
- Signalised intersection of Drysdale Street and Greensborough Road
- Potential crossings between Lower Plenty Road and Grimshaw Street.

In addition to the proposed shared use paths and connections across the corridor, several land bridges are proposed to be constructed over North East Link at Watsonia Road, Yallambie Road, Blamey Road and Drysdale Road.

To enhance local accessibility and improve local amenity, the bridges at Watsonia Road and Yallambie Road are proposed to be widened beyond minimal connectivity requirements to become 'land bridges'. Three additional land bridges with no vehicle access are planned between Yallambie Road and Lenola Street. These land bridges are expected to have a maximum length of 80 metres along the width of the cutting, provide local access to pedestrians crossing North East Link.

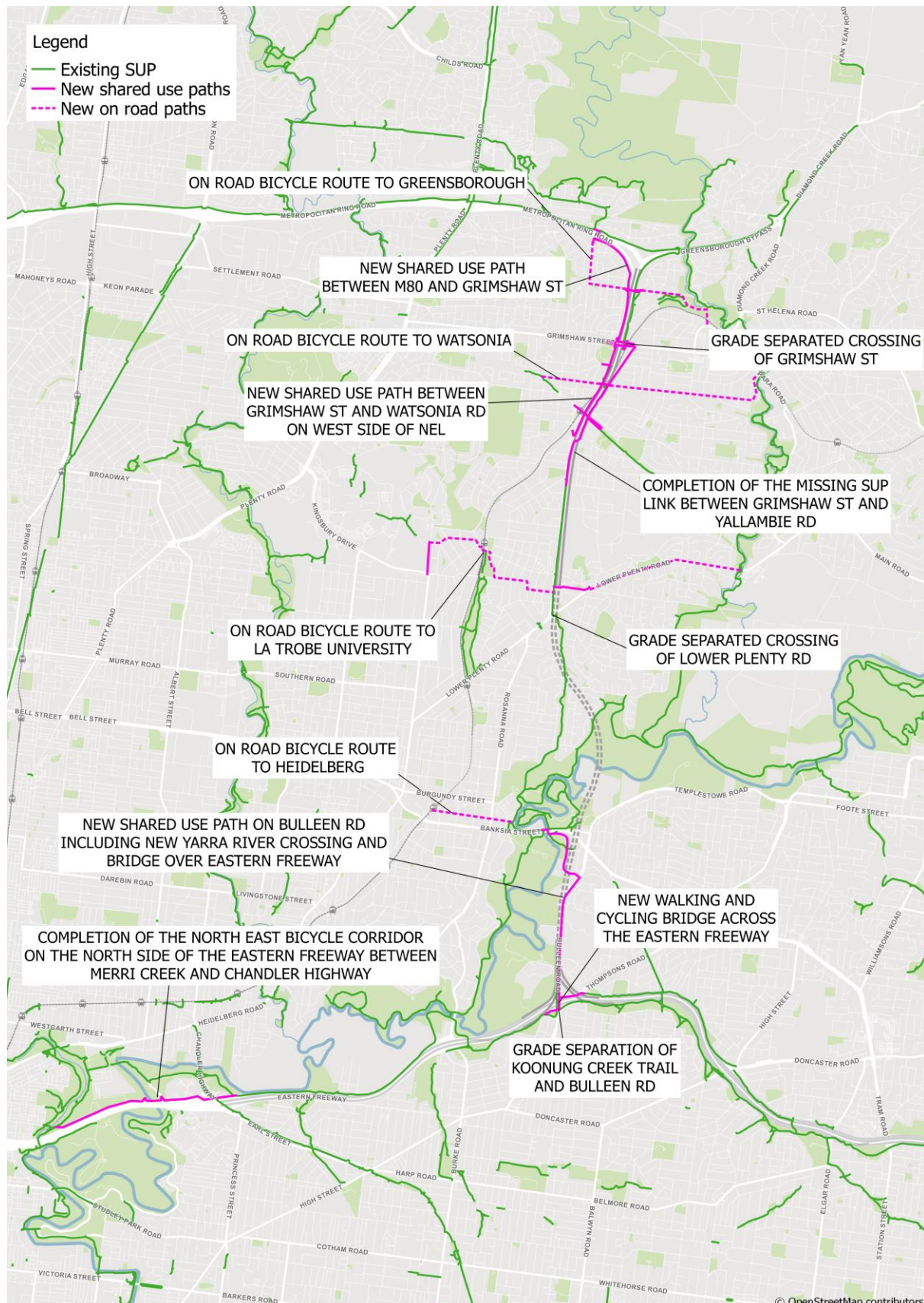
Expected benefits

The proposed walking and cycling projects are expected to provide the following benefits:

- A better connected Principal Bicycle Network (PBN) and Strategic Cycling Corridor networks (SCC), improving access to key destinations including activity centres, recreational facilities, transport hubs and education facilities
- Preservation of local access and improved urban amenity
- Improved safety by creating walking environments
- Improved liveability through health benefits from using active transport
- Better environmental outcomes
- Improved access by sustainable transport modes to public transport nodes, reducing parking pressures at these nodes
- Reduced costs by 'future proofing' walking and cycling infrastructure.

