



PLANNING AND ENVIRONMENT ACT 1987

BANYULE, BOROONDARA, MANNINGHAM, NILLUMBIK,  
WHITEHORSE, WHITTLESEA AND YARRA PLANNING SCHEMES

PERMIT NO. NORTH EAST LINK PROJECT INCORPORATED  
DOCUMENT, DECEMBER 2019

ENDORSED PLAN

SHEET 1 OF 177

SIGNED Richard Wynne  
MINISTER FOR PLANNING

DATE 23/3/20

North East Link

# Urban Design Strategy

March 2020

## Acknowledgement

The North East Link Project respectfully acknowledges the Traditional Owners of the land and pays respect to their Elders, past, present and emerging.

### Authorised and Published by North East Link Project

**13 March 2020.**

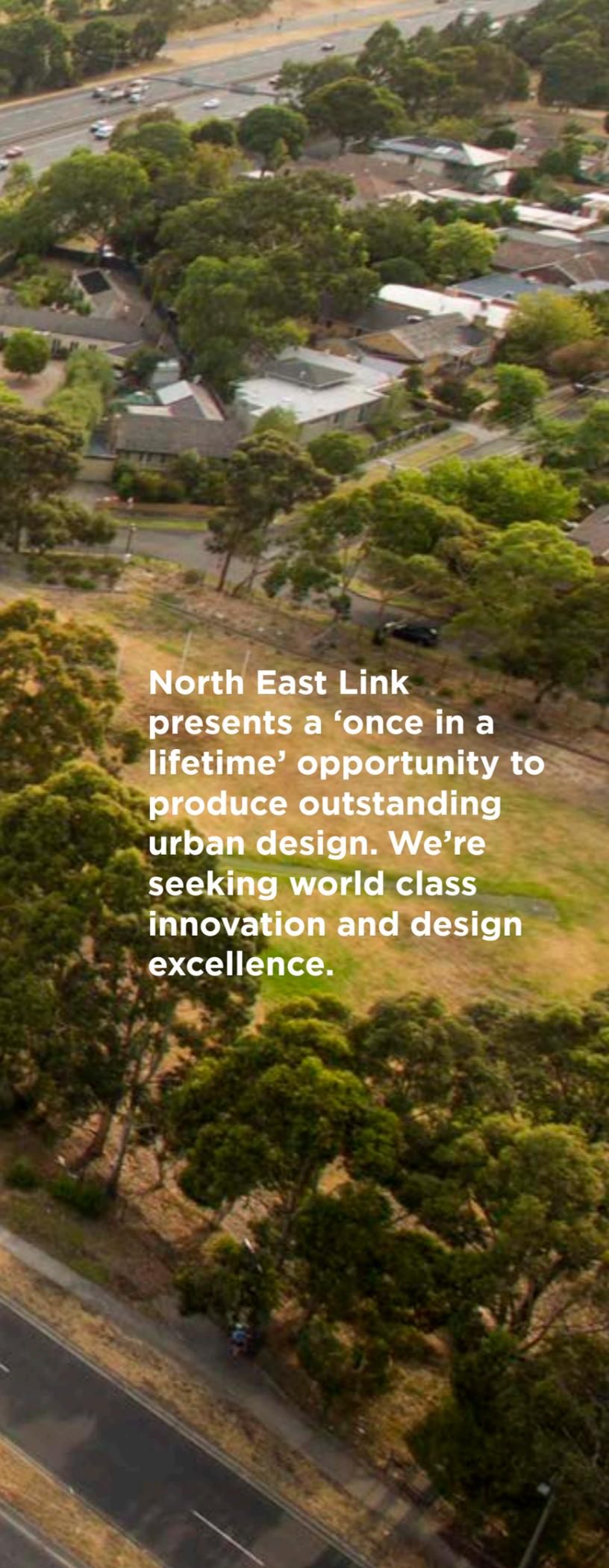
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**North East Link presents a ‘once in a lifetime’ opportunity to produce outstanding urban design. We’re seeking world class innovation and design excellence.**

## Foreword



Duncan Elliott  
Chief Executive Officer  
*North East Link*

### Foreword from the CEO

**Over the next eight years, the State Government will deliver North East Link. This project will complete the ring road between M80 and Eastern Freeway, increase capacity on Eastern Freeway and provide a dedicated express bus lane from Doncaster to the city. In addition, the project will provide numerous new and upgraded walking and cycling connections.**

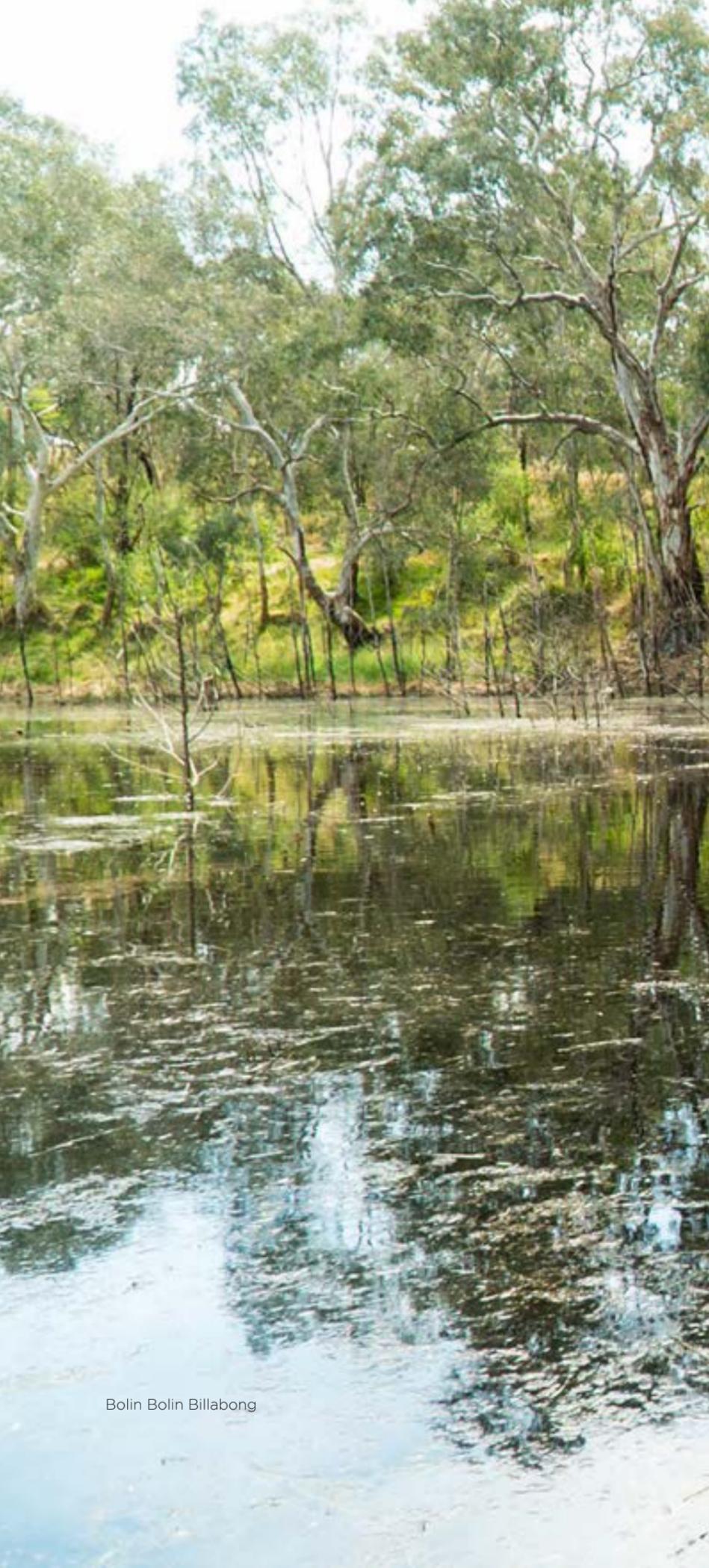
The Urban Design Strategy is an instructive design document that sets the urban design vision and quality expectations for all elements of the project. North East Link presents a ‘once in a life time’ opportunity to produce outstanding urban design. We’re seeking world class innovation and design excellence. This will provide a legacy project that looks beyond the road to improve amenity for all users and opportunities for future transport needs.

A year-long program of stakeholder engagement, urban design advisory, analysis and specialist studies has developed this Urban Design Strategy. Feedback and values-based information from the community have helped shape this document and highlight opportunities.

The project’s Urban Design Advisory Panel (UDAP) which includes urban design specialists from the Office of the Victorian Government Architect and the Department of Transport have provided invaluable guidance and in addition, our engagement with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation has initiated a partnership that is a ‘Victoria first’ for a project of this size and complexity.

Urban design is about more than shaping the visual quality of the places that we live in. It is a process that also shapes amenity, the quality of user experience and the wellbeing of people and communities. Urban design also supports natural systems and cultural and heritage values. Urban design creates places and journeys, and it operates from the macro scale of arranging space to the micro scale of noise walls and bridge design.

This project presents the opportunity to shape a significant part of Melbourne for residents and commuters alike. The process will assemble a collaborative team of the best engineering, urban design, architectural, landscape architectural and horticultural professionals to deliver a world class connection to complete Melbourne’s missing link.



Bolin Bolin Billabong



## Foreword from Wurundjeri

**North East Link is a large infrastructure development that will stretch over and beneath Wurundjeri Country. As such, it will nilim nugal-nganjinu bik (significantly impact our Country). Beyond the post-European settlement history of the project area, Wurundjeri (Woi wurrung) Ancestors have managed these lands for millennia. The Birrarung (Yarra River) and its surrounding environs form part of our Dreaming and is central to our identity as the First People of Greater Melbourne.**

In 2018, for the first time, in recognition of our inherent custodianship of Wurundjeri Country, Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation has been invited to participate directly with the Victorian Government on what will be the largest infrastructure project in Victoria's history and the largest ever undertaken on Wurundjeri Country. Wurundjeri are partnering with North East Link. With a seat at the table during every phase of the design process, Wurundjeri and North East Link believe this will continue to be a positive example of collaboration with Traditional Owners.

Wurundjeri have worked in collaboration with North East Link on the development of this Urban Design Strategy and on the identification of cultural themes to inspire design teams which will be 'brought to life' through the various stages of the project. This represents an exciting opportunity to share precious Wurundjeri knowledge and culture and also to allow shared histories to be told through design.

Structurally embedding recognised Traditional Owners in both the governance and lifecycle of projects supports two-way learning and ultimately delivers richer outcomes for partners and the broader community. This learning journey has been embraced by North East Link. We collectively believe this structural integration is the right way of 'doing business' and should be embraced as the model for all infrastructure and planning projects undertaken on our traditional Country.

Wurundjeri now expect that our cultural values will inform design teams moving forward. We trust that our values, along with post-European settlement history, which include complex Indigenous-European relationships, can be honestly and truthfully realised through this project. This is respect.

# Introduction



## 1. INTRODUCTION

### 1.1 Victoria's Major Transport Infrastructure Program

The Victorian Government's Major Transport Infrastructure Program is one of the most significant investments in transport infrastructure in the state's history.

The Major Transport Infrastructure Program comprises more than just road or rail projects; they are city-shaping projects to create a lasting legacy for Melbourne.

Incorporating the principles and practices of great urban design and engineering is a priority for the government's investment to deliver a full range of benefits to Victorians.

Melbourne has been consistently rated as one of the world's most liveable cities (by The Economist Intelligence Unit) and is internationally recognised as a leader in the design quality of its urban environment. The Victorian Government is committed to enriching this reputation with high-quality, innovative urban design outcomes in all its infrastructure projects.

### 1.2 Project description

North East Link is a proposed new freeway-standard road connection that would complete the missing link in Melbourne's ring road, giving the city a fully completed orbital connection for the first time. The project would also upgrade and increase the capacity of one of Melbourne's key road corridors, the Eastern Freeway.

North East Link is a priority project identified in the Victorian Government's long-term metropolitan planning strategy, Plan Melbourne 2017-2050.

The new road would provide a safe and efficient transport connection to carry an estimated 125,000 vehicles per day by 2036, take 'long-haul' trucks off local streets and reduce congestion in Melbourne's north-eastern suburbs.

The new link would connect the eastern suburbs to the northern and western suburbs, and Melbourne Airport. There would be quick and easy access for freight to move between industrial areas.

North East Link would also include the Doncaster Busway - Melbourne's first dedicated busway. The project would also create opportunities to improve existing and build new shared use path connections throughout Melbourne's north-east.

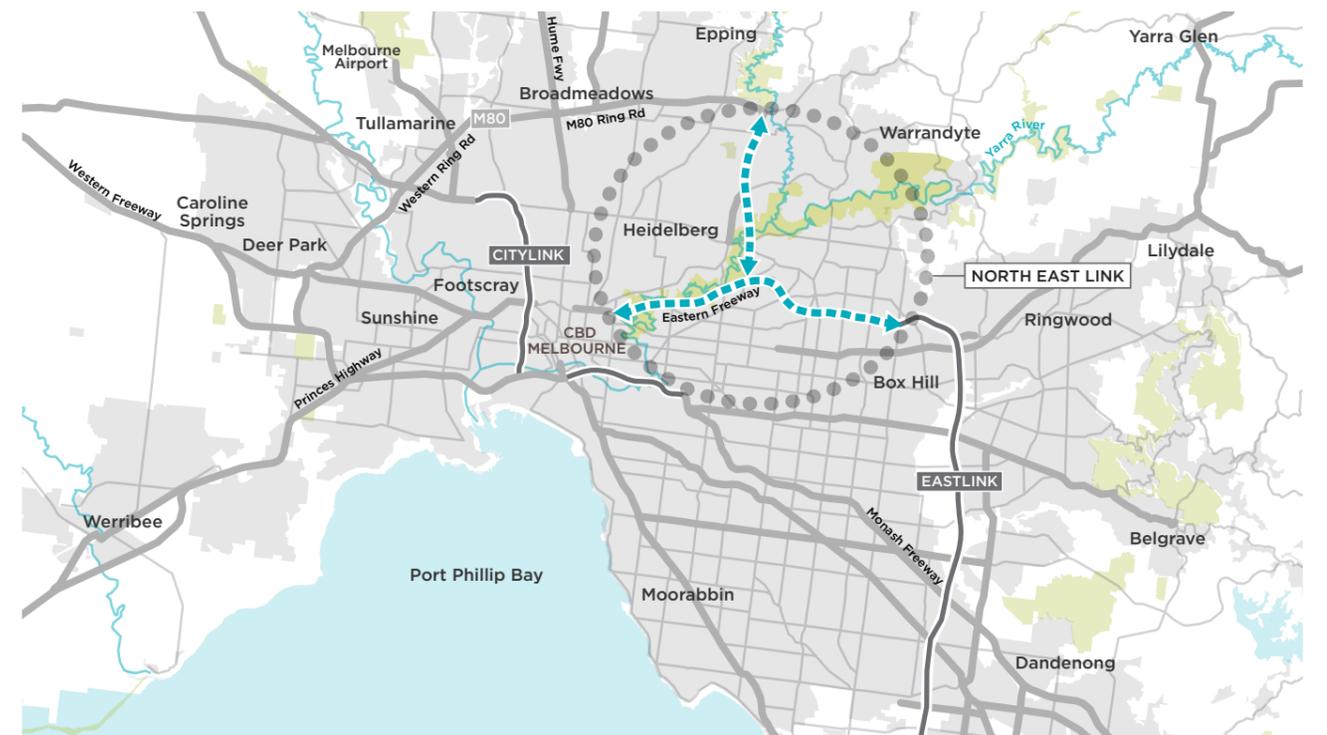
### 1.3 North East Link Project

In 2017, the Victorian Government established the North East Link Project (NELP) to plan and deliver the project.

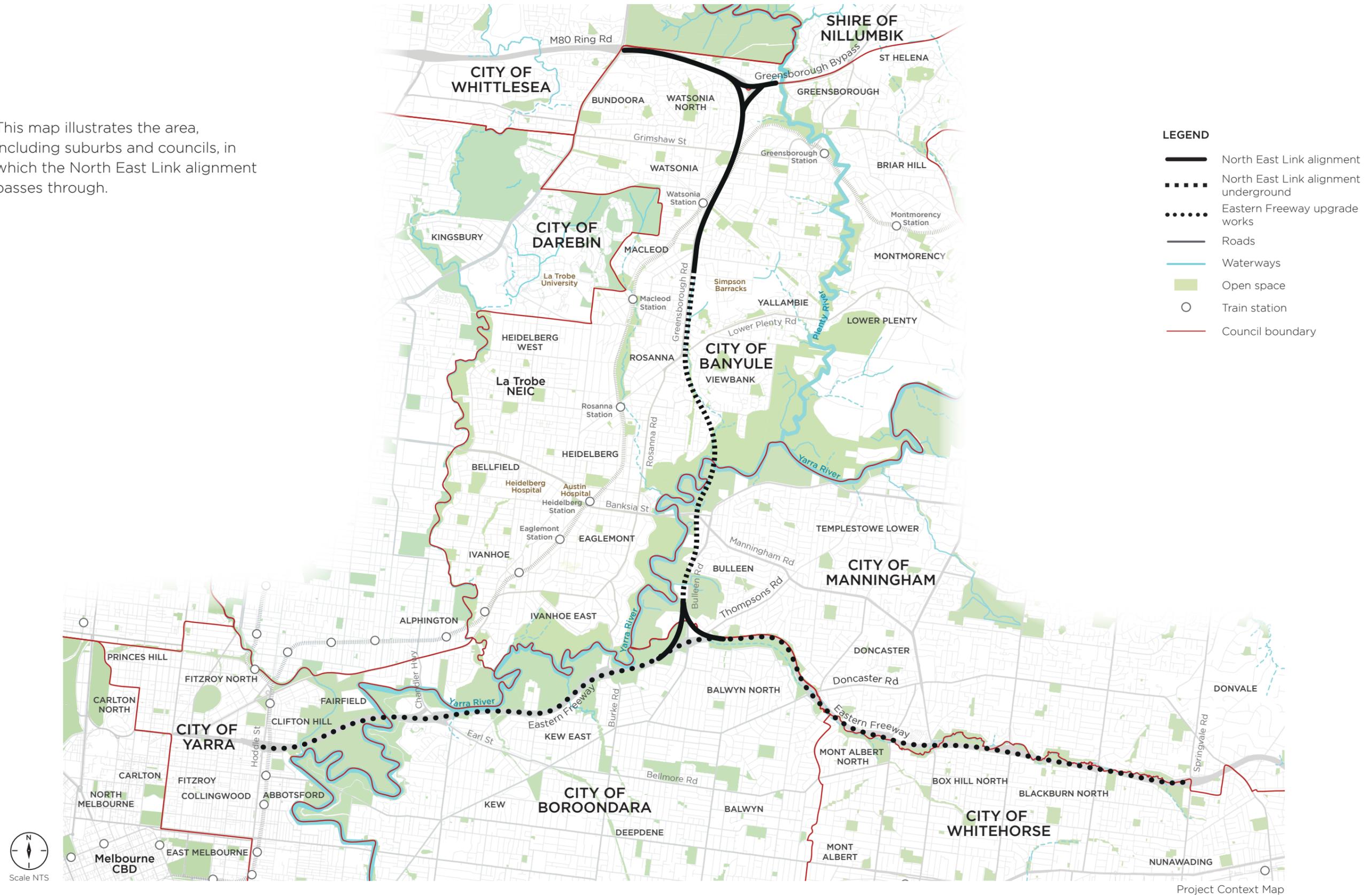
NELP is committed to providing high-quality design outcomes for North East Link as part of a legacy for a better, smarter, more efficient Melbourne and Victoria.

As part this commitment, NELP is collaborating with the Office of the Victorian Government Architect (OVGA) to develop a design approach that includes:

- Preparation of urban design documents to guide the planning, design and evaluation of the project
- Engagement with stakeholders and the community to inform the project's design, including identifying key local considerations and opportunities to involve the community
- Use of expert design advice through the whole of project life-cycle and retention of consistent design expertise from the OVGA, industry and stakeholders at all stages of the project, including development, procurement and delivery
- Use of an Urban Design Advisory Panel (which will include the OVGA) at frequent key milestones throughout the project life-cycle.



This map illustrates the area, including suburbs and councils, in which the North East Link alignment passes through.



## 1.4 Urban design vision

### Vision

#### A positive legacy for Melbourne

North East Link will provide the missing link in Melbourne's freeway network, increase the capacity of the Eastern Freeway and take trucks off the local road network.

North East Link will provide an enduring positive legacy, connecting Melbourne and the communities of its leafy suburban north-east via a transport corridor integrated with the existing network.

The North East Link alignment will respond to the surrounding landscape, support local ecology and recognise the Yarra River (Birrarung) and its tributaries. The design must improve active transport along the alignment and acknowledge and value the identity of local places.

It must be thoughtfully considered to protect the physical and visual amenity of the local community, and to minimise the project footprint.

### What is urban design?

Urban design is the practice of shaping the built environment to improve the quality and overall liveability of cities and towns. While urban design is often tailored for a specific project, the dynamic and evolving nature of urban environments means that realising urban design outcomes is a long-term process.

Urban design is about more than just the appearance of the built environment. It also relates to the functional, environmental, economic and social outcomes of a project.

Urban design operates on a variety of scales, from the macro scale of urban structures such as city-wide transport networks, to the micro scale considering elements such as lighting and noise walls.

Good urban design employs a multi-disciplinary approach to create integrated and considered environments and involves many areas of expertise.

### Why urban design is important

Urban design is important because of its potential to significantly influence:

- The functionality, character and identity of public places for individuals and communities
- Integration and transport systems
- Active and public transport connections and user behaviours
- The levels of comfort, accessibility, safety and inclusiveness of places
- The expression of social and cultural values associated with places
- The socio-economic composition, diversity and economic vibrancy of urban areas
- The sustainability and resilience of urban environments
- Community connectedness, health and wellbeing, and pride of place.

### Urban design in the North East Link project

North East Link is a significant and complex infrastructure project that would alter the urban fabric of Melbourne's north-east. The design of North East Link must continue to support Melbourne as one of the most diverse and liveable places in the world.

Urban design has the single greatest influence on a project of this scale and is essential to positively shape the city. Urban design is integral to achieving the highest standards in design with an iterative and collaborative design process.

Embedding urban design thinking at the outset of the planning and design process for North East Link will ensure the wider social and environmental benefits of the project are achieved.



Eastern Freeway extension, Stage 1  
Design: Wood Marsh

## 1.5 Purpose of this document

### Purpose

North East Link would be designed and delivered by the private sector following a competitive tender process.

This Urban Design Strategy establishes the expectations of the Victorian Government for what contractors must achieve with their design. The Urban Design Strategy seeks to ensure consistent, high-quality and context-sensitive urban design outcomes for North East Link while encouraging innovation and ideas from industry.

The purpose of this Urban Design Strategy is to:

1. Establish and communicate the urban design requirements for the project.
2. Ensure proposals are developed with integrated urban design solutions.
3. Provide the framework for a performance-based assessment of Urban Design and Landscape Plans.

This Urban Design Strategy will drive:

- Urban design excellence to benefit the wider transport network, its users and the communities and places that North East Link passes through
- Positive outcomes that avoid or minimise negative impacts of the project
- Integration of high-quality urban design with effective technical solutions
- Collaborative, multi-disciplinary, integrated design thinking for all elements of the project with an urban design-led process.

### Process

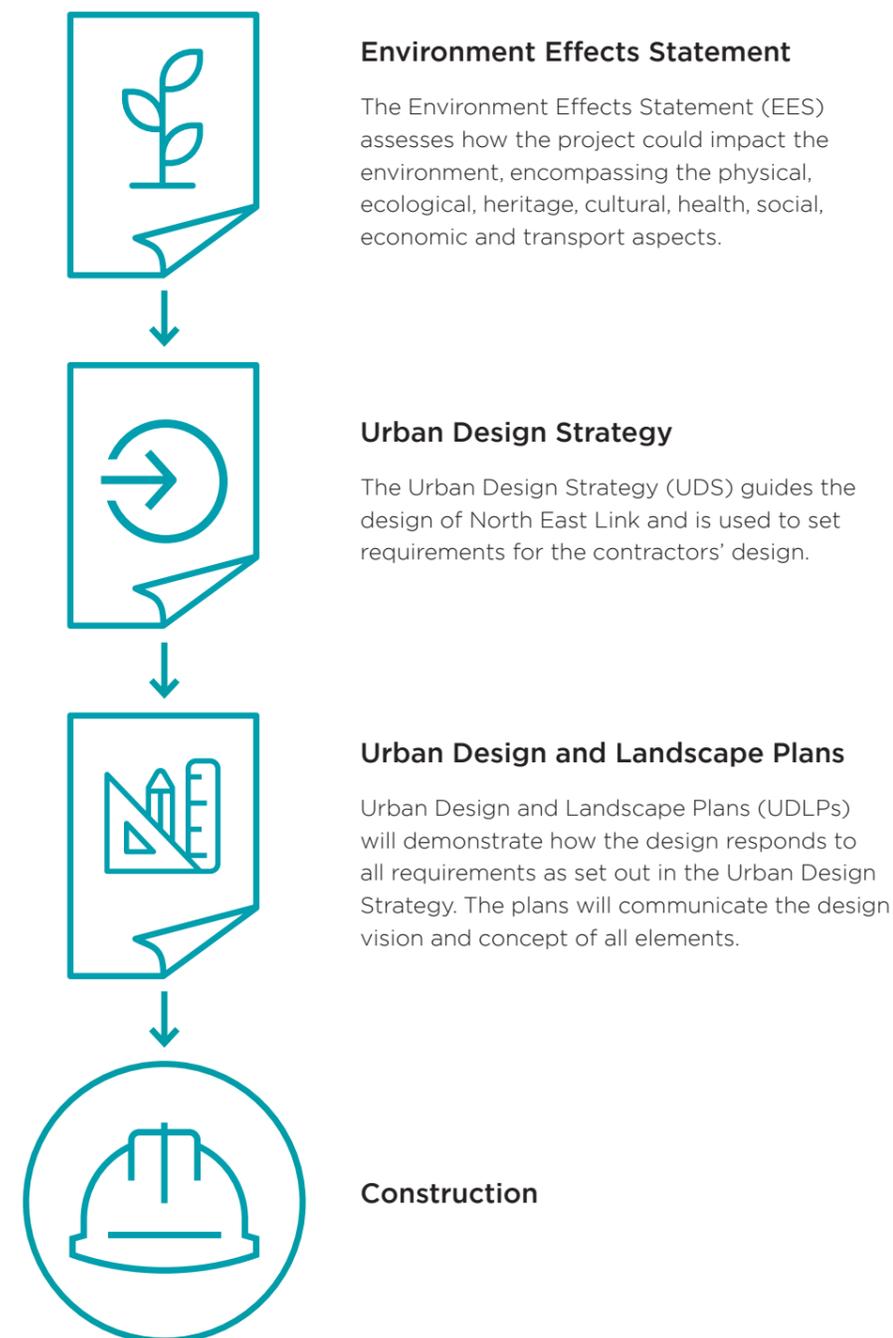
Informed by the Environment Effects Statement (EES) process, this Urban Design Strategy will guide the planning and design of North East Link.

While the Urban Design Strategy sets the strategic direction and overarching urban design requirements for North East Link, it is not intended to communicate design plans or proposals.

As part of the planning approvals (secondary consent requirements), the contractors will develop Urban Design and Landscape Plans that respond to the Urban Design Strategy. These plans will be evaluated against the requirements set in this Urban Design Strategy and will be approved by the Minister for Planning.

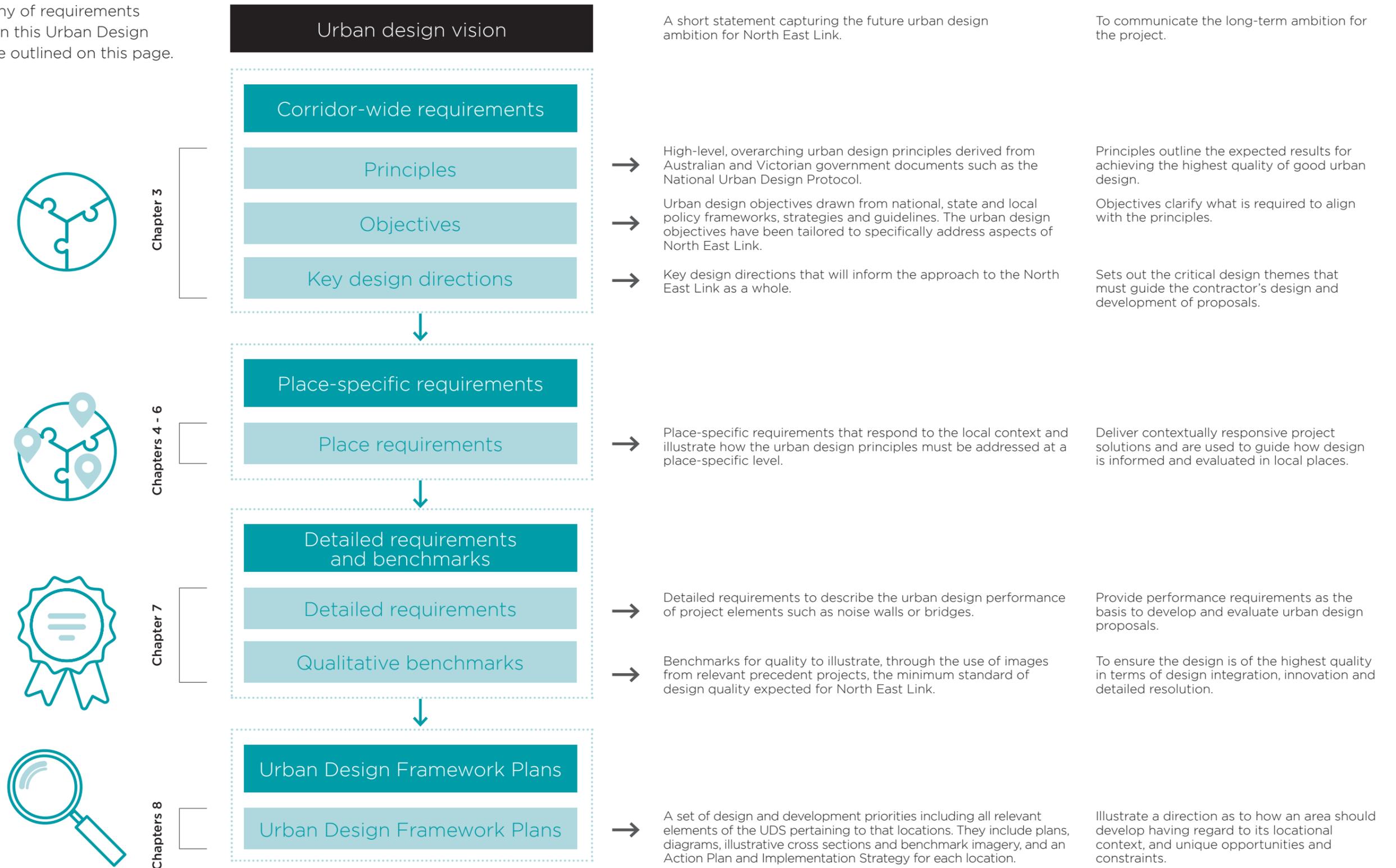
The Urban Design Strategy articulates the urban design performance requirements for the project. Design proposals will be assessed against these requirements.

An Urban Design Advisory Panel (UDAP) has been established to provide ongoing expert design guidance and advice, and to advocate for high-quality design outcomes for North East Link. This panel includes members representing the OVGA and will meet regularly during the design and development process to assess the contractors' design against the requirements and benchmarks set by this Urban Design Strategy.



## 1.6 Content & structure

The hierarchy of requirements addressed in this Urban Design Strategy are outlined on this page.



# Project background



### 2.1 Policy & strategic context

A number of national, state, regional and local legislation, policies and other guidance documents are relevant to the urban design aspirations and requirements of North East Link.

#### National

- Australian Transport Assessment and Planning Guidelines, Australian Government, 2018
- Creating Places for People, an Urban Design Protocol for Australian Cities, Australian Government, 2011
- Our Cities, Our Future, Commonwealth of Australia, 2011

#### State

- Biodiversity 2037, Department of Environment, Land, Water and Planning, 2017
- Creative State – Victoria’s First Creative Industries Strategy 2016-2020, Creative Victoria
- Crime Prevention Through Environmental Design, Victoria Police
- Design principles for multi-deck commuter car parks 2019, Office of the Victorian Government Architect
- Good Design + Transport, Issue 05, guideline 2012, Office of the Victorian Government Architect
- A Guide to Healthy Parks Healthy People, Parks Victoria, 2017
- Healthy Waterways Strategy 2018-2028, Melbourne Water
- Integrated Water Management Framework for Victoria, DEWLP, 2017
- M80 Ring Road Upgrade Urban Design Strategy, VicRoads, 2010
- Movement and Place in Victoria, Department of Transport and VicRoads, 2019
- Plan Melbourne 2017-2050 Metropolitan Planning Strategy, Victorian Government
- Public Transport Guidelines for Land Use Development, Department of Transport, 2008

- Transport Integration Act 2010, Department of Transport
- Trees for Cooler and Greener Streetscapes, DEWLP, September 2019
- Urban Design Charter, Victorian Government, 2009
- Urban Design Guidelines for Victoria, Department of Environment, Land, Water and Planning, 2017
- Victorian Cycling Strategy 2018-28, Transport for Victoria
- Victoria Planning Provisions
- Yarra River Protection (Wilip-gin Birrarung murrn) Act 2017

#### Regional

- Northern Regional Trails Strategy 2016 (encompasses Banyule, Darebin, Hume, Moreland, Nillumbik and Whittlesea)

#### Local

##### Wurundjeri

- Ancient Spirit and Lore of the Yarra, 2018

##### Banyule City Council

- Arts and Culture Strategic Plan 2017-2021
- Banyule Council Plan 2017-2021
- Banyule Planet: The Biodiversity Plan 2014-2017
- Banyule Bicycle Strategy 2010-2020
- Banyule Public Open Space Plan 2016-2031
- Banyule Integrated Transport Plan 2015-2035
- Landscape assessment for significant ridgelines in Banyule, 2012
- Banyule Urban Forest Strategic Plan, 2014
- Greensborough Activity Centre Transport Masterplan, 2017
- Kalparrin Gardens Masterplan, 2016
- Neighbourhood Character Strategy, 2012

- Picture Watsonia: A Vision for Watsonia Village, 2014
- Recreation Plan 2017-2021
- Warringal Parklands and Banyule Flats: Cultural Heritage Assessment, 2014

##### Boroondara City Council

- Access and Inclusion Plan 2013-2017
- Biodiversity Asset Management Plan, 2011
- Boroondara Bicycle Strategy, 2008
- Boroondara Community Plan 2017-2027
- Boroondara Council Plan 2017-21
- Boroondara Integrated Transport Strategy, 2006
- Boroondara Open Space Strategy, 2013
- Boroondara Public Health and Wellbeing Plan 2017-2021
- Boroondara Tree Strategy 2017-2027
- Boroondara Shade Policy 2017-2027
- Hays Paddock Master Plan, 2011
- Integrated Water Management Strategy 2014-2024
- Inventory and assessment of indigenous Flora and Fauna in Boroondara, 2006
- Playground Development Strategy, 2005
- Urban Biodiversity Strategy Implementation Plan 2017-2020
- Urban Biodiversity Strategy 2013-2023

##### Manningham City Council

- Active for Life Recreation Strategy 2010-2025
- Bicycle Strategy, 2013
- Healthy City Strategy 2017-2021
- Koonung Creek Linear Park Management Plan, 2011
- Koonung Park Management Plan, 2016
- Manningham City Council Plan 2017-2021
- Manningham Bus Network Review, 2017
- Open Space Strategy, 2014
- Residential Strategy, 2012

- Streetscape Character Study, 2009
- Walk Manningham Plan 2011-2020

##### Nillumbik Shire Council

- Biodiversity Strategy, 2012
- Nillumbik Council Plan 2017-2021
- Nillumbik Health and Wellbeing Plan 2017-2021
- Nillumbik Trails Strategy, 2011
- Picture Nillumbik, 2013

##### Whitehorse City Council

- Elgar Park Masterplan, 2016
- Neighbourhood Character Study, 2014
- Whitehorse Council Plan 2017-2021
- Whitehorse Cycling Strategy, 2016
- Whitehorse Integrated Transport Strategy, 2011
- Whitehorse Open Space Strategy, 2007
- Whitehorse Play Space Strategy, 2011
- Whitehorse Recreation Strategy 2015-2024

##### Yarra City Council

- City of Yarra Bicycle Strategy – 2016 Refresh
- City of Yarra Council Plan 2017-2021
- City of Yarra Urban Design Strategy, 2011
- Heritage Strategy 2015-2018
- Local Area Place Making Policy
- Urban Forest Strategy, 2017

This is not an exhaustive list of documents and it is recognised that additional publications may be released before the awarding of the project contract.

A number of other useful design publications have also been prepared by other organisations. These include the NSW Roads and Maritime Services: Beyond the Pavement, Landscape design guideline, Tunnel urban design guideline, Bridge Aesthetics, Contributing to liveable Communities: Roads as Links and Places, Noise wall design guideline and Water sensitive urban design guideline.

## 2.2 Consultation & technical inputs

This Urban Design Strategy has been informed by the following.

- National, state and local **government policies, legislation, strategies and guidelines** relevant to the affected area (listed in Section 2.1)
- **Technical impact assessments undertaken as part of the Environment Effects Statement (EES)** for the project, including studies on heritage, land use, social and community, ecology, landscape and visual impact (which in particular identified important view lines, and potential mitigation measures)
- Other **key project documents** such as EES Attachment I –Sustainability approach
- Additional urban **design context and background analysis**, and the identification of issues and opportunities to consider site-specific project impacts and requirements, and to inform potential design outcomes
- Feedback from the **community and key stakeholders**.

Key Victorian Government stakeholders consulted include the Department of Environment Land Water and Planning (DELWP), Transport for Victoria, VicRoads, Melbourne Water, Parks Victoria and the Office of the Victorian Government Architect (OVGA). Key local government stakeholders consulted included representatives from the municipalities of Banyule, Boroondara, Manningham, Whitehorse, Whittlesea, Yarra and Nillumbik.

Collaboration with Wurundjeri Elders has informed the development of the Urban Design Strategy.

Feedback from residents, business owners and other community members was obtained through small group forums and community drop-in sessions. These sessions have included displays of urban design information and the intent for the project.



Community information session at Greensborough

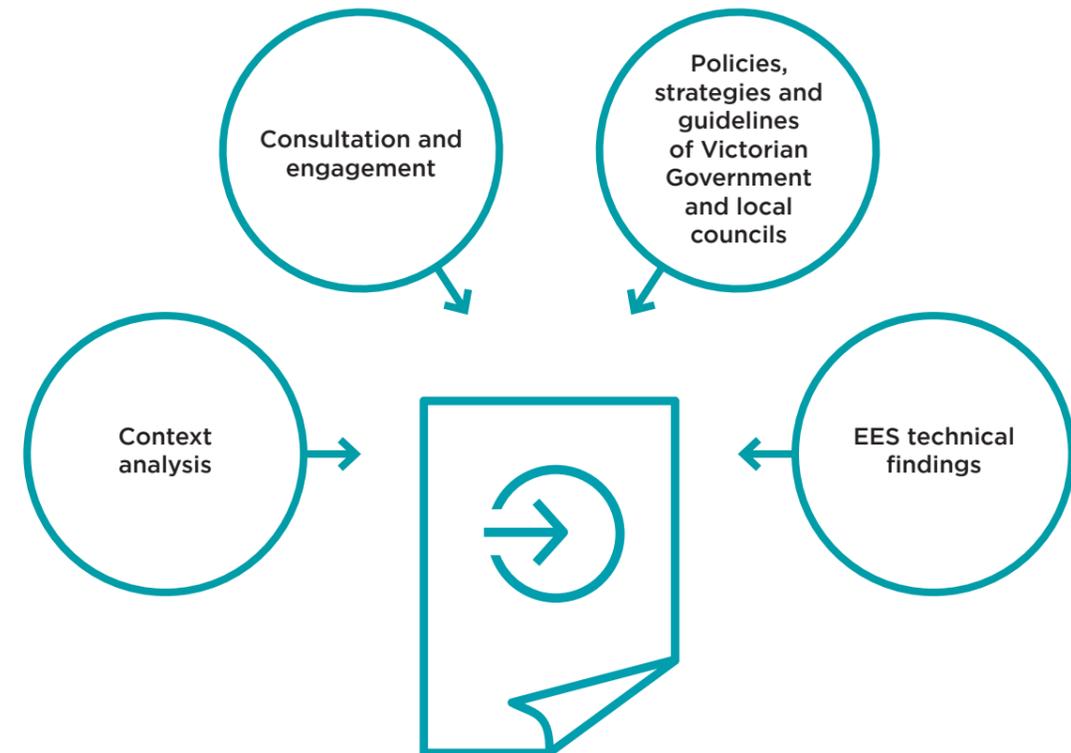
## 2. PROJECT BACKGROUND

A number of actions were identified from discussions with the community. Some of the key actions relevant to this Urban Design Strategy included:

- Using urban design examples from around the world to influence the design of the project
- Considering community preferences in the Urban Design Strategy and include these in project requirements for the contractors
- Exploring opportunities to connect cultural areas and places of interest, such as the Heide Museum of Modern Art to create tourism opportunities
- Continuing to develop North East Link as a 'transport corridor' for walking, cycling, public transport, motorists and freight
- Finding opportunities to connect existing paths
- Finding opportunities to create new walking and cycling crossings over waterways
- Developing guidelines for parkland and improve existing public open space
- Supporting the development of the '20-minute neighbourhood' concept where people are within 20 minutes' walk to shops and services
- Ensuring that sustainability is a core part of the Urban Design Strategy
- Identifying the character of the local area by engaging with the community and ensure that local character is reflected in the design of the project.

Community feedback provided an important understanding of local insights and values, and an opportunity to receive ideas on how North East Link may develop and improve local places. Input from Victorian Government stakeholders and relevant local councils provided a further understanding of local issues and aspirations, and how North East Link could support and align with their future plans, strategies, and goals. This feedback was important in developing a location-specific and context-sensitive approach to the Urban Design Strategy, and was instrumental in informing the key directions, place requirements and the design approach outlined in this document.

### Inputs into the Urban Design Strategy



Corridor-wide

3

## 3.1 Urban design principles & objectives

The principles, objectives and key directions in this strategy apply across the entire project to varying degrees. They form the basis of good urban design outcomes and respond to the different contextual settings within the project corridor. The principles and objectives regarding an integrated design response, minimisation of the project footprint and reduction of any physical and visual impacts are of prime importance and must be addressed as a high priority.

### Urban design outcome Enhancing

Principle 1

#### IDENTITY



A well-defined identity and sense of place add to people's experience and understanding of a place.

##### Objective 1.1 Sense of place

Protect, maintain and enhance the identity of local places, and respectfully represent Indigenous and non-Indigenous cultural values. This includes appropriate consideration of local community facilities, the natural environment, European and Indigenous history, and cultural places such as the Bolin Bolin Billabong, Yarra Bend Park, and Heide Museum of Modern Art.

##### Objective 1.2 Recognise the Yarra River (Birrarung)

Provide a design that respects and promotes the Yarra River (Birrarung) and its environs which encompass its tributaries, wetlands, billabongs, native vegetation and parklands such as Banyule Flats, and seek opportunities to celebrate this iconic Melbourne asset and ceremonial meeting place for the benefit of Traditional Owners and the general public.

##### Objective 1.3 Landscape & visual amenity

Sensitively enhance landscape and visual outcomes and reduce physical and visual impacts associated with the project.

##### Objective 1.4 Existing landscape character

Provide a high quality design outcome that responds sensitively to the distinctive character of this part of Melbourne, takes advantage of existing landmarks and vegetation, views and significant places, protects landscape and vegetation, and seeks to enhance the way in which people experience and interact with the landscape.

##### Objective 1.5 Architectural contribution

Make a positive architectural contribution to infrastructure including bridges, noise walls and other structures.

### Urban design outcome Connected

Principle 2

#### CONNECTIVITY & WAYFINDING



Well connected and legible networks and places contribute to strong economies and healthy, inclusive communities.

##### Objective 2.1 Connectivity

Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.

##### Objective 2.2 Transport integration

Maximise the benefits of the project by facilitating seamless access to a variety of public transport, walking and cycling choices as part of a connected intermodal network.

##### Objective 2.3 Legibility & wayfinding

Provide a coordinated design that promotes visual connections and wayfinding, reduces reliance on signage and minimises visual clutter and obstructions to key views.

### Urban design outcome Diverse

Principle 3

#### URBAN INTEGRATION



Well integrated infrastructure provides a sound framework for successful cities and places.

##### Objective 3.1 Integration with context

Avoid, minimise and mitigate any severance of communities. Provide a well-integrated corridor environment that enhances the street network and takes advantage of opportunities to connect and integrate with the broader commercial, residential and open space functions and environment.

##### Objective 3.2 Integration of design

Ensure an integrated engineering, urban design, architectural and landscape architectural approach that sensitively addresses social, cultural, functional and physical aspects of the project.

##### Objective 3.3 Strategic alignment

Provide an integrated transport infrastructure and land use solution that responds to strategic transport and land use planning for the broader precinct in consultation with local government and authorities.

##### Objective 3.4 Minimise footprint

Minimise negative impacts on the community and the environment by minimising the project footprint and visual bulk, particularly where it intrudes on sensitive land uses including open space and existing vegetated areas.

### Urban design outcome Enduring

Principle 4

#### RESILIENCE & SUSTAINABILITY



Infrastructure must be sustainable, enduring and resilient to support current and future generations.

##### Objective 4.1 Enduring & durable

Provide a design that is enduring and functional for generations to come, is readily maintainable and will age gracefully in concept and detail, ensuring a positive built form legacy.

##### Objective 4.2 Resilience & future proofing

Ensure the infrastructure is able to survive, adapt and perform when subjected to acute stresses and shocks such as changes in climate, technology, future fleets, road use and extreme events.

##### Objective 4.3 Environmental sustainability

Optimise environmental performance and embed sustainability initiatives into the design response. This includes integrated water management, biodiversity and habitat enhancement and connections, green infrastructure provision and sustainable use of energy and materials.

##### Objective 4.4 Whole of life

Ensure the design is appropriate having regard to ongoing maintenance, operations and upkeep; and effective governance arrangements are established to ensure its functionality, design qualities and appearance is able to meet community expectations.

Urban design outcome  
**Comfortable**

Principle 5

**AMENITY**



High quality urban amenity afforded by well-designed infrastructure contributes to successful, equitable and prosperous communities.

**Objective 5.1 Improved amenity**

Enhance urban amenity through a highly considered and site-specific response to realise opportunities and address challenges to create better places for people.

**Objective 5.2 Landscape values**

Create positive outcomes for the community with a coherent landscape response that embraces natural qualities and values.

**Objective 5.3 High quality**

Provide a high quality design outcome that makes a positive contribution to the local built and natural environment and minimises physical and visual impact on the surrounding community.

**Objective 5.4 Experiential**

Provide a great journey for motorists, public transport users, pedestrians and cyclists with consideration of the varying speeds and journey types. Prioritise the visual amenity of the community over the road user.

Urban design outcome  
**Vibrant**

Principle 6

**VIBRANCY**



Vibrant communities are places where people want to visit, experience or live.

**Objective 6.1 Putting people first**

Provide places that are comfortable, inclusive and pleasant for the local community, support active and healthy lifestyles, and encourage diverse social interaction within public spaces.

**Objective 6.2 Places for people**

Improve local neighbourhoods where there are opportunities to create inviting, people-friendly streets and public places.

Urban design outcome  
**Safe**

Principle 7

**SAFETY**



Safe environments are essential for strong, connected and liveable communities.

**Objective 7.1 Safer places**

Reduce the opportunity for crime, maximise passive surveillance and support safe, comfortable and enjoyable places that meet Crime Prevention through Environmental Design (CPTED) principles.

**Objective 7.2 Road safety**

Prioritise safety for all users including motorists, cyclists, pedestrians and public transport users, and avoid unnecessary distractions.

Urban design outcome  
**Walkable**

Principle 8

**ACCESSIBILITY**



Highly accessible and inclusive environments encourage positive activation and are vital to community wellbeing, inclusion and health.

**Objective 8.1 Universally inclusive**

Enhance universal access across the affected and surrounding area for all members of the community.

**Objective 8.2 Twenty-minute neighbourhoods**

Support and enhance 20-minute neighbourhoods for convenient and desirable access to everyday services and facilities (within a 20-minute walk from their home, or faster by bicycle or local public transport).

**Objective 8.3 Active transport**

Encourage walking and cycling for transport and recreation with an integrated active transport infrastructure that meets future growth in demand and connects seamlessly with surrounding networks and with proposed infrastructure being delivered by others.

Urban design principles are derived from **Creating Places for People - an Urban Design Protocol for Australian Cities**

**An integrated design solution will enable the project to move beyond an efficient traffic outcome, towards an architecturally significant design that recognises the connection between people, places and the natural environment.**

## 3.2 Key design directions

Expanding on the general principles and objectives of good urban design detailed previously, this section outlines five corridor-wide key design directions to inform the design approach of North East Link.

**Key direction 1:**

Develop an integrated design response

**Key direction 2:**

Support a natural and connected corridor

**Key direction 3:**

Recognise cultural and historic values

**Key direction 4:**

Provide a great experience for road users

**Key direction 5:**

Create a context sensitive design

## KEY DIRECTION 1: Develop an integrated design response

### The project must demonstrate the effective integration of engineering and urban design to deliver an innovative and balanced design solution.

North East Link is a significant city-shaping project. Given the scale, complexity and extent of its infrastructure and the diverse land use settings, the design must address a wide range of often competing social, functional, environmental and physical challenges.

This key direction requires proponents to move beyond a business as usual and engineering-centred approach to design and address challenges using a multi-disciplinary, innovative framework of three-dimensional design thinking.

Drawn from Objective 3.2 Integration of design, this key direction highlights the significance of a shared responsibility for good urban design across disciplines for North East Link. This requires the input, collaboration and coordination of many different disciplines including architecture, landscape architecture, urban design, engineering, heritage, sustainability, transport planning, land use planning, environmental, ecological, civil and hydraulic engineering amongst others.

The principles of sustainability must also be embedded into the design approach to maximise environmental, social and economic outcomes. To support this, the project sustainability performance would be evaluated by the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability Rating Tool.

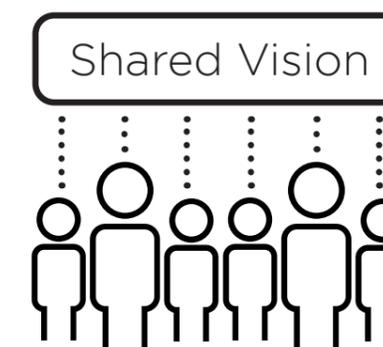
The early integration of design with a multi-disciplinary team throughout the project lifecycle is fundamental to the success of North East Link and to achieve urban design outcomes that ensure:

- Design solutions respect and continue the road and bridge infrastructure along the existing Eastern Freeway
- Design challenges are addressed holistically
- Design solutions and opportunities are identified early in the design process
- The reference design is rigorously challenged to achieve innovative and superior solutions and outcomes
- The design is led by integrated land use and transport thinking
- A meaningful, authentic, and holistic approach to embedding Indigenous values and culture into the project design
- Sustainable infrastructure outcomes
- The vertical and horizontal road geometry is optimised to sit sensitively in the surroundings
- Good engineering design is achieved that is visually pleasing and not literal in its design interpretation
- The composition of road elements along a corridor is integrated and coordinated
- A sensitive response that avoids superfluous visual statements
- Challenges associated with the constrained road reservation are appropriately addressed in order to maximise the traveller experience
- The design is appropriate for its ongoing maintenance, operations and upkeep
- Future land use change opportunities are identified and supported, and long-term opportunities for the place and community are considered
- Project outcomes are aligned with the plans and strategies being developed and delivered by others
- Negative impacts to the neighbouring community are avoided and minimised
- Infrastructure is sited and designed to minimise visual impacts to sensitive receptors such as residents and open space. Mitigation initiatives must address location, scale, form then materials, in order of priority, to maximise effectiveness.
- Public benefits and long-term returns are maximised.