These projects would also support the development of '20-minute neighbourhoods' (an objective of Plan Melbourne 2017-2050) by removing barriers to accessing local services and facilities.

Figure 7 Shared use paths improvement works

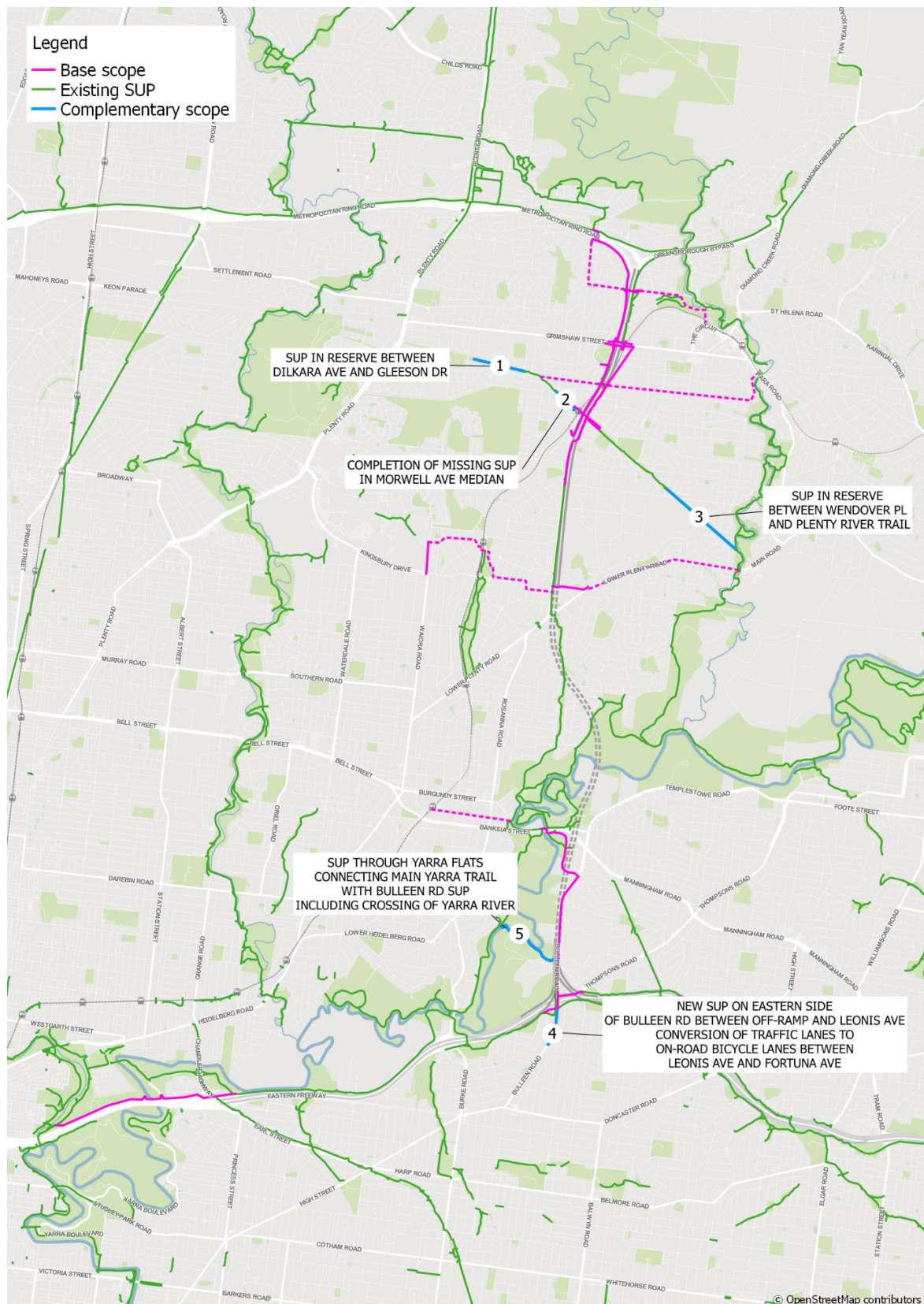


3.2.2 Other shared use path opportunities

Additional opportunities for walking and cycling projects have been identified that may be delivered in parallel to North East Link as separate projects:

- Completion of the East-West Power Easement trail. This trail, which runs between Plenty Road and the Plenty River Trail via Watsonia is incomplete in three sections (locations 1, 2 and 3 in Figure 8) and has been identified as a high priority project by the Northern Regional Trails Strategy.
- Bulleen Road on-road cycling lanes (location 4 of Figure 8). Completing the missing 400-metre section of on-road bicycle lanes between Fortune Avenue and the Koonung Creek Trail south of the Eastern Freeway would create a continuous cycling route along Bulleen Road.
- Construction of a new shared use path through Yarra Flats (location 5 in Figure 8). Walking and cycling connectivity between Ivanhoe, Eaglemont and the Bulleen Road schools and recreational facilities is currently poor. A new crossing of the Yarra River and connection to Bulleen Road from the Main Yarra Trail would improve accessibility to this precinct from the west.

Figure 8 Other shared use opportunities



3.3 Public transport improvement opportunities

3.3.1 Bus service improvements

Situation and opportunity

Public transport connections in the north east experience delays due to congestion, particularly at bottlenecks at existing crossings of the Yarra River for services between the northern and eastern suburbs. Bus services that run through the area are becoming increasingly inefficient resulting in increasing travel times for users. Growth in residential areas to the north and expansions of commercial and educational precincts in the east and south east means that demand for these movements will continue to increase.

North East Link presents opportunities to improve bus services performance on the arterial road network throughout the north east. Further planning will be undertaken to identify how and where these improvements can be made, including:

- Improving or providing priority for buses along key routes and at key intersections
- Providing bus priority at interchanges with the new freeway
- Improving the performance of key intersections to increase the reliability of bus services (as well as improving conditions for general traffic)
- Providing safe and efficient transfers between transport modes, such as between buses and trains at Watsonia Station.

Proposed projects

The enhanced orbital connectivity provided by North East Link also provides opportunities to build a more efficient and better connected city-wide bus network, including opportunities for commercially operated bus services to access Melbourne Airport from eastern and south eastern Melbourne and Victoria. Other opportunities to serve destinations, such as the La Trobe National Employment and Innovation Cluster (La Trobe NEIC), could also be considered.

Expected benefits

The expected benefits of these proposed improvements are:

- More efficient bus services on some routes, leading to improved accessibility for residents living the north east
- More frequent and reliable bus services, which will make public transport more attractive and encourage mode shift. This can help ease traffic congestion on local roads
- Maintaining performance on bus routes where an increase in traffic volumes are expected due to North East Link
- Health benefits for communities associated with using public transport
- Better environmental outcomes for the community, as more public transport users will to help reduce greenhouse gas emissions.

3.3.2 Doncaster Busway

Situation and opportunity

North East Link provides an opportunity to implement a dedicated bus service, known as the Doncaster Busway, from Hoddle Street to Doncaster Road and via the shoulder of the Eastern Freeway east of Doncaster Road. Doncaster Busway is a Bus Rapid Transit (BRT) service, which separates purpose-built, high capacity buses from other road traffic via a dedicated lane that provides full right of way. Implementing Doncaster Busway presents an opportunity to consider the network and service enhancements needed to make best use of the busway and meet growing demand.

Proposed project

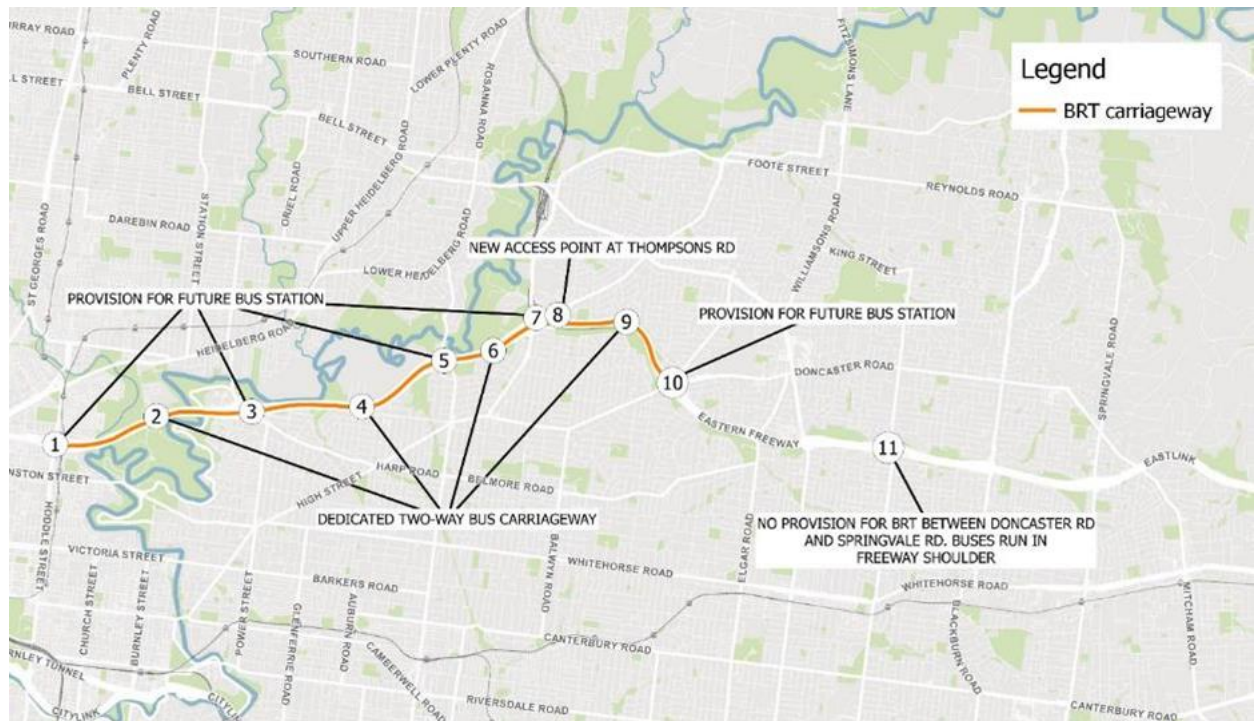
The scope description presented in the table below is subject to further investigations and consultation with Transport for Victoria, PTV and VicRoads. This scope description may change dependent upon the Doncaster Busway design requirements.