This approach could result in an interchange, bridge, road or tunnel design that celebrates structural innovation by creating an elegant structure which is timeless in design and does not make superfluous or superficial visual statements.

An integrated design solution will enable the project to move beyond an efficient traffic outcome, towards an architecturally significant design that recognises the connection between people, places and the natural environment, with a positive legacy for Melbourne.

### Multi-disciplinary project team





Koonung  
Creek Trail

## KEY DIRECTION 2: Support a natural & connected corridor

**The project must demonstrate a design that responds to the natural, movement and open space systems and improve connectivity to ‘stitch’ communities across the project corridor.**

Key recurring themes in conversations with the community about North East Link were the concepts of ‘natural’ and ‘connected’. To support a natural and connected corridor, North East Link must find creative ways to better connect communities to facilities and open spaces and support the natural systems that exist within the project corridor.

### Stitching communities together

Reducing severance is a key priority for the project as community consultation has revealed a strong desire to improve walking, cycling and public transport to connect communities and better connect people to jobs and education.

The project design must endeavour to improve current connections and link communities across North East Link and the Eastern Freeway. This includes providing missing links for walking and cycling along the project corridor between the M80 Ring Road and the Eastern Freeway in the north-south direction, and east-west along the Eastern Freeway into Melbourne’s inner city areas.

Good access across the project corridor and to key facilities and destinations must be provided. The project design must also avoid or minimise barriers that impact on visual and physical connectivity.

### Supporting natural systems

The north-east of Melbourne has a unique natural beauty, with undulating topography and a green, leafy character. The higher volumes of rainfall and dense canopy of trees create an attractive and unique landscape setting. These natural qualities have historically inspired many Melburnians to move to these suburbs. Supporting the natural values and processes of land, water, ecology and environment while allowing for future change is another key priority for the project.

Opportunities exist to recognise and interpret the natural connections to water, land, nature, seasons and journey. These concepts can be physically and metaphorically interwoven into the design, celebrating the enduring influence of natural systems, seasonal cycles, natural processes, migration patterns, connection and time.

The project design should repair and protect local environmental assets and systems to optimise ecology, aesthetics and experiential opportunities.

### Supporting open space systems

North East Link would pass through connected open space systems that include the Greater Yarra Urban Parklands (encompassing the parklands and open spaces along the Yarra River) and the Koonung Creek linear parklands. These open space networks are highly valued by the community and provide opportunities for people to connect with nature, socialise and be active.

The project design should maintain, link and extend the important functions of the open spaces that exist along and adjacent to the project corridor. Visual connections to green spaces for the surrounding community and the traveller should be reinforced.

To provide a robust design, the project must use an integrated systems approach that reflects the interdependency of interactions between transport, environment and the community. By addressing these systems from a holistic perspective, better outcomes can be achieved to ensure transport and community integration is enhanced while preserving the natural systems within the project corridor.

## KEY DIRECTION 3: Recognise past, contemporary & shared Indigenous & historic cultural values

The project must demonstrate a design philosophy and approach that recognises, protects and promotes Indigenous cultural heritage values, and celebrates and interprets places and objects of historical heritage importance.

The aim of this key direction is to build on Principle 1 Identity and Principle 5 Amenity to:

- Ensure **creative, authentic, meaningful and contemporary interpretations** of Indigenous and historical cultural heritage are incorporated into the project design while avoiding literal interpretations of elements
- Increase **knowledge and understanding** of Wurundjeri history as well as their past and present cultural heritage values and traditions
- Ensure the built form for North East Link contributes to the **identity** of Melbourne
- Embed **Indigenous and local community knowledge and understandings of place** into the project
- **Enhance urban amenity, user experience** and contribute to a **sense of place and local identity**.

### A shared history

This project presents a unique opportunity for a collaborative approach with stakeholders and the Wurundjeri to embed local knowledge, understandings and shared values, and to choreograph the journey via infrastructure with sculptural interventions.

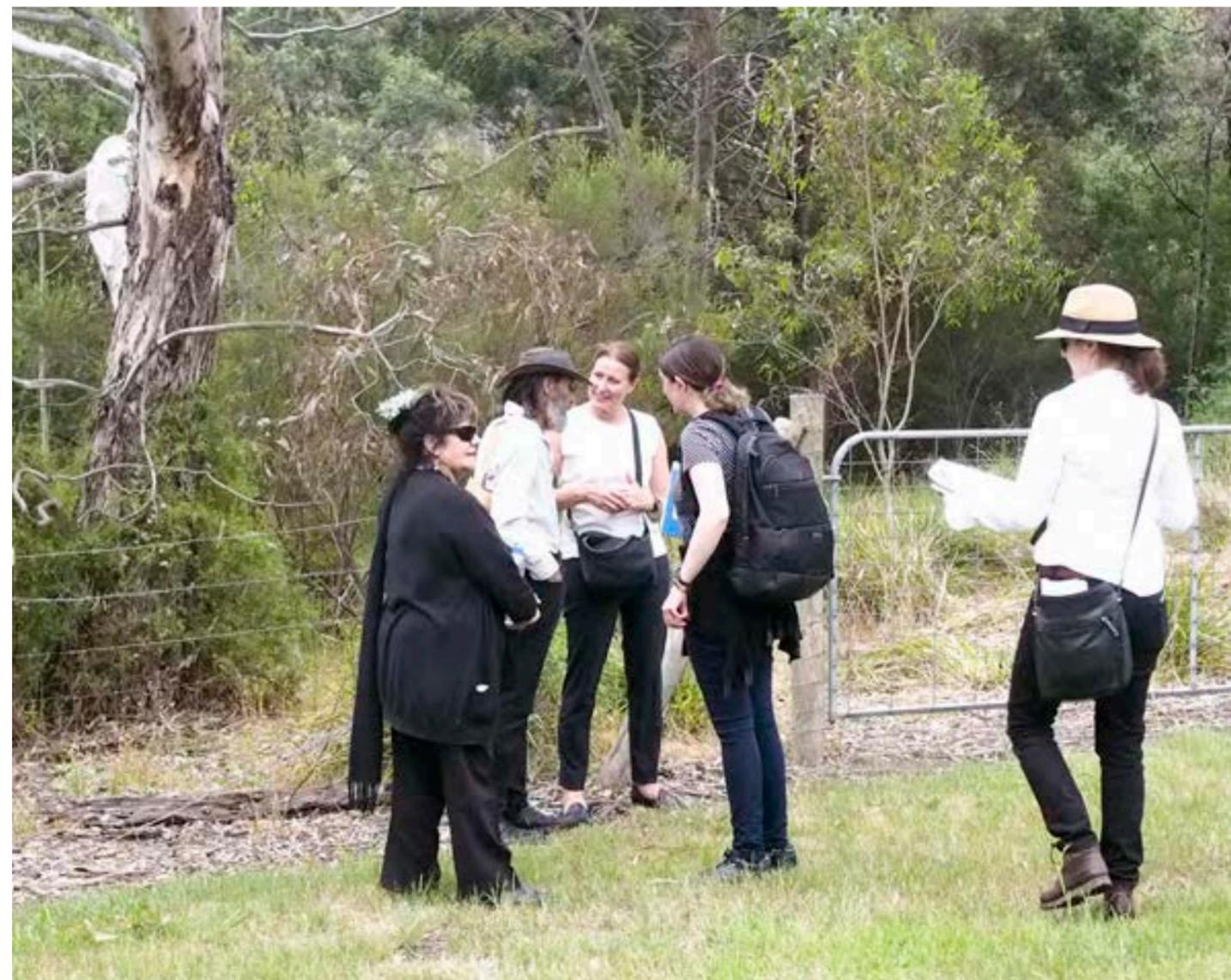
### Wurundjeri and Connection to Country

The North East Link Project has partnered with Traditional Owners through the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) to develop strategies and processes to enable a respectful and sincere process for embedding Indigenous culture and values into the project, and to enable the Wurundjeri to actively and equally participate to ensure their interests as Traditional Owners of the land are represented.

As part of this collaboration, the North East Link Project is committed to a curatorial design process to increase knowledge and understanding of Wurundjeri culture, traditions and histories.

The design for North East Link must seek opportunities to represent Wurundjeri people's knowledge, insights and Connections to Country, via a meaningful, authentic and collaborative process.

Walk on country, Koonung Creek



### 3. CORRIDOR WIDE

As part of supporting the protection and enhancement of precious Wurundjeri traditional knowledge and values, the WWCHAC has identified a number of project-specific **cultural themes** that may be 'brought to life' through the project design:

- Art and interpretation
- Artefacts and material culture
- Ceremony (tanderrum)
- Country and natural resources
- Fire
- Indigenous architecture
- Indigenous seasonality
- Language and communication
- The Manna Gum and Witchetty Grub
- Past, contemporary and emerging Indigenous identity
- Resource gathering and harvesting
- Story telling
- Transition and beneath the earth
- Travel and trade
- Water and totem animal species.

#### Places & influences

North East Link would pass places of importance to Melbourne residents. The project presents an opportunity to celebrate and interpret pre-settlement and historical heritage values and themes of these places.

The **Yarra River** is one of Victoria's most iconic waterways and is integral to the identity of Melbourne. The Yarra River and many of the landscapes located alongside the waterway, which form the Greater Yarra

River Urban Parklands, have high cultural and historic heritage significance. For instance, the Yarra River's billabongs have been significant to Indigenous communities for many thousands of years.

The area of the Yarra River corridor between Bulleen Park and Banyule Flats is recognised as having the potential to become an internationally significant cultural heritage precinct that centres on the arts, nature and Wurundjeri heritage. This precinct includes the Bolin Bolin Billabong and the Heide Museum of Modern Art and is also known for its associations with the Heidelberg School art movement.

The **Bolin Bolin Billabong** is one of many important Indigenous sites in the Yarra River catchment area, and is a highly significant site to the Wurundjeri people. Significant ceremonies (tanderrum) were held here between April and May, to align with the yearly migration of Short finned Eel, with more than 1,000 people attending. Ceremonies lasted for four to five weeks at a time where abundant food sources such as eel were harvested. The Bolin Bolin Billabong was part of a larger network of billabongs offering a plentiful supply of aquatic foods.

The **Heidelberg School** art movement of the 1880s was the first significant post-contact art movement in Australia. This artistic style emerged around Heidelberg and Eaglemont as artists were inspired by the natural beauty of the Yarra River and the bushland landscape in Melbourne's north-east. The artists painted 'en plein air' and sought to realistically capture Australian landscapes including the 'bush' and the

harsh light that typifies the country. A rising nationalistic sentiment encouraged artists to recognise and celebrate the unique qualities of the Australian landscape. Artists included Frederick McCubbin, Arthur Streeton and Tom Roberts. The Heidelberg School Artists Trail in Bulleen allows visitors to experience how artists of the era interpreted this landscape.

The **Heide Museum of Modern Art** is one of Australia's leading public art museums and has a significant ongoing role in the history of Australian modern art. Heide was the home of art patrons Sunday and John Reed 1934-1981. The Reeds supported and promoted some of Australia's most innovative and avant-garde artists. Many of these artists are now regarded as central figures in the Australian modernist art movement including Sidney Nolan, John Perceval, Albert Tucker and Joy Hester. Today the museum is famous for its post-modern and contemporary art collection, offering visitors a unique cultural experience that includes exhibitions, artworks, a sculpture park and gardens, architecture and history. The proximity of this cultural institution to the project presents an exciting opportunity for potential collaboration, inspiration, innovation and creative thinking in the design of North East Link.

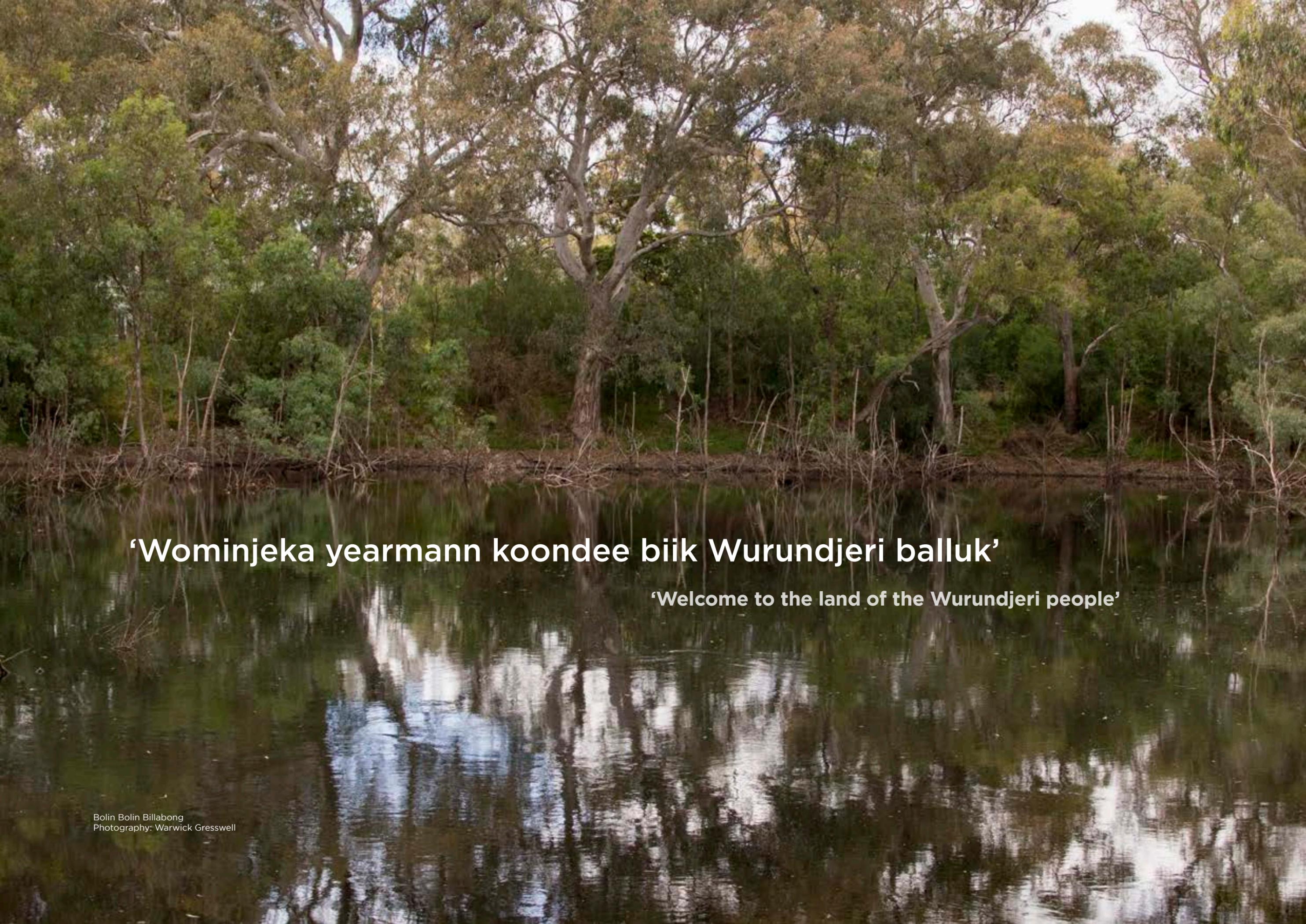
#### Interpretation of heritage themes

The project also provides an opportunity to develop an approach to the interpretation of heritage themes that reference Wurundjeri as well as post-European settlement historical heritage, including the places along the alignment.

Interpretation such as signage or traditional Indigenous forms of marking the landscape (such as tree carvings) should be explored along walking and cycling paths, or as part of public open space works associated with the project. Potential themes that may be considered include but are not limited to:

The history of the Yarra Bend area (including institutions in Yarra Bend Park)

- The Yarra River and its environs
- The Banksia Street pipe bridge (including early bridges)
- The Eastern Freeway design
- Orchard and other agricultural history themes
- Simpson Barracks.

A photograph of a riverbank with large trees and their reflection in the water. The trees are lush green and have thick trunks. The water is calm and reflects the trees and sky. The scene is peaceful and natural.

**‘Wominjeka yearmann koondee biik Wurundjeri balluk’**

**‘Welcome to the land of the Wurundjeri people’**

## KEY DIRECTION 4: Provide a great experience for road users

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**The project must demonstrate a design that creates a great journey for road users, with a consistent experience that coherently links to adjacent freeways and provides a design hierarchy that allows for intuitive navigation.**

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The North East Link journey must create a high quality traveller experience that harmoniously links to the M80 Ring Road, EastLink and the Eastern Freeway. Along the project corridor, the travel experience is to be carefully choreographed to provide a memorable journey for drivers and their passengers, including bus users. Navigational nodes are to be created along the journey to form part of the sequential higher speed travel experience.

While providing landscaping is a priority for the project, it is recognised that one of the project's driving principles is to minimise negative impacts on communities. This has resulted in a spatially constrained road reserve. This will place increased importance

on the design of architectural features such as noise walls, interchanges and bridges to enhance the road user experience.

### Primary nodes

At primary nodes, identifiable elements will function as place markers that recognise the regional importance of these locations to broader Melbourne.

The **M80 Ring Road interchange** is designated a primary node due to its importance as a regional intersection. This interchange would connect North East Link to the M80 Ring Road, providing a vital connection for people travelling to Melbourne Airport and acting as the gateway to the city's northern 'green wedge' – the ring of low-density areas around metropolitan Melbourne. At this location, the project should capitalise on key distant views and topographical features, and mark the transition into the M80 Ring Road and gateway of Melbourne's green wedge. The road design should be legible, with well-designed structures and distinctive landscaping that integrate positively with the surrounding context. Project elements must coherently transition into the M80 Ring Road upgrade design.

The **Manningham Road interchange** area is also designated a primary node due to the cultural and heritage significance of the surrounds to broader Melbourne, including the Heide Museum of Modern Art, the Greater Yarra Urban Parklands and its location on the Yarra Scenic Drive. This area provides opportunity to create a highly considered design that sensitively

responds to the surrounding context and place, marking the transition of the road journey into the tunnel and integrating artful infrastructure to contribute to the cultural narrative of Melbourne. The design should also recognise the role of existing landmarks and features such as the 'Helmet' sculpture near the Heide Museum of Modern Art.

### Secondary nodes

Secondary nodes are places where distinctive elements, navigational features or high-quality civic landmarks will assist with awareness and recognition of places.

**Grimshaw Street** and the **Watsonia Neighbourhood Activity Centre** are designated secondary nodes which will contain easily identifiable features and landmarks with well-designed structures, elements or open cuttings that allow travellers to recognise their location.

The **Lower Plenty interchange** marks the transition from the North East Link tunnels. This location presents an opportunity for an integrated architectural and landscape response that balances freeway infrastructure (such as ventilation structures and buildings) with local amenity and environmental outcomes.

The **Eastern Freeway interchange** is an important node for bus users and includes a busway and the Park and Ride facility in Bulleen. The project is not seeking additional large-scale, feature vertical elements at this location due to the sensitivity of the surrounding context. Nodes at this location should be created by well-designed elegant

structures and the use of landform and landscaping rather than with additional superfluous built elements.

The ventilation structures and associated buildings are significant elements in the landscape that should be sensitively sited, and designed to respond to their surrounding parkland landscape (through architectural form, topography and vegetation), and to integrate with other project elements such as flood walls.

The **Doncaster Road interchange** is also an important node for bus users and marks the entry to the Doncaster Park and Ride. The design at the Doncaster Road interchange must appropriately consider the 'Sentinel' sculpture at Doncaster Road.

### Tunnels

The transition from above ground to beneath the earth and the journey through the subterranean environment, must enhance the traveller journey and create a comfortable and inviting experience for drivers.

The tunnels provide an opportunity to create a highly considered design that may reflect the above-ground characteristics, interpret identified Indigenous cultural heritage themes, and define the transition between the design character areas described in Key Direction 5.

This map shows the hierarchical relationship between the corridor's navigational nodes. These are places along the road journey and will include visual events and design elements that must be considered appropriately in the project design. The map also illustrates some of the existing landmarks and features along the road journey, including the architectural bridges, mast road lighting, and sculptural noise walls and rock walls along the Eastern Freeway, and the sculptural Mullum Mullum tunnel entry and ventilation structure on the EastLink freeway.

Additional guidance and place-specific requirements are also embedded in the place-specific and detailed requirements of this Urban Design Strategy, including locations of key scenic vistas, views towards adjacent landscapes and other requirements to ensure a legible, interesting and enjoyable journey.



**LEGEND**

- North East Link alignment
- North East Link alignment underground
- Eastern Freeway upgrade works
- Roads
- Waterways
- Open space
- Potential primary node
- Potential secondary node
- ✳ Potential ventilation structures location
- Existing architectural bridges
- - - Regionally significant ridgelines
- ←•••••→ Yarra Scenic Drive
- ↖ Scenic views and vistas

Proposed Navigational Node Hierarchy Map

## KEY DIRECTION 5: Create a context sensitive design

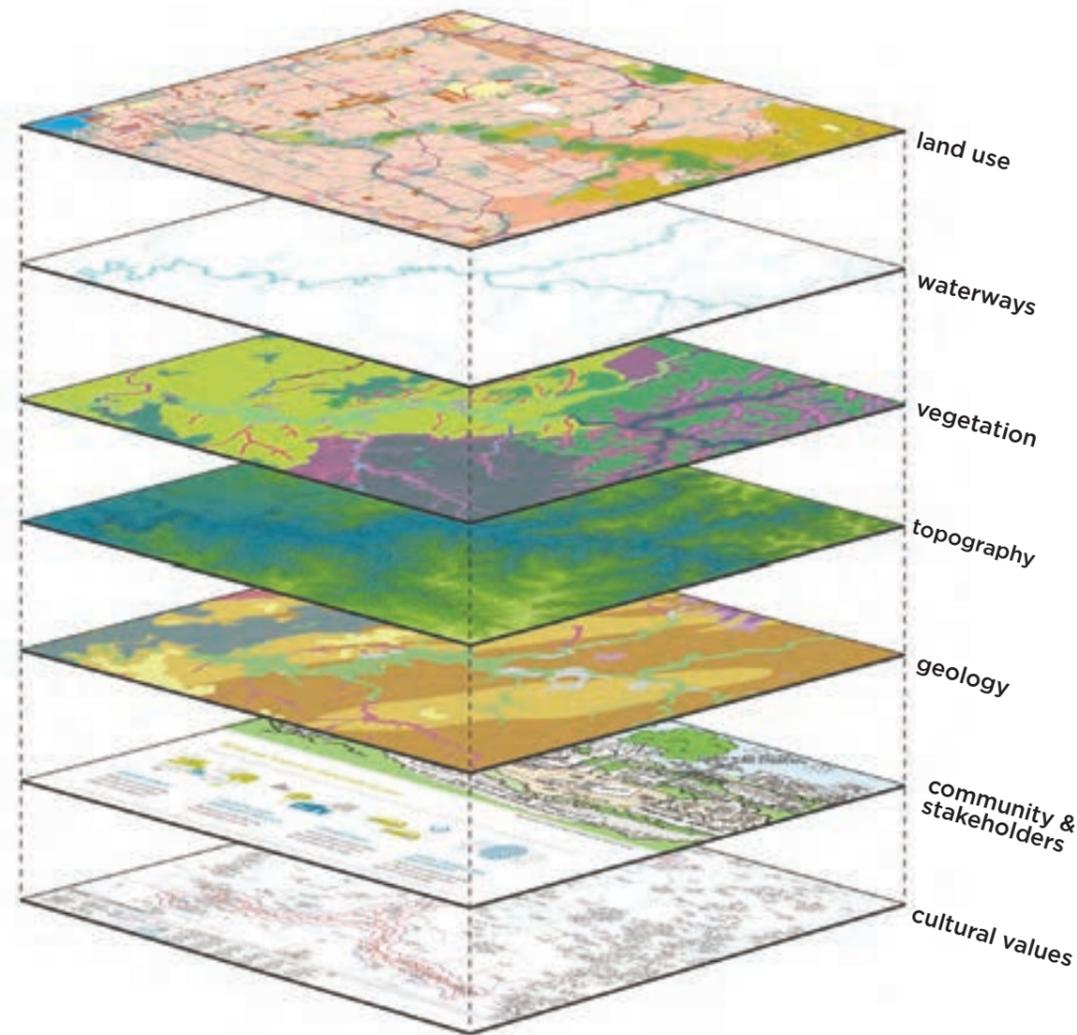
**The project must demonstrate a design that protects, maintains and enhances the local context through which the project passes.**

The North East Link corridor would pass through three distinct environments defined by topography, geology, vegetation and waterways. The surrounding urban development, land uses and the local movement patterns respond uniquely in each area, affecting the way people interact with and experience these places.

The differing values of each of these places were identified in stories and conversations with the community. This has led to an urban design approach that has divided the project into three distinct 'design character areas':

- Ridgeline
- Yarra River Valley
- Koonung Creek Valley.

The design for North East Link must be sensitive to the places adjacent and affected by project, and the features, uses, significant elements and community values within each design character area.



**The three distinct design character areas have been informed by site features, technical assessments and feedback from the community.**

This page provides a summary of the three design character areas and their distinctive attributes.

The Landscape and Visual Impact Assessment (LVIA) for the project recognises the existing conditions of these three areas and uses them using the term 'landscape character areas'. In close alignment with the LVIA, this Urban Design Strategy uses the term 'design character areas' to inspire and drive the design intent for the project in each area.



### Ridgeline

Areas around Greensborough, Watsonia North, Watsonia, Macleod, Yallambie, Viewbank and Rosanna with a distinctive suburban residential character. Some key character attributes include:

- Elevated topography
- Suburban residential
- Schools and aged care
- Long views to and from treed ridgelines
- Silurian siltstone, sandstone geology and residual soils
- Grassy woodland (pre-1750)
- Existing infrastructure - the M80 Ring Road, Greensborough Road, electricity transmission towers.



### Yarra River Valley

Areas following the river from Viewbank, the Banyule Flats, Warringal Parklands, the Yarra River Parklands and west through Kew and Fairfield. Landscapes within this design character area have high cultural heritage significance and are open, vegetated and naturalistic landscapes. Some key character attributes include:

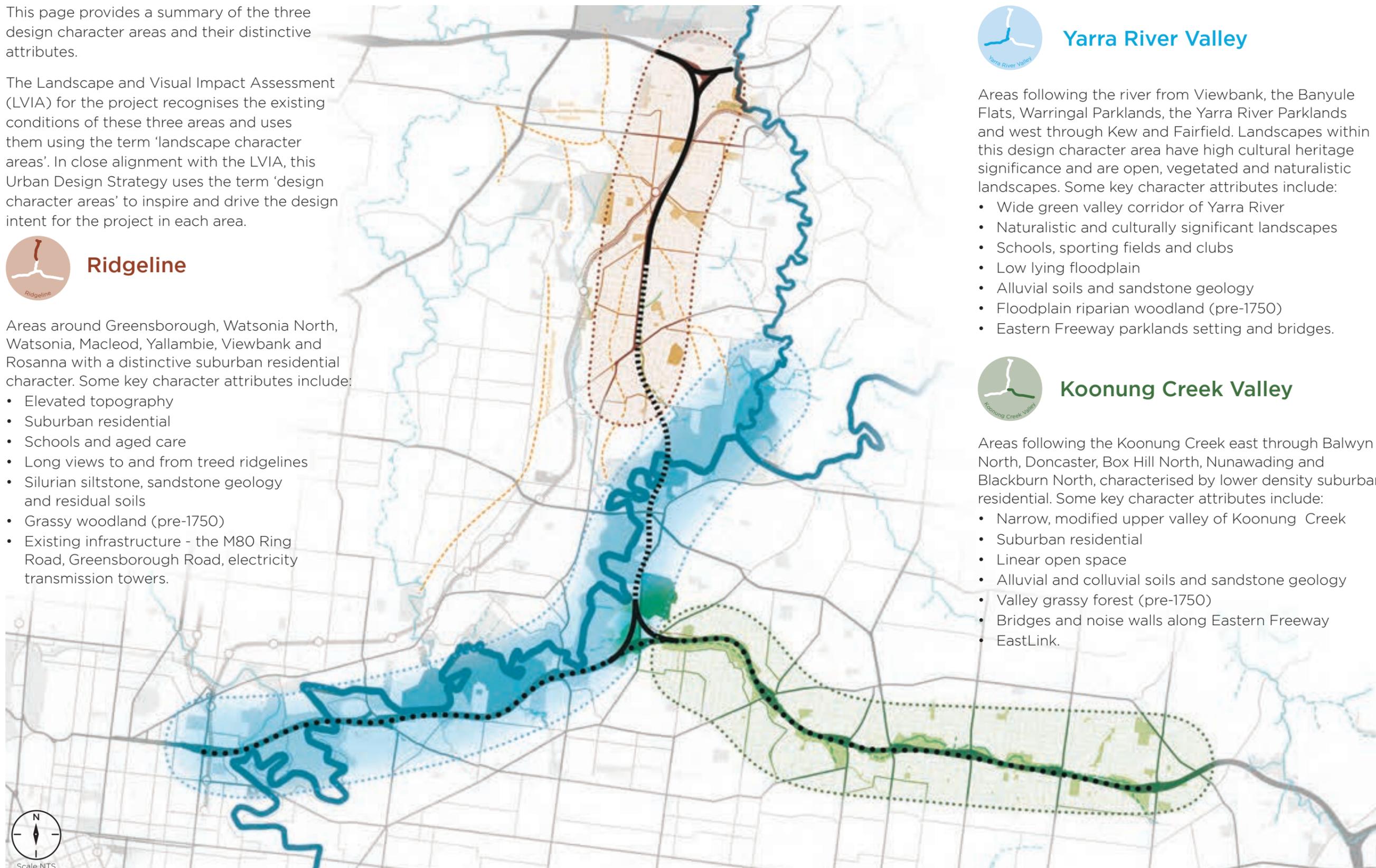
- Wide green valley corridor of Yarra River
- Naturalistic and culturally significant landscapes
- Schools, sporting fields and clubs
- Low lying floodplain
- Alluvial soils and sandstone geology
- Floodplain riparian woodland (pre-1750)
- Eastern Freeway parklands setting and bridges.



### Koonung Creek Valley

Areas following the Koonung Creek east through Balwyn North, Doncaster, Box Hill North, Nunawading and Blackburn North, characterised by lower density suburban residential. Some key character attributes include:

- Narrow, modified upper valley of Koonung Creek
- Suburban residential
- Linear open space
- Alluvial and colluvial soils and sandstone geology
- Valley grassy forest (pre-1750)
- Bridges and noise walls along Eastern Freeway
- EastLink.



Design Character Area Map

### 3. CORRIDOR-WIDE

**Key design requirements that are a particular focus for each design character area are summarised on this page. Further context about each design character area and their key values and priorities are discussed in Chapters 4 to 6.**



## Ridgeline

- 1.R** Support future incremental built form and land use change in the area
- 2.R** Connect neighbourhoods, reduce fragmentation and facilitate the continued integration of the diverse community in this area
- 3.R** Reinforce the distinct and unique treed ridgeline character of Melbourne's north-east
- 4.R** Ensure built form associated with the project responds to the urban setting and seeks innovative ways to integrate infrastructure with adjacent land uses.
- 5.R** Maximise opportunities for land use integration at Watsonia Neighbourhood Centre
- 6.R** Maximise opportunities to repair local environmental assets and systems such as Banyule Creek
- 7.R** Provide an architectural and landscape response that integrates seamlessly with the upgraded M80 Ring Road
- 8.R** Strengthen community connections with the Simpson Barracks
- 9.R** Provide enhanced connections to the La Trobe National Employment and Innovation Cluster (La Trobe NEIC)



Suburban character of the Ridgeline Design Character Area with elevated topography and distant views



Simpson Barracks woodlands set back from Greensborough Road



## Yarra River Valley

- 1.Y** Protect and promote cultural values for places of significance including the Yarra River, Bolin Bolin Billabong and the Heide Museum of Modern Art
- 2.Y** Respect the design qualities of the original section of the Eastern Freeway built in 1977 including mast lights and bridges, rock escarpments and 'borrowed' landscape
- 3.Y** Create a great bus user experience along the Eastern Freeway and a well-resolved facility for Bulleen Bus Park and Ride
- 4.Y** Maximise opportunities for land use integration at the Manningham Road interchange
- 5.Y** Be sympathetic to the landscape setting of the Greater Yarra Urban Parklands
- 6.Y** Improve the ability for the community to access open space in Bulleen
- 7.Y** Provide enhanced and more convenient cycling routes to Melbourne's inner city areas



Eastern Freeway with mast lights



The Yarra River and its surrounding open spaces are a key attribute of the Yarra River Valley design character area

### 3. CORRIDOR-WIDE



## Koonung Creek Valley

- 1.K** Optimise the existing open space functions and upgrade the open spaces that run parallel to the Eastern Freeway
- 2.K** Respect the original architectural and landscape design of the Eastern Freeway
- 3.K** Maximise opportunities to connect the communities to the north and south of the Eastern Freeway
- 4.K** Improve transport and road connections to key activity centres
- 5.K** Create a great bus user experience and upgrade the existing Doncaster Park and Ride into a well-resolved facility
- 6.K** Support active transport along the Koonung Creek Trail
- 7.K** Reinstate and enhance buffer vegetation to filter views to freeway infrastructure and blend interfaces with surrounding treed neighbourhood character
- 8.K** Celebrate, maximise and reinstate natural vegetation, wetlands and open waterways including Koonung Creek



Eastern Freeway carved through sandstone rock escarpments and valley floor



Koonung Creek and its adjoining linear open spaces along the Eastern Freeway

# Ridgeline area



### 4.1 Contextual narrative

The Ridgeline design character area has a distinctive undulating topography, defined by treed ridgelines and long views. The corridor traverses defined communities in the suburbs of Yallambie, Macleod and Watsonia, and dissects one of the highest areas in Melbourne, the Bundoora-Diamond Village-Army Barracks Ridgeline, which accentuates the elevation of the area. The corridor is also surrounded by parallel ridgelines which present a continuous green silhouette rarely punctuated by built form. In the past, these ridgelines were travelled by Aboriginal people.

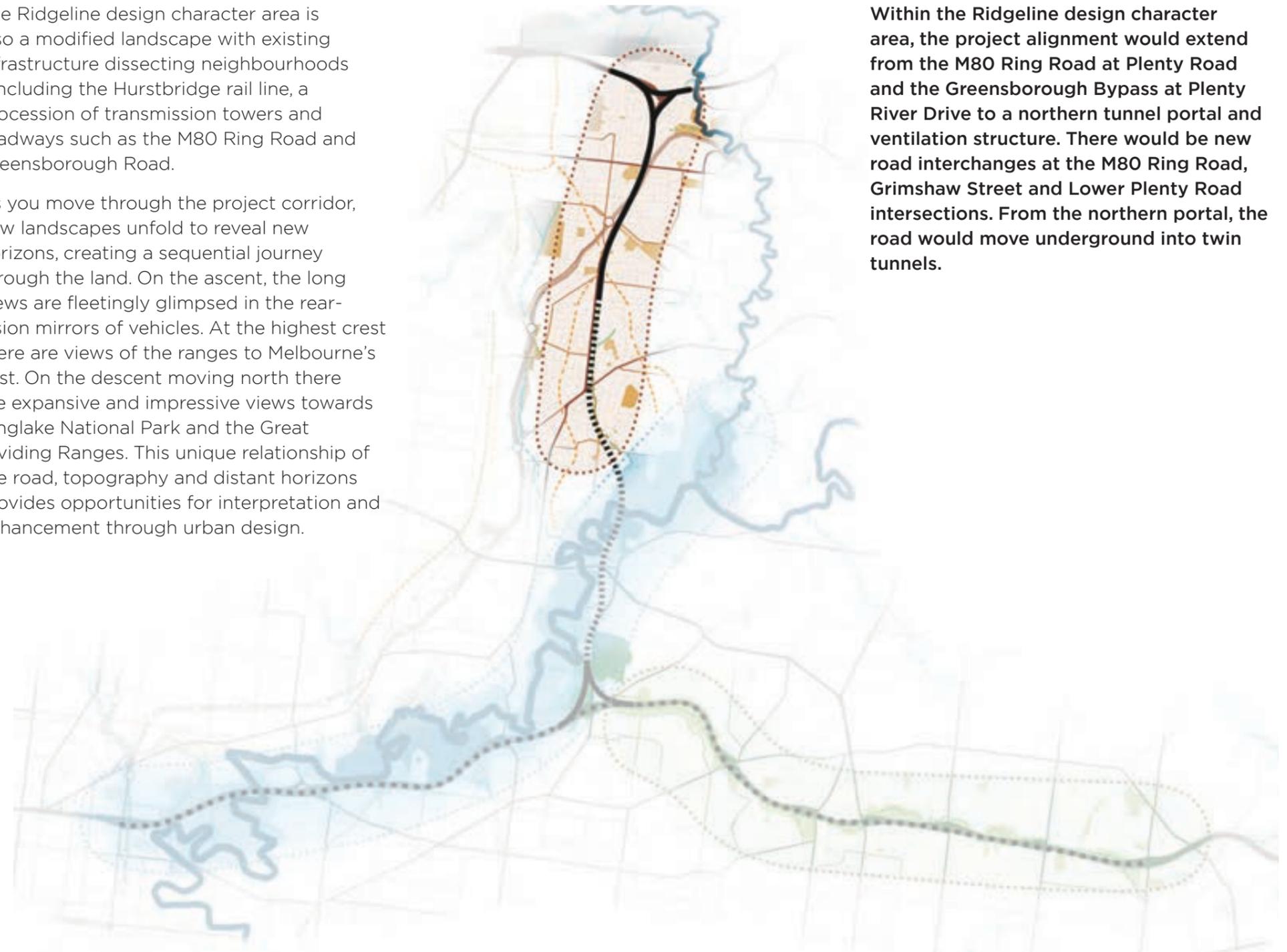
The northern-most section of the corridor ends at the M80 Ring Road which is the gateway to the Nillumbik green wedge to the north-east.

The predominantly suburban area is blanketed under a canopy of mature native trees. The colours of the ridgeline area are defined by golden sandstone rock, natural greens of native vegetation, and layered greens and blues of distant horizons. Houses are mostly low in scale with low pitched roofs and are generally constructed with bricks in a range of cream, red and brown tones.

Simpson Barracks is an important part of the local community. Set back from Greensborough Road, this large Australian Army facility has strong community associations, with many families of army personnel working and living in the surrounding area.

The Ridgeline design character area is also a modified landscape with existing infrastructure dissecting neighbourhoods - including the Hurstbridge rail line, a procession of transmission towers and roadways such as the M80 Ring Road and Greensborough Road.

As you move through the project corridor, new landscapes unfold to reveal new horizons, creating a sequential journey through the land. On the ascent, the long views are fleetingly glimpsed in the rear-vision mirrors of vehicles. At the highest crest there are views of the ranges to Melbourne's east. On the descent moving north there are expansive and impressive views towards Kinglake National Park and the Great Dividing Ranges. This unique relationship of the road, topography and distant horizons provides opportunities for interpretation and enhancement through urban design.



**Within the Ridgeline design character area, the project alignment would extend from the M80 Ring Road at Plenty Road and the Greensborough Bypass at Plenty River Drive to a northern tunnel portal and ventilation structure. There would be new road interchanges at the M80 Ring Road, Grimshaw Street and Lower Plenty Road intersections. From the northern portal, the road would move underground into twin tunnels.**

## 4.2 Values & priorities

The relatively undeveloped suburban feel of the Ridgeline design character area is likely to undergo incremental change from the current detached dwellings that surround the project corridor.

Future redevelopment will principally be associated with the La Trobe National Employment and Innovation Cluster (NEIC) which is a regionally significant planned employment and commercial centre. North East Link would have a positive impact on the La Trobe NEIC, providing connections to support its growth and development including with efficient and safe bus priority along Grimshaw Street.

Watsonia Neighbourhood Centre is a place identified to undergo change in future (Picture Watsonia – A Vision for Watsonia Village, Banyule City Council). The redevelopment of the Watsonia railway station car park would be part of North East Link works and presents a significant opportunity to improve urban integration and support the future vision for the precinct.

The neighbourhoods in the Ridgeline area are somewhat fragmented and disconnected by steep topography and large infrastructure. North East Link should avoid or minimise further fragmentation and also connect and ‘knit’ communities and land uses together where opportunities exist. In particular, walking and cycling connections must support the ‘20-minute neighbourhoods’ of Watsonia and Macleod (and the La Trobe NEIC beyond).

The built form of North East Link should be well integrated and respond to the ridgeline design character area (including the urban setting, topography, geology, views and landform) and minimise the project’s visual impacts.

The community in the Ridgeline design character area is diverse, with a prevalence of aged care facilities and schools. It is important the North East Link design allows for the continued integration of the community.

Local gathering places are essential for providing places that promote familiarity and exchange among neighbourhood residents. North East Link would be in close proximity to facilities that service vulnerable people such as children and the elderly. Shade and other facilities that support walking and outdoor socialising are particularly important to these more vulnerable community members.

Simpson Barracks and the immediately surrounding area provides opportunities for the project to acknowledge, respect and commemorate those who have served, and to more strongly connect the local community to the army facility.

The project should take cues and be inspired by local natural assets, including the treed ridgelines, Plenty River Gorge, Gresswell Nature Forest, Banyule Creek and the vegetation within Simpson Barracks.

The M80 Ring Road to the northern project boundary is being progressively upgraded. North East Link must integrate seamlessly with any new or proposed works to the M80 Ring Road to provide a coherent journey.



Low-rise suburban residential houses with distant views to ridgelines

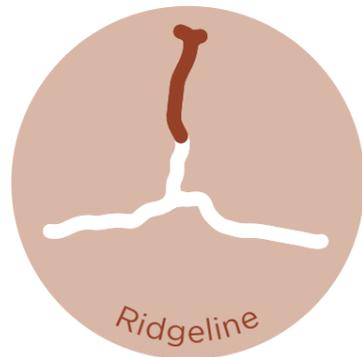


Watsonia Library



Gresswell Forest in Macleod

### 4.3 Place-specific requirements



Place-specific requirements that must be met and addressed at locations within the Ridgeline design character area are outlined in this section. These requirements have been prepared in close collaboration with key stakeholders so the community's expectations and local level issues are considered as the design develops.

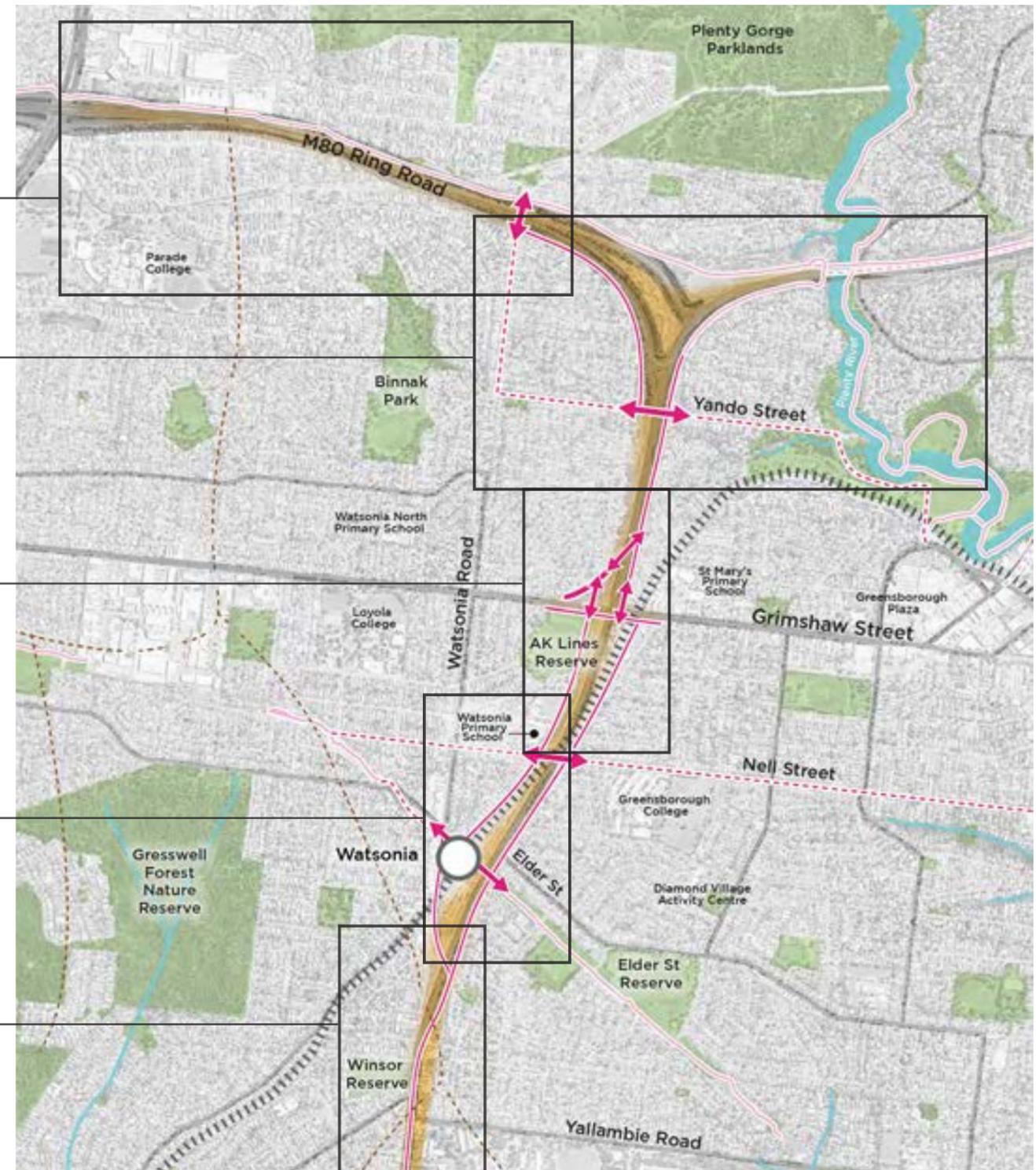
The requirements for the individual maps have been categorised under the most relevant principle, acknowledging the requirements may relate to multiple principles.

It is to be noted that cycle and pedestrian paths are shown as a functional layout and it is possible that an equivalent and acceptable level of connectivity could be achieved in an alternative manner.

#### KEY PLAN

This key plan shows the Ridgeline design character area and the proposed North East Link alignment. Individual maps are used to outline place-specific requirements.

- MAP R1**  
M80
- MAP R2**  
M80 INTERCHANGE
- MAP R3**  
GRIMSHAW STREET INTERCHANGE
- MAP R4**  
WATSONIA NEIGHBOURHOOD CENTRE
- MAP R5**  
SOUTH OF WATSONIA STATION  
(REFER NEXT PAGE)



REFER NEXT PAGE

REFER PREVIOUS PAGE

MAP R4

WATSONIA NEIGHBOURHOOD CENTRE  
(REFER PREVIOUS PAGE)

MAP R5

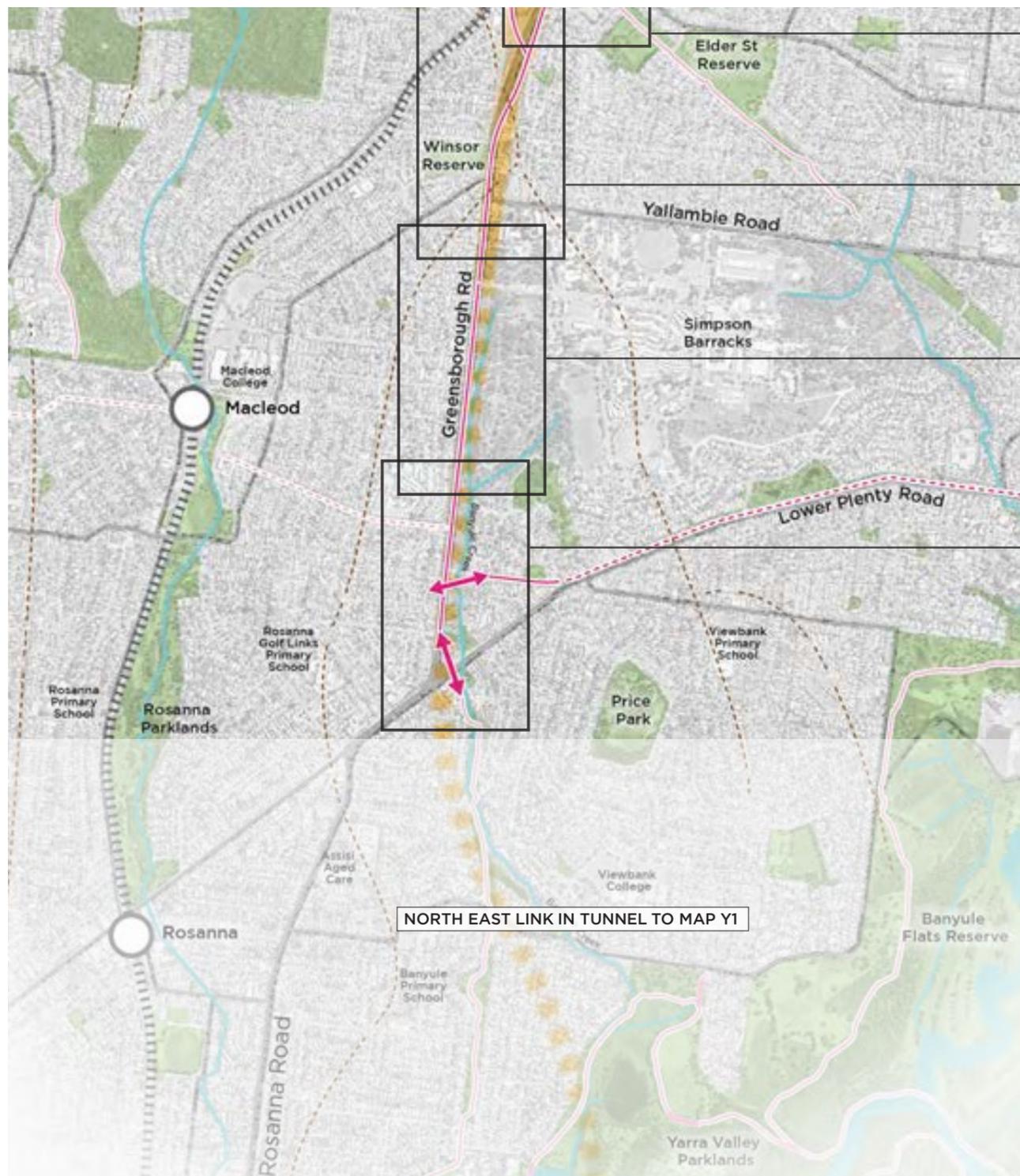
SOUTH OF WATSONIA STATION

MAP R6

SIMPSON BARRACKS

MAP R7

LOWER PLENTY ROAD INTERCHANGE



LEGEND

-  North East Link alignment
-  North East Link alignment underground
-  Roads
-  Waterways
-  Train line
-  Train station
-  Open space
-  Existing ridgeline
-  Proposed off-road walking/cycling connection
-  Proposed walking/cycling crossing link
-  Potential cycling connection
-  Existing on-road cycling connection
-  Existing off-road walking/cycling connection

MAP R1:  
M80



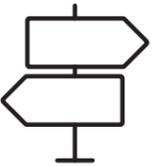


## Identity

- 1A Design infrastructure to maximise amenity for cyclists and pedestrians and to take advantage of scenic views towards the Dandenong Ranges at the M80 crossing.



## Connectivity, Wayfinding & Accessibility



- 2A Ensure new infrastructure supports a cycling connection (to be delivered by others) from the M80 Ring Road to Macorna Street.
- 2B Provide a new walking and cycling connection north-south across the corridor near Macorna Street that links to the proposed off road cycle route along the south of the M80 Ring Road.

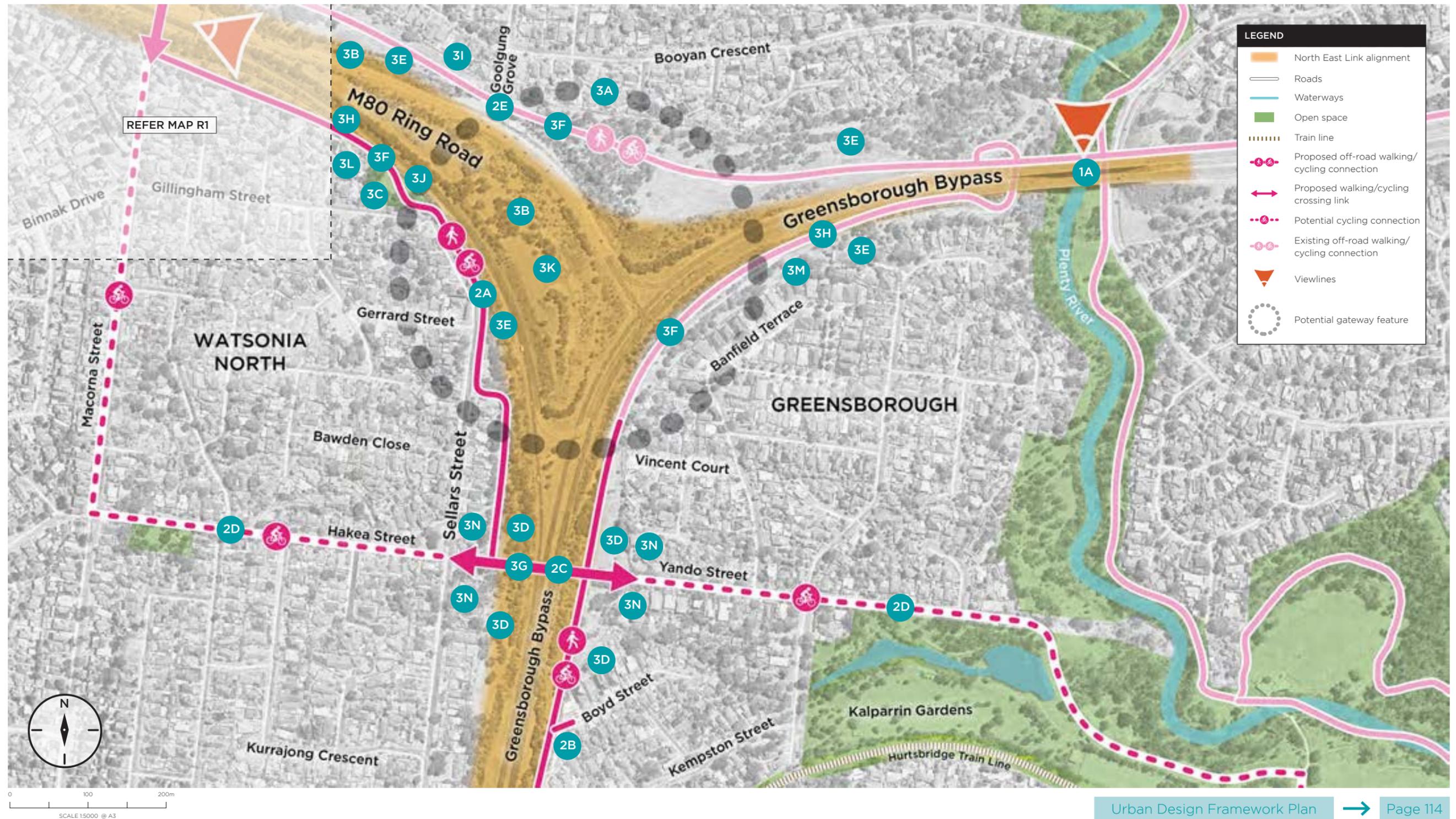


## Amenity, Vibrancy & Safety

- 3A Minimise overlooking and overshadowing to residential properties adjacent to M80 Ring Road interchange in the south-west, including Gillingham Street.
- 3B Reinststate native tree and understory planting within the road landscape (of the M80 Ring Road and the proposed road corridor) to reinforce the green roadside character.
- 3C Carefully integrate and transition noise walls and other infrastructure (planned or constructed) as part of the M80 Ring Road upgrade.
- 3D Replace existing timber noise walls located along M80 Ring Road and Greensborough Bypass with new high quality noise walls that maximise solar access (particularly on the southern side).
- 3E Noise walls to the north of the M80 Ring Road are to take advantage of views towards surrounding vegetation and promote new vistas for travellers.
- 3F Reinststate tree and shrub planting adjacent to the M80 (north and south) between residential areas and the road interface to filter and screen views towards roadway and built infrastructure. Use native and indigenous planting to reinforce the existing native character.
- 3G Minimise overshadowing to residential properties to the south of the M80 Ring Road.



## MAP R2: M80 INTERCHANGE



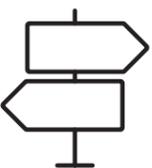


## Identity

- 1A** Design infrastructure to maximise amenity for cyclists and pedestrians and to take advantage of scenic views towards Plenty Gorge and Plenty River at the Greensborough Bypass crossing (over the Plenty River).



## Connectivity, Wayfinding & Accessibility



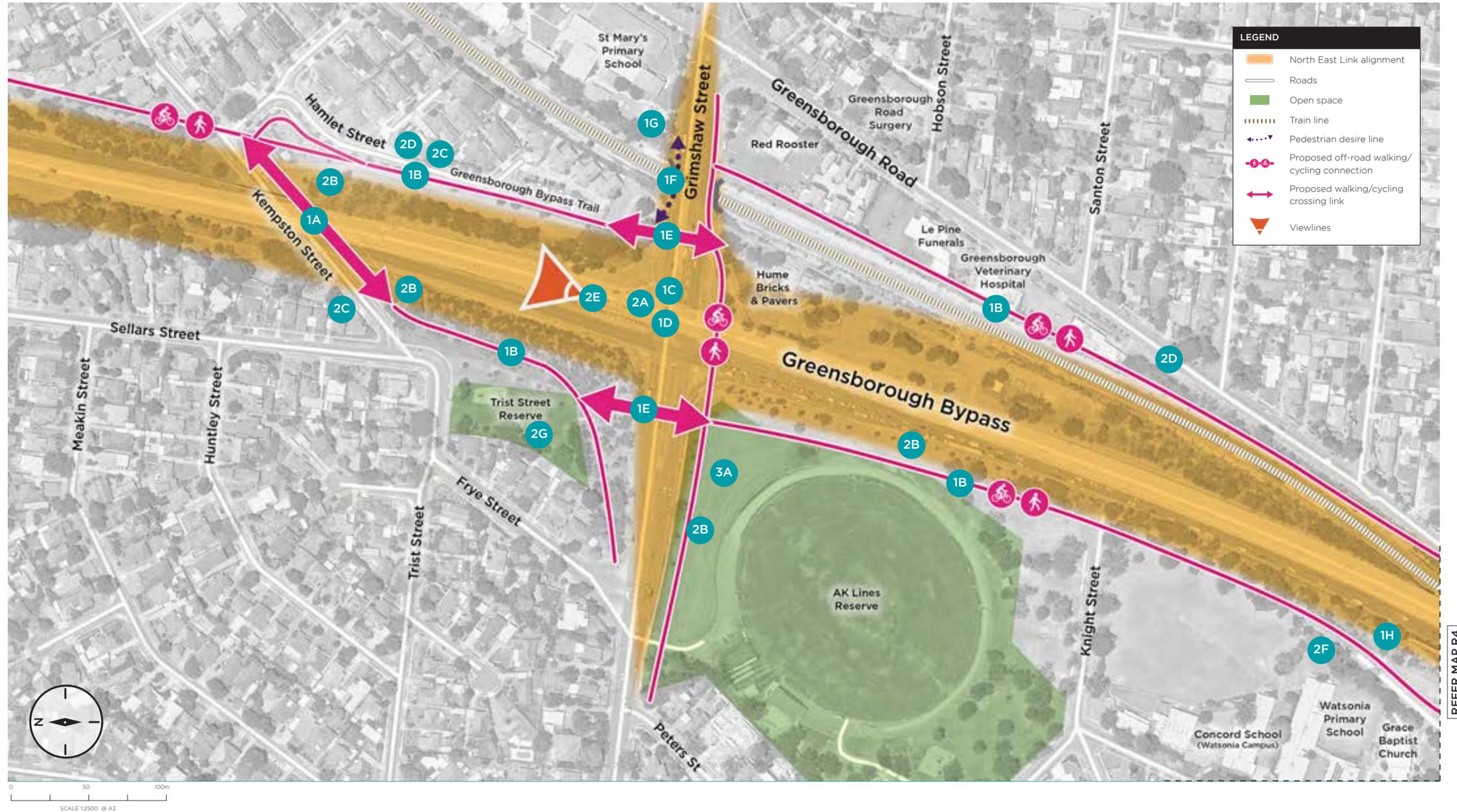
- 2A** Provide a new off-road walking and cycling path connecting the M80 Ring Road trail to Yando/Hakea Street crossing and Sellars Street.
- 2B** Provide a path connection from Boyd Street to the Yando Street walking and cycling path.
- 2C** Maintain and enhance an east-west walking and cycling connection across the corridor between Yando and Hakea Streets. Any new east-west cycle crossing must connect with the Greensborough Bypass Trail.
- 2D** Ensure new infrastructure supports a new east-west cycling connection (to be delivered by others) from M80 Ring Road to increase accessibility to Greensborough Activity Centre further to the east.
- 2E** Provide a safe walking and cycling connection to Booyan Crescent via Goolgung Grove from the M80 Ring Road Path subject to planning approvals for works outside the project boundary.

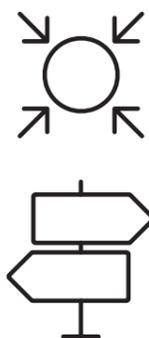


## Amenity, Vibrancy & Safety

- 3A** Create a high quality navigational feature at the M80 Ring Road interchange to address the road environment while reducing the visible impact towards adjoining residential areas. Use distinctive elements to provide features and landmarks for navigation including:
- Integrating Water Sensitive Urban Design infrastructure (such as a wetland) to create a landscape feature and to manage stormwater
  - Landscaping which takes inspiration from surrounding natural assets such as the Plenty River Gorge
  - Using indigenous planting to support biodiversity and habitat
  - Built form for the interchange should be well integrated and responsive to the Ridgeline design character area (including the urban setting, topography, geology, views and landform), and visual impacts should be minimised from the adjacent residential areas.
- 3B** Reinstate native tree and understory planting within the road landscape (of M80 Ring Road, Greensborough Bypass and the proposed road corridor) to reinforce the green roadside character.
- 3C** Maintain the amenity and function of the open space east of Gillingham Street including tree planting and screening to improve the interface with the M80 Ring Road.
- 3D** Maximise planting on both sides of the Greensborough Bypass and the proposed road corridor to maintain a treed outlook and the local character around Watsonia North and Greensborough.
- 3E** Reinstate tree and shrub planting adjacent to the M80 Ring Road (north and south) between residential areas and the road interface to filter and screen views towards roadway and built infrastructure. Use native and indigenous planting to reinforce the existing native character.
- 3F** Re-establish vegetation on the embankment and between paths around the M80 Ring Road interchange to filter and screen views towards road infrastructure from residential areas and walking/cycling paths.
- 3G** Reinstate tree and shrub planting adjacent to residential areas in Watsonia North and Greensborough so that impacts to views and solar access are avoided and minimised.
- 3H** Replace existing timber noise walls located along M80 Ring Road and Greensborough Bypass with new high quality noise walls that maximise solar access (particularly on the southern side).
- 3I** Noise walls to the north of the M80 Ring Road interchange are to provide visual amenity on both the road and residential interfaces and seek to frame views towards surrounding vegetation and promote new vistas for travellers.
- 3J** Carefully integrate and transition noise walls and other infrastructure (planned or constructed) as part of the M80 Ring Road upgrade.
- 3K** Locate any screens and barriers between viaducts at the M80 Ring Road interchange and existing dwellings so that impacts on views and solar access are avoided or minimised.
- 3L** Minimise overlooking and overshadowing to residential properties adjacent to M80 Ring Road interchange in the south-west, including at Gillingham Street.
- 3M** Minimise overshadowing to residential properties to the south of the Greensborough Bypass.
- 3N** Minimise overlooking and overshadowing to residential properties to the east and west of Yando Street shared use overpass.

### MAP R3: GRIMSHAW STREET INTERCHANGE





## Connectivity, Wayfinding & Accessibility

- 1A Improve pedestrian environment at Kempston Street (such as lighting) and provide a new walking and cycling connection along Kempston Street to improve east-west connectivity between Watsonia and Greensborough.
- 1B Provide new walking and cycling paths from Kempston Street to Grimshaw Street (on the east and west side of Greensborough Bypass) which link to the new grade separated crossings under Grimshaw Street and continue south.
- 1C Enhance the walking and cycling environment along Grimshaw Street to improve connections to St. Marys Catholic Primary School and neighbourhood integration between communities to the east and west of Greensborough Road.
- 1D Maintain, improve or provide new at-grade pedestrian crossings and footpaths across Grimshaw Street.
- 1E Provide grade separated north-south walking and cycling links across Grimshaw Street to allow seamless movements.
- 1F Provide a direct pedestrian connection from the new walking and cycling path on the north east side of Grimshaw Street interchange to St Mary's Catholic Primary School to strengthen connectivity to the school and surrounding neighbourhood.
- 1G Ensure that the design has regard to the setting and operational requirements of St Marys Primary School.
- 1H Ensure the design has regard to the setting and operational requirements of Watsonia Primary School



## Amenity, Vibrancy & Safety

- 2A Utilise the existing viewlines to create a feature landscape and/or built treatment at the Grimshaw Street intersection. The feature treatment should provide a wider context to navigate drivers, pedestrians and cyclists and acknowledge the role of Grimshaw Street as a threshold to Greensborough shopping centre. Use landscaping to reduce the apparent scale and expanse of hard paving at the road intersection.
- 2B Provide buffer planting between the road interface to filter views towards road infrastructure from surrounding open space and adjacent reserves (including AK Lines Reserve and Trist Street Reserve). Use native and indigenous planting to reinforce the existing native character.
- 2C Ensure new noise walls on ground level on either side of the Greensborough Bypass and the proposed road corridor address visual amenity on both the road and residential interfaces, and deter graffiti at lower levels while maximising light penetration to enhance solar access for surrounding community.
- 2D Maximise vegetation (such as street tree planting) along Greensborough Road and Hamlet Street to improve streetscape amenity.
- 2E Take advantage of long views to Kinglake and the Great Dividing Ranges from the Greensborough Bypass.
- 2F Collaborate with Watsonia Primary School and Concord School to reinstate planting and canopy shade trees between the school and the walking and cycling path.
- 2G Replace planting in Trist Reserve where upgrades are being undertaken by the project and do not preclude future opportunities for the land owner to provide additional park infrastructure.



## Resilience & Sustainability

- 3A Collaborate with relevant authorities to consider the storage and reuse of rainwater at AK Lines Reserve.

# MAP R4: WATSONIA NEIGHBOURHOOD CENTRE



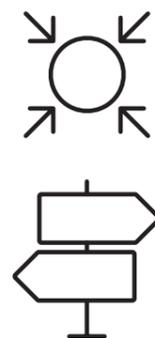


## Urban Integration

1A

### Watsonia Station Precinct

- Maximise opportunities for land use and transport integration and ensure the project design has regard to relevant State and local government strategic land use plans.
- The project design seeks opportunities to consolidate land parcels and minimise the fragmentation of land parcels.
- Built form should be well integrated, provide for passive surveillance and respond to the urban setting.
- Design the road network to accommodate vehicle and pedestrian access to residual land parcels.
- Ensure the road configuration accessing Watsonia Station car park and bus interchange is in accordance with relevant Victorian Government transport agency requirements.
- Ensure no net loss of vehicle parking at Watsonia Station.



## Connectivity, Wayfinding & Accessibility

2A

Provide a new north-south walking and cycling route to the eastern side of the corridor, connecting to the existing Greensborough Bypass Trail to the north, and the Banyule Trail to the south.

2B

Provide a new north-south off-road walking and cycling path to the western side of the corridor which links Watsonia Shopping Centre and Watsonia Station to the southern end of the station carpark.

2C

Provide a new walking and cycling link from the east side of the road corridor across Greensborough Road and connecting to the Watsonia Station and the Watsonia Neighbourhood Centre. Ensure there are pedestrian connections to Watsonia Station platforms that addresses key desire lines, enhance sightlines, wayfinding and legibility for walking and link to the walking and cycling paths/bridge.

2D

Enhance pedestrian and cycling connections to Watsonia Station and the Watsonia Neighbourhood Centre from residential areas to the east and south-east; to increase accessibility to an activity centre which can service everyday needs (consistent with Plan Melbourne's 20 Minute Neighbourhood strategy).

2E

Provide new off-road walking and cycling path in east-west direction to link from Watsonia Road to Watsonia Station.

2F

Provide a new cycling connection between Nell Street West linking to Watsonia Shopping Centre.

2G

Ensure new infrastructure supports the new off-road cycling connection parallel to Morwell Avenue (to be delivered others) which will link the existing East-West Power Easement Trail to the west with the Watsonia Neighbourhood Centre.

2H

Ensure new infrastructure supports a new east-west cycling connection (to be delivered by others) along Nell Street and Nell Street West.

2I

Replace existing Nell Street pedestrian bridge with new high quality, wider, walking and cycling crossing that connects the east and west side of the corridor. Crossing is to link into the surrounding path networks and to Watsonia Primary School.

2J

Provide a direct vehicle connection from Elder Street to Watsonia Station car park which could facilitate an at-grade walking and cycling crossing.

2K

Ensure the design of the Nell Street pedestrian bridge has regard to the setting and operational requirements of Watsonia Primary School.



## Amenity, Vibrancy & Safety

3A

Provide additional tree planting along pathways, streets and in carparks within the project corridor wherever possible to reinforce Watsonia's leafy character, contribute to the urban forest, enhance amenity and provide shade.

3B

Minimise overlooking to residential properties from proposed walking and cycling bridges at Nell Street and Watsonia Station.

3C

Provide a planted interface with Greensborough Road to filter views of road infrastructure from adjacent residential areas.

3D

Enhance the quality of public open space in Watsonia where walking and cycling upgrades are being undertaken by the project.

Do not preclude the future delivery (by others) of enhancements to public open space for the shopping strip and improvements to create a high quality entrance to the station focused around Watsonia Library.

3E

Should project works directly impact the transmission easement between Greensborough Road and Frensham Road, improve the amenity and the quality of open space by:

- Providing additional planting / buffer planting to residential fencing subject to the approval of the relevant Utility Service Providers.
- Upgrading the existing East-West Power Easement Trail.

3F

*\*Consider improvements to the amenity and quality of the open space along the transmission easement between Greensborough Road and Frensham Road by implementing Water Sensitive Urban Design infrastructure (such as vegetated swales or raingardens) to manage stormwater.*



## Resilience & Sustainability

4A

New planting in the transmission easement must be indigenous to strengthen local biodiversity and habitat within the 'Powerline Link' biodiversity corridor.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

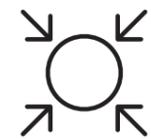
### MAP R5: SOUTH OF WATSONIA STATION





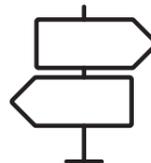
## Urban Integration

- 1A Provide open space and planting opportunities above the road alignment via land bridges (or similar) that are aligned to other adjacent open spaces and potential Greensborough Road crossing points. Ensure that there is useable open space at ground level in order to extend the sense of integration between either side of the road corridor. Paths are to be provided across any land bridges to create exercise and recreational opportunities.



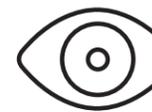
## Connectivity, Wayfinding & Accessibility

- 2A Provide pedestrian path links to Wittman Reserve, Service Road and Watson Street.
- 2B Provide a new walking and cycling path parallel to Greensborough Road between Watsonia Road and Yallambie Road to complete the missing link between the Greensborough Road path and Watsonia.
- 2C Realign the Banyule Trail to connect with proposed walking and cycling path to north.
- 2D Provide a footpath along Yallambie Road to connect with existing east-west paths.
- 2E Maintain existing pedestrian crossing along Greensborough Road at Yallambie Road.
- 2F Provide a new pedestrian crossing point on Greensborough Road at Wattle Drive to create a better link towards Macleod.
- 2G Enhance pedestrian and cycling connections to Watsonia Station and the Watsonia Neighbourhood Centre from residential areas to the east and south-east; to increase accessibility to an activity centre which can service everyday needs (consistent with Plan Melbourne's 20 Minute Neighbourhood strategy).
- 2H Maintain existing pedestrian crossing along Greensborough Road at Watsonia Road.



## Amenity, Vibrancy & Safety

- 3A Use screen planting where appropriate to mitigate views to barriers and road infrastructure.
- 3B Provide vegetated buffer planting to residential interfaces to improve appearance.
- 3C Improve the landscaping along Greensborough Road by creating an avenue of indigenous shade trees with seating opportunities while maintaining safety for all road users.
- 3D Provide additional planting to enhance visual amenity and the existing 'Yallambie-Bundoora Plains' local habitat link.
- 3E Provide additional tree planting along pathways, streets and in carparks within the project corridor wherever possible to reinforce Watsonia's leafy character, contribute to the urban forest, enhance amenity and provide shade.
- 3F Provide streetscape improvements to Greensborough Road to make it more comfortable and attractive for walking (such as via street tree planting and new seating for rest stops and at bus stops).
- 3G Provide a planted interface with Greensborough Road to filter views of road infrastructure from adjacent residential areas.
- 3H Consider the creation of a sense of entry into Watsonia Shopping Centre. Ensure that the intersection of Greensborough Road and Watsonia Road is configured to enhance walkability.



# MAP R6: SIMPSON BARRACKS





## Identity

**1A** Retain the memorial at Simpson Barracks. Should relocation be required, this is to be undertaken in close consultation with relevant stakeholders.

Consider providing a design response that acknowledges, respects, commemorates and more strongly connects the Simpson Barracks with the community (subject to approval from Department of Defence and Simpson Barracks) by:

- Exploring the use of design to interpret cultural and historic aspects of the Barracks
- Creating space/s for community gathering and reflection
- Integrating memorial elements and/or commemorative planting.



## Connectivity, Wayfinding & Accessibility

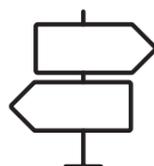
**2A** Upgrade the Banyule Trail (north of Lower Plenty Road) to be a high quality, suitably wide and functional connection that creates a pleasant and attractive journey for users.

**2B** Provide an additional pedestrian crossing on Greensborough Road at Strathallan Road to improve walkability to facilities and bus stops.

**2C** Provide a new walking and cycling path east of the proposed road alignment to connect with the pedestrian crossing at Strathallan Road (to the north) and the Drysdale-Moorwatha east-west corridor (to the south).

**2D** Realign the Banyule Trail to connect with proposed walking and cycling path to north.

**2E** Provide wayfinding and access to Banyule Creek from the Banyule Shared Trail (such as signage or granitic sand tracks).



## Amenity, Vibrancy & Safety

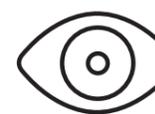
**3A** Provide additional buffer planting to filter views from residential areas to walls and road infrastructure.

**3B** Minimise impacts to Banyule Creek from road infrastructure and enhance and extend the natural values of Banyule Creek to improve appearance, biodiversity, habitat and recreational values.

**3C** Maintain and reinforce views from residential areas towards trees where possible. Prioritise the retention and enhancement of local views to the Simpson Barracks woodland.

**3D** Improve the landscaping along Greensborough Road by creating an avenue of indigenous shade trees with seating opportunities while maintaining safety for all road users.

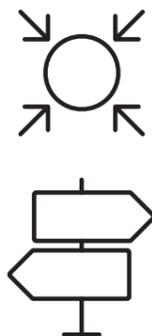
**3E** Use screen planting where appropriate to mitigate views to barriers and road infrastructure.



Mount Cooper Lookout towards ridgelines

### MAP R7: LOWER PLENTY ROAD INTERCHANGE





## Connectivity, Wayfinding & Accessibility

- 1A Upgrade the Banyule Trail (north of Lower Plenty Road) to be a high quality, suitably wide and functional connection that creates a pleasant and attractive journey for users.
- 1B Provide a new east-west walking and cycling path along the easement connecting to Lower Plenty Road to the east and continuing towards the Plenty River trail.
- 1C Provide a grade separated walking and cycling crossing at Lower Plenty Road to allow for a continuous north/south route.
- 1D Provide a walking and cycling link (that seamlessly connects to the proposed path along easement to the east and a proposed path which continues further north) and ensure new infrastructure supports a potential cycling connection west of Greensborough Road to serve the Drysdale-Moorwatha and Erskine-Coleen east-west corridors and connect to key destinations including the La Trobe NEIC.
- 1E Create a high quality wayfinding feature at the Lower Plenty Road interchange to be used by the community for all travel modes to navigate and identify their location. The feature may contain built form, distinctive elements and/or landscaping that provide easily identifiable features and landmarks that address multiple scales and speeds of movement.
- 1F Enhance access to local primary schools such as Rosanna Golf Links and St Martin of Tours through improved and safe walking links across the Lower Plenty Road interchange and connecting to River Gum Walk.
- 1G Provide wayfinding and access to Banyule Creek from the Banyule Shared Trail (such as signage or granitic sand tracks).
- 1H Provide a secondary connection (such as a gravel path) from Coleen Street to Erskine Road.
- 1I Ensure that the design has regard to the setting and operational requirements of Rosanna Golf Links and St Martin of Tours.



## Resilience & Sustainability

- 2A Provide landscaping to improve appearance and use indigenous planting to support biodiversity and habitat.  
  
Through the design of Water Sensitive Urban Design infrastructure, consider management of stormwater and opportunities to reflect the 'naturalistic' values of Banyule Creek.
- 2B *\*Consider providing habitat infrastructure beneath Lower Plenty Road to support habitat connectivity between Simpsons Barracks and the Banyule Flats/Yarra Floodplain.*
- 2C *\*Consider providing planting adjacent to Lower Plenty Road to support the wildlife corridor.*



## Amenity, Vibrancy & Safety

- 3A Provide additional buffer planting to filter views from residential areas to walls and road infrastructure.
- 3B Minimise impacts to Banyule Creek from road infrastructure and enhance and extend the natural values of Banyule Creek to improve appearance, biodiversity, habitat and recreational values.
- 3C Through the design process, consider enhancing landscaping along the grassed easement to improve user amenity for walkers and cyclists, subject to approval of the land owner/manager.
- 3D Where project works directly affect Banyule Creek to the south of Lower Plenty Road, restore and enhance the creek.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

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# Yarra River Valley area

'The Birrarung is a river of mist and shadows – the river and its environs are a living, breathing entity that follows Wurundjeri songlines and forms a central part of the Dreaming of the Wurundjeri. A Dreaming that links the billabongs, wetlands and swamps in the upstream forests, across the meandering plains and out to the salt water. We the Wurundjeri are connected to the Birrarung through spirit, culture and nature. The river follows the paths that our ancestors have travelled for thousands of years – providing for them as now it provides for all Victorians.'

*From the Wurundjeri input into the Yarra Strategic Plan (Ancient Spirit and Lore of the Yarra)*

Bolin Bolin Billabong  
*Photography: Warwick Gresswell*



### 5.1 Contextual narrative

The Yarra River Valley design character area has many unique qualities. Situated within a floodplain, the area is part of an integrated natural system of low-lying wetlands, swamps, flats, billabongs and riparian woodland, centred around the meandering and ancient Yarra River. Connecting to the Yarra River are a network of tributaries that include Merri Creek, Darebin Creek and Koonung Creek.

The Yarra River's lands and waterways have spiritual and cultural significance for Aboriginal communities. To the Wurundjeri people, the Yarra River is known as Birrarung and is a life source and important meeting place.

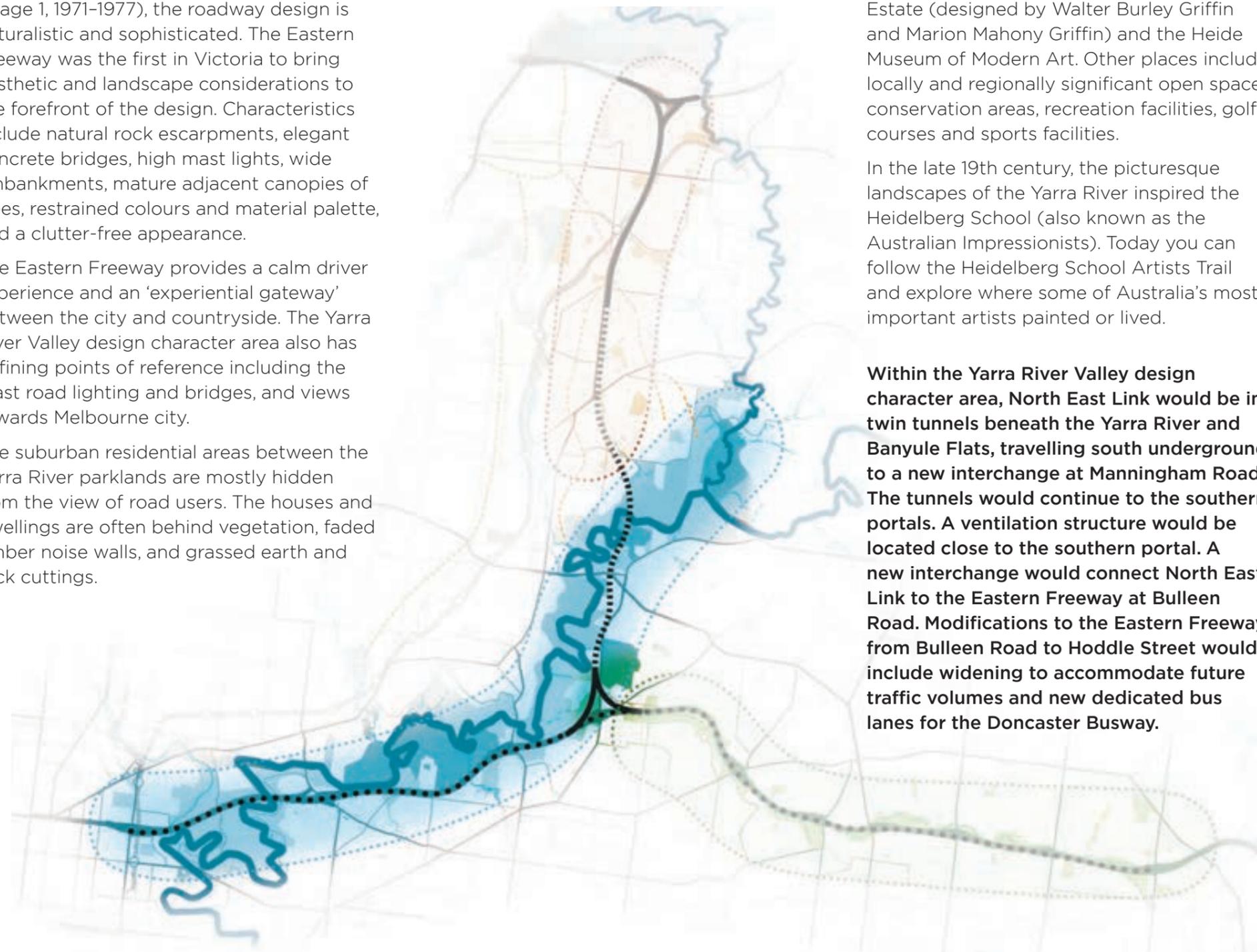
The parklands, open spaces and continuous vegetated landscapes along the river provide much valued places for Melbournians and visitors for relaxation, recreation and socialisation. Open spaces downstream of Bulleen are the locations for a number of sports fields, golf courses and smaller parkland areas. The Yarra River is also an important biodiversity and wildlife corridor. The area also has vegetation that has heritage value and which contributes to the local landscape character.

The Main Yarra Trail provides a popular commuter bicycle link along the banks of the Yarra River between the natural landscapes of the floodplain to the heart of the busy urban metropolis.

Where the river valley intersects with the oldest section of the Eastern Freeway (stage 1, 1971-1977), the roadway design is naturalistic and sophisticated. The Eastern Freeway was the first in Victoria to bring aesthetic and landscape considerations to the forefront of the design. Characteristics include natural rock escarpments, elegant concrete bridges, high mast lights, wide embankments, mature adjacent canopies of trees, restrained colours and material palette, and a clutter-free appearance.

The Eastern Freeway provides a calm driver experience and an 'experiential gateway' between the city and countryside. The Yarra River Valley design character area also has defining points of reference including the mast road lighting and bridges, and views towards Melbourne city.

The suburban residential areas between the Yarra River parklands are mostly hidden from the view of road users. The houses and dwellings are often behind vegetation, faded timber noise walls, and grassed earth and rock cuttings.



Key cultural places include the Yarra River (Birrarung), Bolin Bolin Billabong, Eaglemont Estate (designed by Walter Burley Griffin and Marion Mahony Griffin) and the Heide Museum of Modern Art. Other places include locally and regionally significant open spaces, conservation areas, recreation facilities, golf courses and sports facilities.

In the late 19th century, the picturesque landscapes of the Yarra River inspired the Heidelberg School (also known as the Australian Impressionists). Today you can follow the Heidelberg School Artists Trail and explore where some of Australia's most important artists painted or lived.

**Within the Yarra River Valley design character area, North East Link would be in twin tunnels beneath the Yarra River and Banyule Flats, travelling south underground to a new interchange at Manningham Road. The tunnels would continue to the southern portals. A ventilation structure would be located close to the southern portal. A new interchange would connect North East Link to the Eastern Freeway at Bulleen Road. Modifications to the Eastern Freeway from Bulleen Road to Hoddle Street would include widening to accommodate future traffic volumes and new dedicated bus lanes for the Doncaster Busway.**

## 5.2 Values & priorities

In the Yarra River Valley design character area the project corridor would mostly follow the Yarra River valley in line with Bulleen Road, before following the river valley along the Eastern Freeway into Melbourne's inner city areas. Significant residential and retail growth is expected closer to Melbourne's CBD. This includes urban renewal at the Johnston Street Activity Centre and a large-scale residential development at the Alphington Paper Mill. The southern extent of the La Trobe National Employment and Innovation Cluster (NEIC) to the west of the Yarra River and Banksia Street features a growing number of multi-storey residential apartments and townhouses located around the Heidelberg railway station within the Heidelberg Activity Centre. As the project corridor moves further from the city the current low-rise residential character is expected to be retained except in identified areas such as activity centres.

The Yarra River and the landscape it passes through would continue to play a key role in the identity of Melbourne, providing environmental, aesthetic, cultural, recreational and tourism benefits. The Yarra River and its surrounding parklands are of high importance to Victoria, and the public parklands and open spaces along the river are collectively declared as the Greater Yarra Urban Parklands. North East Link should integrate and respond to the distinctive setting as well as the future context of the area. The project must enhance the social and environmental values of the Greater Yarra Urban Parklands.

This UDS aligns with and supports the relevant principles under the Yarra River Protection (Willip-gin Birrarung Murrn) Act 2017, see 8.1.

The upgrades to the Eastern Freeway in the Yarra River Valley design character area would mainly occur within the existing road corridor. The project design should retain and conserve the fabric and aesthetic qualities of the Eastern Freeway (stage 1) design.

The Eastern Freeway interchange at Bulleen Road, and the southern ventilation structure and building are significant elements which should be sensitively designed with regard to siting and form. The Doncaster Busway along the Eastern Freeway, and the redevelopment of the Boroondara Tennis Centre into a new Park and Ride facility, present major project opportunities for land use and transport integration, and would create a great public transport user experience with well-integrated services that enhance the commuter journey. The Bulleen Industrial Park would be impacted by the new Manningham Road interchange. This site presents opportunities for urban renewal, localised enhancements and improved interfaces with the Yarra River.

Bulleen Road and the Eastern Freeway are currently barriers for the community to access the open spaces along the Yarra River. It is a priority to provide enhanced crossings and connections to natural assets, facilities, open spaces and cultural places in Bulleen, and to maximise cycle and pedestrian access and connections across the Eastern Freeway.

The project provides opportunities to improve and create new cycling routes into Melbourne's inner city areas along the Eastern Freeway alignment, and to Heidelberg railway station.



Eastern Freeway viewing to Melbourne city skyline



Heide Museum of Modern Art Sculpture Park



Yarra River

## 5.3 Place-specific requirements



Place-specific requirements that must be met and addressed at specific locations within the Yarra River Valley design character area are outlined in this section. These requirements have been prepared in close collaboration with key stakeholders so the community's expectations and local level issues are considered as the design develops.

The requirements for the individual maps have been categorised under the most relevant principle, acknowledging that the requirements may relate to multiple principles.

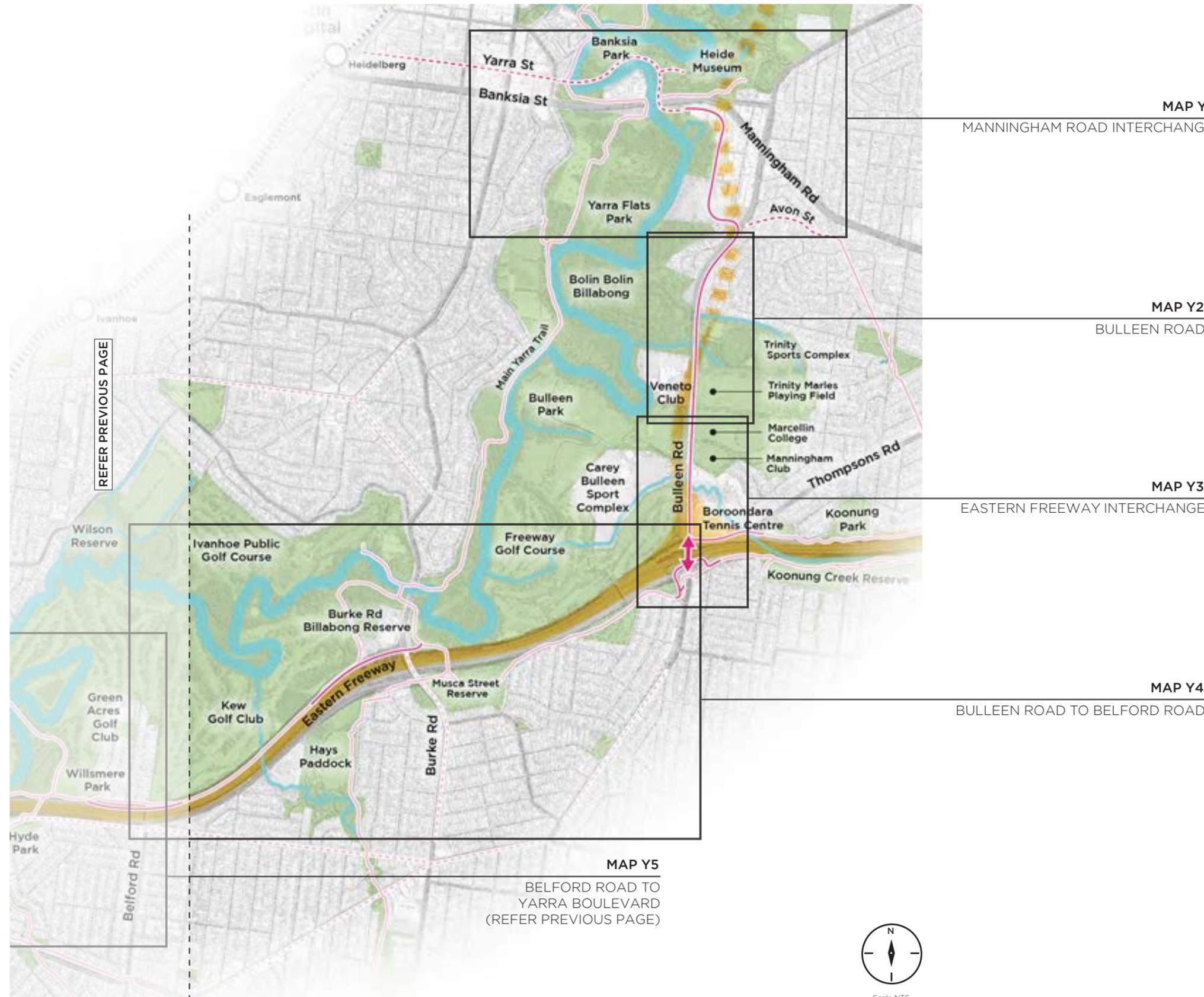
It is to be noted that cycle and pedestrian paths are shown as a functional layout and it is possible that an equivalent and acceptable level of connectivity could be achieved in an alternative manner.

### KEY PLAN

This key plan shows the Yarra River Valley design character area and the proposed North East Link alignment. Individual maps are used to outline place-specific requirements.



REFER NEXT PAGE



REFER PREVIOUS PAGE

MAP Y1

MANNINGHAM ROAD INTERCHANGE

MAP Y2

BULLEEN ROAD

MAP Y3

EASTERN FREEWAY INTERCHANGE

MAP Y4

BULLEEN ROAD TO BELFORD ROAD

MAP Y5

BELFORD ROAD TO  
YARRA BOULEVARD  
(REFER PREVIOUS PAGE)

LEGEND

-  North East Link alignment
-  North East Link alignment underground
-  Roads
-  Waterways
-  Train line
-  Train station
-  Open space
-  Proposed off-road walking/cycling connection
-  Proposed walking/cycling crossing link
-  Potential cycling connection
-  Existing on-road cycling connection
-  Existing off-road walking/cycling connection



Scale NTS

# MAP Y1: MANNINGHAM ROAD INTERCHANGE



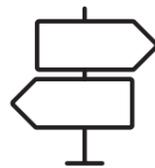


## Identity

- 1A Create a high quality navigational feature at the Manningham Road interchange that complements and respects the role of the existing Manningham Gateway 'Helmet' sculpture in Banksia Park, and signifies the entry into this important cultural and heritage precinct which includes the Heide Museum of Modern Art and the Yarra River Parklands.
- 1B All practical design alternatives to retain the existing significant River Red Gum should be explored. If removal cannot be avoided, provide legacy actions in consultation with key stakeholders.



## Connectivity, Wayfinding & Accessibility

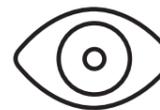


- 2A Provide off-road walking and cycling paths through Yarra Flats Park and to the east of Bulleen Road to improve connectivity from Banksia Street down towards Koonung Creek Trail further to the south.
- 2B Provide a pedestrian path on the northern side of Bridge Street to connect Bulleen Road residents to the Heidelberg Activity Centre.
- 2C Maintain a signalised crossing across Bulleen Road at Manningham Road.
- 2D Provide new signalised crossings across Bulleen Road at both Bridge Street and Avon Street.
- 2E Upgrade footpaths along Manningham Road, west of Bulleen Road and south of Bridge Street.
- 2F Ensure new infrastructure supports a new on-road cycling connection (to be delivered by others) along Avon Street to provide a link to Golden Way Reserve.
- 2G Ensure new infrastructure supports a new walking and cycling crossing over the Yarra River (to be delivered by others) linking to a potential on-road east-west cycling route along Yarra Street (further to the west) to improve links to Heidelberg railway station.

- 2H Ensure new infrastructure supports new signalised crossings (to be delivered by others) along Yarra Street at the intersections with both Dora Street and Lower Heidelberg Road.
- 2I Ensure new infrastructure supports upgrading existing path through Banksia Park to a high quality, suitably wide and functional walking and cycling path (to be delivered by others) linking the potential Yarra River crossing and Banksia Street, with a path connection to the Heide Museum of Modern Art.
- 2J *\*Consider reinstating and extending the informal path as part of the Cultural Landscape Trail.*
- 2K *\*Consider a trail connection across Banksia Street in the north-south direction to the entrance of Yarra Flats Park as an alternative to the existing underpass.*
- 2L Provide appropriate walking and cycling path connections at the Manningham interchange that are convenient and link to key destinations and desire lines.
- 2M Through the design process, consult with Heide Museum of Modern Art to understand future options for vehicle and pedestrian access, how they relate to the project and could be addressed.



## Amenity, Vibrancy & Safety



- 3A Improve the interface of the Yarra Valley Parklands with the interchange and transport infrastructure. Use landscaping to reveal scenic views and reinforce visual links to the natural environment, and filter views towards infrastructure. Plant indigenous vegetation to support local biodiversity and habitat.
- 3B Provide roadside planting with large canopy trees along Bulleen Road to enhance the area's 'green' character and role as a gateway to Melbourne's north-east.
- 3C Maintain and enhance public access to the Yarra Valley Parklands including water access locations along the Yarra River.
- 3D *\*Consider enhancing the existing underpass (across the Yarra River under Banksia Street) to have clear sightlines, good lighting and be attractive to use.*



## Urban Integration

- 4A **Manningham Road interchange:**  
Ensure the project design has regard to relevant State and local government strategic land use plans.  
Consider enabling future land use opportunities by:
  - Seeking opportunities to consolidate land parcels and minimise the fragmentation of land parcels
  - Designing the road network to accommodate vehicle and pedestrian access to residual land parcels.
 New built form must provide sensitive interfaces with the adjoining Yarra Valley Parklands. Built form should be integrated into the landscape to avoid or minimise visual impact of flood mitigation and other structures.

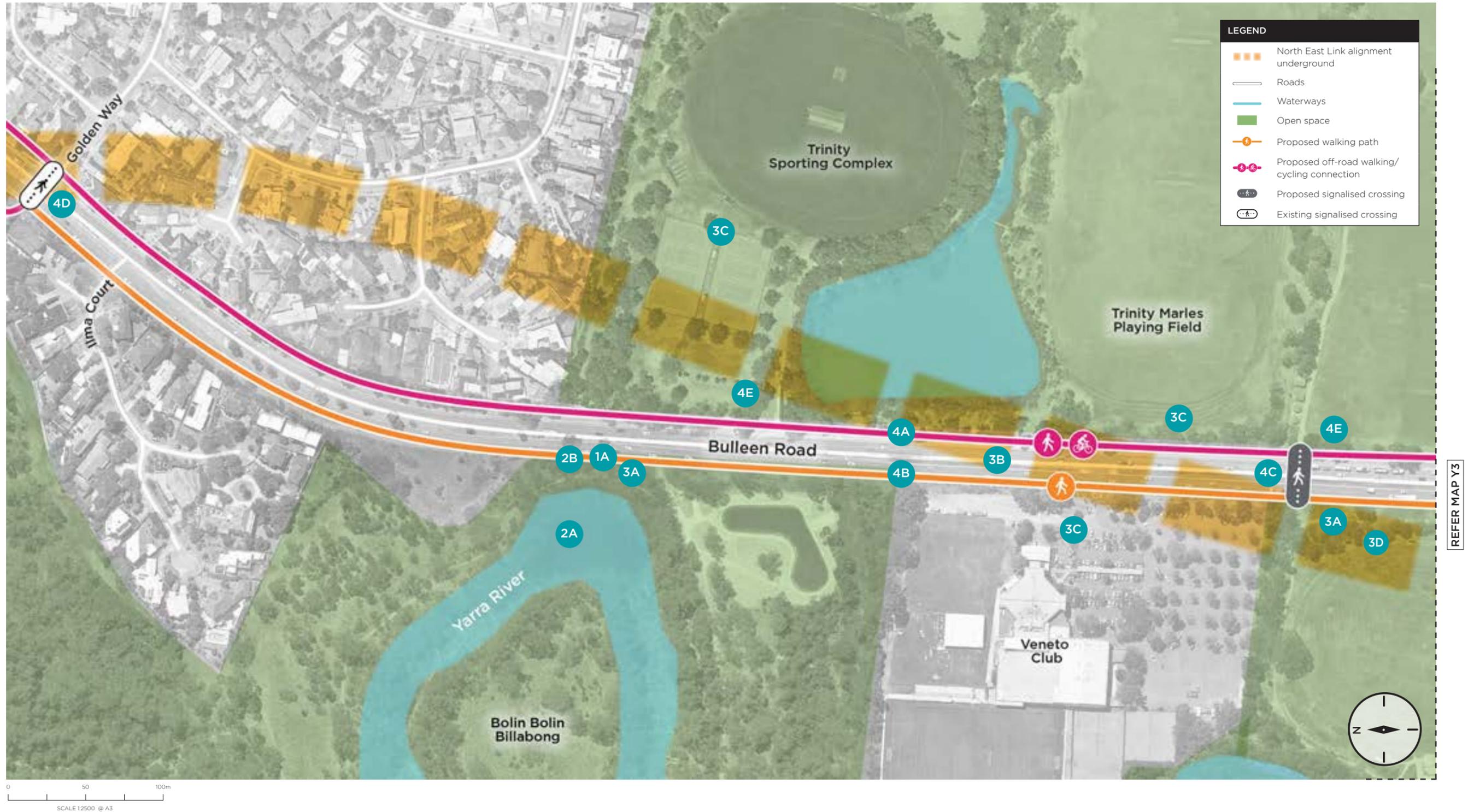


## Resilience & Sustainability

- 5A Should project works occur beneath the Manningham Road bridge, provide additional habitat beneath the bridge to support habitat connectivity along the Yarra River corridor.
- 5B Within the WSUD strategy consider opportunities to implement naturalistic Water Sensitive Urban Design elements (such as wetlands) around the Yarra Valley Parklands to treat stormwater. Seek opportunities to return treated flows to improve the waterway system associated with the Yarra River.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

## MAP Y2: BULLEEN ROAD





## Identity

- 1A Revegetate the area around the new footpath at the interface with the Bolin Bolin Billabong (excluding the No-Go Zone area) in consultation with Wurundjeri Woi wurrung and relevant land owners/managers.



## Resilience & Sustainability

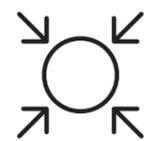
- 2A Enhance biodiversity and habitat links along the Yarra River corridor.
- 2B *\*Consider the implementation of 'naturalistic' Water Sensitive Urban Design elements (such as wetlands) to treat stormwater and to return flows to the Yarra River and surrounding billabongs to support river health.*



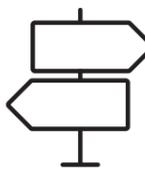
## Amenity, Vibrancy & Safety



- 3A Minimise the visibility of road infrastructure from the Yarra River and the Bolin Bolin Billabong. Plant indigenous trees and vegetation to filter views.
- 3B Provide roadside planting with large canopy trees along Bulleen Road to enhance the area's 'green' character and role as a gateway to Melbourne's north-east.
- 3C Use screen planting where appropriate to mitigate views to barriers and road infrastructure from Trinity Grammar School and the Veneto Club.
- 3D Design the ventilation structure and buildings to be well integrated with floodwalls and other built form; and include design innovations, landscape and landform to mitigate visual impacts.