Table 1 Proposed Doncaster Busway scope

Location	Scope
Victoria Park Precinct	<ul style="list-style-type: none"> Provision for station by Transport for Victoria at Hoddle Street interchange Dedicated two-way bus carriageway between Hoddle Street and Chandler Highway
Chandler Highway interchange	<ul style="list-style-type: none"> Provision for bus station in freeway median near overpass (station will not be delivered as part of the project scope)
Chandler Highway to Burke Road	<ul style="list-style-type: none"> Provision for dedicated two-way bus carriageway
Burke Road interchange	<ul style="list-style-type: none"> Provision for bus station in freeway median near the overpass (station will not be delivered as part of the project scope)
Burke Road to Bulleen Road	<ul style="list-style-type: none"> Provision for dedicated two-way bus carriageway
Bulleen Road/Thompsons Road interchange	<ul style="list-style-type: none"> Provision for bus station on the site of the relocated Boroondara Tennis Centre Provision for future Park & Ride facilities co-located with the future station
Bulleen Road to Doncaster Road	<ul style="list-style-type: none"> New access point across Thompsons Road, connections provided to existing local road network Provision for dedicated two-way bus carriageway
Doncaster Road interchange	<ul style="list-style-type: none"> Provision for bus station on the northern side of the freeway (station will not be delivered as part of the project scope) Connection to Park & Ride facilities on the eastern side of Doncaster Road to be determined with Transport for Victoria
Doncaster Road to Elgar Road	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway, hard shoulder running required
Elgar Road interchange	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway Scope options available to provide dedicated lanes for Doncaster Busway at the overpass: <ul style="list-style-type: none"> Modify the bridge abutments, both inbound and outbound Rebuild the bridge
Elgar Road to Tram Road	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway, hard shoulder running required

Location	Scope
Tram Road interchange	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway Scope options available to provide dedicated lanes for BRT at the overpass: <ul style="list-style-type: none"> Modify the bridge abutments, both inbound and outbound Rebuild the bridge
Tram Road to Middleborough Road	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway, hard shoulder running required
Middleborough Road interchange	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway, hard shoulder running required
Middleborough Road to Blackburn Road	<ul style="list-style-type: none"> No dedicated provision for Doncaster Busway, hard shoulder running required

Figure 9 Doncaster Busway



In addition to the infrastructure provided, there is also opportunity to operate additional bus services on the Doncaster Busway.

Expected benefits

Expected benefits from implementing the Doncaster Busway include:

- Improved travel times for bus services
- More reliable and frequent bus services
- Health benefits for the community associated with greater use of public transport
- Better environmental outcomes due to reduced greenhouse gas emissions.

3.3.3 Watsonia railway station improvements

Situation and opportunity

Greensborough Highway, the main north-south movement corridor in the area, is a barrier to pedestrian access to Watsonia station from the east. There are cross regional cycling connections from Watsonia to La Trobe University, but minimal on-road and off-road cycling facilities to access Watsonia station. North East Link creates an opportunity to improve access to Watsonia railway station.

The proposed upgrade to Watsonia station aligns with future transport requirements identified by Transport for Victoria based on the VicRoads Road User Hierarchy and Movement and Place framework.

Proposed project 1

The proposed Watsonia station access improvements consist of additional car parking (approximately 60 extra car spaces) to facilitate loss of parking at Greensborough railway station as a result of Hurstbridge Rail Line Upgrade Stage 2.

Proposed project 2

In addition to proposed project 1, other access improvements proposed for Watsonia station are:

- Upgrade of the station car park to a multi-level parking
- Upgrade to pedestrian infrastructure to support desire lines to the station.

Expected benefits

Upgrading Watsonia station is expected to deliver the following benefits:

- Improved access to Watsonia station via walking and cycling, as well as driving
- Health benefits for the community associated with greater take-up of public transport
- Better environmental outcomes through a reduction in greenhouse gas emissions.

3.3.4 Greensborough railway station improvements

Situation and opportunity

Greensborough railway station is renowned within the community for issues with access within its catchment area. Connectivity from the station to the surrounding arterial road network is poor, and pedestrian and cycle access to the nearby Greensborough Activity Centre is hampered by the steep gradient between the station (located on the side of a hill) and the town centre (at the top of the hill).