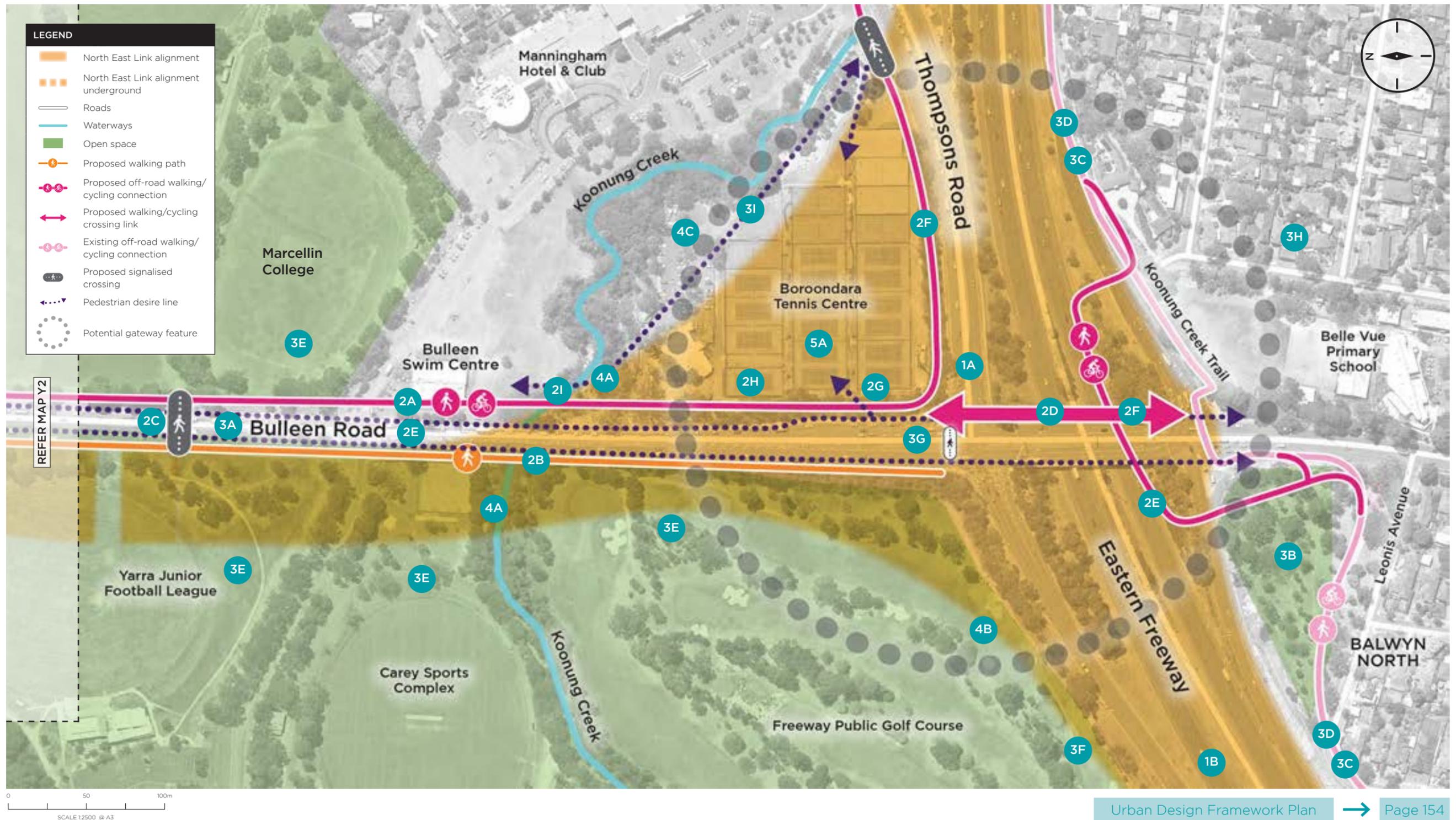
## Connectivity, Wayfinding & Accessibility



- 4A Provide an off-road walking and cycling path on the east side of Bulleen Road to improve north-south connections.
- 4B Provide a footpath along the west side of Bulleen Road to improve north-south and east-west connections.
- 4C Provide signalised crossings across Bulleen Road to improve pedestrian safety, encourage active transport to the recreational and community facilities, and improve access to public open space from residential areas to the east.
- 4D Maintain a signalised crossing across Bulleen Road at Golden Way.
- 4E Ensure direct access to Trinity Grammar School and Marcellin College from Bulleen Road.



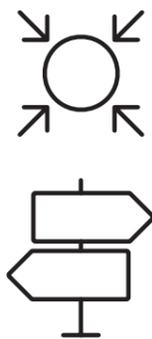
### MAP Y3: EASTERN FREEWAY INTERCHANGE





## Identity

- 1A Design the Eastern Freeway interchange to be a navigational node by using distinctive elements to provide features and landmarks for navigation for all modes of transports. Landscaping is to take inspiration from surrounding natural assets such as the Yarra River and will maximise indigenous planting to support biodiversity and habitat.
- 1B Where the existing mast lights along the Eastern Freeway cannot be retained, consider relocation. Where the existing mast lights cannot be relocated provide a design strategy for reuse.



## Connectivity, Wayfinding & Accessibility

- 2A Provide an off-road walking and cycling path along the eastern side of Bulleen Road to encourage active transport to local educational, cultural and recreational places.
- 2B Provide a footpath along the western side of Bulleen Road to support pedestrian access north-south between Ilma Court and the Eastern Freeway. The footpath should seek to minimise impact to sensitive areas.
- 2C Provide signalised crossings across Bulleen Road to improve pedestrian safety, encourage active transport to the recreational and community facilities, and improve access to public open space from residential areas to the east.
- 2D Provide a walking and cycling crossing of the Eastern Freeway linking the new walking and cycling path to the Koonung Creek Trail.
- 2E Provide an alternative grade-separated crossing of Bulleen Road for pedestrians and cyclists travelling along the Koonung Creek Trail.
- 2F Provide a high quality walking and cycling path to connect from Bulleen Road and alongside Thompsons Road (located further east) to the Koonung Creek Trail on the northern side of the Eastern Freeway.
- 2G Provide a pedestrian connection from Bulleen Road into the Bulleen Park and Ride facility.

- 2H Improve landscape amenity along Bulleen Road and adjacent to Bulleen Park and Ride facility.
- 2I Through the design process, consider improvement to connectivity to nearby schools by creating a crossing over the Koonung Creek north of the new Bulleen Park and Ride facility.
- 2E Ensure that the design has regard to the setting and operational requirements of Marcellin College, Trinity Grammar and Carey Grammar.
- 2F Ensure that the design (including of the walking and cycling crossing of the Eastern Freeway) has regard to the setting and operational requirements of Belle Vue Primary.



## Amenity, Vibrancy & Safety

- 3A Provide roadside planting with large canopy trees along Bulleen Road to enhance the area's 'green' character and role as a gateway to Melbourne's north-east.
- 3B Reinstate and enhance buffer planting along the Eastern Freeway interface at Leonis Avenue Reserve.
- 3C Ensure noise walls to the south of the Eastern Freeway:
  - Maximise solar access to the Koonung Creek Trail and to residential properties
  - Minimise overshadowing to residential properties
  - Have treatments to both sides of the wall
  - Use landscaping to filter views towards noise walls
  - Respond sensitively to existing retained noise walls.
- 3D Ensure narrower areas along the Koonung Creek Trail have good lighting, open sightlines and are attractive to users.
- 3E Minimise the visibility of road infrastructure from the open spaces, Carey and Marcellin College. Plant indigenous trees and vegetation to filter views.
- 3F Reinstate and enhance buffer planting along the Eastern Freeway interface.



## Resilience & Sustainability

- 4A Provide planting to enhance visual amenity, biodiversity and habitat links along the Koonung Creek corridor.
- 4B Reinstate and enhance buffer planting along the Freeway Public Golf Course interface.
 

Through the design process, consider Water Sensitive Urban Design infrastructure to capture and treat stormwater run off from the project.
- 4C Where project works directly affect the Koonung Creek interface (between Bulleen Road and Thompsons Road), provide additional vegetation in the area around the creek to enhance the appearance and environmental values.

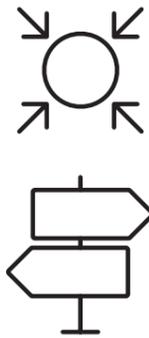


## Urban Integration

- 5A Create a new Park and Ride facility in Bulleen that considers:
  - Connectivity to surrounding walking and cycling network
  - Provision of convenient bicycle parking facilities
  - Sensitivity of interfaces with new built form and being at a pedestrian scale with the adjoining Koonung Creek corridor
  - Seamless transition and connection to the Eastern Freeway design (within the Yarra River Valley design character area) with the design for the Eastern Freeway interchange and to the east of Bulleen Road (within the Koonung Creek design character area).

## MAP Y4: BULLEEN ROAD TO BELFORD ROAD





### Connectivity, Wayfinding & Accessibility

- 1A Provide a more direct cycling path parallel with the Eastern Freeway from Burke Road, connecting to the existing Koonung Creek Trail east of Burke Road.
- 1B Provide a cycling path on the north side of the Eastern Freeway at freeway level to address existing grade issues at Belford Road.
- 1C *\*Consider providing a walking and cycling path on the north side of the Eastern Freeway from Bulleen Road towards Burke Road.*
- 1D *\*Consider providing a path connection along the east side of the Yarra River in the Freeway Golf Course to improve access on either side of the Eastern freeway.*



### Amenity, Vibrancy & Safety

- 2A Reinstatement and enhance buffer planting along the Eastern Freeway interface at Columba Street Reserve.  
*\*Consider opportunities to improve neighbourhood/local unstructured and informal recreational facilities in consultation with Boroondara City Council.*
- 2B Improve lighting and consider other enhancements to wall treatments, sightlines, and wayfinding at the existing underpass beneath the Eastern Freeway connecting Musca Reserve and Yarra Flats Reserve.
- 2C Provide buffer planting to the edge of Musca Street Reserve to create a vegetated backdrop and filter views towards road infrastructure.
- 2D Design infrastructure to maximise solar access to properties along Elm Grove / Main Yarra Trail adjoining the Eastern Freeway.
- 2E Noise walls adjacent to residential properties are to provide visual amenity on both the road and residential interfaces.
- 2F Maximise views towards borrowed landscapes from the Eastern Freeway.



### Resilience & Sustainability

- 3A *\*Consider providing habitat infrastructure beneath Burke Road bridge to support habitat connectivity to and from the Yarra River.*
- 3B *\*Consider providing a habitat link across the Eastern Freeway to the Freeway Public Golf Course.*
- 3C *\*Consider providing a habitat link across the Eastern Freeway from Hays Paddock to Kew Golf Club.*

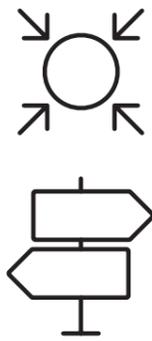


### Identity

- 4A Through the design process, consider the relocation of the existing mast lights where the lights cannot be retained in their current location.
- 4B Seek to maintain distant scenic views to the north from residential areas on Columba Street at the interface with the project.
- 4C Maintain the existing rock escarpments. Where additional rock cutting or modifications are required, they should complement the existing rock escarpment.
- 4D Conserve the quality of existing Belford Road and Burke Road bridges by:
  - Avoiding the retrofitting of elements to the bridges. Should the retrofitting of elements be required, they are to be bespoke to complement the existing bridge designs
  - Not locating signage on the bridges
  - Ensuring any new structures and/or elements located near the existing bridges are designed to minimise visual impact and to respond to the design of the existing bridges.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*





### Connectivity, Wayfinding & Accessibility

- 1A Provide a new walking and cycling connection to link Chandler Highway to the proposed Eastern Bicycle Corridor.
- 1B Provide a new cycling connection to the north of the Eastern Freeway near Chandler Highway as part of the Eastern Bicycle Corridor. This new bicycle corridor alignment should avoid removing existing trees where possible.
- 1C Provide a walking and cycling bridge connection over the Yarra River as part of the new Eastern Bicycle Corridor.



### Amenity, Vibrancy & Safety

- 2A Improve lighting and consider other improvements such as wall treatments and wayfinding at the existing underpass beneath the Eastern Freeway near Willsmere Park.
- 2B Minimise visual impacts of proposed elevated busway to residential properties to the south along Wiltshire Drive.
- 2C Maintain the pedestrian environment and established landscape along Kilby Road.
- 2D Provide additional buffer planting to noise walls to filter views from residential areas and from Vaughan Crescent.
- 2E Maximise views towards borrowed landscapes from the Eastern Freeway.



### Resilience & Sustainability

- 3A Do not preclude a wetland at Chandler Park (to be delivered by others) to receive and treat stormwater from the Eastern Freeway and surrounding residential areas.



### Identity

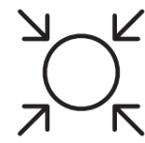
- 4A Retain the mast lights to the west of Chandler Highway as existing navigational landmarks that contribute to the aesthetic qualities and original design of this section of road.
- 4B Through the design process, consider the relocation of the existing Eastern Freeway mast lights where they cannot be retained in their current location
- 4C Maintain the existing rock escarpments. Where additional rock cutting or modifications are required, they should complement the existing rock escarpment.
- 4D Conserve the quality of existing Yarra Boulevard and Chandler Highway bridges by:
  - Avoiding the retrofitting of elements to the bridges. Should the retrofitting of elements be required, they are to be bespoke to complement the existing bridge designs
  - Not locating signage on the bridges
  - Ensuring any new structures and/or elements located near the existing bridges are designed to minimise visual impact and to respond to the design of the existing bridges.





## Identity

- 1A Retain the mast lights to the west of Chandler Highway as existing navigational landmarks that contribute to the aesthetic qualities and original design of this section of road.
- 1B Maintain prominent views to the city from Fairlea Reserve.
- 1C Retain motorist views towards rock escarpments.
- 1D Maintain the existing rock escarpments. Where additional rock cutting or modifications are required, they should complement the existing rock escarpment.
- 1E Conserve the quality of existing Yarra Bend Road and Merri Creek bridges by:
  - Avoiding the retrofitting of elements to the bridges. Should the retrofitting of elements be required, they are to be bespoke to complement the existing bridge designs
  - Not locating signage on the bridges
  - Ensuring any new structures and/or elements located near the existing bridges are designed to minimise visual impact and to respond to the design of the existing bridges.
- 1F Consider opportunities along the shared use path between the Yarra River and the Main Yarra Trail to interpret the cultural heritage values of the former Yarra Bend Asylum and Yarra Bend Park (such as signage).



## Connectivity, Wayfinding & Accessibility

- 2A Provide a new cycling connection to the north of Eastern Freeway as part of the Eastern Bicycle Corridor. This new bicycle corridor alignment should avoid removing existing trees where possible.
- 2B Upgrade the existing River Circuit Trail at Fairlea Reserve to provide a footpath for walkers separated from the new Eastern Bicycle Corridor.



## Amenity, Vibrancy & Safety

- 3A Maximise views towards borrowed landscapes from the Eastern Freeway.
- 3B Provide tree planting along Maugie Street open space reserve to filter views of the Eastern Freeway.



Eastern Freeway near Belford Road

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# Koonung Creek Valley area



## 6.1 Contextual narrative

The Koonung Creek is a small and highly modified tributary of the Yarra River. It runs through a narrow rocky upper valley down to the alluvial floodplains of the Yarra River. Koonung Creek, its culverts, the shared paths, open spaces and the natural systems all weave around the Eastern Freeway, each with their own flow, activity and connection. These interconnected networks link the community from an urban and natural perspective.

The Koonung Creek Valley design character area includes the Eastern Freeway corridor, the creek channel, parallel linear parklands, adjacent wetlands, and lower density residential interfaces. The Eastern Freeway is carved through sandstone rock and valley floor, dividing the communities to the north and south. Drivers' views along the freeway are generally enclosed and channelled along the roadway towards distant views.

Travelling in and out of exposed rock escarpments, the journey is framed by vegetated mounds, adjacent tree canopies, and interconnected architecturally designed noise walls. The 'ribbon-like' noise walls and landscape appears to undulate as the road travellers move along the freeway at speed. The sweeping walls create pockets of widened landscaping along the freeway or along its residential interfaces. The proximity of the surrounding suburban area also changes along the freeway edge. At times the freeway creeps close to the suburban interface, while at other times it is separated by varying widths of green parklands.

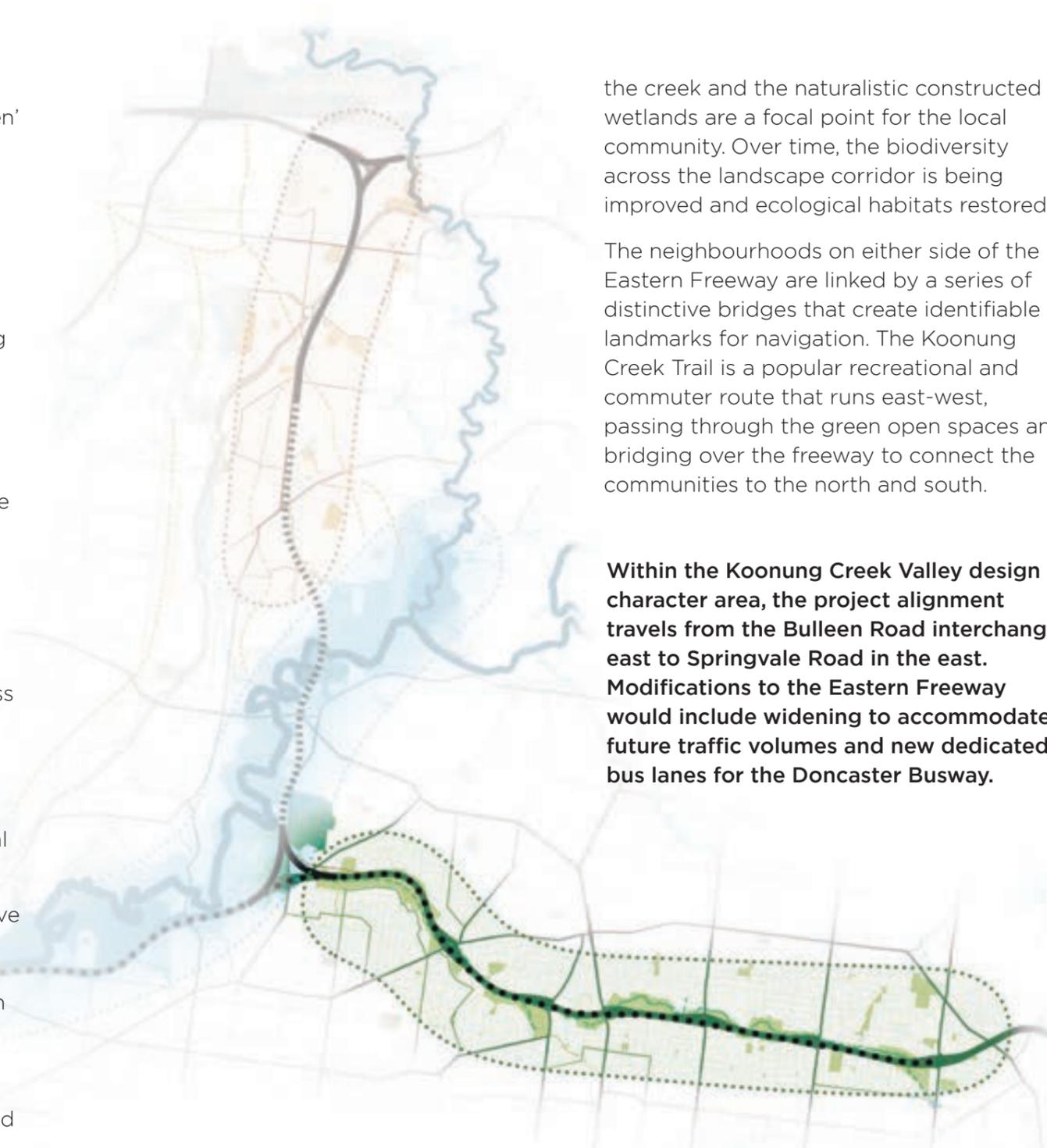
Another characteristic of the driver experience is the balance between the 'green' of the roadside planting and vegetation beyond, and the 'grey' of the roadway.

The parklands flanking the freeway form green ribbons of mature native woodland and linear open space that buffer the surrounding lower density residential suburbs from the Eastern Freeway. Housing is typically characterised by one and two-storey detached residences within established garden settings.

Views towards the freeway infrastructure from the parklands and residential areas are generally well concealed behind planting and sculpted earth walls, except for some narrower sections.

The linear green open spaces along the Eastern Freeway are highly valued by the community for recreation, socialising, fitness and to provide opportunities to reflect and connect with nature. These green spaces provide a variety of opportunities for recreation, ranging from dog walking and informal kick-around spaces to more formal organised sports.

While the waterways of Koonung Creek have been substantially altered by development, the corridor is culturally sensitive to Aboriginal people. The significant alteration of Koonung Creek for construction of the Eastern Freeway in the 1990s resulted in the creek being realigned and piped underground in some places. The daylighted (above ground and restored) sections of



the creek and the naturalistic constructed wetlands are a focal point for the local community. Over time, the biodiversity across the landscape corridor is being improved and ecological habitats restored.

The neighbourhoods on either side of the Eastern Freeway are linked by a series of distinctive bridges that create identifiable landmarks for navigation. The Koonung Creek Trail is a popular recreational and commuter route that runs east-west, passing through the green open spaces and bridging over the freeway to connect the communities to the north and south.

**Within the Koonung Creek Valley design character area, the project alignment travels from the Bulleen Road interchange east to Springvale Road in the east. Modifications to the Eastern Freeway would include widening to accommodate future traffic volumes and new dedicated bus lanes for the Doncaster Busway.**

## 6.2 Values & priorities

Minimal change is expected to the low rise residential neighbourhoods that align the Eastern Freeway in the Koonung Creek design character areas.

The Eastern Freeway design (as part of the 1994 and 1997 extensions) is an award-winning design well regarded by the community. Changes to the freeway should respect and take design inspiration from key elements from this design such as the native planting, exposed rock, architectural walls, elegant bridges, restrained colour palette and the classic use of materials that age gracefully. New interfaces should blend seamlessly with the retained elements.

The upgrades to the Eastern Freeway as part of the project would encroach into open space to widen the existing road corridor, moving transport infrastructure closer to housing and impacting the existing roadside landscape. Opportunities to connect the communities to the facilities to the north and south of the freeway must be maximised. It is a priority to provide enhanced crossings to connect people to facilities, and to maximise cycle and pedestrian access and connections across the freeway.

The project would continue to support active transport along the Koonung Creek Trail and across the Eastern Freeway by maintaining and/or improving connections.

A number of regionally significant activity centres lie further afield to the north and south, such as the Doncaster Hill, Nunawading Megamile and the Box Hill Metropolitan Activity Centre. North East Link would strengthen connectivity and accessibility to these centres to support their role as hubs for services, employment and social interaction.

The redevelopment of the Doncaster Park and Ride presents a major project opportunity for land use and transport integration, and to create a high quality public transport user experience.

The Koonung Creek open space system that runs along the freeway would continue to play an important role into the future by providing environmental features and a diverse range of sport and recreation activities for the local community. There is the opportunity to re-imagine the open spaces to the north and south of the Eastern Freeway as the 'centre' of a connected space and 'green/blue' system, rather than as the boundary or 'edge' between the municipalities. North East Link should avoid or minimise negative impacts on open space functions, and upgrades to the Eastern Freeway should create consistent, high quality and multi-functional spaces.

The project should restore and continue the progressive revegetation and improvements to the biodiversity and environmental features along the corridor. It is also important to maintain wetlands and waterways as focal points for the community and as places for reflection in a naturalistic setting.

The community that lives along the Eastern Freeway has indicated strongly that they don't want to 'see' or 'hear' traffic noise from the freeway. Their preference is to have views towards vegetation rather than road infrastructure. It is therefore a priority to re-establish landscaped buffers and plant trees to filter views and blend the interfaces into the surrounding treed neighbourhood character.



Eastern Freeway



Doncaster Park and Ride



Walking paths along the Koonung Creek open space system

### 6.3 Place-specific requirements



**KEY PLAN**

This key plan shows the Koonung Creek Valley design character area and the proposed North East Link alignment. Individual maps are used to outline place-specific requirements.

Place-specific requirements that must be met and resolved at specific locations within the Koonung Creek Valley design character area are outlined in this section. These requirements have been prepared in close collaboration with key stakeholders so the community's expectations and local level issues are considered as the design develops.

The requirements for the individual maps have been categorised under the most relevant principle, acknowledging the requirements may relate to multiple principles.

It is to be noted that cycle and pedestrian paths are shown as a functional layout and it is possible that an equivalent and acceptable level of connectivity could be achieved in an alternative manner.



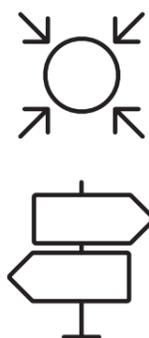
# MAP K1: BULLEEN ROAD TO DONCASTER ROAD





## Identity

- 1A Ensure the Thompsons Road intersection supports a safe pedestrian environment and caters for public transport such as for the Bulleen Park and Ride facility.



## Connectivity, Wayfinding & Accessibility

- 2A Reinststate or realign the Koonung Creek Trail where required to a suitably wide and functional standard.
- 2B Replace existing pedestrian bridge at Estelle Street with a walking and cycling bridge over the Eastern Freeway linking Estelle Street with the Koonung Creek Trail (north and south of the freeway) and Koonung Creek Reserve.

Bridges within the Koonung Creek design character area must seek to retain existing elegant qualities and should read as a family while being individually identifiable to provide landmarks for navigation.

Provide an enhanced entry and link at Estelle Street to the new walking and cycling bridge which has clear sightlines and wayfinding signage to the Koonung Creek Trail.

- 2C Where project works directly affect existing secondary paths in Koonung Creek Reserve, provide replacement walking paths in high use areas where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Koonung Creek Trail and provide additional amenity for the community.



## Urban Integration

- 3A Seamlessly transition and connect the Eastern Freeway design (within the Koonung Creek Valley design character area) with the design for the Bulleen Road interchange and to the west of Bulleen Road (within the Yarra River Valley design character area).



## Resilience & Sustainability

- 4A Support the biodiversity corridor in Koonung Creek Reserve with indigenous revegetation.



## Amenity, Vibrancy & Safety

- 5A Support Manningham City Council's planned improvements to Koonung Park which include:

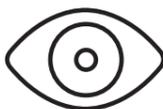
Additional planting, improving sightlines and creating a more consistent landscaping theme

*\*Consider upgrades to the playground and providing a shelter and barbecue nearby.*

*\*Consider a path link from the Koonung Creek Trail to the playground and exercise area.*



- 5B Ensure narrow areas along the Koonung Creek Trail have good lighting, open sightlines and are attractive to users.

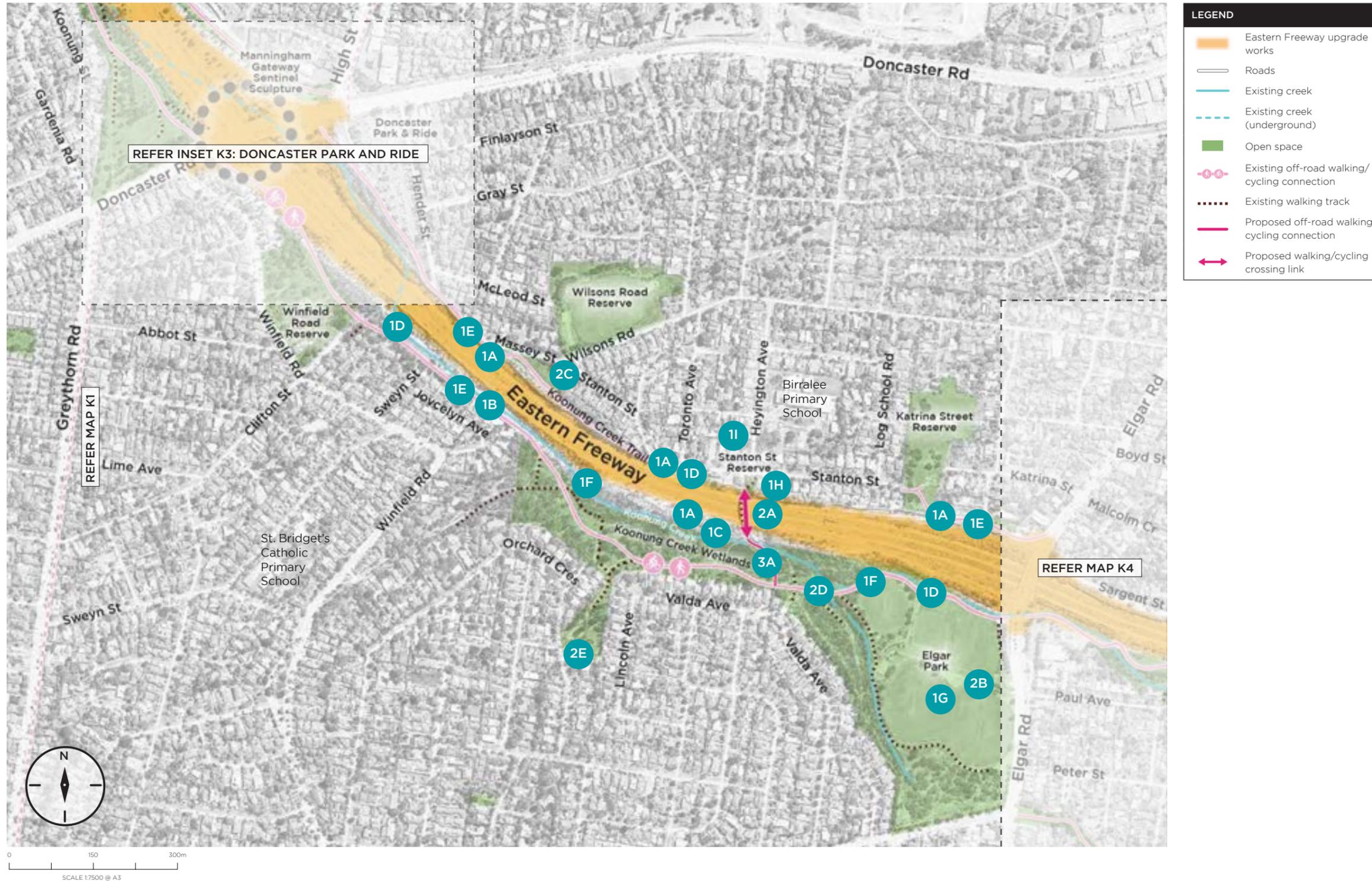


- 5C Maintain wetlands as a focal point for the community in the Koonung Creek Reserve. Retain the natural values of the wetlands. Retain and/or enhance community infrastructure (such as seating, boardwalks, interpretation, informal paths, shade) to support the enjoyment of the wetlands.

- 5D Provide canopy tree planting to improve shade provision along the Koonung Creek Trail and along connections to key destinations.
- 5E Ensure noise walls along the Eastern Freeway deter graffiti at lower levels and maximise solar access.
- 5F Reinststate buffer landscape treatments (such as vegetation and mounding) adjacent to the Eastern Freeway road reserve to filter views from parkland and residential areas towards the Eastern Freeway. Landscape planting is to complement the existing open space planting themes and local character.
- 5G Where project works directly affect Koonung Creek Reserve provide appropriate seating and additional planting to enhance amenity for the community.
- 5H Consider planting of the open space at the corner of Kampman Street and Thompsons Road.
- 5I Enhance vegetation between the Koonung Creek Trail and proposed noise walls near Balwyn Road to filter views to walls from Kalker Montessori Centre.
- 5J Noise walls adjacent to residential properties are to provide visual amenity on the road and residential interfaces.
- 5K Minimise overlooking to residential properties located north-east of the Eastern Freeway interchange.
- 5L Retain the concrete half-arch structure located along the Koonung Creek Shared Trail. Should relocation or removal be proposed, this is to be undertaken in close consultation with Council and other relevant stakeholders.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

## MAP K2: DONCASTER ROAD TO ELGAR ROAD

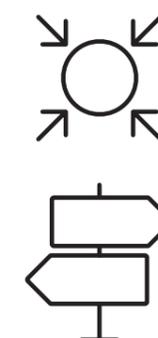




## Amenity, Vibrancy & Safety

- 1A** Ensure noise walls along north of the Eastern Freeway deter graffiti at lower levels and maximise solar access. Use buffer planting to filter views to noise walls.
- 1B** Design noise walls to the south of the Eastern Freeway to maximise solar access to residential properties and the Koonung Creek Trail, deter graffiti at lower levels and to have treatments both sides of the wall. Use landscaping to filter views to walls from surrounding dwellings.
- 1C** Retain wetlands as a focal point for the community in the Koonung Creek Reserve. Retain the natural values of the wetlands. Retain and/or enhance community infrastructure (such as seating, boardwalks, interpretation, informal paths, shade) to support the enjoyment of the wetlands.
- 1D** Reinstate buffer landscape treatments (such as vegetation and mounding) adjacent to the Eastern Freeway road reserve to filter views from parkland and residential areas towards the freeway. Landscaping and planting is to complement the existing open space planting themes and local character.
- 1E** Seek to reinstate a planted buffer between the Eastern Freeway and the Koonung Creek Trail to improve amenity for walkers and cyclists.
- 1F** Where project works directly affect the Koonung Creek Trail, consider opportunities to provide exercise equipment or fitness stations or bicycle maintenance stations at strategic locations.

- 1G** *\*Consider Whitehorse City Council's planned improvements to Elgar Park which include:*
  - *Upgrading the Koonung Creek Trail including increasing path width, path realignment to improve sightlines and wayfinding signage*
  - *Improving connectivity through Elgar Park and between the Koonung Creek Trail and Bushy Creek Trail*
  - *Providing amenity nodes and pause points along the Koonung Creek Trail including seating, drinking fountains and fitness equipment*
  - *Retaining and enhancing the bushland backdrop to Elgar Park, specifically along the northern vegetation which acts as a buffer to the Eastern Freeway*
  - *Incorporating Water Sensitive Urban Design initiatives to capture and store stormwater for use in irrigating sports fields*
  - *Improving the bushland vegetation along the Koonung Creek to improve its ecological value.*
- 1H** Retain the memorial currently located at the north entrance to the Stanton Street pedestrian bridge. Should relocation be required, this is to be undertaken in close consultation with relevant stakeholders.
- 1I** Minimise overlooking to residential properties located north of the Stanton Street pedestrian bridge.



## Connectivity, Wayfinding & Accessibility

- 2A** Replace existing bridge at Heyington Avenue with a walking and cycling bridge over the Eastern Freeway that connects between Stanton Street and Birralee Primary School to the north and the Koonung Creek Trail. Entries to bridge are to be clear, legible and are to include wayfinding to the entry points.
- 2B** Ensure any changes or upgrades to interfaces with open space (such as Elgar Park) support Whitehorse City Council's proposed Easy Ride Routes (low stress cycling routes to key local destinations and facilities).
- 2C** *\*Consider providing a high quality path connection between the Koonung Creek Trail to the Wilson Road pedestrian path (refer to Manningham City Council's Koonung Creek Linear Park Management Plan 2011).*
- 2D** Should project works directly impact existing secondary paths, provide replacement walking paths in high use areas where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Koonung Creek Trail and provide additional amenity for the community.
- 2E** *\*Consider providing low stress cycling routes to key local destinations and facilities (refer to Whitehorse City Council's proposed Easy Ride Routes).*

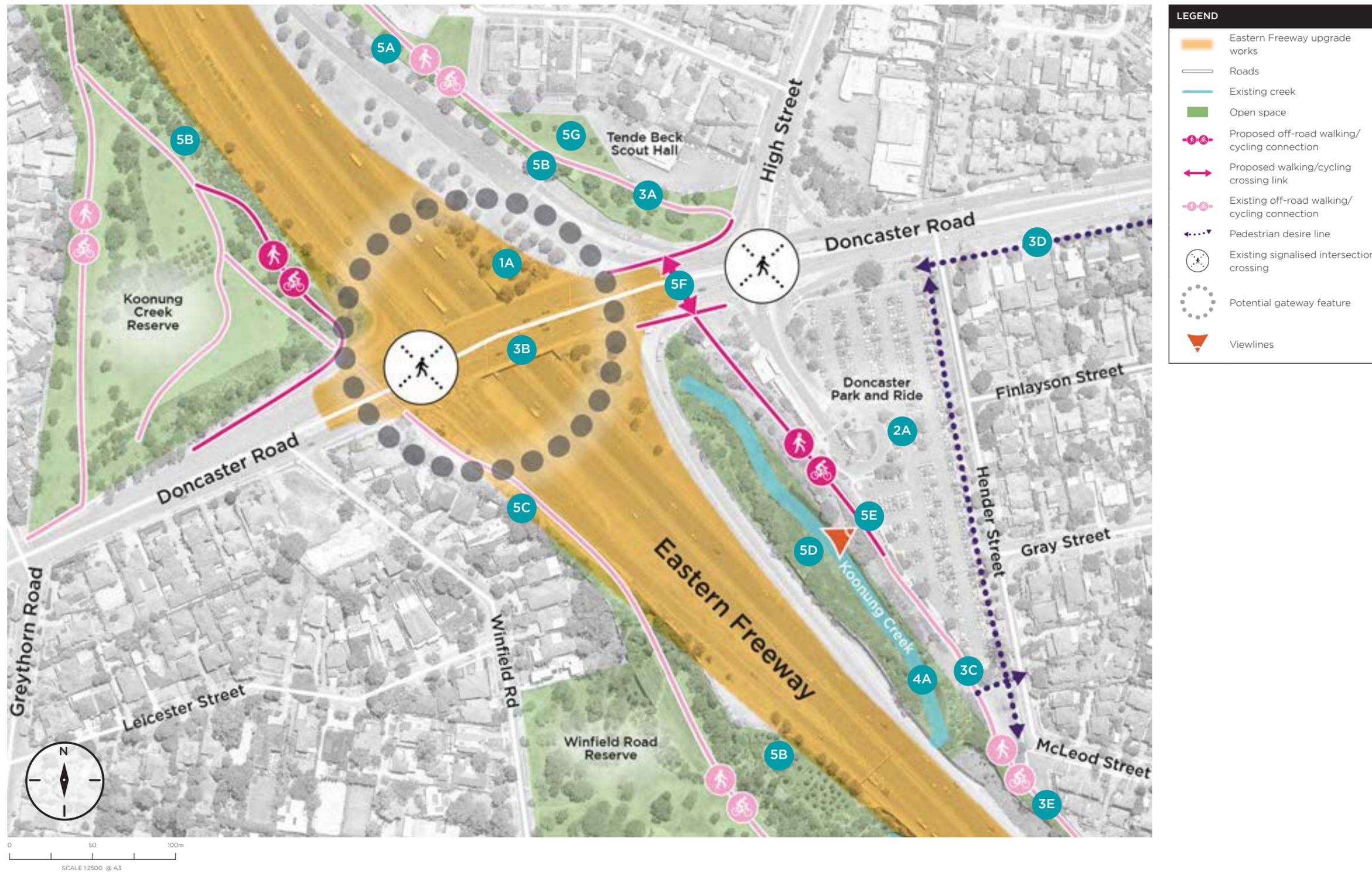


## Resilience & Sustainability

- 3A** Support the biodiversity corridor in the Koonung Creek Reserve by increasing indigenous revegetation at wetlands and throughout the reserve.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

### INSET K3: DONCASTER PARK AND RIDE





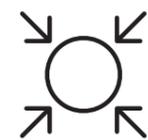
## Identity

- 1A** Create a landscape feature at Doncaster Road which integrates with the Manningham Gateway Sculpture, 'Sentinel' by Inge King. Should relocation of the sculpture be required this is to be undertaken in close consultation with relevant stakeholders.

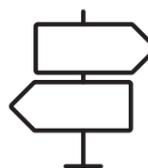


## Urban Integration

- 2A** Enhance the Doncaster Park and Ride facility that considers:
  - Increasing the number of bicycle parking spaces
  - Maintaining or increasing the number of car parking spaces
  - Improving the surrounding landscape, to enhance the gateway role of the Doncaster Park and Ride
  - Potential development opportunities fronting Doncaster Road
  - Connectivity to surrounding walking and cycling network
  - New built form providing sensitive interfaces and be at a pedestrian scale with the adjoining Koonung Creek corridor
  - Creating a landscaped feature with a walking and cycling connection and canopy trees along the western side of Hender Street to provide amenity for pedestrians and a sensitive interface to adjacent residential uses.



## Connectivity, Wayfinding & Accessibility



- 3A** Integrate new path links with the surrounding network, and consider future improvements to pedestrian connections from the Koonung Trail to Doncaster Road.
- 3B** Improve pedestrian paths and crossing points over Doncaster Road at the freeway interchange to assist pedestrian and cyclists to cross more safely and easily.
- 3C** Provide a walking and cycling connection from the Koonung Creek Trail to Hender Street.
- 3D** Maintain and enhance the local east west pedestrian connection along Doncaster Road adjacent to the Doncaster Park and Ride.
- 3E** Should project works directly impact on existing shared use paths, consider upgrades to existing paths between the Doncaster Park and Ride and Massey Street within the project boundary to improve the function and appearance.



## Resilience & Sustainability

- 4A** Retain and enhance the amenity and preserve the natural and ecological values of Koonung Creek adjacent to the west of Doncaster Park and Ride.

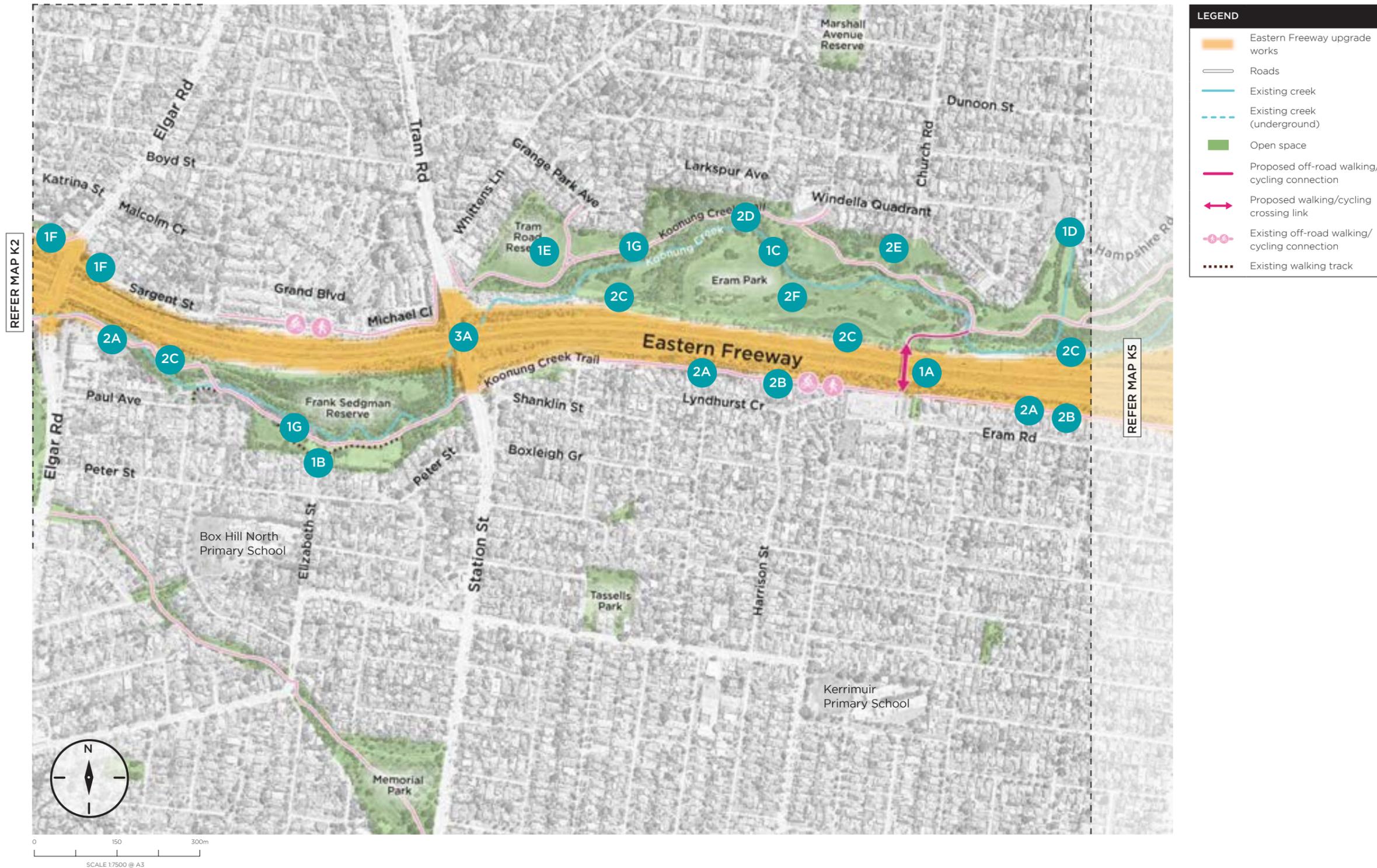


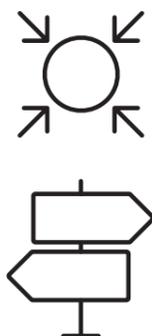
## Amenity, Vibrancy & Safety



- 5A** Ensure noise walls to the north of the Eastern Freeway deter graffiti at lower levels. Use buffer planting to screen and filter views to noise walls.
- 5B** Reinststate buffer landscape treatments (such as vegetation and mounding) adjacent to the Eastern Freeway road reserve to filter views from parkland and residential areas towards the Eastern freeway. Landscaping and planting is to complement the existing open space planting themes and local character.
- 5C** Ensure new noise walls to the south of the Eastern Freeway address visual amenity on the road and residential interfaces, and deter graffiti at lower levels while maximising light penetration to enhance solar access to residential properties and the Koonung Creek Trail.
  - Use landscaping to filter views to walls from surrounding dwellings and from the Koonung Creek Trail.
- 5D** Ensure visual permeability and solar access from the Doncaster Park and Ride to Koonung Creek to enhance visual amenity.
- 5E** Maintain viewlines across the Koonung Creek corridor from the walking and cycling path to promote passive surveillance and a comfortable journey.
- 5F** Provide a grade-separated walking and cycling crossing of Doncaster Road.
- 5G** *\*Consider improving the landscape appearance of the area in front of the Tende Beck Scout Hall (refer to Manningham City Council's Koonung Creek Linear Trail Future Works Program).*

# MAP K4: ELGAR ROAD TO MIDDLEBOROUGH ROAD





## Connectivity, Wayfinding & Accessibility

- 1A Replace and relocate existing bridge near Eram Road over Eastern Freeway with a new walking and cycling crossing that connects to the Koonung Creek Trail and surrounding path networks. Entries to the bridge are to be clear, legible and are to include wayfinding to the entry points.
- 1B Ensure any changes or upgrades to the Frank Sedgman Reserve interface support Whitehorse Council's proposed Easy Ride Routes which provide low stress cycling routes to key local destinations and facilities such as Box Hill North Primary School.
- 1C *\*Consider improving the ability for pedestrians to cross Koonung Creek to access underutilised open space within Eram Park.*
- 1D Do not preclude provision of a new path to link the Koonung Creek Trail to Colston Close and Hampshire Road play space by others (refer to Manningham City Council's Koonung Creek Linear Park Management Plan 2011).
- 1E Should project works directly impact existing secondary paths at the Koonung Creek Trail on the north side of the Eastern Freeway, provide replacement walking paths in high use areas where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Trail and provide additional amenity for the community.
- 1F Should project works directly impact on existing shared use paths, consider opportunities for upgrades to walking and cycling paths along the Koonung Creek Trail (to the east and west of Elgar Road).
- 1G Should project works directly impact existing secondary paths in Frank Sedgeman Reserve, provide replacement walking paths in high use areas where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Koonung Creek Trail and provide additional amenity for the community.



## Amenity, Vibrancy & Safety

- 2A Ensure narrow areas along the Koonung Creek Trail have good lighting, open sightlines and are attractive to users.
- 2B Maintain the existing alignment of noise walls south of the Eastern Freeway between Station Street and Middleborough Road where possible to minimise impacts along this narrower section of the Koonung Creek Trail. Ensure any new noise walls maximise solar access (particularly on the southern side) and minimise overshadowing to residential properties.
- 2C Establish and/or reinstate buffer landscape treatments (such as vegetation and mounding) adjacent to the Eastern Freeway road reserve to filter views from parkland and residential areas towards the freeway and noise walls. Landscaping and planting is to complement the existing open space planting themes and local character.
- 2D *\*Consider enhancements to the Tram Road Reserve by providing shade planting around the existing playground and planting vegetation. Consider other open space improvements in consultation with Manningham City Council.*
- 2E *\*Consider enhancements to the landscaping, plant on hillside and realign path around the north-east side of the Koonung Creek Linear Park (refer to Manningham City Council's Koonung Creek Linear Park Management Plan 2011).*
- 2F Do not preclude the opportunity for enhancements to Eram Park to support dog recreation activities (to be provided by others).

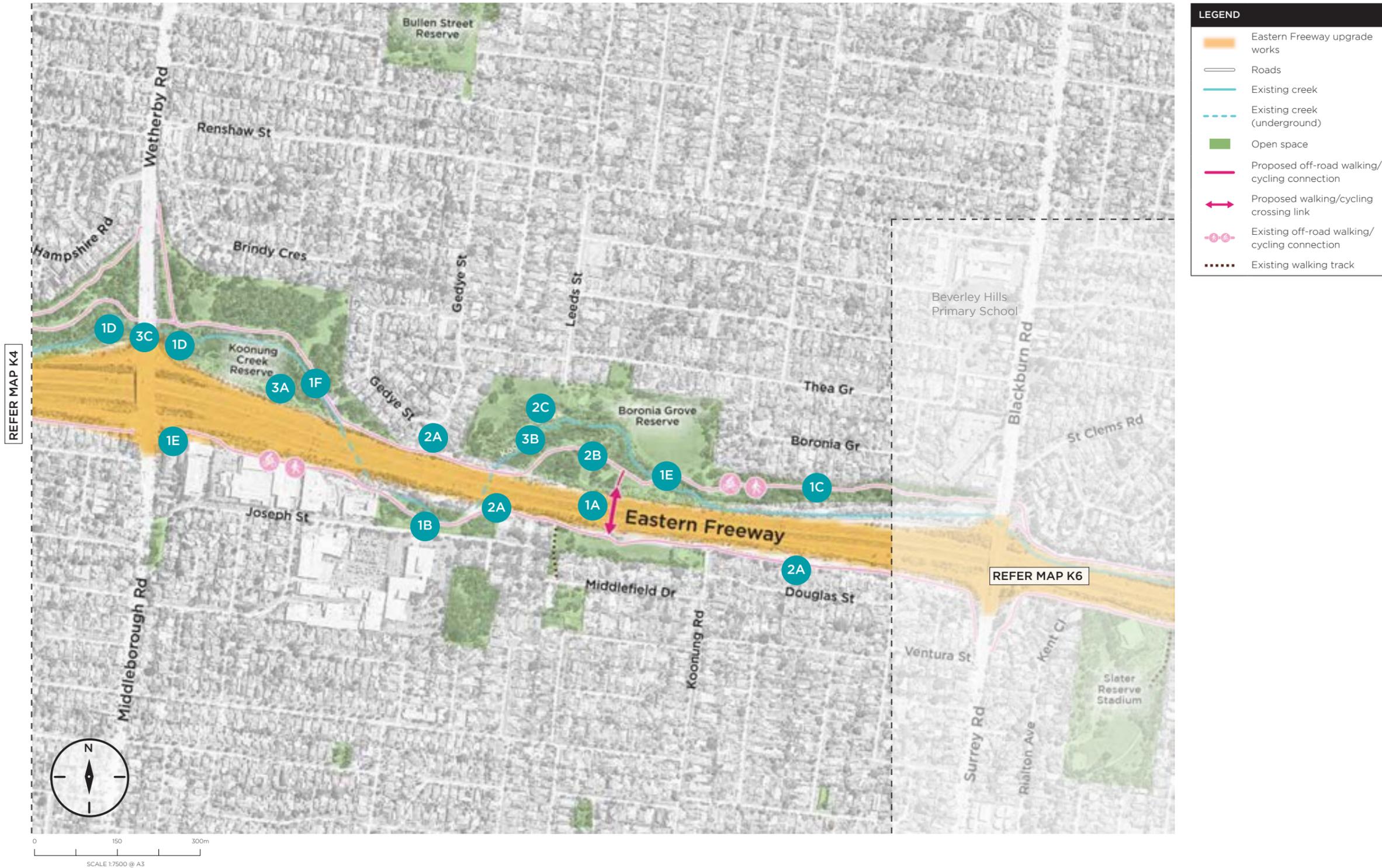


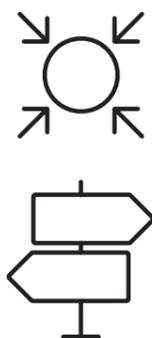
## Resilience & Sustainability

- 3A *\*Consider improving biodiversity and habitat links between Frank Sedgman Reserve and Tram Road Reserve by providing habitat infrastructure across the Eastern Freeway.*

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

# MAP K5: MIDDLEBOROUGH ROAD TO BLACKBURN ROAD



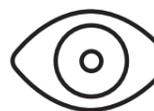


## Connectivity, Wayfinding & Accessibility

- 1A Replace existing bridge over the Eastern Freeway near Koonung Road with a new walking and cycling crossing that connects to the Koonung Creek trail and surrounding path networks. Entries to bridge are to be clear, legible and are to include wayfinding to the entry points.
- 1B *\*Consider improving access to the open space north of Joseph Street that is underutilised due to poor opportunities to cross the Koonung Creek.*
- 1C *\*Consider upgrades to the poor quality sections of paths along the Koonung Creek Trail (west of Blackburn Road around Boronia Grove) to be high quality, suitably wide and functional.*
- 1D *\*Consider formalising the unmade paths at the open spaces on either side of Wetherby Road into walking and cycling paths.*
- 1E *\*Consider improving the connectivity of the Koonung Creek Trail on the east side of Middleborough Road in Blackburn North.*
- 1F Should project works directly impact existing secondary paths in Koonung Creek Reserve, provide replacement walking paths in high use areas where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Koonung Creek Trail and provide additional amenity for the community.