The Level Crossing Removal Authority (LXRA) is investigating upgrade works to Greensborough railway station as part of Hurstbridge Rail Line Upgrade Stage 2. In addition to this, NELA and Transport for Victoria have identified potential public transport opportunities created by North East Link at the Greensborough station precinct that will help to address future public transport and provide an integrated public transport service to the local community.

Proposed project

Proposed initiatives at Greensborough station and surrounding areas include the following:

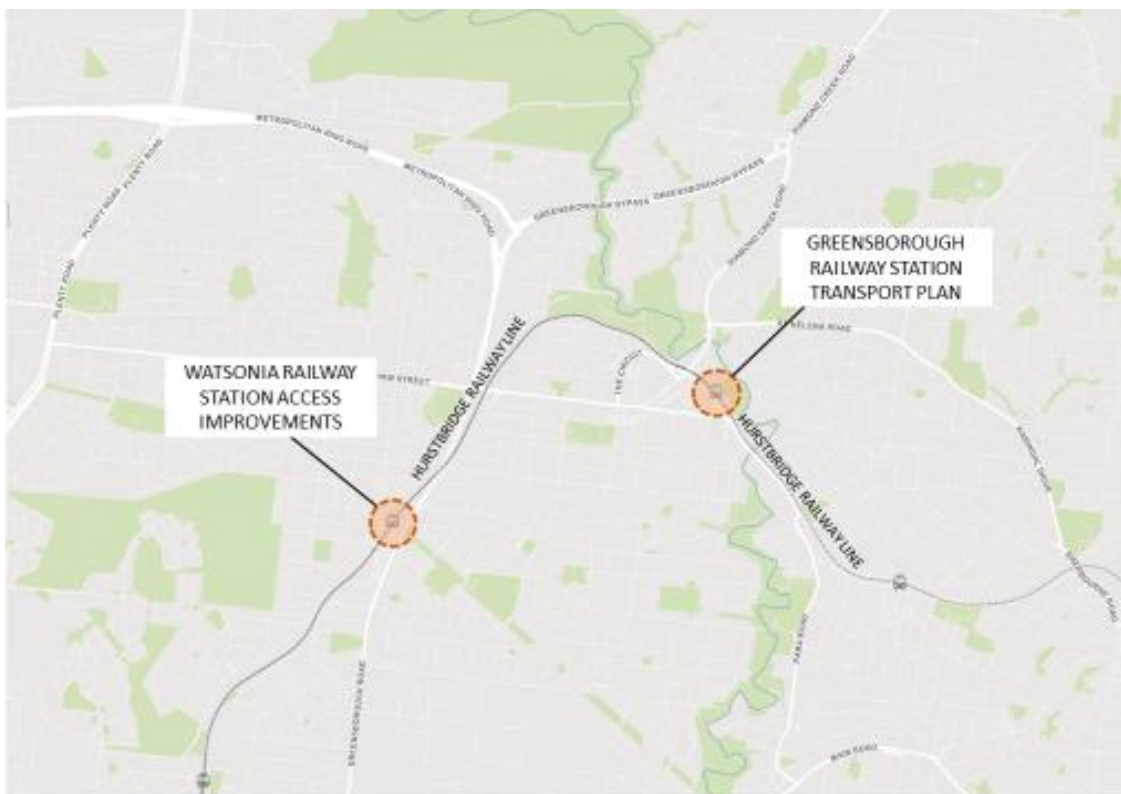
- Principal bus interchange
- On-road bus priority treatments for station access via Para Road to maintain travel times, service reliability and support growing demand for bus access to Greensborough
- Access paths between the station platforms, car parks and bus stops to improve passenger accessibility
- Improved cycle and pedestrian links to Greensborough station
- Improved links to the wider footpath network to shorten walking distances and provide safe and direct access to the station for passengers.
- Improving passenger access through.

Expected benefits

Delivering the Greensborough station initiatives is expected to:

- Improve access for buses to Greensborough railway station
- Improve public transport access and amenity
- Address future network performance needs for public transport
- Increase public transport patronage levels
- Minimise disruption to existing public transport users.

Figure 10 Potential improvements for Watsonia and Greensborough railway stations



3.4 Other opportunities

North East Link has the potential to provide other opportunities to maximise benefits for the community in the north east with regards to road safety, cycling and walking facilities, and open space.

Additional complementary projects were identified through community submissions and consultation with key stakeholders including local councils. These opportunities could be delivered alongside North East Link to enhance overall local amenity surrounding the project corridor. The key opportunities shown in Figure 11.

These complementary projects are consistent with the initiatives proposed in:

- Banyule Council's Integrated Transport Plan 2015-2035 and Northern Regional Trails Strategy 2016
- Manningham Council's Integrated Transport Advisory Committee (ITAC) Terms of Reference 2015 and objectives in the City of Manningham's Council Plan 2017-2021
- Boroondara Council's Economic Development and Tourism Strategy 2016-2021 and Boroondara Bicycle Users Group
- Nillumbik Council's Health and Wellbeing Plan 2017-2021 (Draft).