## Amenity, Vibrancy & Safety



- 2A Ensure narrow areas along the Koonung Creek Trail have good lighting, open sightlines and are attractive to users.
- 2B Where project works directly affect the Koonung Creek Trail, consider opportunities to provide exercise equipment or fitness stations or bicycle maintenance stations at strategic locations.
- 2C Do not preclude enhancements to Boronia Grove Reserve by others (refer to Manningham City Council's Koonung Creek Linear Trail Future Works Program 2011).



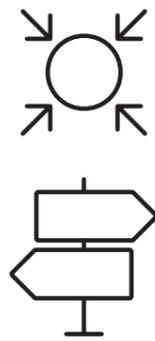
## Resilience & Sustainability

- 3A Maintain and consider enhancements to the wetlands in Koonung Creek Reserve northeast of the Wetherby Road interchange.
- 3B Maintain and consider enhancements to the wetlands in Boronia Grove Reserve
- 3C Consider improving biodiversity and habitat links under Wetherby Road bridge at Koonung Creek Reserve by providing additional habitat where appropriate, subject to approval of the land owner/manager and relevant authorities.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

# MAP K6: BLACKBURN ROAD TO SPRINGVALE ROAD





## Connectivity, Wayfinding & Accessibility

- 1A** Replace existing bridge over the Eastern Freeway and Koonung Creek near Kett Street with new walking and cycling crossings that connects to the Koonung Creek Trail and surrounding path networks. Entries to bridge are to be clear, legible and are to include wayfinding to the entry points.
- 1B** *\*Consider upgrading unsealed path north of Koonung Creek Trail, and the path connecting into the residential area through to Aranga Reserve with a suitably wide and functional pathway.*
- 1C** Should project works directly impact existing secondary paths, provide replacement walking paths in high use areas where safe and practicable to reduce the potential for conflict between walkers and cyclists along the Koonung Creek Trail and provide additional amenity for the community.
- 1D** Where project works directly affect the Koonung Creek Trail, upgrade the connection from the Trail (to the north of Kett Street) to the walking and cycling bridge over the Eastern Freeway.



## Amenity, Vibrancy & Safety

- 2A** Establish and/or reinstate buffer landscape treatments (such as vegetation and mounding) adjacent to the Eastern Freeway Linear Reserve to screen and filter views towards the Eastern Freeway and any associated walls and infrastructure.

*\*Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*



Koonung Creek

# Detailed requirements & benchmarks

This section outlines element-based detailed requirements and qualitative benchmarks that apply to the whole project to ensure a consistent and high quality corridor-wide approach.

The **detailed requirements** provide performance requirements for the project elements. They communicate the outcomes required to achieve the urban design principles and objectives, and provide the basis for which proposals will be informed, evaluated and delivered.

The **qualitative benchmarks** provide a series of images that illustrate the minimum standard of design quality expected for project elements, drawn from relevant precedent projects. The qualitative benchmarks provide a reference to illustrate the level of quality required in meeting the measures. They are not intended as benchmarks in terms of whole-of-project solutions, but to demonstrate the required quality in terms of conceptual and detailed design integration, innovation and detailed resolution, as annotated on each image.

The detailed requirements and qualitative benchmarks together identify and illustrate the level of quality expected, and requirements against which proposals will be evaluated. A successful design must adequately meet the relevant detailed requirements to achieve a high quality outcome for the project, as well as mitigate and manage negative impacts on the community during the construction of North East Link.



## 7.1 Element-based requirements & qualitative benchmarks



### 1. Multi-span bridges



**FIGURE 1** Demonstrates: well considered pier forms integrated with super structure, providing clear visual permeability across the ground plane. South Road Superway, Adelaide. Design: Wood Marsh, Image: GHD



**FIGURE 2** Demonstrates: well considered multi span steel trough bridge with articulated piers and integral crosshead. M80 Ring Road, Melbourne. Design: Peter Elliott and VicRoads, Photography: John Gollings



**FIGURE 3** Demonstrates: continuous / smooth bridge underside and elegant soffit line. Western Ring Road, Melbourne. Image: VicRoads

#### 1.1 Viaduct design

Viaducts (continuous multi-span bridges) and ramps are well designed and well proportioned to complement the surrounding area and appropriately address sensitive interfaces.

Viaduct profile and design employ a high quality aesthetic when viewed from and to the structure, and are designed to minimise visual bulk.

Abrupt changes of size and depth of structures is avoided and transitions are smooth.

Structural solutions are durable and avoid the need for cladding.

#### 1.2 Integration

New elements such as elevated roads and ramps are integrated well with connected structures and/or other built elements, the surrounding land form, local context and road network.

Any widening of existing structures are carefully integrated with existing structures to create a cohesive design. Widened structures shall match with existing in size, shape and structural form.

Where bridges are duplicated, new soffit lines do not protrude below existing soffit lines and match existing profile.

Superstructure, piers, beams, barriers, railings, associated furniture, deck, abutment and feature lighting are carefully integrated together to provide a high quality and durable design solution for all users above and below the structure.

Opportunities are maximised to structurally integrate pier cross heads into the bridge and viaduct superstructure.



**FIGURE 4** Demonstrates: Continuous / smooth bridge underside and soffit line. Western Freeway, Warrenheip. Image: VicRoads



**FIGURE 5** Demonstrates: a continuous and streamlined pier and box girder bridge structure design. Image: VicRoads

#### 1.3 Minimising impacts

Elevated roads and structures are designed with minimal visual bulk. The design of these structures is to minimise overshadowing of residential properties, impacts on the use of nearby areas (including through generation of noise and disruption of access), and visual impacts from sensitive viewpoints.

The visual impact of the elevated roads and structures on road users is also minimised.

#### 1.4 Visual clutter

Visual clutter is avoided and the number of piers are minimised.

Piers and towers are located to avoid the need for additional structures (such as protection barriers). Where pier protection barriers are unavoidable, reduce the scale and carefully integrate with the bridge design.

Elements such as the edge of the deck, drainage pipes, services and ducts are concealed from view.

#### 1.5 Passive surveillance

Where there is access below structures, passive surveillance is maximised to deter undesirable behaviour.

Materials, textures and finishes are used to deter graffiti.

Solar access is maximised to spaces beneath the structure.



## 2. Road bridges



**FIGURE 6** Demonstrates: an elegant structural solution that is timeless in design. Eastern Freeway, Melbourne. Image: GHD



**FIGURE 7** Demonstrates: a solution to abutment design that assists in creating a family of bridges. Peninsula Link Melbourne. Design: ARM Architecture, Image: Southern Way

### 2.1 Bridge design

All new bridges continue the form of the existing Eastern Freeway bridges. New road bridges and modifications to existing bridges are well designed, complement the surrounding area and appropriately address sensitive interfaces.

Bridges are designed to a high quality standard, to minimise visual bulk, and to be visually pleasing when viewed from and to the structure.

The overall structure and the various parts of the bridge structure, are geometrically proportioned and have a harmonious relationship.

Structural solutions are durable and avoid the need for cladding.

New piers match existing pier shape, angle and proportion in both directions.

Base of bridge beams match the existing beams in profile.

### 2.2 Identity

Sets of bridges within a corridor visually complement one another. There is a clear relationship between bridges, with a consistency of bridge elements demonstrated along the length of the project.

### 2.3 Integration

New bridges and modifications to existing bridges are well integrated with any connected structures or other built elements, the surrounding land form, local context and road network.

Superstructure, piers, beams, barriers, railings, associated furniture, deck, abutment and feature lighting are carefully integrated together to provide a high quality design solution for all users above and below the structure.

Opportunities are maximised to structurally integrate pier cross heads into the bridge superstructure.

### 2.4 Views

Scenic views and vistas seen from bridges are maximised for road users and pedestrians.



**FIGURE 8** Demonstrates: a sleek and elegant road bridge design. Eastern Freeway, Melbourne. Image: VicRoads



**FIGURE 9** Demonstrates: a well designed substructure, integrated pier / details and appropriate integration of safety barriers. Western Ring Road, Hume. Image: VicRoads



**FIGURE 10** Demonstrates: an elegant road over cut. Remembrance Drive, Ballarat. Client/Owner: VicRoads, Design Team: OCULUS, Paul Thompson; Michael Taffe, John Holland Group, Photography: John Gollings

### 2.5 Minimising impacts

Road bridges are designed to minimal height and width to reduce landscape and visual impacts and overshadowing of residential properties and other sensitive land uses.

The visual impact of the bridge structure on road users is minimised.

### 2.6 Visual clutter

Visual clutter is avoided and the number of piers are minimised.

Piers and towers are located to avoid the need for additional structures (such as protection barriers). Where pier protection barriers are unavoidable, reduce the scale and carefully integrate with the bridge design.

Elements such as the edge of the deck, drainage pipes, services and ducts are concealed from view.

### 2.7 Passive surveillance

Where there is public access below structures, passive surveillance is maximised to deter undesirable behaviour.

Materials, textures and finishes are used effectively to deter graffiti.

Solar access is maximised to spaces beneath the structure.

### 2.8 Retrofitting

New built elements (e.g. throw screens, traffic barriers around piers, structures, fencing, walls etc.) on existing road bridges are bespoke, innovative and designed to complement the original form and aesthetic qualities.

### 2.9 Signage on bridges

Advertising and road signage are not located on bridges.

Intelligent Transport System (ITS) signage on bridges is avoided or well integrated into the bridge design.



### 3. Land bridges



**FIGURE 11** Demonstrates: a landscape design that provides an enhanced user experience. High Line, New York.  
Design: James Corner Field Operations (Project Lead), Diller Scofidio + Renfro, and Piet Oudolf, Image: GHD



**FIGURE 12** Demonstrates: unique and well envisaged public open space above a highway. Freeway Park, Seattle.  
Design: Lawrence Halprin and Angela Danadjieva, Photography: Matt Hagen

#### 3.1 Community connections

Land bridges (land supported by bridge structures that cross over a road in trench) maintain and/or enhance connections for pedestrians and cyclists across the road corridor.

#### 3.2 Green links

Land bridges act as 'green bridges' to connect adjacent open space and vegetation visually and physically. They enhance and extend biodiversity and habitat links across the project.

#### 3.3 Soil depth

Land bridges have sufficient depth of soil and a suitable soil profile to support healthy long-term growth of trees and shrubs.

#### 3.4 Land bridge design

Land bridges are unique and visually appealing design elements for both the roadway and adjacent communities.

Land bridges extend surrounding public space and movement patterns and enhance the open space function. Design response should include innovative and integrated solutions.

Careful consideration is given to the driver experience including the use of lighting, quality surface materials that age gracefully, and the minimising of the need for structural elements (such as piers) that clutter views.

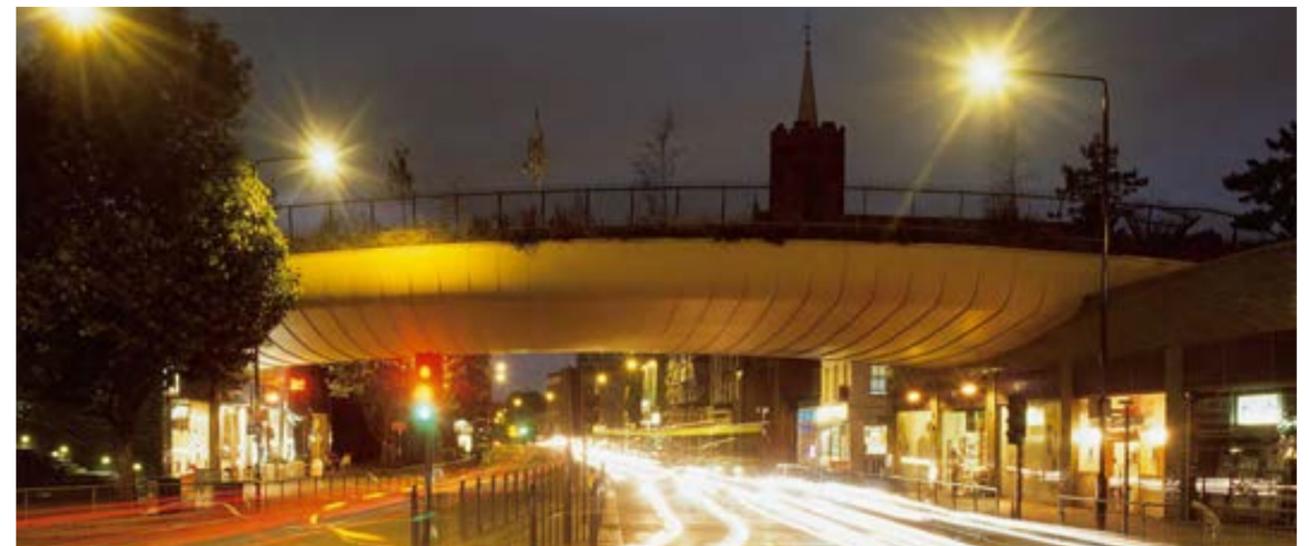
#### 3.5 Visual considerations

Barriers on and adjoining land bridges are well integrated, provide good visual connectivity, maximise passive surveillance, and minimise visual obstructions to views and landmarks for the surrounding community.

Central piers and visual driver clutter is avoided for land bridges over cutting.



**FIGURE 13** Demonstrates: extension and connection of open space via a landbridge. The Green Bridge, London.  
Design: CZWG Architects LLP, Photography: © Philip Lane Photography



**FIGURE 14** Demonstrates: design of bridge underside provides street level amenity. The Green Bridge, London.  
Design: CZWG Architects LLP, Photography: © Barbara Piemonte



## 4. Open cuttings



**FIGURE 15** Demonstrates: irrigated greenery that softens visual impact of the road. Domain tunnel entrance, Citylink, Melbourne. Image: VicRoads



**FIGURE 16** Demonstrates: use of existing natural stone in cutting as a design feature. EastLink Freeway, Melbourne. Design: Wood Marsh and Tract Consultants, Image: EastLink

### 4.1 Connectivity

The design of open cuttings is part of a holistic urban design response to improve permeability, legibility and accessibility along and across the corridor, and severance impacts on communities are avoided.

The quality and number of path crossings over the project corridor are maintained to better connect communities, provide access to local facilities and link movement networks.

### 4.2 Cutting design

High quality finishes, materials and hard and soft landscapes are used in cuttings.

Cuttings are designed to mitigate adverse amenity impacts for adjacent residents and the local community, and to provide spaces that are considered and well resolved as part of the overall design solution.

### 4.3 Landscaping

Landscape design and plant species selection within open cut areas are appropriate to local conditions, micro-climate, urban design concepts and local character.

### 4.4 Visual considerations

Barriers on or adjacent to land bridges provide good visual connectivity, maximise passive surveillance, and minimise visual obstructions to views and landmarks for the surrounding community.



## 5. Ventilation structures, portals & tunnels



**FIGURE 17** Demonstrates: curve-walled tunnel approach with dynamic visual experience. Veduggio-Cassarate Tunnel Development, Switzerland. Design: Cino Zucchi Architetti



**FIGURE 18** Demonstrates: well integrated tunnel approach which minimises impacts to surroundings. CityLink Western Tunnel portal, Melbourne. Image: VicRoads



**FIGURE 19** Demonstrates: integration of structures and walls Melba Tunnel EastLink, Melbourne. Design: Wood Marsh and Tract Consultants

### 5.1 Tunnel approach, dive structures and portal design

Tunnel approach, dive structures and portals make a positive contribution to the identity of the local area and user experience through high quality design.

The design is well coordinated, neat, attractive and inviting for motorists.

The portal design is context sensitive, avoids unnecessary clutter, minimises opportunities for vandalism and does not detract from the remaining tunnel system and components.

The portals transition smoothly to create a relaxed and safe feeling for motorists.

Signage is well integrated to ensure the tunnel approach and entrance is uncluttered.

The transition into the tunnel is welcoming, maximises road safety and provides a positive and memorable experience for the driver.

The tunnel entrance is of generous proportions to promote driver comfort.

### 5.2 Context sensitive

The tunnel and associated structures are well integrated into the local built context to minimise impacts on surrounding land uses, open spaces and connectivity.

The tunnel is integrated with the character of the local area, land form and landscape.

Opportunities to add value to the community are maximised such as green infrastructure, improved connectivity, interpretation of indigenous and historical cultural values etc.



**FIGURE 20** Demonstrates: creative response and landmark feature that celebrates local context. Mullum Mullum Tunnel, EastLink, Melbourne. Design: Wood Marsh and Tract Consultants, Image: VicRoads

### 5.3 Landscape and visual considerations

The tunnel approach, dive structures, portals, ventilation structures and other associated buildings are designed to minimise negative landscape and visual impact on the surrounding community.

The surrounding landscape design responds to the structure's scale, and siting is sensitive to the surrounding environs with particular attention to bulk and scale. Associated elements such as flood walls are integrated into the structure (e.g. use of land form).

The position, form and overall appearance of the tunnel and associated structure are consistent with the characteristics and qualities of the local area.

### 5.4 Ventilation structure design

Large-scale elements such as ventilation structures and associated buildings are sensitively sited and designed, and well integrated to minimise negative impact on the surrounding area and adjacent communities.

Ventilation structures and buildings are to be high quality architectural and landscape design elements that are positive elements in the landscape when seen from outside the road corridor.

The architectural form, texture, colour and lighting of the ventilation structures and associated buildings are context sensitive and provide a positive contribution to the local environment.

Visual bulk and size is minimised through landform and vegetation and innovative design.



## 6. Project buildings & ancillary structures



**FIGURE 21** Demonstrates: integrated ventilation structure and tunnel approach. Waterview Tunnel, Auckland. Design: Warren and Mahoney, Image: NZ Transport Agency



**FIGURE 22** Demonstrates: Appropriate use of tunnel lining to improve user comfort, alter the tunnel profile and conceal mechanical services. EastLink, Melbourne. Design: Wood Marsh, Image: EastLink



**FIGURE 23** Demonstrates: Feature lighting used at strategic locations in tunnel to provide driver visual stimulation. EastLink, Melbourne. Design: Wood Marsh, Image: EastLink

### 5.5 Internal tunnel design

The internal design and profile of the tunnel provides a positive experience for the driver and appropriately addresses transitional and ambient lighting.

High quality and robust surface materials are used to enhance the driving experience, age gracefully, withstand harsh tunnel conditions and are easy to maintain.

Design features are provided in the tunnel to promote high quality driver experience that is appropriately designed for the speed at which they are viewed.

### 5.6 Safe and comfortable tunnel experience

The tunnel interior is designed to maximise driver safety and comfort, minimise feelings of claustrophobia and provide an appropriate level of visual stimulation at strategic points to influence driver alertness without being distracting.

### 5.7 Below ground orientation

The tunnel interior enhances cognitive mapping, minimises disorientation associated with long tunnels and winding ramps and enables awareness of location.

Opportunities are maximised to create landmarks or artistic elements within the tunnel that reflect the above-ground characteristics, assist with driver orientation and add interest to the journey.

The perceptual experience of the tunnel is shortened with points of visual interest along the journey.



**FIGURE 24** Demonstrates: green roof which integrates building with surrounding landscape. Victorian Desalination Plant, Victoria. Design: ASPECT Studios, Photography: Peter Bennetts



**FIGURE 25** Demonstrates: well designed building facade that complements the rail yard environment. Yardmasters building at Southern Cross Station, Melbourne. Design: McBride Charles Ryan Architects, Photography: John Gollings



**FIGURE 26** Demonstrates: design of operations building integrated with the design of freeway built elements. EastLink Operations Centre, Melbourne. Design: Wood Marsh, Image: EastLink

### 6.1 Siting

New above-ground service and utility infrastructure are located to avoid or minimise impacts to existing to adjoining properties, and to reduce the need to remove vegetation.

The number and size of utility buildings and structures within public open space are minimised.

Above-ground utility buildings and structures are co-located with nearby existing structures and adjacent to vegetation to better integrate with the surrounding area.

They are located to maintain the amenity and function of the places they occupy, and minimise visual impacts on significant buildings, monuments, trees, open spaces and landscape vistas.

### 6.2 Integrated and coordinated

Project buildings, technical shelters, compounds and structures integrate sensitively with their surrounds, and complement and coordinate with existing nearby structures and fencing where appropriate.

The obtrusive appearance of utility buildings and structures from the public realm (public realm refers to all public open space along with other publicly-owned land between buildings including streets) is minimised through the use of appropriate landscaping screening (e.g. planting and land form), architectural façades, and/or security fencing that also function as a visual screen.



## 7. Public open space



**FIGURE 27** Demonstrates: community recreation below structure. Citylink Burnley Bouldering Wall, Melbourne. *Image: VicRoads*



**FIGURE 28** Demonstrates: integration of infrastructure with adjacent land uses. Caulfield to Dandenong Level Crossing Removal Project, Melbourne. *Design: ASPECT Studios, Photography: Peter Bennetts*



**FIGURE 29** Demonstrates: integration of public uses below structure. Caulfield to Dandenong Level Crossing Removal Project, Melbourne. *Design: ASPECT Studios, Photography: Peter Bennetts*

### 7.1 Integration with surroundings

The design maximises continuity of public realm, extends surrounding public open space (land primarily used for recreation, nature conservation and passive outdoor enjoyment) and movement patterns, and mitigates any severing of communities and places.

Access to public open space within and at the interface of the project is enhanced. Opportunities to create additional functional and high quality open space within the project corridor are maximised.

The open space function of the open spaces within and along the project corridor is maintained.

Encroachment and impacts on adjacent open space by freeway infrastructure and roadside landscaping (planting within the road reserve) is minimised.

### 7.2 Open space infrastructure

Opportunities to upgrade the existing open spaces along the project corridor are maximised to create consistent, high quality, multifunctional and efficient spaces. This includes public open space infrastructure to enhance the function and enjoyment of the open space, such as seating, natural shade, drinking fountains, dog drinking bowls, emergency markers, bicycle leaning rails/hoops and rest areas.

Public open spaces are consistent with local council or Parks Victoria furniture, material palettes and standards, and playground guidelines.

Park and recreation facilities are clustered within open spaces to encourage people to gather together and to have positive social interactions.



**FIGURE 30** Demonstrates: well utilised public open space beneath pedestrian bridge at university campus. Burwood Link Bridge, Melbourne. *Design: Watson Architecture and GHD, Image: GHD*



**FIGURE 31** Demonstrates: high quality public open space with meeting places. San Donà di Piave, Italy. *Design: Cino Zucchi Architetti*

### 7.3 Positive use of space

The design promotes and enables the positive use of public open space through design, with the resulting spaces being useful, attractive, activated, safe and sustainable. This includes incidental spaces such as those under ramps and viaducts, as well as pocket parks alongside the roadway.

Places are well designed to cater for a diversity of uses that promote opportunities for positive social interactions and incidental physical activity.

### 7.4 Pedestrian realm

Public open spaces are inclusive, pleasant and welcoming.

Seating, shade, shelter, 'pause points' and lighting are provided, as appropriate, and at regular intervals in open spaces at transport stops, on key pathways, and in community spaces associated with the project.

Natural daylight is maximised into public spaces below and adjacent structures.

### 7.5 Safety

New spaces created around the project feel safe, comfortable and welcoming to users during both day time and night time, maximising passive surveillance, clear sight lines and appropriate lighting.



## 8. Local streets, schools & neighbourhoods



**FIGURE 32** Demonstrates: boulevard of trees contributing to streetscape amenity. Mature vegetation on local street, Watsonia. Image: GHD

### 8.1 Pedestrian friendly local streets

Pedestrian-friendly areas and the '20 minute neighbourhood' concept is supported, with streetscapes that are comfortable, safe, inclusive, pleasant and welcoming to the local community.

### 8.2 Boulevards and streetscapes

Landscape design of local roads and streets as part of the project contributes positively to the function and character of the area. This includes the introduction of street tree planting, additional greening, pedestrian and cycling infrastructure.

The design of local streets is consistent with local authority requirements.

Boulevards of canopy trees are prioritised,

especially adjacent to shared and pedestrian paths.

Seating, shade, shelter and lighting are provided, as appropriate, and at regular intervals, transport stops, on key pathways and in community places associated with the project.

### 8.3 Transition

Built elements and landscape are designed to sensitively transition from a highway environment to local streets and neighbourhoods.

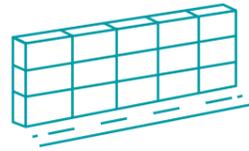


**FIGURE 33** Demonstrates: tree planting in a road median to improve appearance and provide cooling. Mason Street, Altona. Image: GHD

### 8.4 School interfaces

Liaise with schools that interface the project to identify appropriate interface treatments. The design of road infrastructure around schools carefully considers local identity, sense of arrival, legibility of access points and operational requirements.

The landscape design response filters and screens any views of road infrastructure from school grounds where appropriate.



## 9. Walls, fencing, barriers & screens



**FIGURE 34** Demonstrates: buffer planting used to mitigate views and enhance appearance of walls. Eastern Freeway, Melbourne. *Design: Wood Marsh, Image: NELP*



**FIGURE 35** Demonstrates: high quality road interface scaled for pedestrians. Todd Road, Melbourne. *Design: Tract Consultants, Image: VicRoads*



**FIGURE 36** Demonstrates: noise mitigation responds to the local context. Goulburn Valley Highway, Victoria. *Design: VicRoads*

### 9.1 Noise and visual mitigation

Noise attenuation elements are high quality and context sensitive.

Innovative methods of noise mitigation are maximised to reflect/refract and/or absorb noise.

Landscaping and landscaped embankments enhance and soften the appearance of walls and barriers, reduce height and bulk, and better integrate the structures into the surrounding area.

### 9.2 Integrated and coordinated

Noise walls, flood walls, fences, screens and traffic barriers are coordinated and integrated to minimise visual and physical clutter. These elements integrate with existing or proposed elements to reduce the need for additional structures and transition seamlessly into the existing elements.

Opportunities to incorporate new built form as noise mitigation are maximised to replace the need for noise walls.

Transitions in wall and fencing heights are well considered and seamless.

Materials and colour palettes are coordinated, and finishes are high quality.

### 9.3 Local context and scale

Walls, fencing and screens are designed in response to the surrounding areas, with careful consideration to form, texture and colour on both sides of the walls.

Use of colour is appropriate to location, and minimises the impact on residential and sensitive uses, including negative impacts from coloured light from transparent materials.

Both faces are designed to the same standard of quality, with a front and a front, rather than a front and a back.

Walls are appropriately designed to address the speed at which they are viewed. Design on public and residential interfaces reflects a pedestrian scale, whereas the roadside interface reflects the scale of a high-speed vehicle environment.

Walls and other structures are sensitively sited and proportionate to the surrounding structures, landscape and urban elements.



**FIGURE 37** Demonstrates: semi-enclosed transparent noise wall to reduce visual bulk and allow light into the adjacent creek. Eastern Freeway, Melbourne. *Design: Wood Marsh*



**FIGURE 38** Demonstrates: transition of noise wall types (on and off structure noise walls with continuous protection barrier). Deer Park Bypass, Melbourne. *Design: Peter Elliott, Image: VicRoads, Photography: John Gollings*



**FIGURE 39** Demonstrates: dynamic and sculptural screening near tunnel entrance. Veduggio-Cassarate Tunnel Development, Switzerland. *Design: Cino Zucchi Architetti*

### 9.4 Interfaces

The creation of unsafe narrow areas between noise walls and residential properties are avoided and minimised. Innovative solutions are included to ensure any narrow spaces are pleasant and safe.

Walls respond to the adjacent land uses and boundaries and maximise opportunities for dual use.

### 9.5 Transitions

Transitions in types and materials of walls, barriers and fencing appropriately address adjacent sensitive land use, property boundaries and vegetation.

Changes in wall heights and materials types in walls, barriers and fencing are well considered.

### 9.6 Visual connectivity and solar access

Transparent barriers are used to take advantage of scenic and adjacent views of surrounding landscape, and reduce the bulky appearance of structures.

Walls and barriers are designed (for example sited or angled) to avoid or minimise overshadowing of properties, waterways and open space. Transparent barriers are used to optimise solar access, and to maximise visual connectivity across corridor to connect communities.

Walls and barriers are responsive to the local environment and allow sunlight to waterways and ecological areas.

### 9.7 Anti-throw screens, public safety barriers (PSB) and privacy screens

Anti-throw screens, public safety barriers and privacy screens are well integrated with bridge and road structures and utilise high quality architectural materials while maintaining a high quality aesthetic form. The scale and visual bulk of throw screens are minimised.

Screens are designed to avoid the perception of entrapment that may become a barrier to



**FIGURE 40** Demonstrates: privacy screens on bridge used to minimise overlooking to residential areas. Hawkstowe Station, Melbourne. *Design: Grimshaw, Image: GHD*



**FIGURE 41** Demonstrates: Visually permeable safety barriers comprised of high quality architectural materials. Westgate Bridge, Melbourne. *Design: Peter Elliott*



**FIGURE 42** Demonstrates: architecturally designed, tasteful noise walls which enrich the journey with an experiential quality. Eastern Freeway, Melbourne. *Design: Wood Marsh*

use. Anti-throw screens have good visual permeability when viewed from adjacent areas, to maximise passive surveillance.

### 9.8 Flood walls and retaining walls

Walls are carefully integrated with the landform. Opportunities to use earth embankments and screen planting to mitigate the visual height and bulk of walls are maximised.

Walls are integrated with traffic barriers, fencing, throw screens and other structures to reduce visual clutter.

Walls have a consistent form, design and material palette.

Wall design appropriately reflects the surrounding landscape, urban form and the local context.

Walls at the entrance to tunnels and along the road corridor use a consistent design and materials, are integrated with the landscape and have appropriate maintenance access.

### 9.9 Deterring graffiti

High quality materials and textured surfaces are used on walls, fencing and screening to deter graffiti, particularly at lower levels of the noise wall.

Other opportunities for innovative solutions to deter graffiti are maximised.

### 9.10 Maintenance

Walls are designed to minimise maintenance burden through the selection of high quality materials that are durable, not subject to environmental damage and can be accessed to maintain their high quality.



**FIGURE 43** Demonstrates: well considered architectural walls add to the pedestrian experience along the path. *Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman*



## 10. Bus park & ride, & bus lanes



**FIGURE 44** Demonstrates: a station designed for passenger comfort. Perth Busport. *Design: GHD Woodhead, Photography: Douglas Black Photography*



**FIGURE 45** Demonstrates: High quality weather protection design. The Pforzheim Central Bus Station, Pforzheim, Germany. *Design: Metaraum Architects, Photography: Zooley Braun*



**FIGURE 46** Demonstrates: simple, context sensitive bus station design. Blackburn Station bus bays, Melbourne. *Design: Hassell, Image: GHD*

### 10.1 Bus interchanges

Bus interchanges provide a high quality experience for commuters that enhances their journey, provides intermodal connections and increases neighbourhood connectivity.

Interchanges have demonstrated capacity to support or facilitate future service changes.

### 10.2 Bus station design

The design of the interchange optimises their dual role as service points for public transport infrastructure and as public landmarks. Architecture of the bus interchange is high quality and provides a positive built-form contribution to the local area. The public realm promotes pedestrian activity, creates vibrant spaces, uplifts connectivity, and integrates the interchange precinct into the surrounding area.

Complementary land use and activation opportunities such as commercial, retail and public facilities are maximised. Car parking areas are safe and positive places.

Weather protection must be provided such as shelters and passenger lounges. Break rooms and toilets for drivers are conveniently located to minimise disruption to services.

### 10.3 Innovation

Innovative design solutions that add value to project should be incorporated into the design. These are solutions that are not commonly used in the Victoria and are beyond business-as-usual approaches. These solutions include locating of ticketing devices on platforms, creating more attractive 'airport' style waiting spaces, integrating retail and public amenities into station building, initiatives that support intermodal interchange such as shower and change room facilities, integrating future-thinking technologies, and built form sustainability initiatives that contribute to beyond business-as-usual sustainability outcomes.



**FIGURE 47** Demonstrates: Inner Northern Busway, Brisbane. *Photography: Christopher Frederick Jones*



**FIGURE 48** Demonstrates: weather protected waiting areas with clear sightlines. Eastern Busway, Brisbane. *Design: Cottee Parker, Photography: Christopher Frederick Jones*



**FIGURE 49** Demonstrates: weather protected bus terminal for passenger comfort. Eastern Busway, Brisbane. *Photography: Christopher Frederick Jones*

### 10.4 Transport and active travel connections

Interchanges provide the ability for commuters to undertake effective, safe and comfortable inter-modal connections to public transport, vehicles and active transport.

Customers are provided with clear and open movement within the bus precinct/station. Walking and cycling along priority routes into the precinct, along desire lines and at entry points (both existing and future) within the precinct is improved. Walking and cycling connections link into the surrounding network, and are convenient, direct and attractive to use.

End of trip and bicycle amenities including bicycle parking are provided.

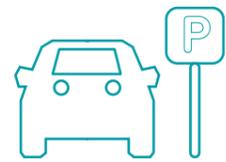
Clear sight lines and well integrated connections are provided to feeder bus services and other modes of transport. The entry and exit to facilities and stops are identifiable and easy to access.

### 10.5 Bus lanes and busway

The design creates a clear corridor that supports the efficient, safe and high speed movement of buses.

The corridor infrastructure has a strong visual identity, works to break-up the perceived expanse of freeway, is responsive to the adjacent landscape and urban form, and creates a memorable public transport experience. The busway design is sympathetic to the design of the Eastern Freeway.

Busway is designed to achieve high quality urban design and landscape outcomes.



## 11. Car parking

### 11.1 Car park design

Car parks will maximise opportunities for vehicle efficiencies such as via other off-peak uses of car park area, and the integration of commuter car parking into any site development.

Landscaping is used in car parks to mitigate the visual impact of large expanses of pavement and to create attractive buffers to residential interfaces. Canopy tree planting is used in car parks to enhance amenity and to provide shade.

Opportunities to incorporate Water Sensitive Urban Design infrastructure into the car park precinct is maximised to reduce surface water flow impacts and to provide passive irrigation to planted areas.

### 11.2 Connectivity and safety

Car parking areas feel safe during the day and night time, passive surveillance is maximised with clear sight lines for pedestrians and cyclists.

Car parking areas support the ease of movement for pedestrians and cyclists and avoid or minimise the potential for conflict with vehicles. Access points to walking and cycling paths are clearly defined and are separate from vehicle movements.

### 11.3 Signage and entries

Entries to car parks are legible and clear for all modes of transport. Entry points and signage are of high quality design.



**FIGURE 50** Demonstrates: Water Sensitive Urban Design infrastructure and tree planting incorporated into the car park. Henry Turner Oval car park, Melbourne. *Design: GHD*



## 12. Lighting

### 12.1 General lighting

Functional lighting design and light elements for roads and paths integrate with infrastructure and surrounding areas, and are appropriate to surrounding land uses and enhance personal safety.

Lighting creates a cohesive identity for the project and is integrated with built elements and the general lighting approach.

### 12.2 Feature lighting

Feature lighting is integrated with road lighting to enhance navigation and user experience. All lighting appropriately addresses impacts to sensitive adjacent land uses.

### 12.3 Light pollution

Lighting employed in the project is designed sensitively for the surrounding environment and to avoid or minimise light pollution.

### 12.4 Maintenance

General and feature lighting include designs and elements that maximise road safety, are environmentally friendly and can be safely maintained.

### 12.5 Energy efficiency

Energy efficient lighting is used to reduce ongoing energy consumption.



**FIGURE 51** Demonstrates: mast road lighting creating a navigational landmark. Eastern Freeway, Melbourne. *Image: NELP*



**FIGURE 52** Demonstrates: lighting used at select locations along the freeway. M80, Melbourne. *Design: Peter Elliott, Photography: VicRoads*



## 13. Walking & cycling infrastructure



**FIGURE 53** Demonstrates: use of transparent material to provide visual permeability to the road for improved perceived cyclist safety. M80, Melbourne. Design: Peter Elliott, Image: VicRoads



**FIGURE 54** Demonstrates: shade trees and community infrastructure located along path. Koonung Creek Trail, Melbourne. Image: NELP



**FIGURE 55** Demonstrates: high quality cycling and walking infrastructure. Darebin Yarra Trail, Melbourne. Design: VicRoads, Photography: Emma Cross

### 13.1 Pedestrian and cycling network

The project maintains or enhances the existing pedestrian and cycling network.

Walking and cycling connectivity through local neighbourhoods is improved with integrated links and connections across the project.

Clear visual and movement linkages between streets, footpaths, bicycle paths, and public open spaces connect public transport, neighbourhood activity centres, schools and other key community facilities and services.

### 13.2 Encourage cross-community connectivity

Opportunities to remove barriers that discourage walking and cycling, cross-project corridor connectivity, and the community's ability to reach everyday services and facilities within a 20 minute walk are maximised. These barriers include physical obstructions, and a lack of shade and rest stops.

Pedestrian and cycle crossings of the project corridor are celebrated and emphasised to encourage greater sense of connectivity

### 13.3 Pathways and connections

Connectivity and continuity of on-road and off-road walking and cycling routes along and around the corridor are maintained and enhanced.

Any existing trails impacted by works are realigned to retain connectivity.

Pathways are direct and convenient. Access is maintained or improved with direct, pleasant and safe pedestrian and cycling links.

Opportunities for grade separation of walking and cycling paths from roads are maximised.

Off-road walking and cycling paths are high quality, suitably wide, functional and aligned appropriately.

The transition between cycling paths is continuous and seamless with direct routes and consistent design elements. The riding environment is safe and appealing. Extent of local and strategic cycling corridors is maximised.

### 13.4 Path separation

Separated walking and cycling paths are used in high-use areas where appropriate, and avoid and minimise the potential for conflict between intersecting travel paths.

### 13.5 Pedestrian crossings

Pedestrian crossings are provided at strategic points to encourage safe travel behaviour and enhanced connectivity. They are regularly spaced. The distances between them minimised.

### 13.6 Perceived safety

Perceptions of safety along walking and cycling paths are improved for pedestrians and cyclists, through good design, to remove barriers to participation.

### 13.7 Shade

Canopy trees are maximised along pedestrian and cycle routes, to provide amenity and shade.

### 13.8 Prioritise pedestrians

Pedestrian priority is maximised on key walking routes into and around key community facilities and destinations (including activity centres, Park and Rides and nearby schools and aged care facilities) by providing a high quality walking environment. This includes shade, drinking fountains at appropriate intervals and rest stops with seating.

Pedestrian-friendly walkways are free from obstructions and have a smooth surface.

Outdoor furniture and fixtures such as bins, bicycle parking and drinking fountains are offset from pedestrian pathways.

### 13.9 Wayfinding

Wayfinding and signage is used to improve the ability for people to find their way to key destinations.

### 13.10 Wayfinding signage design

Wayfinding signage provides clear and reliable information, as well as being appropriate and sensitive to the environment and users of varying abilities. A balance is struck between sufficient signage and visual clutter. Obstructions to key sightlines are avoided or minimised.

Signage is consistent and well integrated with any existing local signage systems. Route hierarchy is coherent.

Standard route naming is adopted along entire routes, negotiated with the relevant authority. Individual branding incorporating graphic devices is employed, such as the Koonung Creek Trail branding.

A list of 'standard' destinations is developed for each route in consultation with the relevant authority. Names and notation are consistent with those used on other wayfinding signs and maps.

Signage is provided where users join the route, at the ends of the route and at any significant intersection with another, route, trail, path or road.

Alternative routes are signed where appropriate, such as where the main route may flood.

Signage is provided at any point where route continuity is unclear.

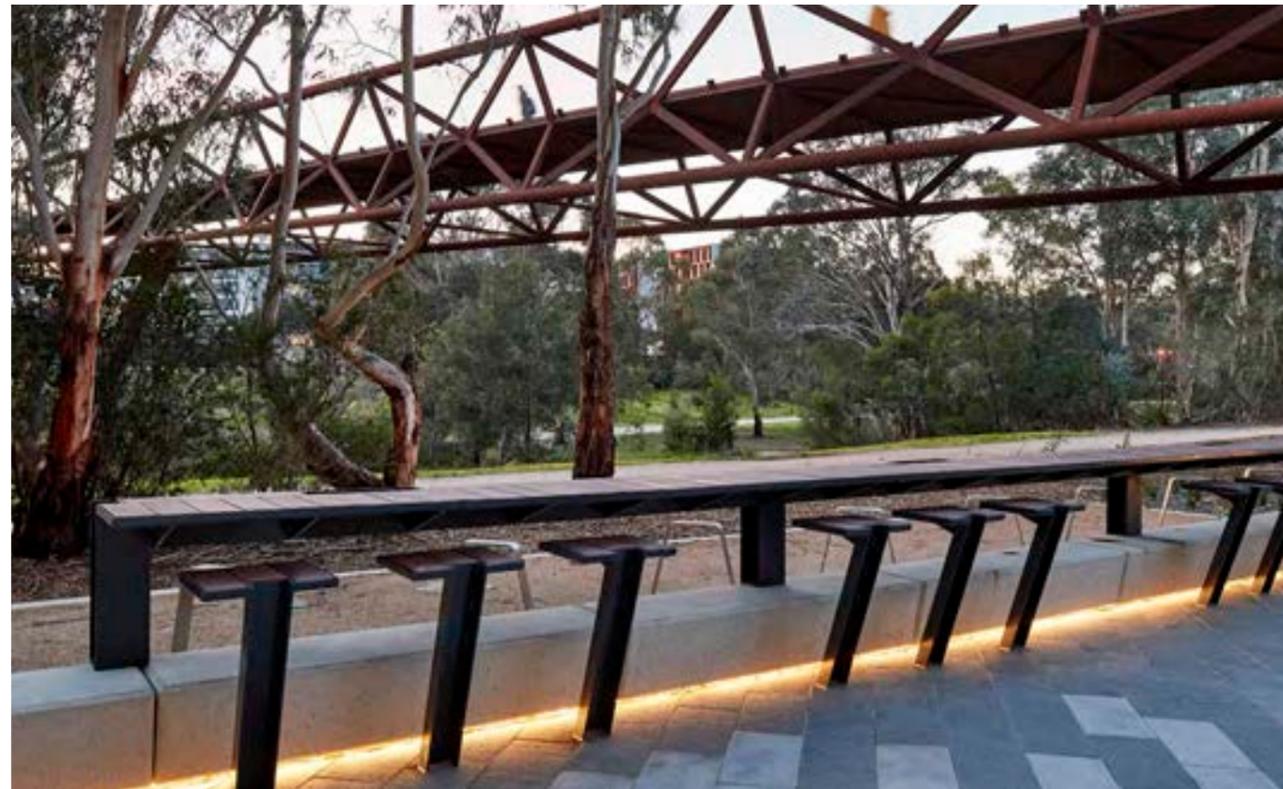
Signage is high quality, graffiti proof, weatherproof and low maintenance.



**FIGURE 56** Demonstrates: wide recreational trail with clear sightlines and integrated seating spots. Bowen Place Crossing, Canberra. Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman



## 14. Walking & cycling bridges



**FIGURE 57** Demonstrates: unique architectural bridge sits sensitively to the natural context. Deakin University Pedestrian Bridge, Melbourne. *Design: Watson Architecture and GHD, Image: GHD*

### 14.1 Walking and cycling bridge design

Walking and cycling bridges are high quality and suitably wide to allow for passive surveillance and maintenance vehicles.

Walking and cycling bridges are well designed and proportioned, and are visually appealing design elements for the roadway and adjacent communities.

Bridges are structurally expressive and durable and the need to enhance the appearance of the bridge by use of cladding is avoided.

Walking and cycling bridges use structural form, materials, texture and colour to create an identity for the project.

Bridges respond to the surrounding context and are sensitive to the local character of the area.

### 14.2 Entries

Bridges have a sense of openness at the approach, with a clearly identifiable entry and effective wayfinding.

### 14.3 Safety

Bridges provide a high level of passive surveillance and perception of safety.

### 14.4 Minimising impacts

Elevated structures are designed to minimise landscape and visual impacts, overlooking and overshadowing of residential and other sensitive areas.

The visual impact of the bridge structure on road users is minimised.

Planting is used to integrate ramps with their surroundings and reduce their visual impacts.

### 14.5 Access

Walking and cycling bridges meet universal access requirements with ramps and stairs for direct access.



**FIGURE 58** Demonstrates: a high quality user experience which takes advantage of its setting. Darebin Yarra Trail, Melbourne. *Design: VicRoads, Photography: Emma Cross*



**FIGURE 59** Demonstrates: integration of screens into the form of the pedestrian bridge. Williams Landing Train Station, Melbourne. *Design: Arup and Cox, Image: VicRoads*



**FIGURE 60** Demonstrates: a cable stay pedestrian bridge that is responsive to the surrounding context. Thompson River, Sale. *Design: VicRoads, Image: GHD*



**FIGURE 61** Demonstrates: well integrated interface between pedestrian bridge and adjoining path. Darebin Yarra Trail, Melbourne. *Design: VicRoads, Photography: Emma Cross*



**FIGURE 62** Demonstrates: an Indigenous inspired lattice bridge that is visually appealing. Webb Bridge, Melbourne. Design: Denton Corker Marshall and Robert Owen, Image: GHD



**FIGURE 63** Demonstrates: a footbridge with sculptural qualities that enriches the user experience. Arganzuela Footbridge, Madrid. Design: Dominique Perrault Architecture, Image: GHD



**FIGURE 64** Demonstrates: contextually responsive design to the differing viewing conditions on either side of the bridge. Caxton Roma Pedestrian Link, Brisbane. Design: EDAW, Photography: Christopher Frederick Jones

#### 14.6 Views

The design takes advantage of scenic views and vistas, and space for stopping and viewing does not significantly interrupt pedestrian and cycle movement.

#### 14.7 Lighting

Lighting is integrated into the design to make the crossing attractive and appropriate for night time use.



**FIGURE 65** Demonstrates: cable stay pedestrian bridge that creates a landmark for travellers and eliminates the requirement for roadside barriers. EastLink, Melbourne. Design: Wood Marsh, Image: GHD



## 15. Walking & cycling underpasses

### 15.1 Entries

Underpasses have a sense of openness at the approach, with a clearly identifiable entry and effective wayfinding.

### 15.2 Connections

Underpasses are strategically located to improve any gaps in the existing path network. Topography and entry points are integrated with the existing path network to provide a seamless and safe journey with clear sight lines.

Paths are generously proportioned with room for pedestrians and cyclists traveling in both directions.

### 15.3 Safety

Underpasses have clear visual connections through to the streetscape and public spaces on either side. Underpasses are wide enough to provide a high level of passive surveillance and perception of safety. The length of underpasses is minimised.

### 15.4 Deterring graffiti

Internal and external walls use high quality materials with graffiti-resistant surfaces.

### 15.5 Natural lighting

Opportunities to incorporate openings for natural daylight are maximised to improve lighting and reduce operating costs.

### 15.6 Artificial lighting

High quality artificial lighting is used to enhance safety for pedestrians and cyclists. Lighting elements are included as design features integrated into the structure.



**FIGURE 67** Demonstrates: well integrated retaining walls extended to address safety as part of the design. *Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman*



**FIGURE 66** Demonstrates: use of natural light and a generous proportioned underpass. Bowen Place Crossing, Canberra *Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman*



**FIGURE 68** Demonstrates: clear visual connections through underpass with highly textured vibrant walls. *Design: Jasmx, Photography: Meg Back*



## 16. Navigational nodes & thresholds



**FIGURE 69** Demonstrates: integrated pedestrian bridge with noise walls to create a gateway that frames Melbourne's skyline. Craigieburn Bypass, Melbourne. *Design: Taylor Cullity Lethlean, Tonkin Zulaikha Greer Architects and Robert Owen, Image: VicRoads*



**FIGURE 70** Demonstrates: an interchange celebrated as a gateway which assists with navigation in a complex interchange. M80, Melbourne. *Design: Peter Elliott and VicRoads, Photography: John Gollings*

### 16.1 Hierarchy

A hierarchy of identifiable elements are located along the corridor, in accordance with the key design directions set out in this document, to help the community to navigate and identify their location. These elements should incorporate scenic views to the city, mountains, ridgelines and existing natural or built features; or through the design of elements that respond to cultural and historic values, geology, topography, water course, vegetation, above-ground characteristics and places above tunnels, and/or the urban setting.

### 16.2 Structures as features

Opportunities are maximised for attractive, identifiable and well-designed structures (interchanges, ramps, bridges etc.) that also act as navigational nodes and threshold treatments.

Built features and elements are meaningful and are not superfluous visual elements.

### 16.3 Visual clutter

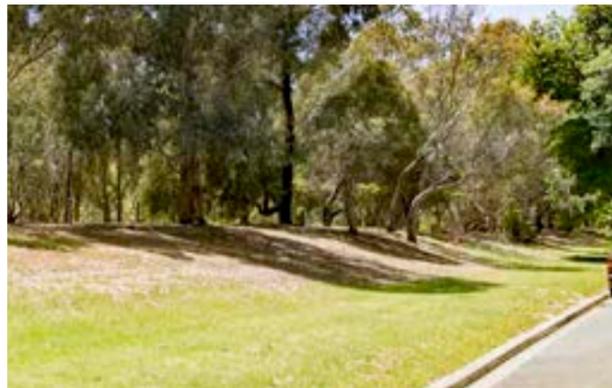
Visual clutter is to be minimised including from road lighting.



## 17. Landscape



**FIGURE 71** Demonstrates: robust and sustainable roadside planting. Eastern Freeway, Melbourne. *Design: VicRoads, Wood Marsh and Tract Consultants, Image: NELP*



**FIGURE 72** Demonstrates: buffer planting and mounds filter views from residential areas. Koonung Creek Reserve, Melbourne. *Image: NELP*



**FIGURE 73** Demonstrates: use of vegetation to soften tunnel entry. M80 Jacana Tunnel entry in Pascoe Vale, Melbourne. *Image: VicRoads*

### 17.1 Green corridors

The project enhances the quality of the surrounding landscape and strengthens existing green corridors. New landscape work complements the existing soft landscaping and is distributed evenly throughout the project. Landscaping is undertaken early in the construction process where practicable, prioritising areas that will not be impacted by future construction, in order to maintain the green character of the area.

### 17.2 Roadway identity

Landscaping unifies the road corridor, contributes to the identity of the roadway and enhances the experience when driving through the area.

### 17.3 Integration

The landscape design integrates the road environment into the existing landscape character and urban fabric.

Landscape areas are clearly defined and are not left-over and undesirable spaces.

### 17.4 Minimising loss

The removal of mature trees, planted and remnant native trees and remnant vegetation, (particularly large amenity trees, heritage vegetation and vegetation within or connected to open space) is minimised.

Opportunities to retain all valuable habitat linkages or corridors are maximised.

An approach for the reuse of existing vegetation to be removed is developed.

### 17.5 Enhance habitat and biodiversity

New landscapes corridors are developed to enhance biodiversity and habitat links (both new and existing). Indigenous vegetation is planted in existing habitat linkages and corridors to strengthen biodiversity and provide habitat links for native fauna to move more easily through the urban landscape.

Opportunities to create fauna habitat and links are maximised, including the use of hollow logs, nesting boxes and rope ladders as part of any landscape works undertaken within biodiversity zones and natural open spaces.



**FIGURE 74** Demonstrates: a sensitively placed land bridge Leura land bridge over Great Western Highway. *Design: Spackman Mossop Michaels*



**FIGURE 75** Demonstrates: arterial median or roadside planting where trees and groundcovers used to soften hard paving and/or to provide shade. Great Western Highway between Leura and Katoomba. *Design: Spackman Mossop Michaels*

### 17.6 Visual mitigation

Landscaping is used to filter or screen views of road infrastructure and head light glare.

The punctuation of built form and structures above treed ridgelines is minimised. Support a canopy of mature trees as the dominant visual element throughout the project corridor.

Roadside landscape is used to mitigate the visual impact of large expanses of asphalt and to enhance the driver experience.

### 17.7 Be inspired by local assets

The landscape design takes cues and is inspired by nearby local environmental assets including the Yarra Valley Parklands, Koonung Creek, Plenty River Gorge, Gresswell Nature Forest, Banyule Creek and Simpson Barracks.

Landscapes along river and creek corridors that are impacted by the project are rehabilitated and naturalised for ecological and experiential benefits.