3.4.1 Road safety improvements

Situation and opportunity

A number of road safety improvements have been identified by local councils, community groups and other key stakeholders in the north east. For example, Belle Vue Primary School has identified a potential initiative to enhance the benefits delivered by North East Link and address the current situation where staff and parents are unable to exit safely from Hillview Road onto Bulleen Road due to the high volumes in traffic along Bulleen Road during peak periods.

Proposed projects

- Yarra Boulevard road safety improvements
- Staff access improvements out of Belle Vue Primary School, with potential to include these works as part of the Bulleen Road upgrade
- Installation of pedestrian operated signals on Dora Street at Yarra Street (in Banyule) and Lower Heidelberg Road at Yarra Street (in Banyule). This could be delivered in parallel with the proposed Bulleen Road Upgrade.

Expected benefits

The expected benefits of these proposed improvements are:

- Improved road safety and operations
- Improved access to schools, social clubs and shopping precincts
- Enhanced pedestrian connectivity via modifying the existing signalised intersection
- Improved safety and accessibility for students, parents and teachers at Belle Vue Primary School.

3.4.2 Active transport improvements

Situation and opportunity

Local councils in the north east have identified areas of concern that could be addressed through opportunities created by North East Link, including improving walking and cycling accessibility for residents.

Proposed projects

- Grade separation or the construction of signals at the pipe track to facilitate the crossing of the Aqueduct Trail, Greensborough Bypass and Diamond Creek Road. There is potential to include these works in the scope of Diamond Creek Road Upgrade
- Pedestrian infrastructure improvements around local schools to encourage walking and facilitate easier access to public transport services
- Balwyn Road pedestrian operated signals at Gordon Barnard Reserve
- Off-road shared use path upgrades including mode separation along the Main Yarra Trail and Koonung Creek Trail where possible
- Earl Street and Willsmere Road roundabout improvements for pedestrians and cyclists
- Asquith Street, Belford Road and Valerie Street roundabout improvements for pedestrians and cyclists.

Expected benefits

The expected benefits of these proposed improvements are:

- Improved overall pedestrian and cyclist connectivity through the area
- Improved specific areas of concern in pedestrian and cycling connectivity for the community
- Improved accessibility and safety for pedestrians, road users and the community at large.

3.4.3 Open space initiatives

Situation and opportunity

Manningham City Council has identified a potential open space initiative at the Bolin Bolin Integrated Water Harvesting Facility created by North East Link.

Proposed project

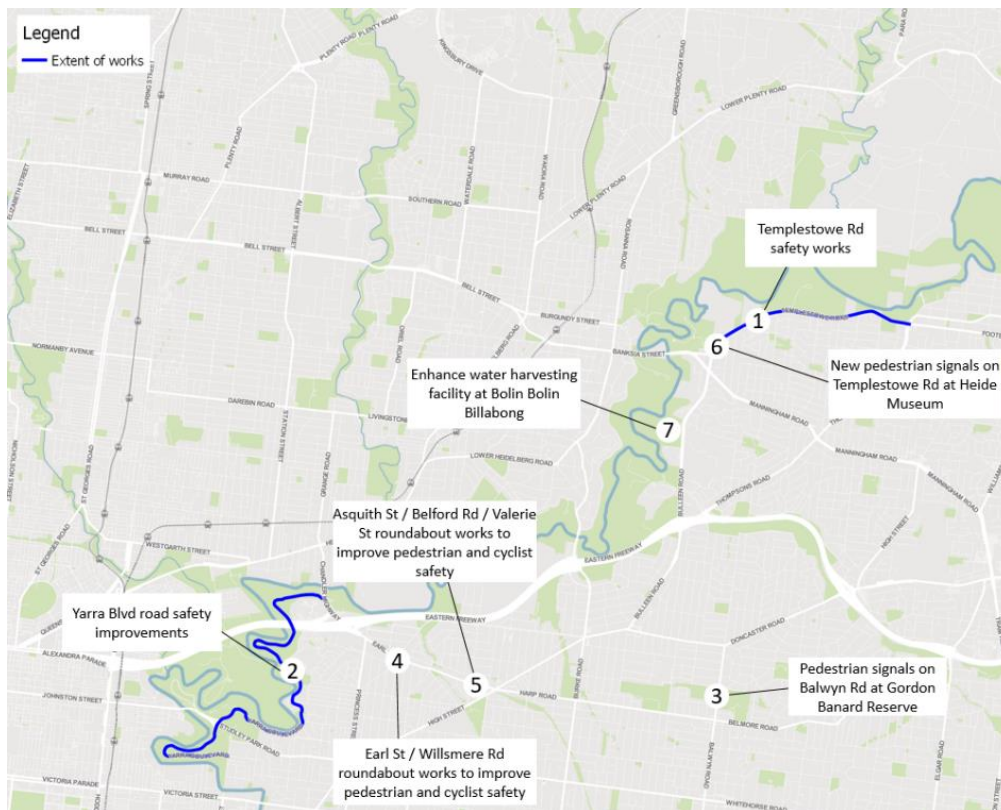
- Enhance the existing Bolin Bolin Integrated Water Harvesting Facility and protect the culturally significant water course.