### 17.8 Urban forest

New tree planting and vegetation is prioritised within the project corridor, including adjoining streets, medians, buffers and in carparks, to support the urban forest.

Opportunities for tree planting within the roadway landscape, local streetscapes, in buffer planting, and on highpoints and ridgelines is maximised.

Innovative engineering solutions are used to maximise tree planting.

Where there is a conflict between planting canopy trees and maintaining views, canopy tree and buffer planting may take precedence.

Services are located to optimise tree planting.

### 17.9 Plant health

The design provides sufficient set-backs, soil, and conditions for new and existing trees and vegetation to maintain and support plant health and growth.

## 7. DETAILED REQUIREMENTS & BENCHMARKS

### 17.10 Plant selection

Planting throughout the project is self-reliant, sustainable and requires minimal maintenance. Native species of local provenance are used in environmentally sensitive areas and/or identified biodiversity sites and corridors.

The potential for impacts on identified biodiversity and habitat corridors and sites, and the Yarra River corridor by introduced species, is minimised.

Trees and other vegetation are selected, to take into account predicted future changes in climate.

Plant species selection is consistent with State and local government guidance.

New tree planting, within or adjacent to the road reserve, is appropriate to the scale for the road environment and considers maintenance access.

### 17.11 Buffer planting and land form

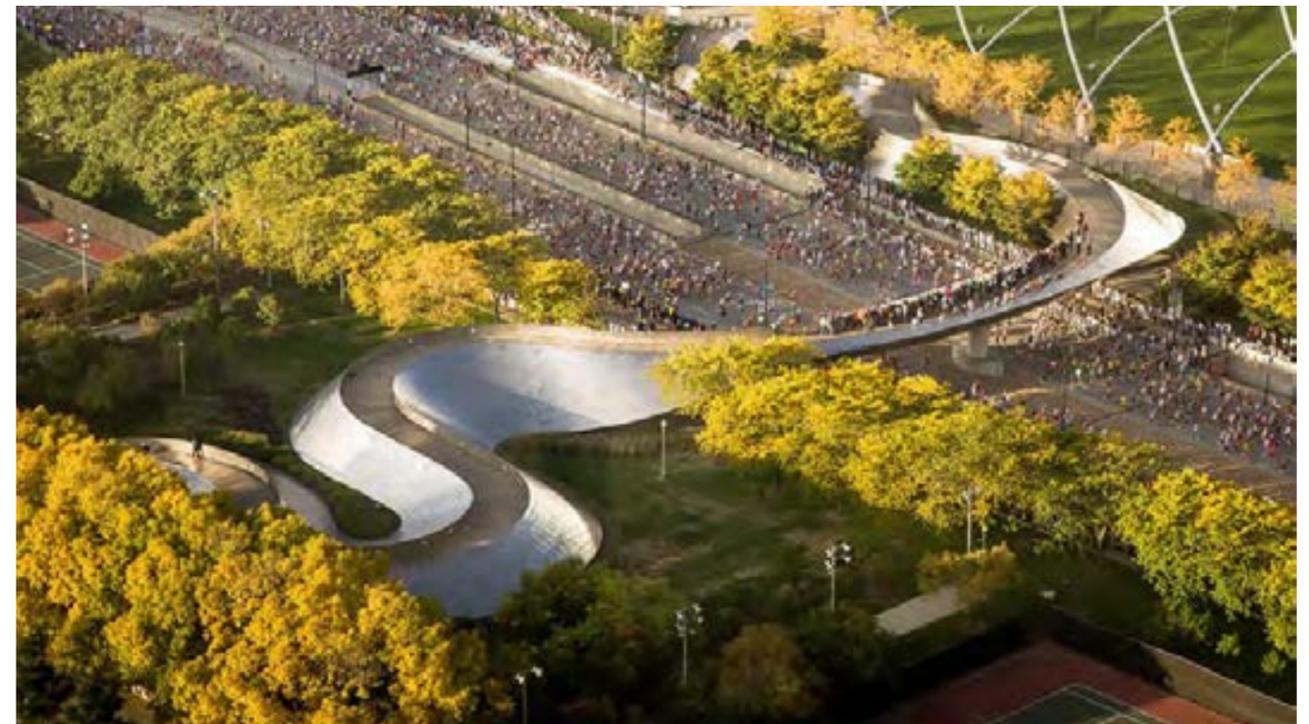
Landscape design elements including buffer planting (planted vegetation situated outside the road reserve) and land form are used to create a visual buffer between the roadway and surrounding areas. Existing buffer planting is retained at the edges of any widened road corridors.

Land form is used to reduce the apparent height of walls, barriers and road infrastructure.

A suitable width of low planting is used to separate pedestrian and roadside traffic.



**FIGURE 76** Demonstrates: a landscape design that responds to the high speed viewing environment through the use of terraced planting. CityLink, Melbourne. *Design: EDAW, Image: GHD*



**FIGURE 77** Demonstrates: well considered tree boulevards with innovative infrastructure. BP Pedestrian Bridge, Chicago. *Design: Frank Gehry, Image: Millennium Park Foundation*



## 18. Water



**FIGURE 78** Demonstrates: context sensitive Water Sensitive Urban Design. Leopold, Melbourne. *Design: GHD*



**FIGURE 79** Demonstrates: wetlands serve environmental and social functions. Adelaide Botanic Gardens Wetland, Adelaide. *Design: Taylor Cullity Lethlean, Image: GHD*

### 18.1 Water sensitive design

A 'water-sensitive design' approach is used to integrate water management objectives into the project's urban design and achieve a broad range of community and environmental benefits. This includes the use of passive irrigation techniques, and the incorporation of Water Sensitive Urban Design infrastructure such as swales, bio-filtration systems (rain gardens) and wetlands.

A holistic approach to integrated water management across the entire project should be adopted.

### 18.2 Healthy waterways

The project maintains or improves the river health of the waterways that it crosses. Drainage infrastructure maximises opportunities to replicate natural processes in the treatment of water, and enhances stormwater management outcomes, as well as broader urban design and ecological values.

### 18.3 Daylighting waterways

Opportunities are maximised to preserve and restore natural and open waterways, and to 'daylight' (restore to a more natural state above ground) sections of creeks and streams that have previously been diverted into a culvert, pipe or drainage system to improve aesthetics, amenity and ecological values.

Roadway crossings of waterways and wetland are minimised.

### 18.4 Minimise habitat impacts

Road infrastructure is designed, located and constructed to minimise short and long-term impacts on riparian, riverbed and aquatic habitat.



**FIGURE 80** Demonstrates: architectural design aspects within Water Sensitive Urban Design infrastructure. Edinburgh Gardens Raingarden, Melbourne. *Design: GHD*

## 7. DETAILED REQUIREMENTS & BENCHMARKS

### 18.5 Drainage infrastructure and retarding basin design

Drainage infrastructure and retarding basins are located and designed to not adversely impact on the function of public open space. Drainage infrastructure within public open space does not inhibit the ability of local residents to have access to open space near where they live. New infrastructure enhances recreational values, and contributes positively to the quality and function of the open space.

Low points in basins are strategically located to maximise useable open space, and to minimise disruption to the community's enjoyment of open space, particularly following wet periods.

Drainage infrastructure is designed to visually blend into the surrounding landscape.

### 18.6 Maximise community and environmental benefits

Opportunities for community education and to integrate community recreational infrastructure (e.g. seating, paths, boardwalks) are maximised.

Water Sensitive Urban Design infrastructure is prioritised at locations where there are opportunities for water harvesting, treatment and reuse that support community facilities (such as providing a source of treated water for the irrigation of sporting fields).

Water Sensitive Urban Design infrastructure does not limit opportunities to use landscape to mitigate visual impacts of the project (that is, by reducing available space for planting of trees and vegetation to filter views towards infrastructure).

Water Sensitive Urban Design infrastructure is located and designed to support the proposed hierarchy of navigational nodes.

### 18.7 Raingarden and wetland design

Water Sensitive Urban Design infrastructure is integrated with the surrounding context and is designed to enhance the aesthetic appeal and ecological values of the area. Water Sensitive Urban Design maintains existing and planned key walking and cycling movement connections.

Wetlands and raingardens located within or near the Yarra River floodplain or along creek and waterway corridors are naturalistic in form and aesthetics. The location of these elements avoids or minimises impact on existing recreational values.

New wetland shapes respond to the contours of the land. The design provides a balance between natural areas for animal and bird life, and areas for public amenity, including places for respite, recreation and seclusion.



**FIGURE 81** Demonstrates: Water Sensitive Urban Design adjacent road infrastructure assists integration as a well resolved constructed ecology. Eastern Freeway, Melbourne. *Design: VicRoads, Wood Marsh and Tract Consultants, Image: NELP*



**FIGURE 82** Demonstrates: constructed wetland and vegetated embankment. EastLink, Melbourne. *Design: Wood Marsh and Tract Consultants, Image: EastLink*



## 19. Road signage

### 19.1 Strategic approach

A consistent, coordinated, whole-of-corridor signage and wayfinding approach is developed to enhance driver legibility and safety, and to improve the overall experience.

### 19.2 General signage

Signage, toll points, gantries, and associated infrastructure are sited and designed to be well integrated along the corridor. The scale and character of the area is not undermined with a dominating skyline, or with significant views blocked by signage infrastructure.

Minimise visual impacts from signage and toll points on local communities and on the quality of the adjoining public realm.

Signage infrastructure is located sensitively, relative to topography, access, safety, security, visual impact, landform and vegetation.

### 19.3 Design

Signage and gantries are consistent, with a simple structure and with consideration to form, shape and colour.

Unauthorised access and vandalism is prevented.

### 19.4 Siting to reduce visual clutter

Signage and gantries are consolidated and rationalised where appropriate to minimise the number of overhead elements.

The locating of signage on bridges and structures is minimised. Signage at tunnel entries is avoided. Signage is well integrated with the design of project elements.

The locating of gantries on ramps and elevated structures, or within close proximity to bridges is minimised.

Gantries are integrated inside tunnel ceilings to avoid visual clutter at portals.

Opportunities are maximised to co-locate features such as signage, toll points, Lane Use Management Signs (LUMS), Closed Circuit Television (CCTV), Variable Speed Limit (VSL) signs and Variable Message Signs (VMS) on shared gantries, light poles and other shared assets. Alternative tolling solutions and the 'designing out' of radio frequency (RF) barriers are considered, to avoid or minimise visual impacts.



**FIGURE 83** Demonstrates: good integration of road barriers, landscaping, noise walls, wayfinding markers and signage gantries. Craigieburn Bypass, Melbourne. Design: Taylor Cullity Lethlean, Tonkin Zulaikha Greer Architects and Robert Owen, Image: VicRoads



**FIGURE 84** Demonstrates: LUMS (land use management) integrated with pedestrian bridge. M1 York Street pedestrian bridge, Melbourne. Design: Denton Corker Marshall, Image: VicRoads



**FIGURE 85** Demonstrates: a simple and uncluttered gantry design which does not detract from surrounding built form elements. M1 gantry, Melbourne. Image: VicRoads



## 20. Materials & finishes



**FIGURE 86** Demonstrates: transparent and clear noise walls minimise overshadowing and provide views to landscape outside the freeway reserve. M1 Monash York St Pedestrian bridge, Melbourne. *Image: VicRoads*



**FIGURE 87** Demonstrates: high quality and durable noise walls. EastLink, Melbourne. *Design: Wood Marsh, Image: GHD*



**FIGURE 88** Demonstrates: reuse of reclaimed site materials in project design. Middle Gorge Station as part of the South Morang line to Mernda extension. *Design: Grimshaw, Image: NELP*

### 20.1 High quality

Materials and finishes used in the project are high quality, durable, robust, easy to maintain, and will weather and age well over time.

### 20.2 Colour palette

The colour palette for the materials and finishes is consistent along the project's design character areas, sensitive to the local environment and reinforces the broader wayfinding approach for the corridor.

### 20.3 Reflectivity

New materials and finishes minimise light pollution in the surrounding areas from reflectivity.

### 20.4 Vandalism

Selection and application of materials and finishes discourages and minimises the potential for vandalism including graffiti.

### 20.5 Identity through design

The design elements along the freeway corridors are coordinated and designed to promote a cohesive identity through colour, materials, patterns and form. These design features include noise attenuation elements, retaining walls, pedestrian bridges, signage and buildings. This coordinated approach creates a consistent, high quality experience for road users and the local community.

### 20.6 Use resources efficiently

Opportunities are maximised to use materials that are recycled, recovered, have lower embodied energy and are ethically sourced.

## 7.2 Using design to help manage construction impacts

### The project uses design to avoid, minimise and mitigate adverse impacts on the community from temporary works and construction activities.

Construction activity for North East Link includes construction of surface roads, tunnels and structures.

Construction is expected to take around seven years. During this period there will be impacts on the community, environment and local places from temporary and construction works.

Design requirements for temporary and construction works are to be designed and carried out in accordance with the urban design principles and objectives, and this section (7.2), to meet the Environmental Performance Requirement (EPR LV2).

#### Maintaining access and connections

Alternative pedestrian and cycling routes are redirected and clearly signed. Wayfinding during the construction is addressed as part of the overall wayfinding approach for the project.

Accessible, relatively direct and safe connections are provided around construction activities. CPTED principles are applied to reinforce perceptions of safety. Connections address any amenity impacts on the user experience.

#### Maintaining community functions

Temporary signage and directional signs is provided to give information and directions to businesses and community facilities affected by construction activities.

Accessibility requirements ensure access is maintained to community facilities and functions during construction.

#### Protecting viability and amenity

Opportunities for the location of temporary works sites and temporary infrastructure to add value (post construction) and be compatible with future land uses are maximised.

Temporary works are sited and designed to avoid or minimise amenity impacts on the local community and adverse visual impact of project works and provide visual appeal.

#### Protecting features

Memorials, plaques, monuments and artworks are protected and/or temporarily removed, restored and reinstated as appropriate, and in consultation with relevant stakeholders.



Metro Tunnel hoardings with windows to allow views of construction



Construction screen with live planting as part of Green Green Screen project in Japan  
 Design: Klein Dytham Architecture

### Landscaping

Early landscape buffer and tree planting is used to optimise growth and ability to enhance amenity and provide visual screening (where practical and appropriate).

### Temporary uses

Temporary uses, events and pop-up public spaces can be used to offset the impact of construction activities.

### Visual impacts & presentation

Enclosures, hoardings and screens are designed to address the type of activity and the distance from which they will be viewed (e.g. whether seen at close range by pedestrians or at high speed from a road).

The quality of enclosures, hoardings, screens and temporary features increase in proportion to the time they will be present on site. They are neat, respect the character of their setting, assist in minimising graffiti, bill-posting and unauthorised material.

### Waste generation & reuse

Opportunities for the retention and/or reuse of excavated materials, site materials, elements and any trees removed as part of the project.

Temporary landscape treatments, features or screening are reused across the project, where appropriate.

### Innovation

Innovative initiatives should be used in adopting a beyond business-as-usual approach. For example the integration of emerging practice, design competitions (for temporary uses, art installations etc.) and initiatives developed in collaboration with the local community.



Temporary information hub contributes positively to the public realm and invites the community to participate  
 Image: LXP

# Urban Design Framework Plans

8



## URBAN DESIGN FRAMEWORK PLANS

The Urban Design Framework Plans (UDFPs) identify and prioritise key requirements from the UDS that are most relevant to selected precincts along the project alignment. They illustrate a direction as to how the area should develop, having regard to land use, and design opportunities and constraints. The approach to UDFPs has been tailored to suit a performance based approach, with a level of detail suitable for a major infrastructure project.

They provide greater clarity on the urban design outcomes to be achieved, having regard to land use and design constraints and opportunities at the following locations:

- M80 / Greensborough Highway Interchange
- Watsonia Neighbourhood Centre and its surrounds
- Borlase Reserve and Lower Plenty Road Interchange
- Manningham / Bulleen Road Interchange
- Bulleen Road / Eastern Freeway Interchange

The UDFPs are an holistic application of the design elements that comprise the UDS hierarchy (on page 6). Importantly, they prioritise the significant issues at each precinct and provide further design direction and options. They highlight strategic priorities for movement and connectivity, as well as key land use interfaces and constraints unique to each location's context.

Selected place specific requirements of particular relevance to each UDFP location have been expanded upon to provide a finer grain of detail around the specific locational constraints and opportunities, sensitive uses and interfaces.

Each UDFP also contains an implementation table identifying the key stakeholders and delivery time periods associated with specific actions for greater clarity.

### How to read the UDFPs

The UDFPs are to be read in conjunction with all other requirements in the UDS. The project requirements are outlined in the five key chapters of the UDS:

- Chapter 3** – Corridor-wide requirements
  - Urban design principles and objectives
  - Key design directions

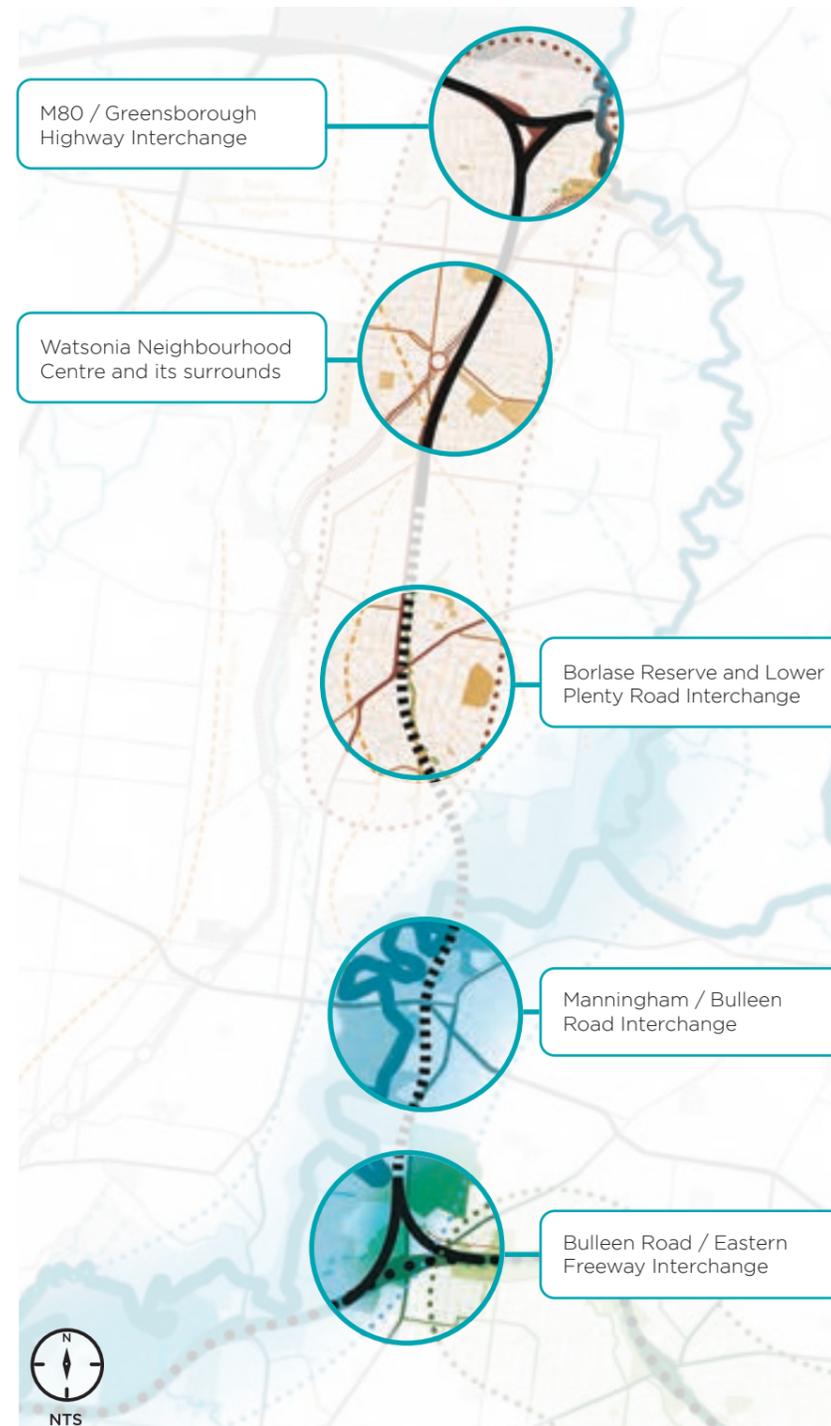
#### Chapters 4, 5 and 6 – Place-specific requirements

#### Chapter 7 – Detailed requirements and benchmarks

The UDFPs identify key place specific requirements from Chapters 4-6 which are most relevant to each location, and expanded upon with additional information on the opportunities and constraints, and further context. This is intended to guide detailed design, and ensure that landscape and visual impacts on these sensitive areas are minimised.

For the purpose of the UDFPs an indicative functional layout and accompanying illustrative sections have been used to demonstrate one feasible means by which the project could be designed. This design as shown in the UDFPs is generally based on either the Environment Effects Statement (EES) Map Book or amended plans tabled through the Inquiry and Advisory Committee (IAC) process. The location of shared use paths, pedestrian and cycle paths is generally in accordance with the remainder of the UDS. It is to be noted that as this is a functional layout, it is possible that an equivalent and acceptable level of connectivity could be achieved in an alternative manner. In order to be in accordance with the UDS, the final design does not need to reflect the particular design as depicted in the illustrative sections and functional layout. As the design and consultation with stakeholders for the project is ongoing, components of the project design as shown may change.

The final design must be in accordance with all of the place-specific requirements in the Urban Design Strategy.



The five UDFP locations



Grey represents an indicative functional road layout and is subject to change. The final project design does not have to reflect this particular layout, in order to be in accordance with the UDS.

Aqua dots refer to the existing Place-specific requirements in the UDS, which have been expanded upon through the UDFPs as key place-specific requirements due to their particular relevance.



Illustrative sections are indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

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# 8.1 M80/ GREENSBOROUGH HIGHWAY INTERCHANGE

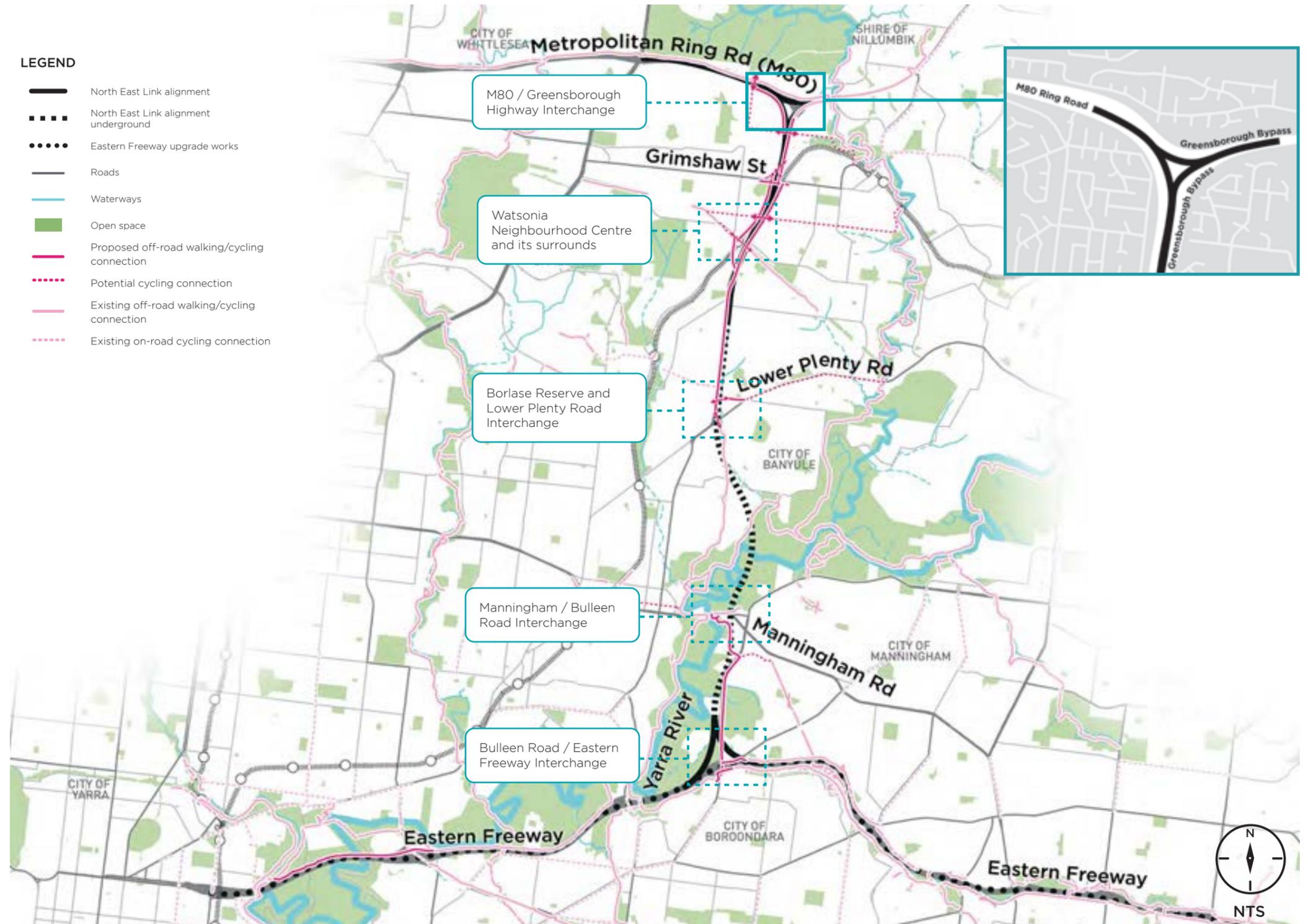
## Functional summary

Upgrade and connection to the existing M80 interchange, providing for all movements between M80, Greensborough and North East Link.

## LOCATION PLAN

### LEGEND

-  North East Link alignment
-  North East Link alignment underground
-  Eastern Freeway upgrade works
-  Roads
-  Waterways
-  Open space
-  Proposed off-road walking/cycling connection
-  Potential cycling connection
-  Existing off-road walking/cycling connection
-  Existing on-road cycling connection



Ridgeline  
Design  
Character  
Area



## FRAMEWORK PLAN

### Design intent

Ensure the road footprint is minimised, integrated with its residential surrounds to reduce visual impacts and improves pedestrian and cyclist connectivity along and across the corridor.



Plan is based on EES Mapbook Sheet 19 - 05 March 2019. It is indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

# DESIGN AND DEVELOPMENT PRIORITIES

While all UDS Principles, Objectives and Key Directions apply, the following are most relevant for this location and form the design and development priorities. These design and development priorities must be addressed within the Urban Design and Landscape Plans.

## Key Principles & Objectives

**PRINCIPLE 1**  
**IDENTITY** 

**Objective 1.4**  
**Existing landscape character**

Provide a high quality design outcome that responds sensitively to the distinctive character of this part of Melbourne, takes advantage of existing landmarks and vegetation, views and significant places, protects landscape and vegetation, and seeks to enhance the way in which people experience and interact with the landscape.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Undulating topography and sensitive residential interfaces around the M80 interchange require a landscape-led design approach that reinforces the status of the interchange as a primary node, integrates the ramps and structures into the landscape and sensitively incorporates both vegetation and functional elements.

**PRINCIPLE 2**  
**CONNECTING & WAYFINDING** 

**Objective 2.1**  
**Connectivity**

Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The M80 interchange has several bridges and underpasses (Macorna Street, Yando Street and Plenty Gorge) to cross the freeway but would greatly benefit from new pedestrian and cycling paths to link them together. Crossings at Yando Street and Macorna Street are narrow with low passive surveillance, in certain areas. There is an opportunity for new underpasses and overpasses that replace any existing crossings to be designed to increase usage and improve safety.

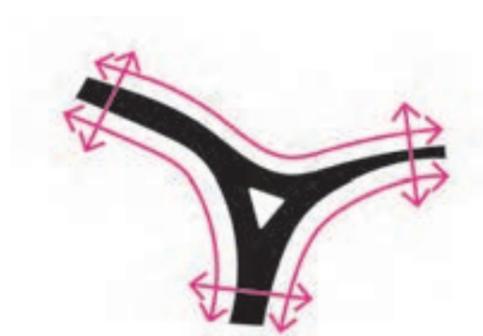


Diagram demonstrating cross corridor connectivity for pedestrians and cyclists at the M80 interchange

**PRINCIPLE 3**  
**URBAN INTEGRATION** 

**Objective 3.2**  
**Integration of design**

Ensure an integrated engineering, urban design, architectural and landscape architectural approach that sensitively addresses social, cultural, functional and physical aspects of the project.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The increased complexity of roads at the M80 interchange requires a multi-disciplinary approach that results in well-proportioned elevated structures with minimal visual impact, clear wayfinding for drivers and an attractive environment for all.

**Objective 3.4**  
**Minimise footprint**

Minimise negative impacts on the community and the environment by minimising the design footprint and visual bulk.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The large reserve of land at the M80 interchange presents a significant opportunity to minimise the footprint of the road infrastructure and maximise open space for improved environmental values and the enjoyment and usage by the local community and drivers.

**PRINCIPLE 4**  
**RESILIENCE & SUSTAINABILITY** 

**Objective 4.3**  
**Environmental sustainability**

Optimise environmental performance and embed sustainability initiatives into the design response. This includes integrated water management, biodiversity and habitat enhancement and connections, green infrastructure provision and sustainable use of energy and materials.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Land adjacent to and under the new road structures at the M80 interchange presents the opportunity to improve amenity and environmental values of the local area through initiatives such as functional water bodies and indigenous planting.



Diagram demonstrating minimisation of the road footprint (Illustrating Principle 3.4)

## Key Directions

**KEY DIRECTION 1**  
**Develop an integrated design response**

- Excerpt from 3.2 Key design directions
- Integrate noise walls and fascia solutions
  - Consider topography both inside and outside of the interchange in formulating the design of infrastructure
  - Provide a design that is sensitive to the surrounding residential areas

**KEY DIRECTION 2**  
**Support a natural and connected corridor**

- Excerpt from 3.2 Key design directions
- Stitch communities together across the project corridor and improve access to key facilities and destinations such as the Plenty River.

**KEY DIRECTION 5**  
**Create a context sensitive design**

- Ridgeline**
- 2.R Connect neighbourhoods, reduce fragmentation and facilitate the continued integration of the diverse community in this area
  - 3.R Reinforce the distinct and unique treed ridgeline character of Melbourne's north-east
  - 4.R Ensure built form associated with the project responds to the urban setting and seeks innovative ways to integrate infrastructure with a djacent land uses.
  - 7.R Provide an architectural and landscape response that integrates seamlessly with the upgraded M80 Ring Road

Excerpt from 3.2 Key design directions

## KEY PLACE-SPECIFIC REQUIREMENTS

All place-specific requirements (including those listed below) must be met and addressed within Urban Design and Landscape Plans (refer page 5 section 1.5). The place-specific context and opportunities provide finer grain detail for these requirements and identify additional opportunities that could be delivered.

**2C** Maintain and enhance an east-west walking and cycling connection across the corridor between Yando and Hakea Streets. Any new east-west cycle crossing must connect with the Greensborough Bypass Trail.

4.2 Existing Place-specific requirement - Map R2 - M80 Interchange

**Place-specific context and opportunities**

The existing Yando and Hakea Street underpass below Greensborough Highway provides a walking and cycling connection between the residential areas in Watsonia North and Greensborough.

The widening of Greensborough Highway would potentially lengthen an already long and narrow underpass. A cross corridor connection at this location is complex due to the corridor span, existing topography and adjacent land uses.

The design must address the three-dimensional aspects of the site to ensure pedestrian and cyclist safety, reduce travel distances by providing direct and convenient links, and maximise clear lines of sight.

Refer to Chapter 7 – Detailed requirements & benchmarks

- DETAILED REQUIREMENTS
- 14. Walking & cycling bridges
  - 15. Walking & cycling underpasses

**3A** Create a high quality navigational feature at the M80 Ring Road interchange to address the road environment while reducing the visible impact towards adjoining residential areas..

4.3 Excerpt from existing Place-specific requirement - Map R2 - M80 Interchange

**Place-specific context and opportunities**

The M80 interchange would mark the transition between the M80 Ring Road, Greensborough Highway and the North East Link. It represents a threshold between the City of Banyule and the Shire of Nillumbik. Key Direction 4 designates the interchange as a primary node.

With these attributes, the design must act as a navigational feature, using a well-considered landscape response that integrates landform and infrastructure through grading and water treatment options.

- DETAILED REQUIREMENTS
- 1. Multi-span bridges
  - 16. Navigational nodes & thresholds
  - 17. Landscape

**3F** Re-establish vegetation on the embankment and between paths around the M80 Ring Road interchange to filter and screen views towards road infrastructure from residential areas and walking/cycling paths.

4.3 Existing Place-specific requirement - Map R2 - M80 Interchange

**Place-specific context and opportunities**

Shared use paths exist or are proposed to be located between the M80 interchange and adjacent residential areas. New noise walls are proposed in similar areas. Landscaping and landscaped embankments are required, to improve the environment for pedestrians and cyclists, and filter views from residences to road infrastructure.

In places, the open space corridor containing the shared use path and landscaping would be tightly constrained between the noise walls and residential boundaries.

The design must appropriately resolve these conflicting demands for space, maximising open space and its functionality, and addressing views from both the community side and the road side. Considerations would include the location and height of noise walls and their acoustic efficiency relative to the noise source and receiver.

- DETAILED REQUIREMENTS
- 7. Public Open Space
  - 9. Walls, fencing, barriers & screens
  - 13. Walking & cycling infrastructure
  - 17. Landscape

**Minimum walking and cycling connection requirements**

**East-west connections:**

- Across North East Link and Greensborough Bypass near Hakea Street / Yando Street in the form of a grade-separated crossing

**North-south connections:**

- Across M80 Ring Road at Macorna Street in the form of a grade-separated crossing
- Along the west side of North East Link from Hakea Street to Macorna Street in the form of a new shared use path



## KEY BENCHMARKS

The key benchmarks below illustrate specific treatments or approaches which demonstrate potential design outcomes relevant to the final design in this location as described in text below.



**FIGURE 89** Refer key place-specific requirement 3A. Demonstrates: an interchange celebrated as a gateway which assists with navigation in a complex interchange. M80, Melbourne. *Design: Peter Elliott and VicRoads, Photography: John Gollings*



**FIGURE 90** Refer Objective 3.2. Demonstrates: well considered multi span steel trough bridge with articulated piers and integral crosshead. M80 Ring Road, Melbourne. *Design: Peter Elliott and VicRoads, Photography: John Gollings*



**FIGURE 91** Demonstrates: use of climber to screen infrastructure. Melbourne Park car park, Melbourne. *Image: Isabelle Verschueren*



**FIGURE 92** Refer Objective 4.3. Demonstrates: constructed wetland and vegetated embankment. EastLink, Melbourne. *Design: Wood Marsh and Tract Consultants, Image: EastLink*



**FIGURE 93** Refer Objective 4.3. Demonstrates: context sensitive Water Sensitive Urban Design. Leopold, Melbourne. *Design: GHD*



**FIGURE 94** Demonstrates: a landscape design that responds to the high speed viewing environment through the use of terraced planting. CityLink, Melbourne. *Design: EDAW, Image: GHD*



**FIGURE 95** Demonstrates: well considered tree boulevards with innovative infrastructure. BP Pedestrian Bridge, Chicago. *Design: Frank Gehry, Image: Millennium Park Foundation*



**FIGURE 96** Demonstrates: integrated pedestrian bridge with noise walls to create a gateway that frames Melbourne's skyline. Craigieburn Bypass, Melbourne. *Design: Taylor Cullity Lethlean, Tonkin Zulaikha Greer Architects and Robert Owen, Image: VicRoads*



**FIGURE 97** Demonstrates: use of natural light and a generous proportioned underpass. Bowen Place Crossing, Canberra *Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman*



**FIGURE 98** Refer Objective 4.3. Demonstrates: buffer planting and mounds filter views from residential areas. Koonung Creek Reserve, Melbourne. *Image: NELP*



**FIGURE 99** Demonstrates: robust and sustainable roadside planting. Eastern Freeway, Melbourne. *Design: VicRoads, Wood Marsh and Tract Consultants, Image: NELP*



**FIGURE 100** Refer Objective 4.3. Demonstrates: interchange acting as a navigational node with the integrated built form sensitively sited in the landscape. M80 / Princes Interchange, *Image: VicRoads*



**FIGURE 101** Demonstrates: a cable stay pedestrian bridge that is responsive to the surrounding context. Thompson River, Sale. *Design: VicRoads, Image: GHD*

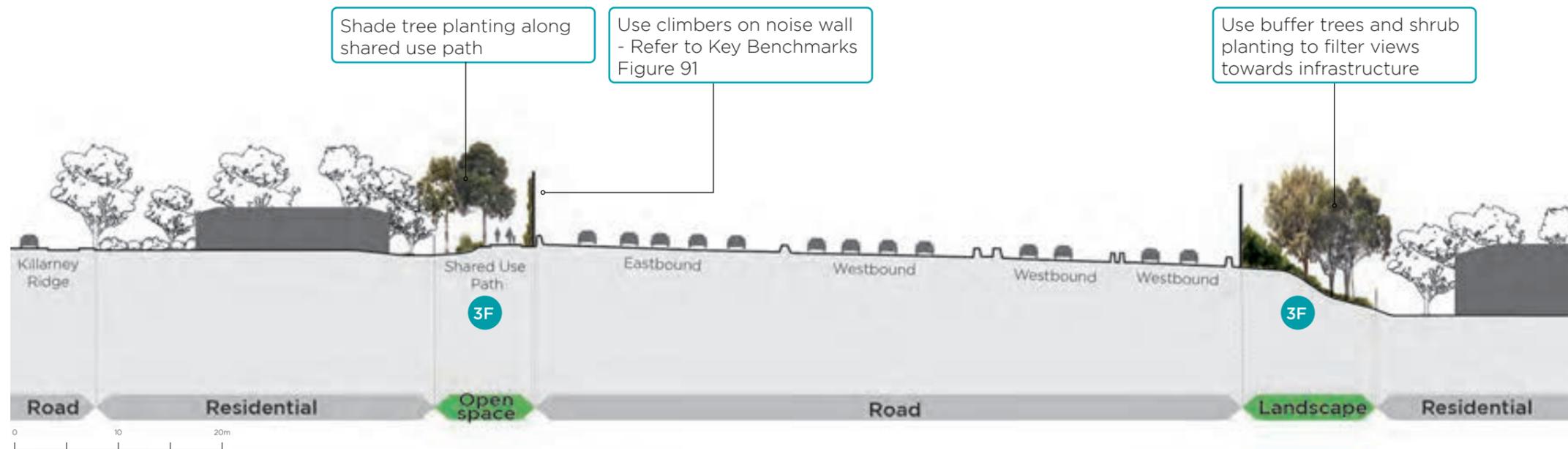


**FIGURE 102** Demonstrates: semi-enclosed transparent noise wall to reduce visual bulk and allow light into the adjacent creek. Eastern Freeway, Melbourne. *Design: Wood Marsh*

## ILLUSTRATIVE SECTIONS

Illustrative sections are indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

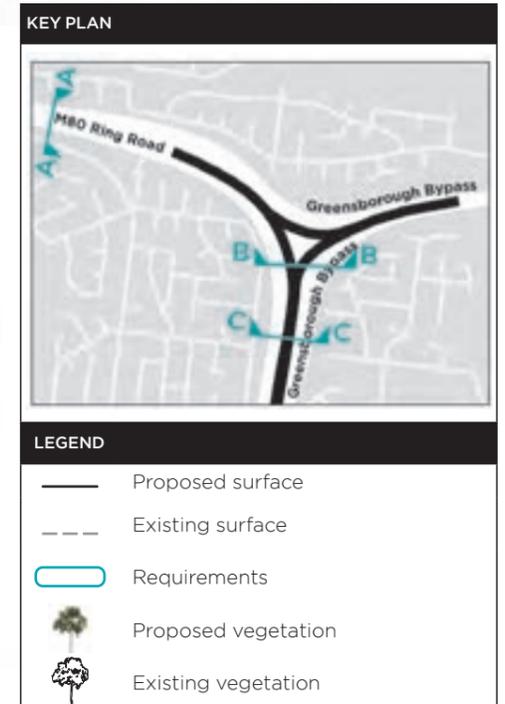
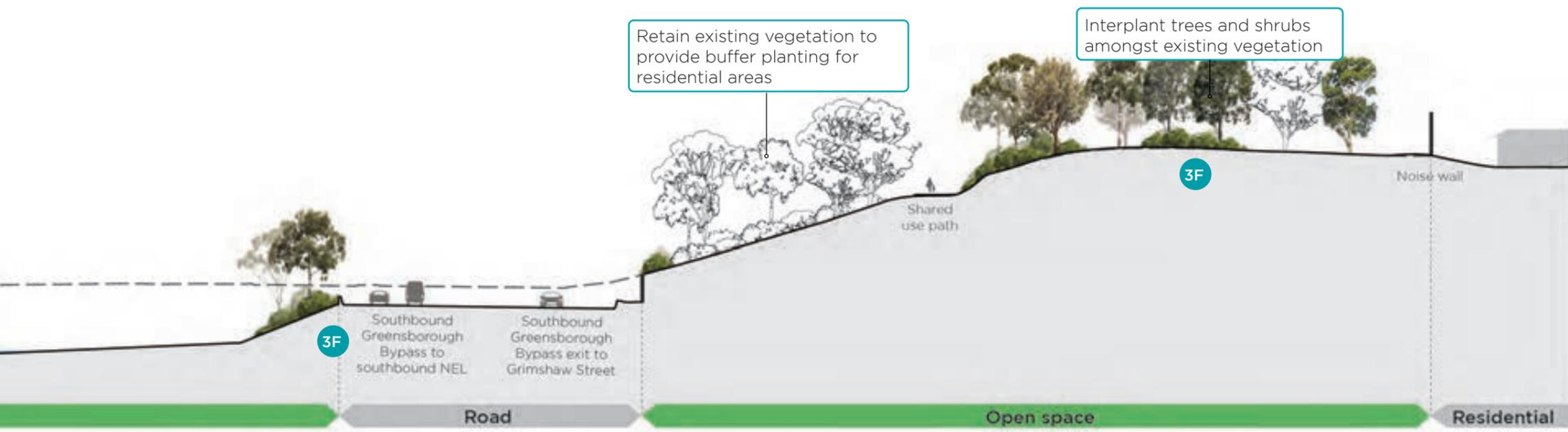
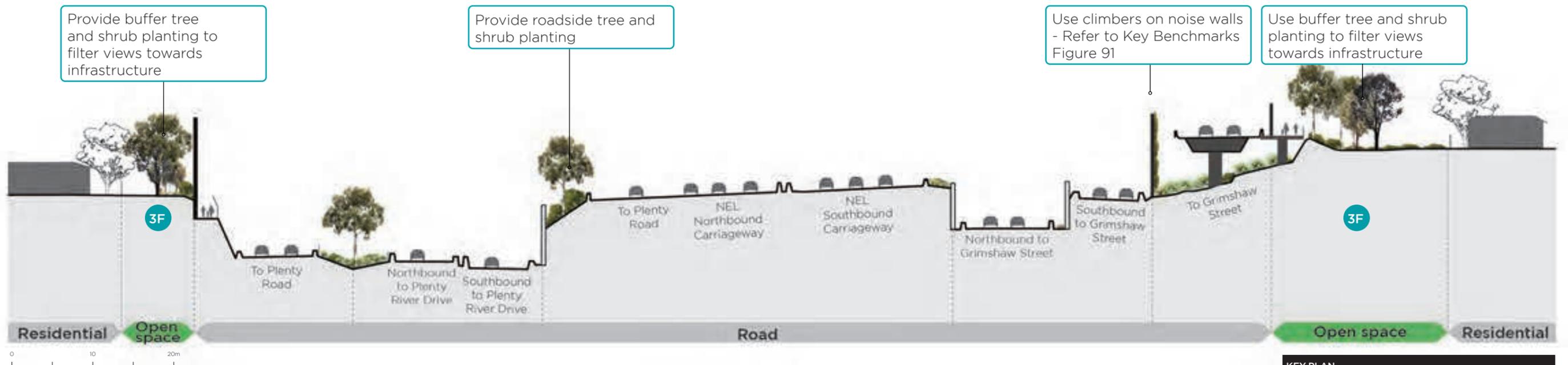
### SECTION AA



### SECTION BB



SECTION CC



## ACTION PLAN & IMPLEMENTATION STRATEGY

### Key components to be developed by the Project

The table below contains the key place-specific requirements identified by stakeholders including the NELP Urban Design Advisory Panel and Councils, and will be delivered by the Project. Whilst these key requirements are considered most relevant to this precinct, the final design must be in accordance with all of the place-specific requirements in the Urban Design Strategy. The broader infrastructure elements for delivery have not been included in this table so as not to limit the final design response and allow for innovation.

Summary of key place-specific requirements		Type	Key stakeholders	Delivery timeframe
2C	East-west walking and cycling connection across the corridor between Yando Street and Hakea Street which connects into the Greensborough Bypass Trail.	Walking and cycling connection	DoT, Banyule	During construction
3A	Creation of a high quality navigational feature.	Navigational feature	DoT, Banyule, Nillumbik	During construction
3F	Re-establishing vegetation to filter and screen views towards road infrastructure.	Landscaping	DoT, Banyule, Nillumbik, VicRoads	During construction (Final stages of construction)

M80 Interchange Table 1 - Implementation Plan

### Opportunities for development or upgrades by others

The table below lists opportunities and proposals for the surrounding precinct that could be developed or upgraded by others. This list includes relevant draft and approved local and state government plans / strategies or key opportunities (by others) identified through the EES process.

Opportunity	Reference
<p><b>Northern Regional Trails Strategy, Councils of Banyule, Darebin, Hume, Moreland, Nillumbik and Whittlesea, 2016</b></p> <p>The proposed Aqueduct Trail is a high short term priority trail project for Nillumbik Council. Section N2a of the trail would provide a link from the Metropolitan Ring Road, through Diamond Creek to the existing Banyule Diamond Creek trail.</p>	<p>Web link:</p> <p><a href="http://www.nillumbik.vic.gov.au/files/assets/public/council/council-publications/strategies-etc/northern-regional-trails-strategy.pdf">www.nillumbik.vic.gov.au/files/assets/public/council/council-publications/strategies-etc/northern-regional-trails-strategy.pdf</a></p>

M80 Interchange Table 2 - Opportunities for implementation by others

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## 8.2 WATSONIA NEIGHBOURHOOD ACTIVITY CENTRE AND SURROUNDS

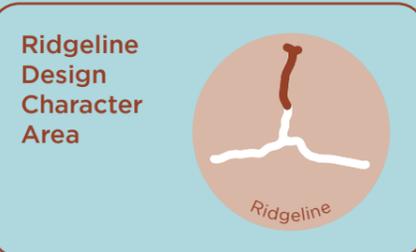
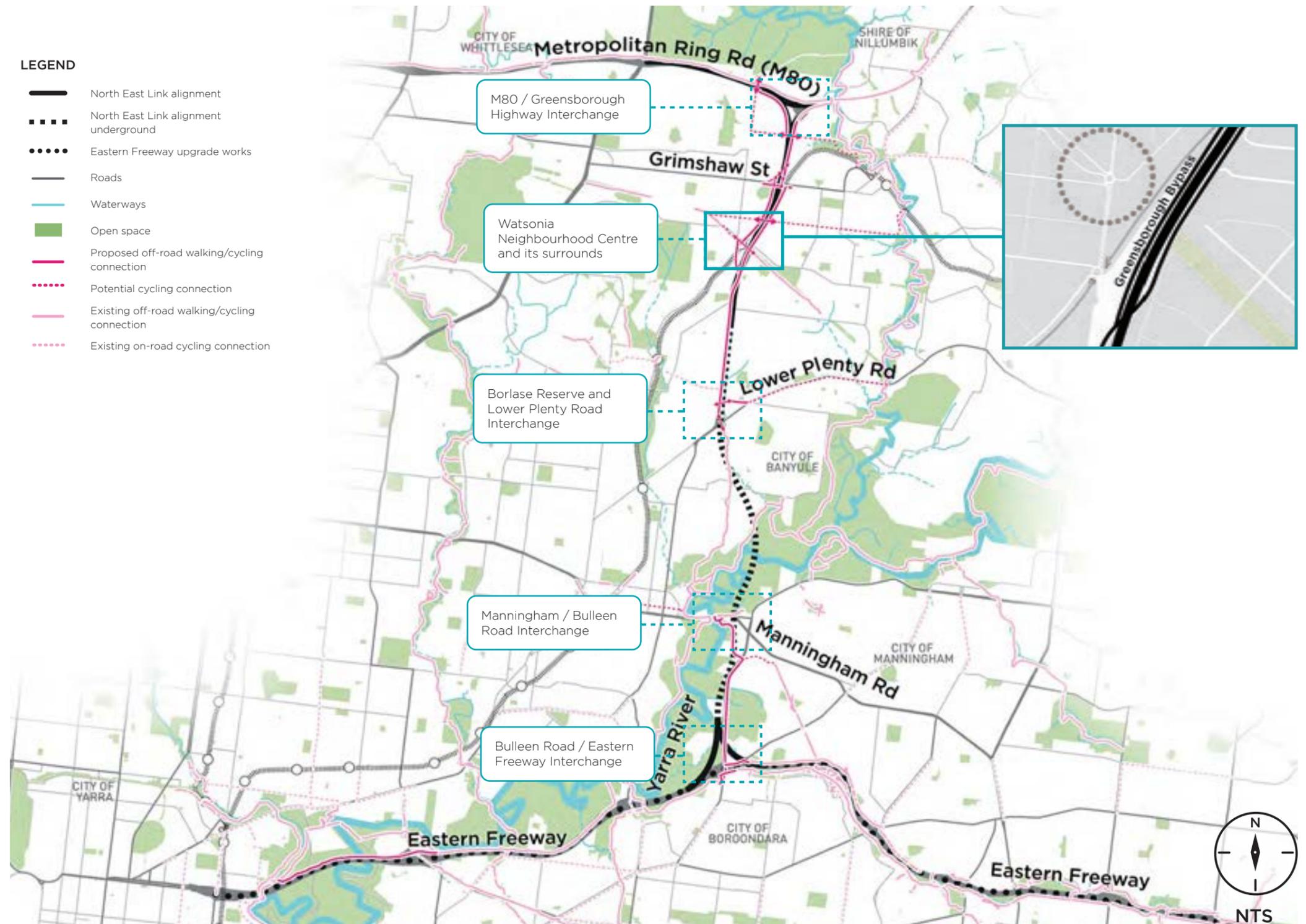
### Functional summary

North East Link would pass to the east of the Watsonia Neighbourhood Activity Centre, including a direct connection between Elder Street, Greensborough Highway and the station carpark, crossings for pedestrians and bike riders to the station and shops, better links for local buses, and improved car parking at Watsonia station.

## LOCATION PLAN

### LEGEND

-  North East Link alignment
-  North East Link alignment underground
-  Eastern Freeway upgrade works
-  Roads
-  Waterways
-  Open space
-  Proposed off-road walking/cycling connection
-  Potential cycling connection
-  Existing off-road walking/cycling connection
-  Existing on-road cycling connection



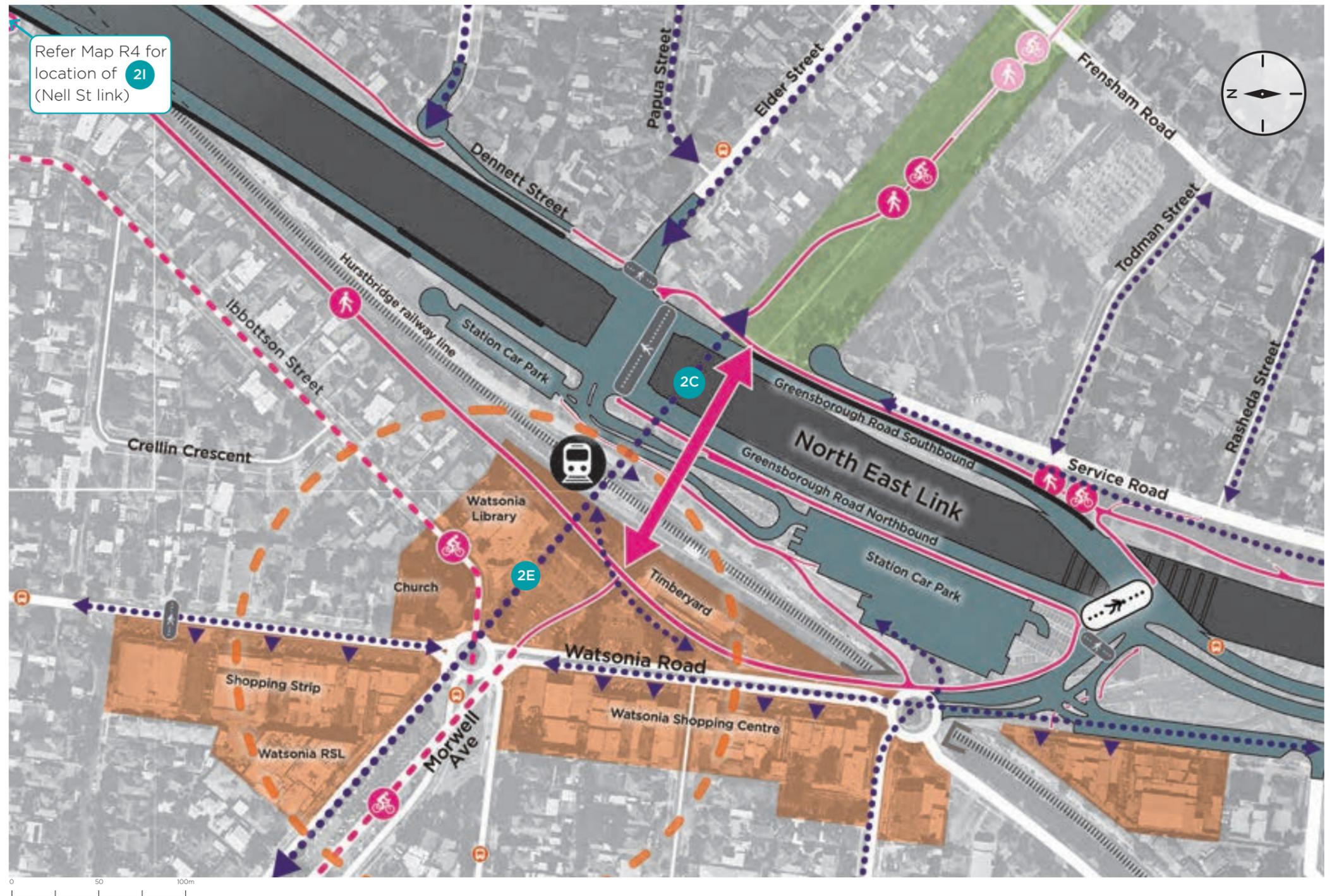
# FRAMEWORK PLAN

## Design intent

Improve amenity and connectivity across the transport corridor for greater integration of the Watsonia Neighbourhood Activity Centre. Maintain access to and minimise impacts on the operation of Watsonia Activity Centre during construction.

**LEGEND**

- Potential new surface roads
- Potential new road trench
- Existing commercial or non-residential properties
- Existing roads
- Noise wall
- Open space / landscaped area
- Pedestrian desire line
- Proposed off-road walking/cycling connection
- Proposed walking/cycling crossing link
- Potential cycling connection
- Existing off-road walking/cycling connection
- Proposed signalised crossing
- Existing signalised crossing
- Watsonia Train Station
- Existing bus stop
- Activity centre



Plan is based on the IAC tabled document 100 - NELP Technical Note R32 Watsonia alternate design Elder Street - 29 July 2019. It is indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

## DESIGN AND DEVELOPMENT PRIORITIES

While all UDS Principles, Objectives and Key Directions apply, the following are most relevant for this location and form the design and development priorities. These design and development priorities must be addressed within the Urban Design and Landscape Plans.

### Key Principles & Objectives

**PRINCIPLE 2**  
**CONNECTING & WAYFINDING**



**Objective 2.1**  
**Connectivity**

Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The Watsonia precinct would benefit from additional walking and cycling paths along and across the existing Greensborough Road corridor, to better connect residential areas, schools, shops and public transport.

Vehicle access to the Watsonia activity centre is particularly important for traders, both during and after the construction of the North East Link.

**Objective 2.2**  
**Transport integration**

Maximise the benefits of the project by facilitating seamless access to a variety of public transport, walking and cycling choices as part of a connected intermodal network.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Access for pedestrians, cyclists, public transport users and drivers to the Watsonia train station and buses is functional but low quality. Pedestrian access through the station car park is not pedestrian friendly. The arrangement of car parks at the station is spatially inefficient. The design must improve the pedestrian experience for public transport users.

**PRINCIPLE 3**  
**URBAN INTEGRATION**



**Objective 3.1**  
**Integration with context**

Avoid, minimise and mitigate any severance of communities. Provide a well-integrated corridor environment that enhances the street network and takes advantage of opportunities to connect and integrate with the broader commercial, residential and open space functions and environment.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Severance is a significant issue in the local area with Greensborough Road and the rail corridor creating a barrier for drivers, cyclists and pedestrians. The project must address this severance and better connect the activity centre with the surrounding area.

**Objective 3.3 Strategic alignment**

Provide an integrated transport infrastructure and land use solution that responds to strategic transport and land use planning for the broader precinct in consultation with local government and authorities.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The long-term vision for Watsonia activity centre is being addressed by the City of Banyule. The North East Link project provides an opportunity to make a positive contribution to this vision, through design elements that help realise the objective of a people-friendly neighbourhood village with a strong sense of place.

**PRINCIPLE 5**  
**AMENITY**



**Objective 5.1**  
**Improved amenity**

Enhance urban amenity through a highly considered and site-specific response to realise opportunities and address challenges to create better places for people.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Public open space throughout the precinct is currently of low quality and low amenity. Improved amenity is a key objective for the project, to ensure that any new public open spaces make a positive contribution to the area. This includes any improvements to the activity centre where walking and cycling upgrades are being undertaken.



Diagram demonstrates improved amenity along Greensborough Road and around the Watsonia precinct

**PRINCIPLE 8**  
**ACCESSIBILITY**



**Objective 8.2**  
**Twenty-minute neighbourhoods**

Support and enhance 20-minute neighbourhoods for convenient and desirable access to everyday services and facilities (within a 20-minute walk from their home, or faster by bicycle or local public transport).

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The State Government has outlined an objective, in Plan Melbourne, to develop 20 minute neighbourhoods. To achieve this objective, the project would maximise the walking catchment to Watsonia activity centre by providing direct, frequent pedestrian links across and along the project corridor.



Diagram demonstrates an increased walking catchment to the Watsonia Neighbourhood Activity Centre, with improved connectivity to the east of Greensborough Road

EPRs and Section 7.2 of the UDS require that the project uses design to minimise and mitigate adverse impacts on the community from temporary works and construction activities. This issue is particularly important for the community and traders associated with Watsonia activity centre.

### Key Directions

**KEY DIRECTION 1**  
**Develop an integrated design response**

Excerpt from 3.2 Key design directions

- Maximise opportunities for transport and land use integration at Watsonia Neighbourhood Activity Centre

**KEY DIRECTION 2**  
**Support a natural and connected corridor**

Excerpt from 3.2 Key design directions

- Improve connectivity across and along the transport corridor to address existing severance.

**KEY DIRECTION 5**  
**Create a context sensitive design**

**Ridgeline**

- 2.R Connect neighbourhoods, reduce fragmentation and facilitate the continued integration of the diverse community in this area
- 3.R Reinforce the distinct and unique treed ridgeline character of Melbourne's north-east
- 4.R Ensure built form associated with the project responds to the urban setting and seeks innovative ways to integrate infrastructure with adjacent land uses.
- 7.R Provide an architectural and landscape response that integrates seamlessly with the upgraded M80 Ring Road
- 9.R Provide enhanced connections to the La Trobe National Employment and Innovation Cluster (La Trobe NEIC)

Excerpt from 3.2 Key design directions

## KEY PLACE-SPECIFIC REQUIREMENTS

All place-specific requirements (including those listed below) must be met and addressed within Urban Design and Landscape Plans (refer page 5 section 1.5). The place-specific context and opportunities provide finer grain detail for these requirements and identify additional opportunities that could be delivered.

**2C** Provide a new walking and cycling link from the east side of the road corridor across Greensborough Road and connecting to the Watsonia Station and the Watsonia Neighbourhood Centre.

Ensure there are pedestrian connections to Watsonia Station platforms that addresses key desire lines, enhance sightlines, wayfinding and legibility for walking and link to the walking and cycling paths/bridge.

4.3 Existing Place-specific requirement - Map R4 - Watsonia Neighbourhood Centre

**Place-specific context and opportunities**

Residents living to the east of Greensborough Road currently have limited access to the Watsonia Neighbourhood Centre, with Greensborough Road and the rail cutting acting as barriers for pedestrians and cyclists.

The project provides a significant opportunity to support Plan Melbourne’s objective for 20-minute neighbourhoods. This objective could be facilitated by extending the 20 minute walking and cycling catchment of the Watsonia Neighbourhood Centre by increasing permeability across the transport corridor. Developing direct and safe pedestrian and cycling links for increased permeability will require careful consideration of the three-dimensional constraints and complexities of the area.

The high voltage power easement which runs perpendicular to Greensborough Highway presents an opportunity to develop a direct, green link that enhances the connectivity objective and becomes a positive asset for the local community. There are numerous opportunities for this linear open space to be upgraded in the future. Refer Key Benchmark Figure 111 Inner Circle-Janet Millman Reserve.

Refer to Chapter 7 – Detailed requirements & benchmarks

DETAILED REQUIREMENTS

- 3. Land bridges
- 4. Open cuttings
- 7. Public open space
- 9. Walls, fencing, barrier & screens
- 12. Lighting
- 13. Walking & cycling infrastructure
- 17. Landscape

**2E** Provide new off-road walking and cycling path in east-west direction to link from Watsonia Road to Watsonia Station.

4.3 Existing Place-specific requirement - Map R4 - Watsonia Neighbourhood Centre

**Place-specific context and opportunities**

The existing pedestrian path between Watsonia Road and Watsonia station is narrow and low quality, relative to its role in providing access from the station to the shopping strip.

The project must improve the pedestrian experience for residents and commuters, as well as contributing to the civic qualities of the precinct. Key issues include wayfinding, sense of place and development of safe and direct connections through the area.

DETAILED REQUIREMENTS

- 7. Public open space
- 13. Walking & cycling infrastructure
- 17. Landscape

**2I** Replace existing Nell Street pedestrian bridge with new high quality, wider, walking and cycling crossing that connects the east and west side of the corridor. Crossing is to link into the surrounding path networks and to Watsonia Primary School.

4.3 Existing Place-specific requirement - Map R4 - Watsonia Neighbourhood Centre

**Place-specific context and opportunities**

The existing pedestrian bridge near Nell Street provides grade-separated access across Greensborough Road between residential areas and local destinations including Watsonia Primary School, Greensborough Secondary College, Concord School, AK Lines Reserve and the Watsonia shopping precinct. The existing pedestrian bridge does not comply with current standards for access and mobility. Public space on the east and west sides of the road corridor is constrained, limiting opportunities to locate stairs and ramps for a replacement bridge.

The design must address the three-dimensional aspects of the site, to place the new crossing in the most appropriate location, prioritise pedestrian and cyclist safety and travel time, and minimise overshadowing of residential areas.

Ensure the design of the Nell Street pedestrian bridge has regard to the setting and operational requirements of Watsonia Primary School.

DETAILED REQUIREMENTS

- 7. Public open space
- 9. Walls, fencing, barrier & screens
- 12. Lighting
- 13. Walking & cycling infrastructure
- 14. Walking & cycling bridges
- 17. Landscape

**Minimum walking and cycling connection requirements**

**East-west connections:**

- Across Greensborough Road near Elder Street in the form of signalised at-grade crossings
- Across North East Link near Elder Street in the form of a grade-separated crossing
- Across North East Link near Watsonia Road in the form of a grade-separated crossing

**North-south connections:**

- Across Elder Street on the east side of Greensborough Road in the form of a signalised at-grade crossing
- Along the east side of Greensborough Road from Grimshaw Street to Blamey Road in the form of a new link

**North-south and east-west connections:**

- Across and along Greensborough Road near Watsonia Road in the form of signalised at-grade crossing(s)

## KEY BENCHMARKS

The key benchmarks below illustrate specific treatments or approaches which demonstrate potential design outcomes relevant to the final design in this location as described in text below.



**FIGURE 103** Refer Objective 3.1. Demonstrates: connectivity of train station to town centre and surrounds. Sandringham Village, Victoria. *Image: NELP*



**FIGURE 104** Refer Objective 3.3. Demonstrates: connection to the public realm and integration with the surrounding town centre. Bayswater Station, Melbourne. *Image: LXP*



**FIGURE 105** Demonstrates: extension and connection of open space via a landbridge. The Green Bridge, London. *Design: CZWG Architects LLP, Photography: Philip Lane Photography*



**FIGURE 106** Demonstrates: Water Sensitive Urban Design infrastructure and tree planting incorporated into the car park. Henry Turner Oval car park, Melbourne. *Design: GHD*



**FIGURE 107** Demonstrates: integration of barriers and handrails. Darebin Yarra Trail, Melbourne. *Design: VicRoads, Photography: Emma Cross*



**FIGURE 108** Demonstrates: integrated car park entry. Steele Oval underground car park at Melbourne Grammar, Melbourne. *Design: Peter Elliott Architecture + Urban Design. Image: Peter Elliott*



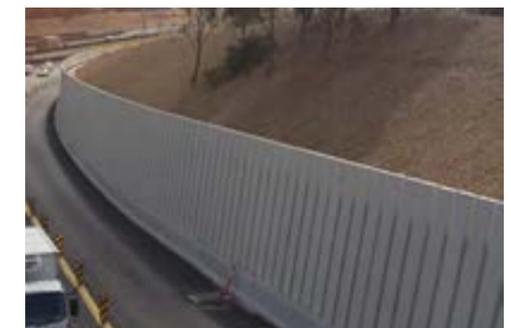
**FIGURE 109** Demonstrates: integrated car park entry. Steele Oval underground car park at Melbourne Grammar, Melbourne. *Design: Peter Elliott Architecture + Urban Design. Image: Peter Elliott*



**FIGURE 110** Demonstrates: good quality planting along water easement. St Georges Road, Thornbury. *Image: NELP*



**FIGURE 111** Demonstrates: good quality planting along power utility easement. Inner Circle-Janet Millman Reserve, Fitzroy North. *Image: NELP*



**FIGURE 112** Refer Cross-section AA-1. Demonstrates: integration of retaining wall and fencing along a road cutting. M80 Ring Road, Melbourne. *Design: Peter Elliott Architecture + Urban Design. Image: Peter Elliott*



**FIGURE 113** Refer Cross-section AA-1. Demonstrates: high quality retaining wall treatment. M80 Ring Road, Melbourne. *Design: Peter Elliott Architecture + Urban Design. Image: Peter Elliott*



**FIGURE 114** Demonstrates: use of existing natural stone in cutting as a design feature. EastLink Freeway, Melbourne. *Design: Wood Marsh and Tract Consultants, Image: EastLink*

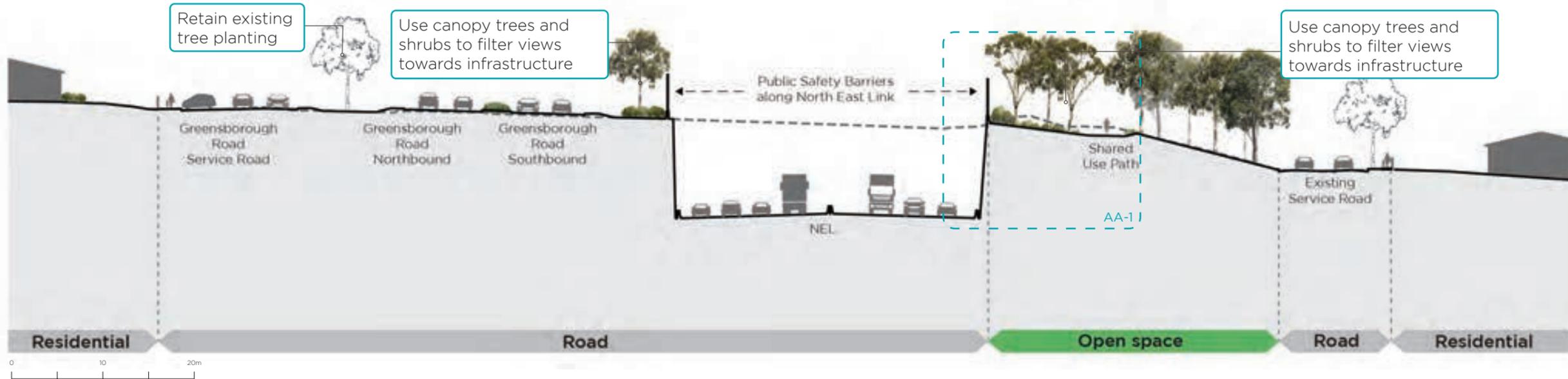


**FIGURE 115** Demonstrates: use of climber to screen infrastructure. Melbourne Park car park, Melbourne. *Image: Isabelle Verschueren*

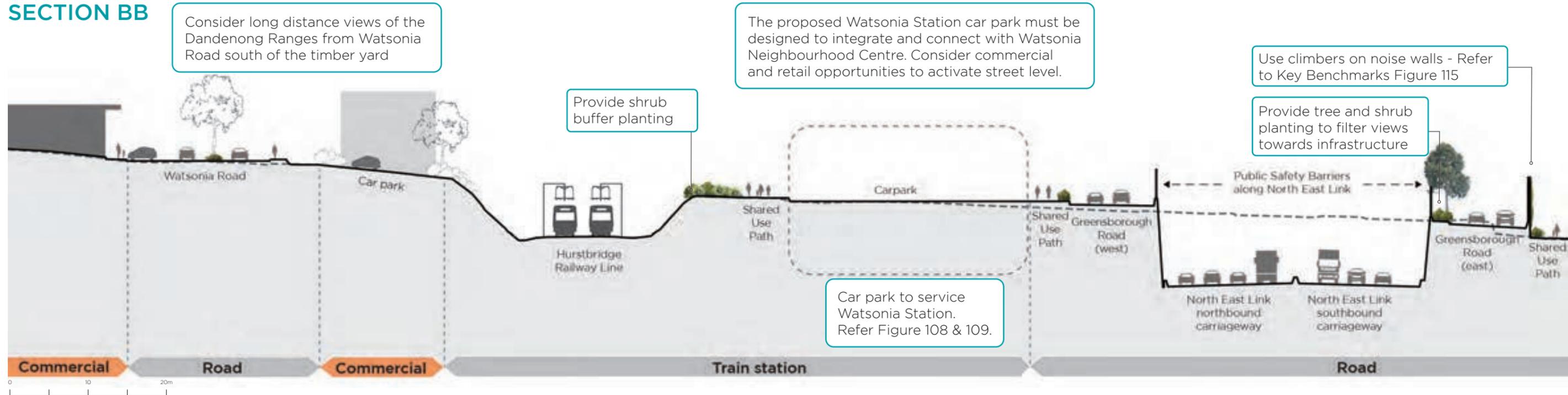
## ILLUSTRATIVE SECTIONS

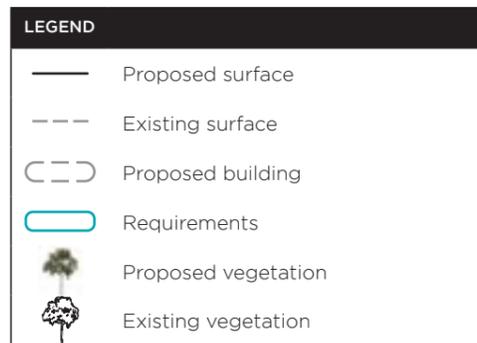
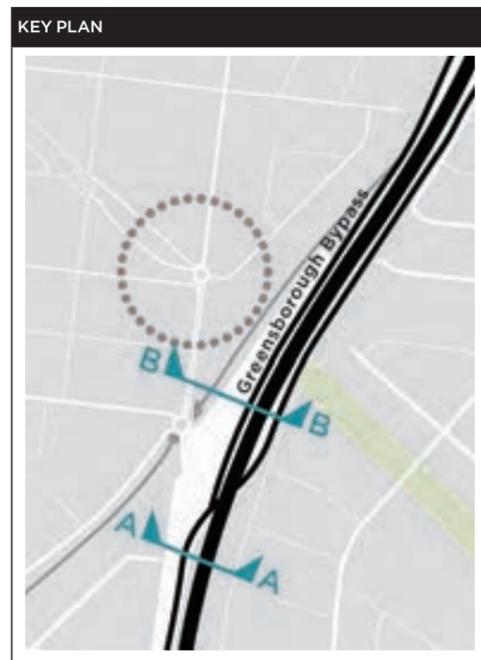
Illustrative sections are indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

### SECTION AA

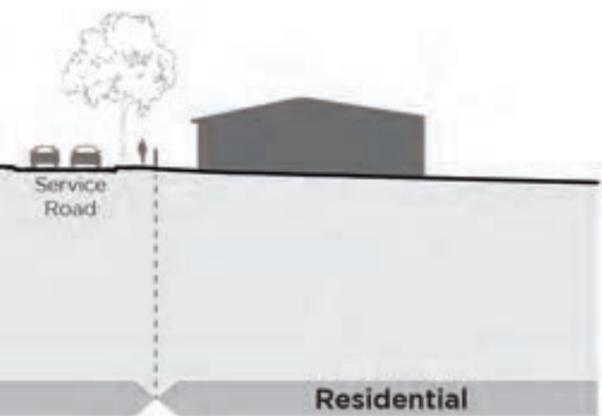
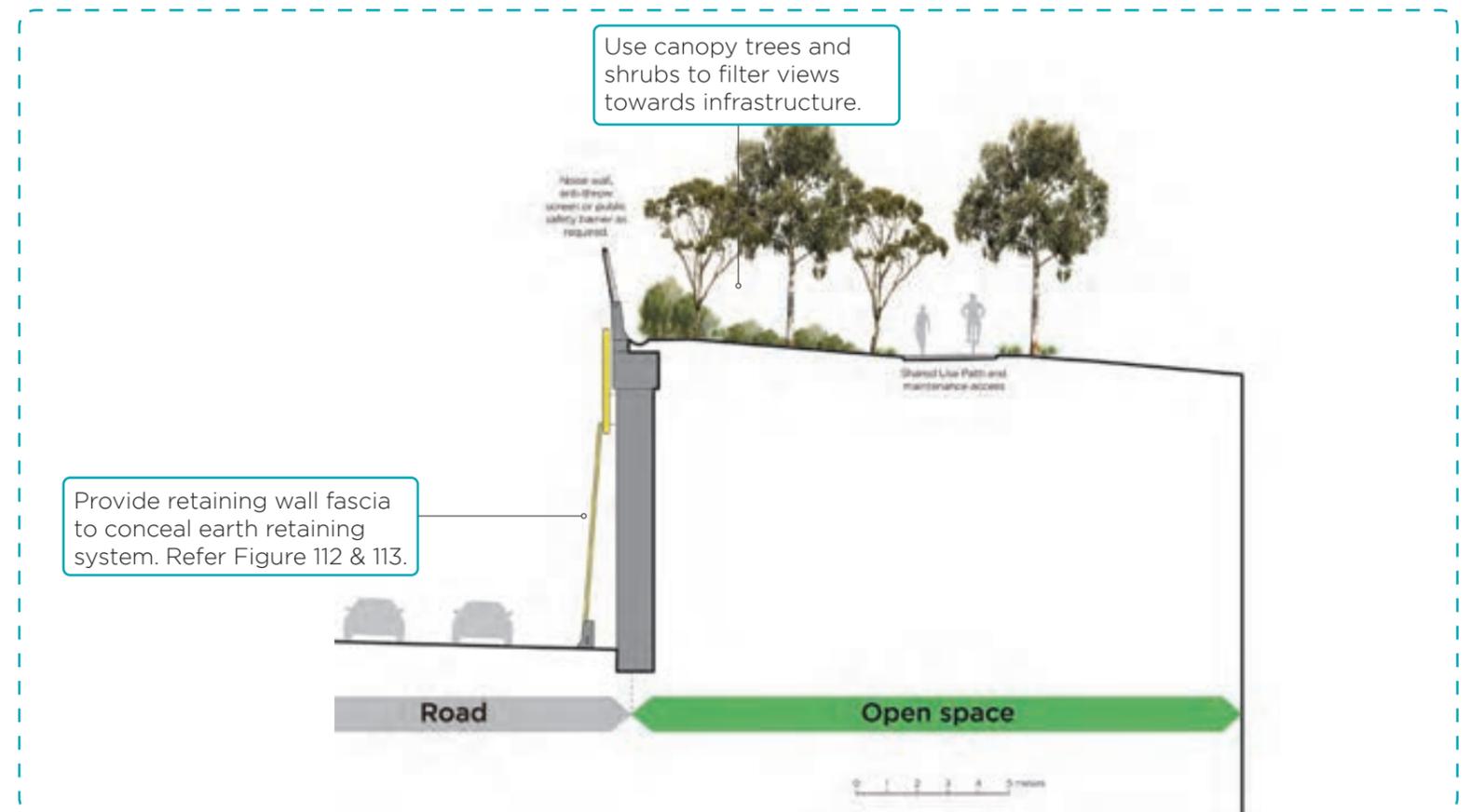


### SECTION BB





### AA-1 ILLUSTRATIVE CROSS SECTION



## ACTION PLAN & IMPLEMENTATION STRATEGY

### Key components to be developed by the Project

The table below contains the key place-specific requirements identified by stakeholders including the NELP Urban Design Advisory Panel and Councils, and will be delivered by the Project. Whilst these key requirements are considered most relevant to this precinct, the final design must be in accordance with all of the place-specific requirements in the Urban Design Strategy. The broader infrastructure elements for delivery have not been included in this table so as not to limit the final design response and allow for innovation.

Summary of key place-specific requirements		Type	Key stakeholders	Delivery timeframe
2C	Walking and cycling connection from the eastern side of Greensborough Road and the NELP corridor to the western side of the road corridor	Walking and cycling connection	Banyule, DoT, VicTrack	During construction
2E	Walking and cycling connection from Watsonia Road to Watsonia Station.	Walking and cycling connection	Banyule, DoT, VicTrack	During construction
2I	Replacement of the existing Nell Street pedestrian bridge.	Walking and cycling connection	Banyule, DoT, VicTrack, Watsonia Primary School	During construction

Watsonia Neighbourhood Activity Centre and surrounds Table 1 - Implementation Plan

## Opportunities for development or upgrades by others

The table below lists opportunities and proposals for the surrounding precinct that could be developed or upgraded by others. This list includes relevant draft and approved local and state government plans / strategies or key opportunities (by others) identified through the EES process.

Opportunity	Reference
<p><b>Watsonia Neighbourhood Centre Concept Plan, Ethos Urban, May 2019</b></p> <ul style="list-style-type: none"> <li>• Seek the upgrade of Watsonia Station to provide a legible, accessible entry structure and new public space decked across the railway cutting under the powerlines, with future local connections providing for buses and drop-off / pick-up.</li> <li>• Locate the Station access decking directly aligned with the powerlines reserve (rather than at Elder Street) to complete the continuous 'green corridor' as a main structuring element and shared trail, potentially establishing local street links from the east to Watsonia Road.</li> <li>• Develop active public spaces at the southern end of Morwell Avenue and between the Library and the Station.</li> <li>• Focus Council works on traffic calming particularly at roundabouts and intersections, improving pedestrian amenity along Watsonia Road and generally planting more trees.</li> </ul>	IAC tabled document 364
<p><b>Picture Watsonia, A Vision for Watsonia Village, Banyule City Council, December 2014</b></p> <ul style="list-style-type: none"> <li>• Picture Watsonia includes a range of short term, medium term and long term opportunities for Watsonia Village.</li> </ul>	IAC tabled document 332d
<p><b>Banyule Walking Strategy 2018-2028, Banyule City Council, November 2018</b></p> <ul style="list-style-type: none"> <li>• Delivery of the priority recreational paths as identified in the Northern Regional Trails Strategy, 2016 such as the East-West Power Easement Trail (B6). The western side of the proposed trail extends from Plenty Road to Watsonia Road / Railway Station / Greensborough Highway precinct. The eastern side of the proposed trail extends from the Greensborough Highway to the Plenty River Trail.</li> </ul>	<p>Web link:</p> <p><a href="http://www.shaping.banyule.vic.gov.au/banyule-walking-strategy">www.shaping.banyule.vic.gov.au/banyule-walking-strategy</a></p>
<p>Potential opportunity to activate the proposed Watsonia Station car park. Depending upon the final design, structure and layout of the car park solution, the following could potentially be implemented:</p> <ul style="list-style-type: none"> <li>• Street level frontage - presents an opportunity for retail/commercial uses to provide active frontages, contribute to the vibrancy of the precinct and provide passive surveillance.</li> <li>• Rooftop - presents an opportunity for uses such as markets and community events.</li> </ul>	Various EES submissions by individuals

Watsonia Neighbourhood Activity Centre and surrounds Table 2 - Opportunities for implementation by others

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### 8.3 BORLASE RESERVE AND LOWER PLENTY ROAD INTERCHANGE

#### Functional summary

A tunnel interchange north of Lower Plenty Road with a new walking and cycling path across Lower Plenty Road linking Greensborough Road to River Gum Walk.

## LOCATION PLAN

#### LEGEND

-  North East Link alignment
-  North East Link alignment underground
-  Eastern Freeway upgrade works
-  Roads
-  Waterways
-  Open space
-  Proposed off-road walking/cycling connection
-  Potential cycling connection
-  Existing off-road walking/cycling connection
-  Existing on-road cycling connection



BORLASE RESERVE 



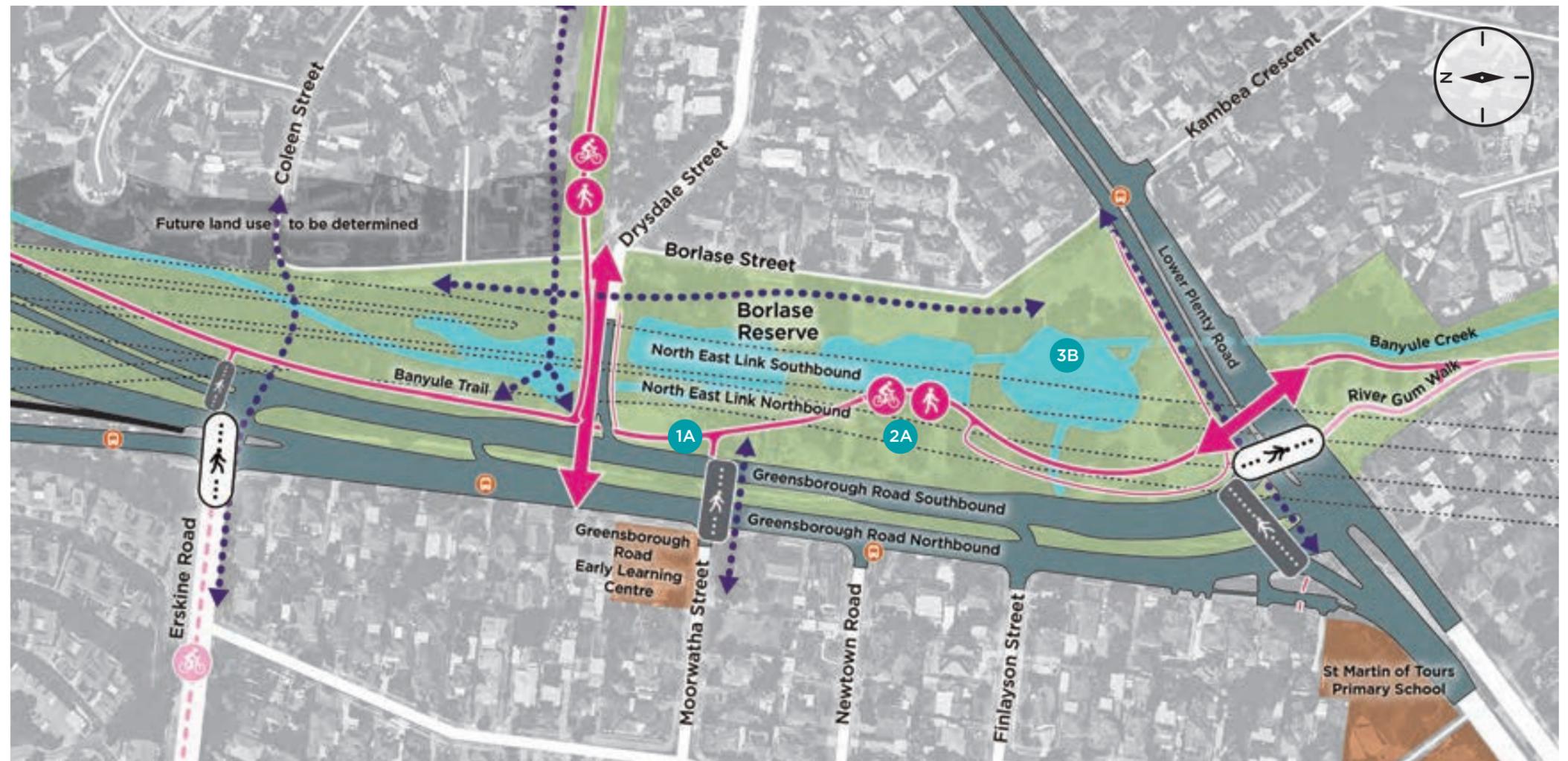
# FRAMEWORK PLAN

## Design intent

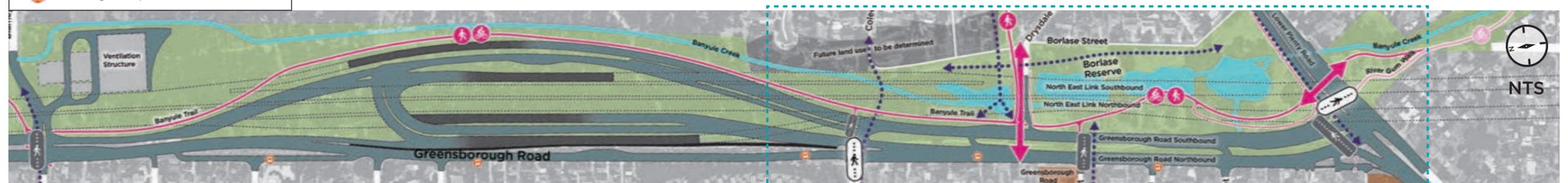
Ensure the road footprint is minimised, preserve open space, enhance access and connectivity, and develop opportunities to reinforce the environmental corridor. Minimise impacts to interfacing residential areas for the final design and during the construction phase.

**LEGEND**

-  Potential new surface roads
-  Potential new road trench
-  Potential new tunnel
-  Future land use to be determined
-  Existing commercial or non-residential properties
-  Existing roads
-  Noise wall
-  Waterways
-  Open space / landscaped area
-  Proposed walking/cycling crossing link
-  Proposed off-road walking/cycling connection
-  Existing off-road walking/cycling connection
-  Pedestrian desire line
-  Proposed signalised crossing
-  Existing signalised crossing
-  Existing bus stops



Plan is based on the IAC tabled document 117a - Lower Plenty Road Alternate Design - 30 July 2019. It is indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.



Plan is based on the IAC tabled document 117a - Lower Plenty Road Alternate Design - 30 July 2019. It is indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

## BORLASE RESERVE

## DESIGN AND DEVELOPMENT PRIORITIES

While all UDS Principles, Objectives and Key Directions apply, the following are most relevant for this location and form the design and development priorities. These design and development priorities must be addressed within the Urban Design and Landscape Plans.

### Key Principles & Objectives

**PRINCIPLE 1**  
**IDENTITY** 

**Objective 1.4 Existing landscape character**

Provide a high quality design outcome that responds sensitively to the distinctive character of this part of Melbourne, takes advantage of existing landmarks and vegetation, views and significant places, protects landscape and vegetation, and seeks to enhance the way in which people experience and interact with the landscape.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The existing Borlase Reserve functions as both a passive recreational amenity and a naturalistic, green backdrop for residents. The project provides an opportunity to improve this amenity, creating an experiential landscape and a destination for the broader community.

**Objective 1.5 Architectural contribution**

Make a positive architectural contribution to infrastructure including bridges, noise walls and other structures.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Built form around the Simpson Barracks and Borlase Reserve is low rise. Undulating topography provides some distant views across the precinct. The introduction of a relatively tall element such as a ventilation structure would have a visual impact that must be addressed through siting and design.

**PRINCIPLE 2**  
**CONNECTING & WAYFINDING** 

**Objective 2.1 Connectivity**

Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Borlase Reserve currently offers a formal pedestrian path at Drysdale Street and an informal pedestrian path from Coleen Street to Greensborough Road. There is a shared use path running north-south, immediately adjacent Greensborough Road. To improve the quality and extent of this limited path network, the project must provide a safe, off-road pedestrian and cyclist link from Yallambie to River Gum Walk, as well as improved east-west connections between Yallambie and Macleod.

**PRINCIPLE 3**  
**URBAN INTEGRATION** 

**Objective 3.4 Minimise footprint**

Minimise negative impacts on the community and the environment by minimising the design footprint and visual bulk.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Considering the current role of Borlase Reserve as both visual landscape and functional parkland, there is a unique opportunity to minimise the footprint of the road infrastructure, consolidate land available for parkland and return high-quality parkland to the local community.

**PRINCIPLE 4**  
**RESILIENCE & SUSTAINABILITY** 

**Objective 4.3 Environmental sustainability**

Optimise environmental performance and embed sustainability initiatives into the design response. This includes integrated water management, biodiversity and habitat enhancement and connections, green infrastructure provision and sustainable use of energy and materials.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Banyule Creek is predominately a concrete culvert, to north of Lower Plenty Road. Some trees in Borlase Reserve are likely to be removed during the construction of the tunnel. The final design of the project must improve and enhance the function, appearance and biodiversity of the reserve. Amenity within the local area is particularly important to residents, both during and after the construction of the North East Link.

### Key Directions

**KEY DIRECTION 1**  
**Develop an integrated design response**

Excerpt from 3.2 Key design directions

- Redevelop Borlase Reserve and integrate it with the surrounding residential area
- Sensitively integrate tunnel infrastructure elements such as the ventilation structures with the local landscape character.

**KEY DIRECTION 3**  
**Recognise cultural and historic values**

Excerpt from 3.2 Key design directions

- Consider providing a design response that recognises the cultural heritage of the Simpsons Barracks and the Traditional Owners

**KEY DIRECTION 5**  
**Create a context sensitive design**

**Ridgeline**

- 2.R Connect neighbourhoods, reduce fragmentation and facilitate the continued integration of the diverse community in this area
- 3.R Reinforce the distinct and unique treed ridgeline character of Melbourne's north-east
- 4.R Ensure built form associated with the project responds to the urban setting and seeks innovative ways to integrate infrastructure with a djacent land uses.
- 7.R Provide an architectural and landscape response that integrates seamlessly with the upgraded M80 Ring Road

Excerpt from 3.2 Key design directions

EPRs and Section 7.2 of the UDS require that the project uses design to minimise and mitigate adverse impacts on the community from temporary works and construction activities. This issue is particularly important for the community adjacent to Borlase Reserve.

## KEY PLACE-SPECIFIC REQUIREMENTS

All place-specific requirements (including those listed below) must be met and addressed within Urban Design and Landscape Plans (refer page 5 section 1.5). The place-specific context and opportunities provide finer grain detail for these requirements and identify additional opportunities that could be delivered.

**1A** Upgrade the Banyule Trail (north of Lower Plenty Road) to be a high quality, suitably wide and functional connection that creates a pleasant and attractive journey for users.

4.3 Existing Place-specific requirement - Map R7 - Lower Plenty Road Interchange

**Place-specific context and opportunities**

The existing shared use path between Greensborough Road and the Simpson Barracks is functional with some canopy cover but is located between a security fence and adjacent traffic.

Improvements to the Banyule Trail must provide pedestrians and cyclists with a safe, off-road path link from Watsonia and Yallambie through Borlase Reserve to River Gum Walk.

The grade-separated walking and cycling crossing at Lower Plenty Road requires careful resolution of competing spatial requirements such as in-ground services, tunnel elevation, at-grade roads and availability of space for ramps and path infrastructure.

**2A** Provide landscaping to improve appearance and use indigenous planting to support biodiversity and habitat.

Through the design of Water Sensitive Urban Design infrastructure, consider management of stormwater and opportunities to reflect the 'naturalistic' values of Banyule Creek.

4.3 Existing Place-specific requirement - Map R7 - Lower Plenty Road Interchange

**Place-specific context and opportunities**

Borlase Reserve provides open space and visual amenity to the residents on both sides of Banyule Creek and Greensborough Road. Improvements to the reserve would significantly benefit the local community following project completion.

Given the residential interface with the reserve, there is the opportunity to increase amenity and provide passive recreational open space for nearby residents, as well as connecting walking and cycling links in the area.

Locating the freeway interchange near Blamey Road and minimising the road footprint near Borlase Reserve would increase the opportunity to consolidate parkland and provide a green link north to Yallambie and Watsonia.

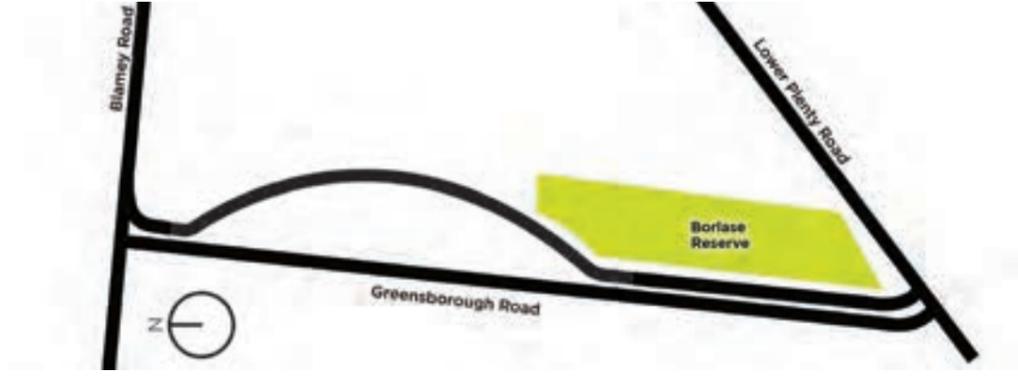


Diagram demonstrates an example road configuration which maximises the retention and functionality of Borlase Reserve

**3B** Minimise impacts to Banyule Creek from road infrastructure and enhance and extend the natural values of Banyule Creek to improve appearance, biodiversity, habitat and recreational values.

4.3 Existing Place-specific requirement - Map R7 - Lower Plenty Road Interchange

**Place-specific context and opportunities**

The existing Banyule Creek is located within Borlase Reserve and is an open drainage channel. It would be impacted directly through the construction of North East Link

There is the opportunity to reinstate Banyule Creek as a natural waterway with high amenity for local park users. The surface road footprint must be minimised and road alignment carefully considered, to maximise opportunities to revitalise the creek and maintain waterway stability as a positive asset for the community.

**Minimum walking and cycling connection requirements**

**East-west connections:**

- Across Greensborough Road in the form of signalised at-grade crossings near Moorwatha Road
- Across Borlase Street near Drysdale Street in the form of an unsignalised at-grade crossing
- Along Drysdale Street and the utility easement in the form of a new shared use path

**North-south connections:**

- Along the east side of Greensborough Road from River Gum Walk to Blamey Road in the form of a new shared use path with a grade-separated crossing across Lower Plenty Road
- Across Drysdale Street near Borlase Street in the form of an unsignalised at-grade crossing

**North-south and east-west connections:**

- Across Greensborough Road in the form of signalised at-grade crossings at the Blamey Road/Fairlie Avenue/Greensborough Road intersection
- Across Greensborough Road in the form of signalised at-grade crossings near Erskine Road

Refer to Chapter 7 – Detailed requirements & benchmarks

- DETAILED REQUIREMENTS
- 13. Walking & cycling infrastructure
  - 14. Walking & cycling bridges
  - 15. Walking & cycling underpasses

- DETAILED REQUIREMENTS
- 7. Public open space
  - 17. Landscape

- DETAILED REQUIREMENTS
- 18.1 Water sensitive design
  - 18.3 Daylighting waterways
  - 18.6 Maximise community and environmental benefits

## KEY BENCHMARKS

The key benchmarks below illustrate specific treatments or approaches which demonstrate potential design outcomes relevant to the final design in this location as described in text below.



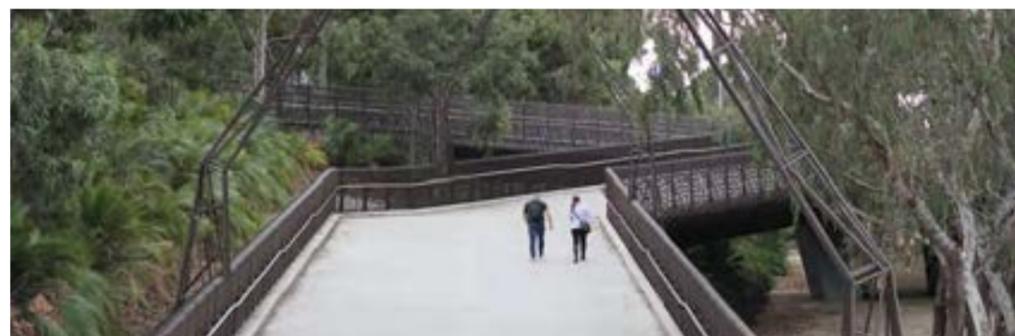
**FIGURE 116** Demonstrates: context sensitive Water Sensitive Urban Design. Trin Warren Tam-Boore Bellbird Waterhole, Parkville. *Image: NELP*



**FIGURE 117** Refer Objective 1.5. Demonstrates: contextually sensitive ventilation structure. Burnley Tunnel, Melbourne. *Image: NELP*



**FIGURE 118** Refer Objective 1.5. Demonstrates: creative response and landmark feature that celebrates local context. Mullum Mullum Tunnel, EastLink, Melbourne. *Design: Wood Marsh and Tract Consultants, Image: VicRoads*



**FIGURE 119** Demonstrates: pedestrian bridge with generous and inviting pedestrian space. Tanderrum Bridge, Melbourne. *Design: John Wardle Architects. Image: NELP*



**FIGURE 120** Demonstrates: shade trees and community infrastructure located along path. Koonung Creek Trail, Melbourne. *Image: NELP*



**FIGURE 121** Demonstrates: tree planting in a road median to improve appearance and provide cooling. Mason Street, Altona. *Image: GHD*



**FIGURE 122** Demonstrates: use of natural light and a generous proportioned underpass. Bowen Place Crossing, Canberra. *Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman*



**FIGURE 123** Demonstrates: integrated architectural and engineering solution. The design reflects the qualities of its immediate context. Bridge of Remembrance, Hobart. *Design: Denton Corker Marshall, Image: John Gollings*



**FIGURE 124** Demonstrates: context sensitive Water Sensitive Urban Design. Storage Wetland, Parkville Melbourne. *Image: NELP*

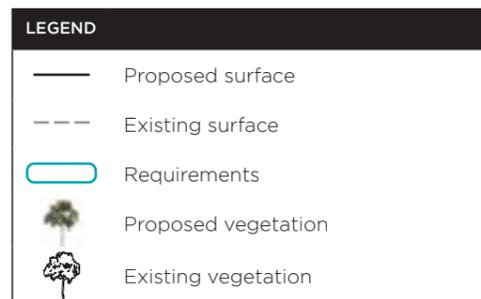
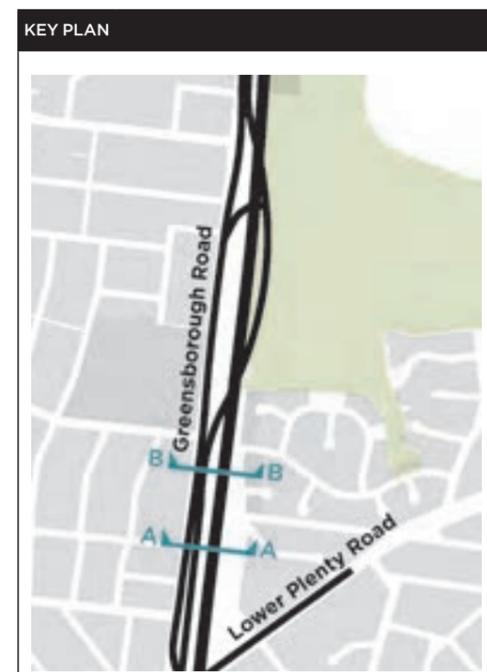
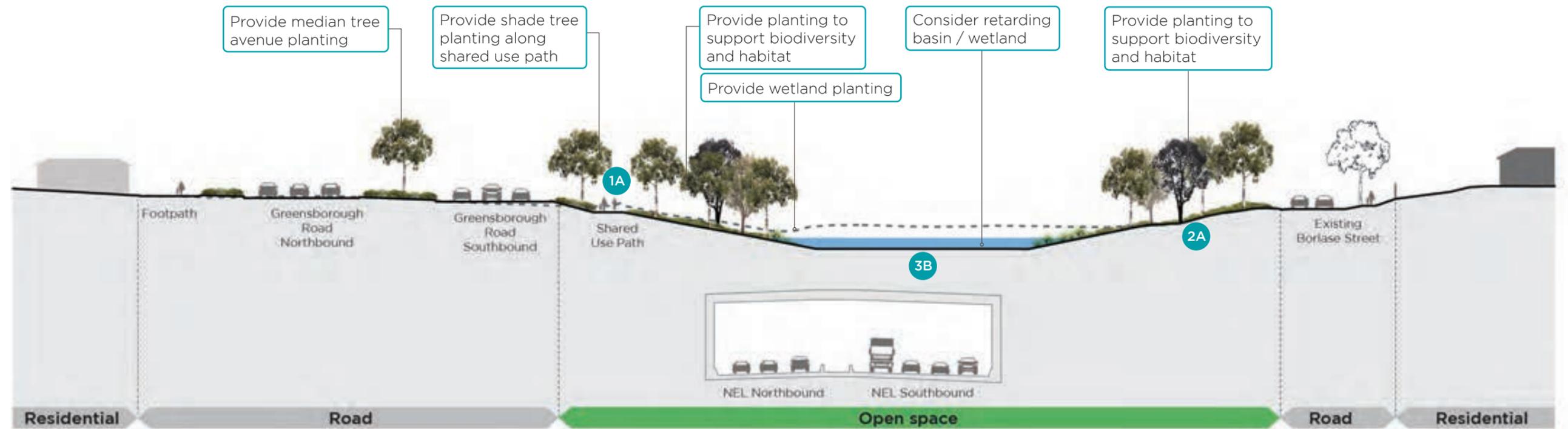


**FIGURE 125** Demonstrates: context sensitive Water Sensitive Urban Design. Koonung Creek Wetlands, Melbourne. *Image: NELP*

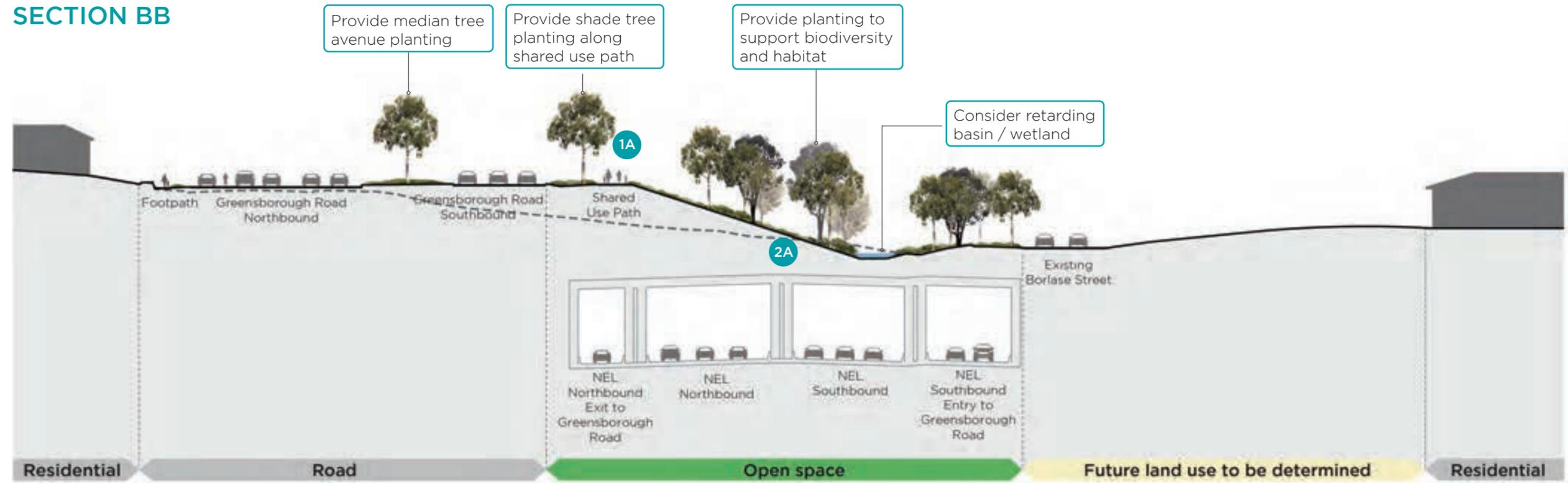
## ILLUSTRATIVE SECTIONS

Illustrative sections are indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

### SECTION AA



SECTION BB



LEGEND	
	Proposed surface
	Existing surface
	Requirements
	Proposed vegetation
	Existing vegetation



## ACTION PLAN & IMPLEMENTATION STRATEGY

### Key components to be developed by the Project

The table below contains the key place-specific requirements identified by stakeholders including the NELP Urban Design Advisory Panel and Councils, and will be delivered by the Project. Whilst these key requirements are considered most relevant to this precinct, the final design must be in accordance with all of the place-specific requirements in the Urban Design Strategy. The broader infrastructure elements for delivery have not been included in this table so as not to limit the final design response and allow for innovation.