Expected benefits

The expected benefits of this proposed initiative are:

- Complements rehabilitation of areas that may be disturbed/disconnected by North East Link and enhances urban amenity outcomes for the community and local businesses
- Improvements to Bolin-Bolin Billabong may offset the effects and disturbance that tunnel construction may cause.

Figure 11 Other opportunities



3.4.4 La Trobe National Employment and Innovation Cluster improvement opportunities

Situation and opportunity

The La Trobe NEIC is the key location for the growth of employment and business in Melbourne's north east. Strategic planning anticipates an increase in the number of jobs in the NEIC in the long term, leveraging the strong foundations of specialised activities associated with existing industries and institutions of Austin Health and La Trobe University. With the highest concentration of jobs in Melbourne's north east, the La Trobe NEIC has significant potential for attracting and creating new jobs which will enhance the area's overall economic growth and liveability.

Preliminary transport assessment indicates that North East Link is likely to change the functionality of the existing road network surrounding the NEIC. This creates potential risks and opportunities to local traffic, active transport and public transport for the NEIC.

The proposed freeway interchange at Lower Plenty Road is likely to impact on traffic conditions, increasing demand for access to the new freeway. This will require management of the interaction between the Lower Plenty Road interchange and local access into and out of La Trobe NEIC.

The Victorian Planning Authority (VPA), together with Banyule and Darebin City Councils, developed a Draft Framework Plan for investment and jobs growth in the La Trobe NEIC. As part of this framework plan, the VPA identified strategic transport network aspirations and targeted actions that could form part of a transport plan developed in collaboration with Transport for Victoria and its agencies. The potential opportunities created by North East Link (through improving congestion on the local road network in the north east) may support the aspirations identified in the Draft Framework Plan.

Proposed projects

Broadly, for the La Trobe NEIC to be attractive and successful, good transport connections to and within the NEIC are required – above and beyond what is presently available. The La Trobe NEIC will require a substantial shift to increased walking, cycling and public transport modes to alleviate congestion, promote commercial activity and ensure it is a destination that attracts new investment and jobs.

This will require leveraging off the existing arterial road network, radial rail network and SmartBus connectivity using a range of targeted small and large scale infrastructure interventions.

Transport network improvements

The Draft Framework Plan identifies road corridors where boulevard treatments could be applied to support greater use of sustainable transport modes and create more attractive places, areas that will require public transport improvements and potential changes to the road network to support the functionality of the network. Changes to traffic conditions as a result of North East Link create potential opportunities to support these aspirations, particularly where a traffic volume decrease is expected.

Pedestrian and cycling infrastructure improvements

North East Link presents opportunities to enhance the pedestrian and cycling network to and within the La Trobe NEIC. This could include on-road and off-road bike paths to La Trobe University, Northland Shopping Centre and Austin Hospital Precinct.

Expected benefits

The expected benefits of these proposed improvements are:

- Improved access to jobs and education opportunities for households in the north east
- Promotion of economic growth in the north east by attracting investment in commercial and residential development
- Improved liveability through health benefits from using active transport
- Better environmental outcomes as having more residents using active and public transport helps to reduce greenhouse gas emissions.

4 Recommendations

The following table summarises the scope, benefits, rationale, indicative costs and recommendations for inclusion/exclusion within North East Link's project scope.

Table 2 Complementary projects scope summary

Complementary Works	Scope description	Rationale	Benefits	Indicative cost (real)	Recommended for inclusion in NEL project scope
Arterial road improvement opportunities					
E6 Corridor	Construction of a new freeway from M80 to Hume Freeway	Strong alignment with North East Link objectives and Outer Metropolitan Ring Road objectives	Provides alternative north-south transport route resulting in improved connection to and from the growth area in the outer north	*	No, recommended for further project development, stakeholder engagement and separate business case
Rosanna Road upgrade:	<ul style="list-style-type: none"> Remove existing overhead power poles on both sides of Rosanna Road over the 2.2 km length from Burgundy Street to Lower Plenty Road to address the safety issues with vehicles side-swiping the power poles Relocate electrical and communications cabling underground along the respective length Replace street lighting on impact absorbing poles General road safety improvements 	Address existing road safety issues on Rosanna Road, adjacent to North East Link.	Improved road safety and access along Rosanna Road	*	No, recommended for further project development, stakeholder engagement and separate business case
Diamond Creek Road upgrade	Network improvements between Greensborough Highway and Yan Yean Road	Address potential impacts on access along Diamond Creek Road to North East Link	Improved road network and safety. Improved access to and efficient operation of North East Link	*	No, recommended for further project development, stakeholder engagement and separate business case

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Complementary Works	Scope description	Rationale	Benefits	Indicative cost (real)	Recommended for inclusion in NEL project scope
Templestowe Road upgrade	Safety and network Improvements between Bridge Street and Thompsons Road	Addressing existing road safety issues on Templestowe Road	Improved road safety, walking and cycling facilities	*	No, recommended for further project development, stakeholder engagement and separate business case The proposed scope is in addition to the allowance made in the NEL project scope cost estimate
Grimshaw Street upgrade	Safety and network Improvements between Greensborough Highway and Main Street.	Addressing existing road safety and local issues on Grimshaw Street.	Improved road safety and local amenity.	*	No, recommended for further project development, stakeholder engagement and separate business case The proposed scope is in addition to the allowance made in the NEL project scope cost estimate
Active transport improvement opportunities					
Shared use path improvement works	Construction of: <ul style="list-style-type: none"> Greensborough Road SUP North East Bicycle Corridor Bulleen Road SUP Also includes pedestrian and cycling crossings of North East Link, and land bridges at Watsonia Road, Yallambie Road, Blamey Road and Drysdale Road	Connecting the gaps in the Principal Bicycle Network (PBN) and the Strategic Cycling Corridors.	Increased access for residents living in the north and east by improving local and wider walking and cycling network surrounding North East Link	*	Yes, the following treatments are recommended for inclusion in NEL's project scope The cost is included in line item 29.5 of the NEL project scope cost estimate
Other shared use path improvement works	<ul style="list-style-type: none"> Completion of the East-West Power Easement trail 	Connecting gaps in the Principal Bicycle Network (PBN) and Strategic Cycling Corridors (SCCs).	Opportunity to improve local and wider walking and cycling network surrounding North East Link	*	No, recommended for further project development, business case and stakeholder engagement

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Complementary Works	Scope description	Rationale	Benefits	Indicative cost (real)	Recommended for inclusion in NEL project scope
	<ul style="list-style-type: none"> Construction of a new shared use path through Yarra Flats Bulleen Road on-road cycling lanes between Fortune Avenue and the Koonung Creek Trail south of the Eastern Freeway 				
Public transport improvement opportunities					
Bus improvement works	Bus priority treatments including bus jump lanes, signals, interchange upgrades and dedicated bus lanes	Address service frequency issues and poor reliability of bus services in the north east	Improved bus travel time and reliability on the network surrounding North East Link	*	No, recommended for further project development, business case and stakeholder engagement
Doncaster Busway operations	Operation of additional bus services on Doncaster Busway	Address service frequency issues and poor reliability of bus services in the north east	Improved bus travel time and reliability on the network surrounding North East Link	*	No, recommended for further project development, business case and stakeholder engagement
Victoria Park precinct	Development of precinct master plan to assess the current role and function of Victoria Park station and provide recommendations for its future development	Provide a framework for realising the vision for Victoria Park precinct	Improved urban amenity and access to the station	*	No, recommended for further project development, business case and stakeholder engagement
Watsonia railway station improvement: Proposed project 1	Additional car parking to facilitate loss of parking at Greensborough railway station due to Hurstbridge Rail Line Upgrade Stage 2	Car park capacity constraints and station access issues	Improved access for residents in the north by increasing the capacity of carpark adjacent to North East Link	*	Yes, recommended for inclusion in NEL Project scope The cost is included in line item 7.82 of the NEL project scope cost estimate
Watsonia railway station	<ul style="list-style-type: none"> Upgrade of the station car park to multi-level parking Upgrade to pedestrian infrastructure to support desire lines to the station 	Car park capacity constraints and station access issues	Increased capacity of carpark adjacent to North East Link and improved station access and amenity	*	No, recommended for further project development, stakeholder engagement and separate business case

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Complementary Works	Scope description	Rationale	Benefits	Indicative cost (real)	Recommended for inclusion in NEL project scope
improvement: Proposed project 2					
Greensborough railway station improvement	Station access and amenity improvements and new bus interchange	Bus-rail interchange and station access issues	Improved station access and amenity	*	No, recommended for further project development, stakeholder engagement and separate business case
Other opportunities					
Other opportunities	<ul style="list-style-type: none"> Road safety improvements Cycling and walking facilities Open space initiatives La Trobe NEIC improvement opportunities 	Leverage benefits from North East Link to improve infrastructure	Improved infrastructure for road users	*	No, recommended for further project development, stakeholder engagement and separate business case

**Redacted – commercial-in-confidence*

5 Funding and timing

Indicative cost estimates for the proposed complementary projects are provided in Table 2. Due to the preliminary nature of these projects, a delivery schedule has not been developed.

For complementary projects recommended for inclusion in the project scope for North East Link, these costs have been included in the funding request for North East Link and will be delivered as part of the project.

Separate funding requests and/or business cases have not been prepared for those complementary projects that are not recommended for inclusion in North East Link's project scope. Where applicable, these business cases will be subject to DTF's High Value High Risk (HVHR) investment guidelines and the Gateway Review Process. Design development, risk analysis, cost refinement, procurement assessment, timing, and financial and economic analysis will be undertaken as part of the preparation of individual business cases and/or funding requests.

Some of these complementary projects may be implemented as early works or during main works or post-completion of North East Link. New complementary projects may be identified during the project's lifecycle.