Summary of key place-specific requirements		Type	Key stakeholders	Delivery timeframe
2A	Provide landscaping and use indigenous planting to support biodiversity and habitat.	Landscaping and biodiversity	Banyule, Melbourne Water	During construction (Final stages of construction)
1A	Upgrade to Banyule Trail (north of Lower Plenty Road).	Landscaping and biodiversity	Banyule	During construction
3B	Minimise impacts to Banyule Creek from road infrastructure and enhance and extend the natural values of Banyule Creek.	Infrastructure built measure, Landscaping, WSUD, Open Space	Banyule, Melbourne Water	During construction

Lower Plenty Road Interchange Table 1 - Implementation plan

### Opportunities for development or upgrades by others

The table below lists opportunities and proposals for the surrounding precinct that could be developed or upgraded by others. This list includes relevant draft and approved local and state government plans / strategies or key opportunities (by others) identified through the EES process.

Opportunity	Reference
<p><b>Banyule City Council Water Plan (Draft) 2019 - 2021, Banyule City Council</b></p> <p>Continue the investigation and implementation of the Capital Works Program at priority locations identified by the Municipal Wide Drainage Network Capacity Study, including:</p> <ul style="list-style-type: none"> <li>Stormwater Management Catchment Program Mitigation Works: Improve the capacity of the drainage network around Brixton Avenue, Eltham North and the Lower Plenty drain catchment.</li> </ul>	<p>Web Link:</p> <p><a href="https://shaping.banyule.vic.gov.au/rezoning-amendment-c98/draft-water-plan-2019-2021">https://shaping.banyule.vic.gov.au/rezoning-amendment-c98/draft-water-plan-2019-2021</a></p>

Lower Plenty Road Interchange Table 2 - Opportunities for implementation by others

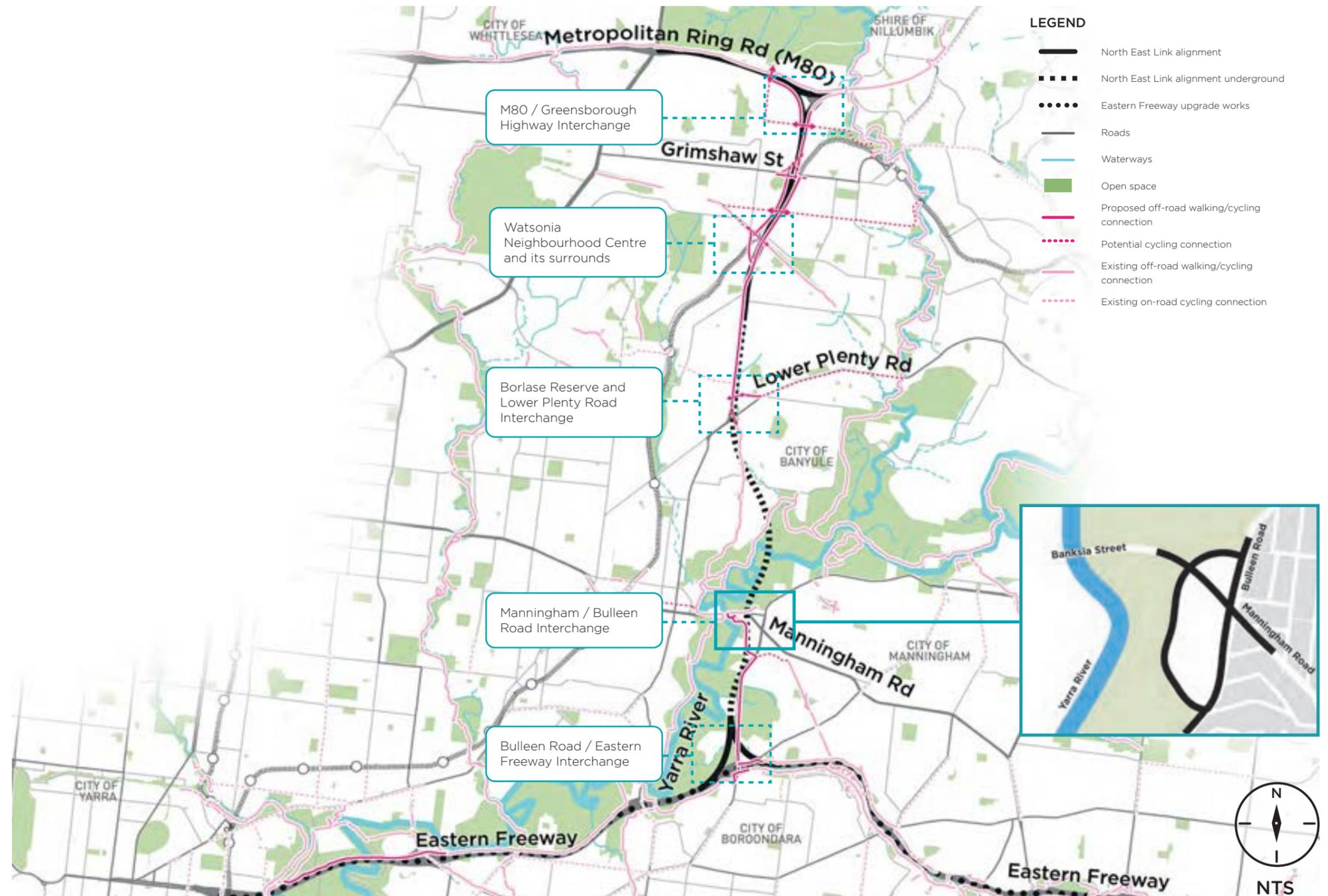
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## 8.4 MANNINGHAM / BULLEEN ROAD INTERCHANGE

### Functional summary

A new interchange connecting Manningham Road and Bulleen Road with the North East Link tunnels. While some structures such as the emergency smoke extraction vent would be above ground, the ramps at the interchange would be below ground.

## LOCATION PLAN



MANNINGHAM

Yarra River Valley Design Character Area



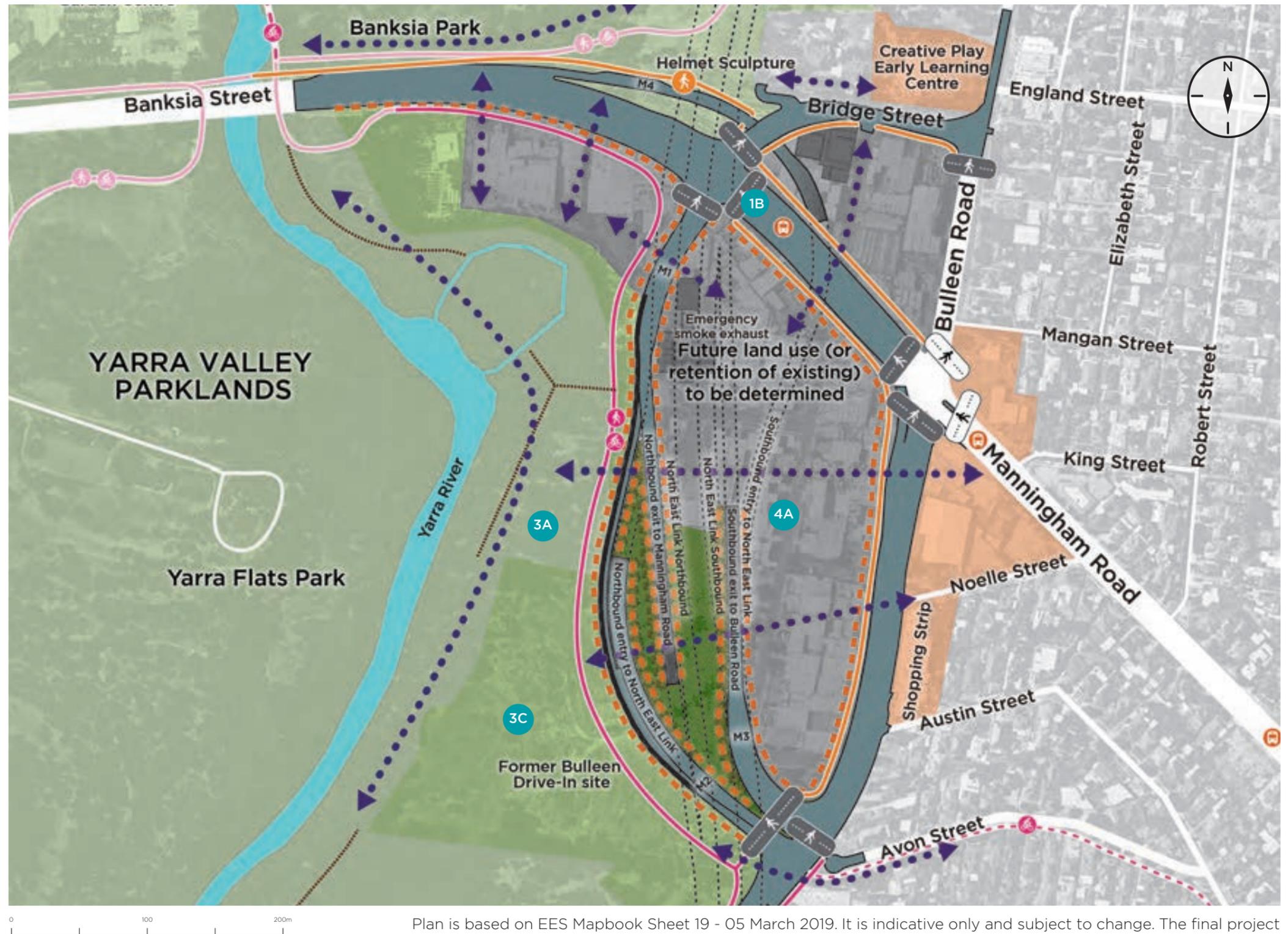
## FRAMEWORK PLAN

### Design intent

Ensure an integrated design approach which supports viable future land uses and existing cultural places. Provide appropriate access and connections to the Yarra Valley Parklands, land at Manningham interchange and adjoining land uses.

**LEGEND**

- Potential new surface roads
- Potential new road trench
- Potential new tunnel
- Land use to be determined (including vehicle access)
- Existing commercial or non-residential properties
- Flood wall
- Existing roads
- Waterways
- Open space / landscaped area
- Interface treatment
- Proposed off-road walking/cycling connection
- Potential cycling connection
- Existing off-road walking/cycling connection
- Proposed walking path
- Existing bus stops
- Cultural Landscape Trail
- Proposed signalised crossing
- Existing signalised crossing
- Potential ancillary buildings
- Pedestrian desire line



Plan is based on EES Mapbook Sheet 19 - 05 March 2019. It is indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

## DESIGN AND DEVELOPMENT PRIORITIES

While all UDS Principles, Objectives and Key Directions apply, the following are most relevant for this location and form the design and development priorities. These design and development priorities must be addressed within the Urban Design and Landscape Plans.

### Key Principles & Objectives

**PRINCIPLE 1**

**IDENTITY**



**Objective 1.1**  
**Sense of place**

Protect, maintain and enhance the identity of local places, and respectfully consider Indigenous and non-Indigenous cultural values. This includes appropriate consideration of local community facilities, the natural environment, European and Indigenous history, and cultural places such as the Bolin Bolin Billabong, Yarra Bend Park, and Heide Museum of Modern Art.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Manningham interchange sits in a part of Melbourne that is culturally significant. The Yarra River, Bolin Bolin Billabong and surrounding area hold great significance for the Wurundjeri Woi-wurrung people. The Heide Museum of Modern Art also holds strong connections for many Melburnians. Any design solutions for this area must acknowledge and celebrate these connections. This could reflect the status of the interchange as a primary node and integrate with initiatives such as a gateway gesture.

**Objective 1.2**  
**Recognise the Yarra River (Birrarung)**

Provide a design that respects and promotes the Yarra River (Birrarung) and its environs which encompass its tributaries, wetlands, billabongs, native vegetation and parklands such as Banyule Flats, and seek opportunities to celebrate this iconic Melbourne asset and ceremonial meeting place for the benefit of Traditional Owners and the general public.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Parkland between the Yarra River and Bulleen Road, south of Banksia Street and to the north of the Veneto Club is largely inaccessible and underutilised. Pedestrian, cycling and vehicle access to this area is limited. The project provides an opportunity to unlock this area and celebrate the presence of the Yarra River (Birrarung).

**PRINCIPLE 2**

**CONNECTING & WAYFINDING**



**Objective 2.1 Connectivity**

Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Walking and cycling paths through the parkland east of the Yarra River are informal and sometimes disjointed. The project provides an opportunity to support the extension of the existing walking and cycling network in this area and improve access into the Bolin Bolin precinct. Additional paths near the Manningham interchange would complement path projects delivered by others and contribute to broader connectivity objectives by linking schools and sporting grounds with cultural facilities and residential areas to the east and west of the Yarra River.



Diagram demonstrating minimisation of footprint. (Illustrating Principle 3.4)

**PRINCIPLE 3**

**URBAN INTEGRATION**



**Objective 3.3**  
**Strategic alignment**

Provide an integrated transport infrastructure and land use solution that responds to strategic transport and land use planning for the broader precinct in consultation with local government and authorities.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The design and development of the interchange must have regard to relevant approved State and Local Government land use strategies, plans and frameworks including the Yarra Strategic Plan, and Draft Yarra River Bulleen Precinct Land Use Framework Plan (when they are approved). It is important that the final design supports viable future land uses (such as commercial and industrial uses), provides for suitable future access, and maximises the developable area at surface level to the extent practicable.

**Objective 3.4**  
**Minimise footprint**

Minimise negative impacts on the community and the environment by minimising the design footprint and visual bulk.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Manningham interchange presents a significant opportunity to minimise the footprint of the road infrastructure and maximise consolidated land for future development along Bulleen Road and for open space that connects to the Yarra River Parkland. Reducing the horizontal and vertical footprint of the road supports the objective to retain existing businesses (such as Bulleen Art and Garden) and reduce visual impacts on surrounding properties and the adjoining Yarra Valley parklands.

### Key Directions

**KEY DIRECTION 1**  
**Develop an integrated design response**

Excerpt from 3.2 Key design directions

- Optimise the engineering design to sit sensitively in the surrounding environment

**KEY DIRECTION 2**  
**Support a natural and connected corridor**

Excerpt from 3.2 Key design directions

- Improve local access to the Yarra River and parkland by providing connections through and around the precinct

**KEY DIRECTION 3**  
**Recognise past, contemporary & shared Indigenous & historic cultural values**

Excerpt from 3.2 Key design directions

- Positively contribute to the cultural identity of the precinct, celebrating the Birrarung, Bolin Bolin Billabong and Heide Museum of Modern Art

**KEY DIRECTION 5**  
**Create a context sensitive design**

**Yarra River Valley**

- 1.Y Protect and promote cultural values for places of significance including the Yarra River, Bolin Bolin Billabong and the Heide Museum of Modern Art
- 4.Y Maximise opportunities for land use integration at the Manningham Road interchange
- 5.Y Be sympathetic to the landscape setting of the Greater Yarra Urban Parklands
- 6.Y Improve the ability for the community to access open space in Bulleen
- 7.Y Provide enhanced and more convenient cycling routes to Melbourne's inner city areas

Excerpt from 3.2 Key design directions

## KEY PLACE-SPECIFIC REQUIREMENTS

All place-specific requirements (including those listed below) must be met and addressed within Urban Design and Landscape Plans (refer page 5 section 1.5). The place-specific context and opportunities provide finer grain detail for these requirements and identify additional opportunities that could be delivered.

**1B** All practical design alternatives to retain the existing significant River Red Gum should be explored. If removal cannot be avoided, provide legacy actions in consultation with key stakeholders.

4.3 Existing Place-specific requirement - Map Y1 Manningham Road Interchange

**Place-specific context and opportunities**

There is considerable community support to retain the existing River Red Gum located near the Caltex site on Manningham Road, which acts a local landmark.

Retention of the existing tree will be challenging due to the significant works associated with constructing the Manningham Interchange in close proximity. Space near the interchange is constrained and therefore it is the difficult to move infrastructure away from the tree without impacting adjacent properties and the Yarra River.

The design should celebrate this local landmark if it can be retained. Its legacy should form part of the design response if removal cannot be avoided.

**Minimum walking and cycling connection requirements**

**East-west connections:**

- Along the northern side of Manningham Road from Bridge Street to Bulleen Road in the form of a pedestrian footpath
- Along the southern side of Manningham Road from Bridge Street to Bulleen Road in the form of a pedestrian footpath
- Along Bridge Street from Manningham Road to Templestowe Road in the form of a pedestrian footpath
- Across Bulleen Road at the Bridge Street intersection in the form of a signalised at-grade crossing

**North-south connections:**

- Along the west side of Bulleen Road from Manningham Road to Avon Street in the form of a pedestrian footpath
- Along the west side of the Manningham Road interchange from Manningham Road to Avon Street in the form of a shared use path
- Along the east side of Bulleen Road from Avon Street to Thompsons Road in the form of a shared use path

**North-south and east-west connections:**

- Across Bulleen Road and North East Link entry and exit ramps at Avon Street in the form of at-grade signalised crossings

DETAILED REQUIREMENTS

17.4 Landscape - Minimising loss

**3A** Improve the interface of the Yarra Valley Parklands with the interchange and transport infrastructure. Use landscaping to reveal scenic views and reinforce visual links to the natural environment, and filter views towards infrastructure. Plant indigenous vegetation to support local biodiversity and habitat.

4.3 Existing Place-specific requirement - Map Y1 Manningham Road Interchange

**Place-specific context and opportunities**

The current interface between the Yarra River parkland and the Manningham interchange site comprises of industrial structures, security fences and parking lots. There is a height differential between the parkland that is lower and prone to flooding, and the current industrial area that sits on higher ground.

Development of the Manningham Interchange must improve the precinct's interface with the Yarra River and integrate with the natural parkland environment. Innovative solutions should be employed to address the flooding issue and provide a positive visual and physical connection between the two areas.

DETAILED REQUIREMENTS

9.8 Flood walls and retaining walls  
17.1 Green corridors

**3C** Maintain and enhance public access to the Yarra Valley Parklands including water access locations along the Yarra River.

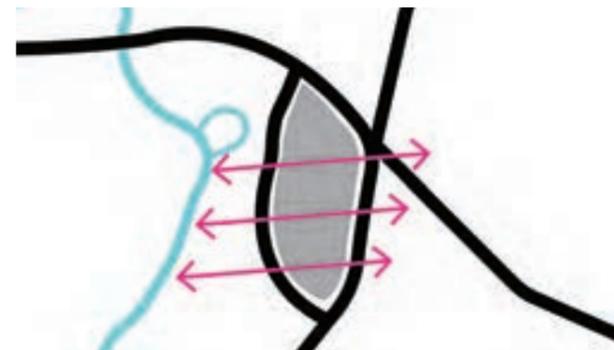
4.3 Existing Place-specific requirement - Map Y1 Manningham Road Interchange

**Place-specific context and opportunities**

The Bolin Bolin Billabong and associated waterways hold particular significance to the Wurundjeri Woi-wurrung. The Yarra River parkland east of the Yarra River, south of Manningham Road and west of Bulleen Road is difficult to access and not well serviced by walking and cycling facilities.

The project presents the opportunity to enhance this unique part of Melbourne through a considered and respectful design that responds to cultural values, topography, vegetation communities and hydrology.

Wayfinding and the alignment of the path network could enhance connections to the Yarra River, surrounding community and landscape.



Enhance physical and visual connections to the Yarra River

DETAILED REQUIREMENTS

13.1 Pedestrian and cycling network  
13.2 Encourage cross-community connectivity  
13.3 Pathways and connections  
14.4 Path separation

**4A** Ensure the project design has regard to relevant State and local government strategic land use plans. Enable future land use opportunities by:

- Seeking opportunities to consolidate land parcels and minimise the fragmentation of land parcels
- Designing the road network to accommodate vehicle and pedestrian access to residual land parcels.

New built form must provide sensitive interfaces with the adjoining Yarra Valley Parklands. Built form should be integrated into the landscape to minimise visual impact of flood mitigation and other structures.

4.3 Existing Place-specific requirement - Map Y1 Manningham Road Interchange

**Place-specific context and opportunities**

Strategic land use plans for the Manningham interchange precinct and adjacent parkland are being developed by State. Whilst they are being prepared, it is important that the design of the North East Link maximises opportunities to accommodate the future plans through initiatives such as maximising the consolidated land available for redevelopment, identifying access to the precinct and establishing a positive connection between the interchange area and the adjacent Yarra River parkland.

Refer to Chapter 7 – Detailed requirements & benchmarks

DETAILED REQUIREMENTS

9.8 Flood walls and retaining walls  
17.1 Green corridors

## KEY BENCHMARKS

The key benchmarks below illustrate specific treatments or approaches which demonstrate potential design outcomes relevant to the final design in this location as described in text below.



**FIGURE 126** Refer Objective 3.3. Demonstrates: high quality commercial development with well vegetated frontage which could be enabled. Burwood, Melbourne. *Image: Google*



**FIGURE 127** Refer Objective 3.3. Demonstrates: high quality, context sensitive development which could be enabled. MADA building at Monash University, Melbourne. *Design: Nigel Bertram, Image: NELP*



**FIGURE 128** Demonstrates: good quality residential development with well vegetated interface which could be enabled. Residential estate, Parkville. Melbourne. *Image: NELP*



**FIGURE 129** Refer Objective 1.1. Demonstrates: context sensitive design reflecting cultural values. Brambuk Cultural Centre, Halls Gap VIC. Architect: Gregory Burgess Architects *Photography: Trevor Mein*



**FIGURE 130** Demonstrates: dynamic and sculptural screening near tunnel entrance. Vedeggio-Cassarate Tunnel Development, Switzerland. *Design: Cino Zucchi Architetti*



**FIGURE 131** Demonstrates: context sensitive architectural solution. *Artist: Anderson Hunt and Down Street Studios, Image: NELP*



**FIGURE 132** Demonstrates: buffer planting and mounds filter views from residential areas. Koonung Creek Reserve, Melbourne. *Image: NELP*



**FIGURE 133** Demonstrates: shade trees and vegetation located along shared use path. Royal Park, Parkville. *Image: NELP*



**FIGURE 134** Demonstrates: a high quality user experience which takes advantage of its setting. Darebin Yarra Trail, Melbourne. *Design: VicRoads, Photography: Emma Cross*



**FIGURE 135** Demonstrates: context sensitive Water Sensitive Urban Design. Trin Warren Tam-Boore Bellbird Waterhole Parkville. *Image: NELP*



**FIGURE 136** Demonstrates: high quality indigenous planting and sculptural elements within a parkland setting. Royal Park, Parkville. *Image: NELP*



**FIGURE 137** Demonstrates: boulevard of trees contributing to streetscape amenity. Mature vegetation on local street, Watsonia. *Image: GHD*



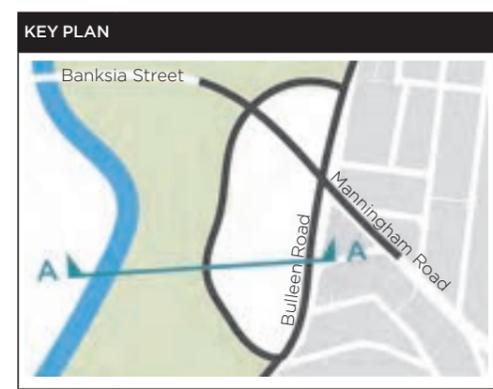
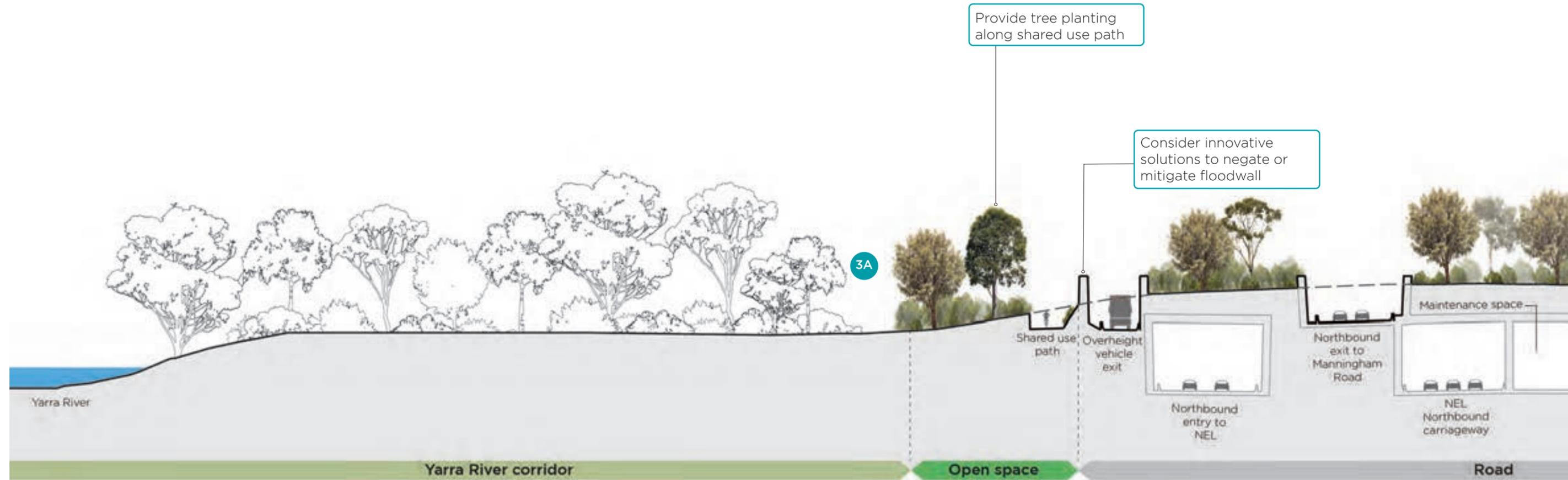
**FIGURE 138** Demonstrates: buffer planting used to mitigate views and enhance appearance of walls. Eastern Freeway, Melbourne. *Design: Wood Marsh, Image: NELP*



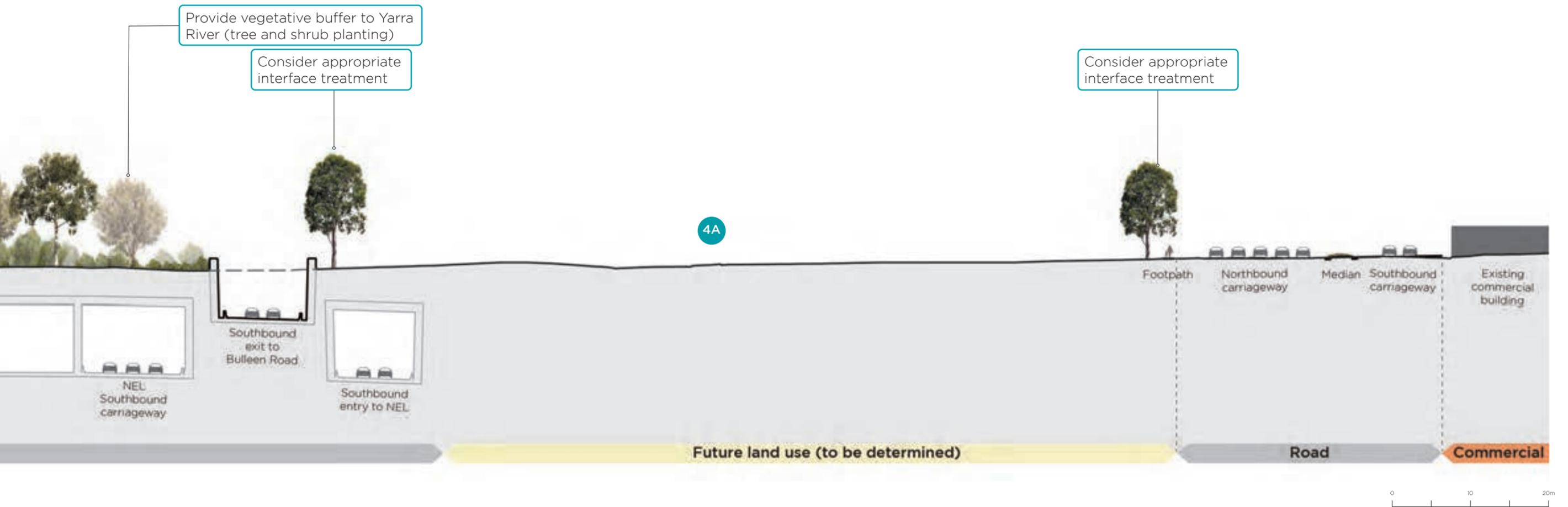
**FIGURE 139** Demonstrates: high quality curved and textured wall. Eastern Freeway, Melbourne. *Design: Wood Marsh, Image: NELP*

# ILLUSTRATIVE SECTIONS

## SECTION AA



LEGEND	
	Proposed surface
	Existing surface
	Requirements
	Proposed vegetation
	Existing vegetation



Road alignment based on EES Mapbook Sheet 19 - 05 March 2019

## ACTION PLAN & IMPLEMENTATION STRATEGY

### Key components to be developed by the Project

The table below contains the key place-specific requirements identified by stakeholders including the NELP Urban Design Advisory Panel and Councils, and will be delivered by the Project. Whilst these key requirements are considered most relevant to this precinct, the final design must be in accordance with all of the place-specific requirements in the Urban Design Strategy. The broader infrastructure elements for delivery have not been included in this table so as not to limit the final design response and allow for innovation.

Summary of key place-specific requirements		Type	Key stakeholders	Delivery timeframe
4A	Ensure the project design has regard to relevant approved State and local government strategic land use plans.	Land use	Manningham, Parks Victoria	Prior to construction
3A	Improve the interface of the Yarra Valley Parklands with the interchange and transport infrastructure.	Landscape	Manningham, Parks Victoria	During construction
3C	Maintain and enhance public access to the Yarra Valley Parklands including water access locations along the Yarra River.	Access and amenity	Manningham, Parks Victoria	During construction
1B	All practical design alternatives to retain the existing significant River Red Gum should be explored. If removal cannot be avoided, provide legacy actions in consultation with key stakeholders.	Landscape	Manningham, Wurundjeri Woi-wurrung	Prior to construction

Manningham Road Interchange Table 1 - Implementation plan

## Opportunities for development or upgrades by others

The table below lists opportunities and proposals for the surrounding precinct that could be developed or upgraded by others. This list includes relevant draft and approved local and state government plans / strategies or key opportunities (by others) identified through the EES process.

Opportunity	Reference
<p><b>Draft Yarra River - Bulleen Precinct Land Use Framework Plan, Department of Environment, Land, Water and Planning, 2019</b></p> <p>The Draft Yarra River - Bulleen Precinct Land Use Framework Plan identifies the following proposed improvements:</p> <ul style="list-style-type: none"> <li>• Development of a new Cultural Gateway at Bulleen Industrial Precinct, integrating cultural uses with employment uses.</li> <li>• Redevelopment of the former Bulleen Drive-in site for open space or conservation.</li> <li>• Investigate, in partnership with VicRoads, the duplication of Templestowe Road, which an analysis of current and projected traffic volumes suggests is warranted.</li> </ul> <p>Note: this would include considering provision of shared use paths.</p> <p>The Draft Yarra River - Bulleen Precinct Land Use Framework Plan also notes other important projects near the study area in various stages of development including:</p> <ul style="list-style-type: none"> <li>• The Bolin Bolin Billabong Rehabilitation Project <ul style="list-style-type: none"> <li>- Major rehabilitation works at Bolin Bolin Billabong to restore nature water inflow regimes, rehabilitate the surrounding environment, improve habitat for wildlife and improve amenity for people using the area.</li> <li>- Agencies involved in this project include Melbourne Water, Parks Victoria, Manningham Council and the Wurundjeri- Woiwurrung Cultural Heritage Aboriginal Corporation.</li> </ul> </li> <li>• The Koonung Creek Linear Park Pathway Connection <ul style="list-style-type: none"> <li>- Investigation (as part of the Koonung Creek Linear Trail Management Plan) of a pedestrian link to create a circuit at the southern end of the Bolin Bolin Cultural Heritage Trail Site.</li> <li>- Agencies involved include Manningham Council and Boroondara Council.</li> </ul> </li> </ul>	<p>IAC tabled document 23a</p> <p>EES submission 643, (page 2 &amp; 6)</p>
<p>A new shared use path bridge provided across the Yarra River at Banksia Park, Bulleen to Yarra Street.</p>	<p>IAC 374i (page 4) and EES submission 316 (page 12)</p>
<p>Heide Museum of Modern Art - Protect and improve access to the Heide MOMA.</p>	<p>IAC 374i (page 7), EES submission 643 (page 2 &amp; 5) and EES submission 756 (page 47)</p>
<p>Provide an underpass at Banksia Street, Heidelberg to the east of Dora Street / The Boulevard to create a safer and more direct route on the Main Yarra Trail</p>	<p>IAC 374g (page 234) and EES submission 716 (page 42)</p>
<p>Building car parking to cater for the Birrarung Cultural Precinct, new village and Heide MoMA</p>	<p>EES submission 756 (page 47)</p>

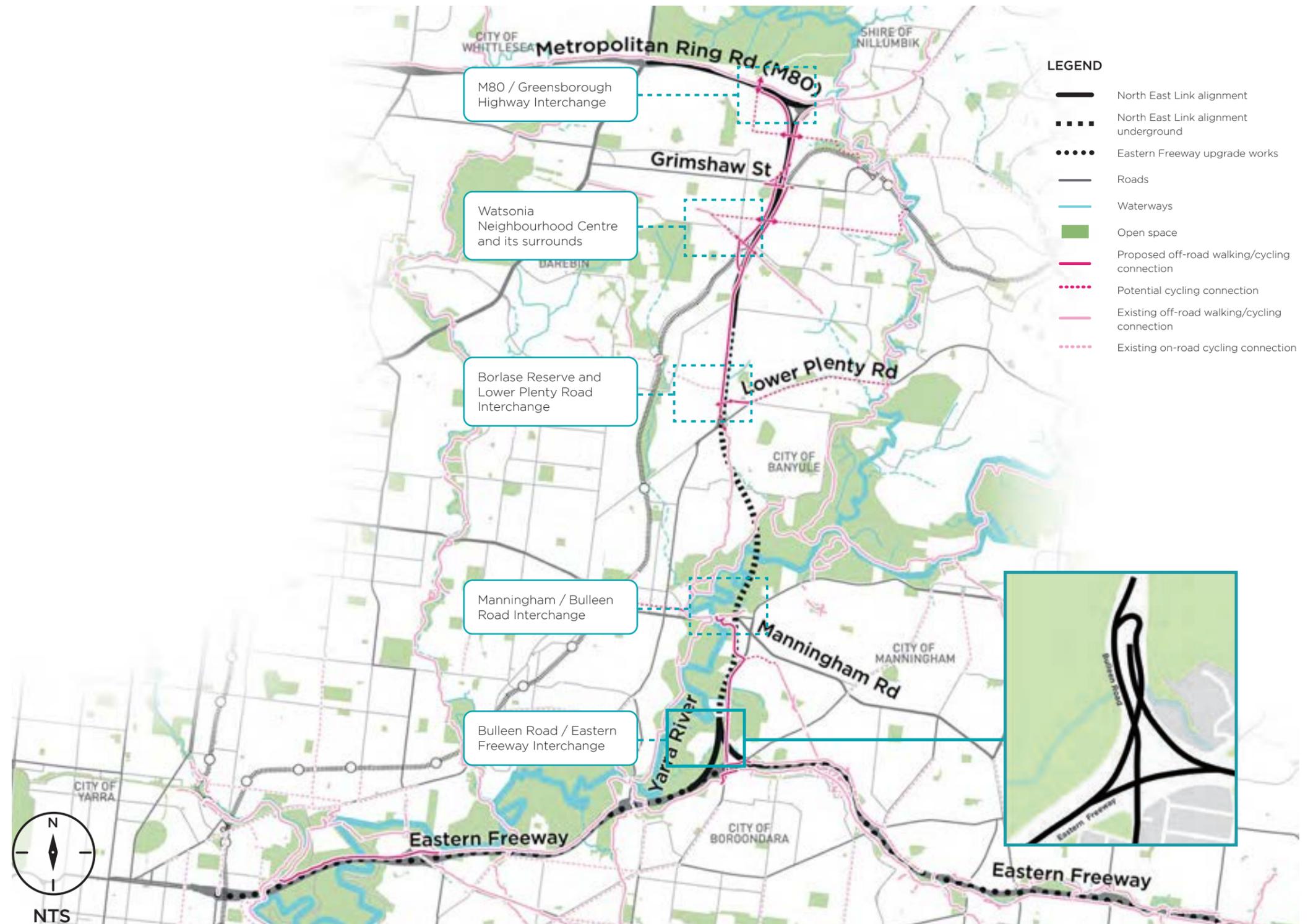
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## 8.5 EASTERN FREEWAY INTERCHANGE

### Functional summary

A new interchange and tunnel portal adjacent to Bulleen Road would connect North East Link to the upgraded Eastern Freeway.

## LOCATION PLAN



Yarra River Valley Design Character Area



## FRAMEWORK PLAN

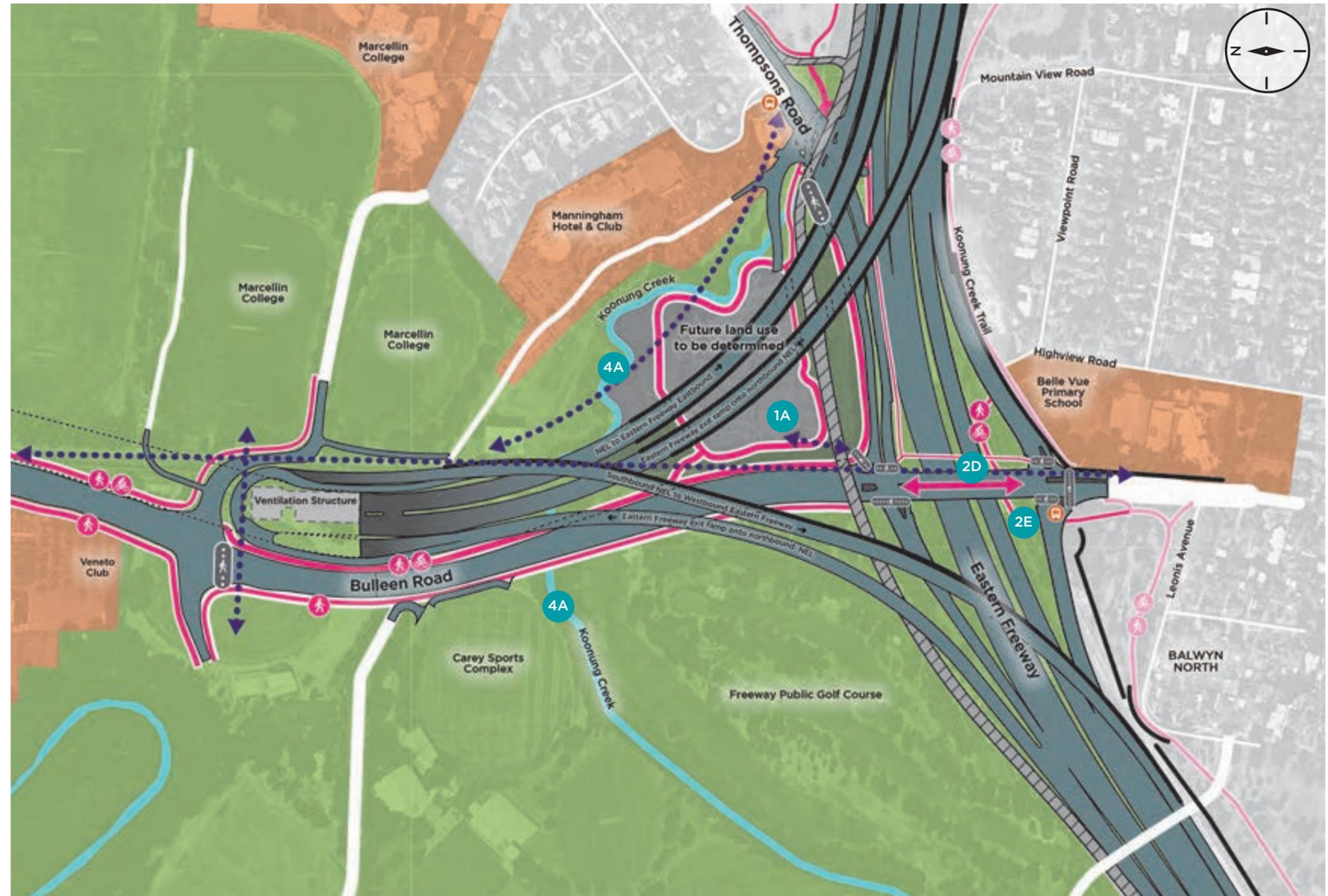
### Design intent

Ensure the road footprint is minimised, improve connectivity and make a positive architectural contribution to the precinct, with appropriate walking and cycling connections and interfaces to schools and residential areas.

Note: There will be subsequent changes to the mix and layout of sport and recreation uses in Bulleen as a result of North East Link, subject to a separate planning approval process.

**LEGEND**

-  Potential new surface roads
-  Potential new road trench
-  Potential new tunnel
-  Future land use to be determined
-  Potential new busway
-  Existing commercial or non-residential properties
-  Existing roads
-  Noise wall
-  Waterways
-  Open space / landscaped area
-  Proposed off-road walking/cycling connection
-  Existing off-road walking/cycling connection
-  Proposed walking/cycling crossing link
-  Pedestrian desire line
-  Existing bus stops
-  Proposed signalised crossing
-  Potential ancillary buildings



Plan is based on the IAC tabled document 113 - NELP Bulleen Interchange alternate design - 30 July 2019. It is indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

# DESIGN AND DEVELOPMENT PRIORITIES

While all UDS Principles, Objectives and Key Directions apply, the following are most relevant for this location and form the design and development priorities. These design and development priorities must be addressed within the Urban Design and Landscape Plans.

## Key Principles & Objectives

**PRINCIPLE 1**  
**IDENTITY** 

**Objective 1.3 Landscape & visual amenity**

Sensitively enhance landscape and visual outcomes and reduce physical and visual impacts associated with the project.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The elevated structures, ventilation building, and associated elements could have a visual impact on the residential areas, schools and parkland of the flat landscape along Bulleen Road. The design must address these impacts as a high priority, using innovative solutions, appropriate mitigation measures and sensitive siting to reduce any adverse effects.

**Objective 1.4 Existing landscape character**

Provide a high quality design outcome that responds sensitively to the distinctive character of this part of Melbourne, takes advantage of existing landmarks and vegetation, views and significant places, protects landscape and vegetation, and seeks to enhance the way in which people experience and interact with the landscape.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The largely flat topography and residential interfaces around the Eastern Freeway interchange require a landscape-led design approach that reinforces the status of the interchange as a primary node, sensitively integrates new elevated road structures and enhances the significant parkland areas along the Yarra River and Koonung Creek.

**PRINCIPLE 2**  
**CONNECTING & WAYFINDING** 

**Objective 2.1 Connectivity**

Improve people's ability to move through the immediate and wider area with ample, efficient and quality links across and along the corridor for all transport modes, including pedestrians and cyclists.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Walking and cycling paths along and across Bulleen Road poorly service the schools (Marcellin College, Trinity Grammar and Carey Grammar) and sporting clubs in the area. The path on the Bulleen Road bridge over the Eastern Freeway is narrow. The Koonung Creek Trail has an at-grade crossing at Bulleen Road. The project must enhance the pedestrian and cycling network and connectivity in the area, improving facilities for students, sports-people, pedestrians and cyclists.

**Objective 2.2 Transport integration**

Maximise the benefits of the project by facilitating seamless access to a variety of public transport, walking and cycling choices as part of a connected intermodal network.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

A new bus interchange at Bulleen will enhance the public transport options for the area. This facility must be well connected to the pedestrian and cycling network, to maximise access. The Park and Ride must be designed to respond to its context including the Koonung Creek, open space, the adjacent road infrastructure and create a space for use by people (not only vehicles).

**PRINCIPLE 3**  
**URBAN INTEGRATION** 

**Objective 3.2 Integration of design**

Ensure an integrated engineering, urban design, architectural and landscape architectural approach that sensitively addresses social, cultural, functional and physical aspects of the project.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The interchange at the junction of the Eastern Freeway and Bulleen Road would be complex, accommodating numerous traffic movements, elevated ramps and a dedicated busway. This increased complexity requires a multi-disciplinary approach that results in well-proportioned elevated structures with clear wayfinding for drivers and a design that integrates well with the Eastern Freeway landscape and adjoining uses.

**Objective 3.4 Minimise footprint**

Minimise negative impacts on the community and the environment by minimising the design footprint and visual bulk.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The Eastern Freeway interchange presents a significant opportunity to minimise the footprint of the road infrastructure and protect schools (Marcellin College, Trinity Grammar, Carey Grammar and Belle Vue Primary), sporting clubs and facilities, and businesses (Manningham Hotel).

**PRINCIPLE 4**  
**RESILIENCE & SUSTAINABILITY** 

**Objective 4.3 Environmental sustainability**

Optimise environmental performance and embed sustainability initiatives into the design response. This includes integrated water management, biodiversity and habitat enhancement and connections, green infrastructure provision and sustainable use of energy and materials.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

Land adjacent and under the new road structures at the interchange presents the opportunity to improve amenity and environmental values through initiatives such as functional water bodies and indigenous planting. This includes connecting and enhancing the Yarra River parkland and Koonung Creek, naturalising waterways and strengthening riparian vegetation.

**PRINCIPLE 1**  
**IDENTITY**

**Objective 1.5 Architectural contribution**

Make a positive architectural contribution to infrastructure including bridges, noise walls and other structures.

Excerpt from section 3.1 Urban design principles & objectives

**Strategic context and opportunities**

The environment along Bulleen Road is flat and open with residences on the escarpment to the north. The introduction of a relatively tall element at Bulleen Park such as a ventilation structure could have a visual impact for residents, parkland users and school students and staff. To address this, the structure must be sensitively sited and well designed.

## Key Directions

**KEY DIRECTION 1**  
**Develop an integrated design response**

Excerpt from 3.2 Key design directions

- Sensitively respond to the functional requirements of the local area including the surrounding schools and natural systems.

**KEY DIRECTION 2**  
**Support a natural and connected corridor**

Excerpt from 3.2 Key design directions

- Enhance the open spaces and natural systems while improving connectivity along and across the corridor.

**KEY DIRECTION 5**  
**Create a context sensitive design**

The Eastern Freeway interchange is located within the Yarra River Valley Character Area at the interface with the Koonung Creek Character Area.

**Yarra River Valley**

- 1.Y Protect and promote cultural values for places of significance including the Yarra River, Bolin Bolin Billabong and the Heide Museum of Modern Art
- 4.Y Maximise opportunities for land use integration at the Manningham Road interchange
- 5.Y Be sympathetic to the landscape setting of the Greater Yarra Urban Parklands
- 6.Y Improve the ability for the community to access open space in Bulleen
- 7.Y Provide enhanced and more convenient cycling routes to Melbourne's inner city areas

Excerpt from 3.2 Key design directions

## KEY PLACE-SPECIFIC REQUIREMENTS

All place-specific requirements (including those listed below) must be met and addressed within Urban Design and Landscape Plans (refer page 5 section 1.5). The place-specific context and opportunities provide finer grain detail for these requirements and identify additional opportunities that could be delivered.

**1A** Design the Eastern Freeway interchange to be a navigational node by using distinctive elements to provide features and landmarks for navigation for all modes of transports. Landscaping is to take inspiration from surrounding natural assets such as the Yarra River and will maximise indigenous planting to support biodiversity and habitat.

4.3 Existing Place-specific requirement - Map Y3 - Eastern Freeway Interchange

**Place-specific context and opportunities**

The Eastern Freeway interchange would mark the transition between the Eastern Freeway and North East Link. It would also mark a meeting point of waterways (Yarra River and Koonung Creek) and a threshold between the City of Manningham and the City of Boroondara. With these attributes, the design must act as a navigational feature, using a well-considered multi-disciplinary response that sensitively integrates road infrastructure with the surrounding parkland and residential areas.

**2D** Provide a walking and cycling crossing of the Eastern Freeway linking the new walking and cycling path to the Koonung Creek Trail.

4.3 Existing Place-specific requirement - Map Y3 - Eastern Freeway Interchange

**Place-specific context and opportunities**

The existing paths on the Bulleen Road bridge over the Eastern Freeway are narrow and are located on the road side of the vehicle containment barriers. This creates an uncomfortable and low-quality experience for pedestrians and cyclists moving between North Balwyn and Bulleen.

The project must enhance the pedestrian and cycling network in the area, by improving the link across the freeway between schools such as Marcellin College and Belle Vue Primary, sporting facilities and residential areas.

**2E** Provide an alternative grade-separated crossing of Bulleen Road for pedestrians and cyclists traveling along the Koonung Creek Trail.

4.3 Existing Place-specific requirement - Map Y3 - Eastern Freeway Interchange

**Place-specific context and opportunities**

The existing at-grade crossing at Bulleen Road diminishes the safety, efficiency and enjoyment of the Koonung Creek Trail for pedestrians and cyclists. A grade-separated alternative would enhance the user experience of the trail for both commuter and recreational cyclists, as well as pedestrians.

The design must sensitively integrate the path into the surrounding landscape and carefully consider useability and safety.

**4A** Provide planting to enhance visual amenity, biodiversity and habitat link along the Koonung Creek corridor

4.3 Existing Place-specific requirement - Map Y3 - Eastern Freeway Interchange

**Place-specific context and opportunities**

The quality of the Koonung Creek environment is relatively poor, where it passes by the Boroondara Tennis Centre and Manningham Hotel. The creek is in a concrete channel, at the eastern end near Thompsons Road. The area is not very accessible to people other than car park users.

There is an opportunity for the community to re-engage with the Koonung Creek, by improving access and landscaping in the area, addressing hydrology and health of the waterway, maximising opportunities for daylighting and strengthening the habitat link along the creek corridor.

**Minimum walking and cycling connection requirements**

East-west connections:

- Across Bulleen Road south of the Eastern Freeway in the form of grade-separated crossings
- Across Doncaster Busway south of Thompsons Road in the form of an unsignalised at-grade crossing of Koonung Creek Trail.

North-south connections:

- Across the Eastern Freeway near the Bulleen Road Bridge in the form of a grade-separated crossing
- Along the east side of Bulleen Road from Thompsons Road to Avon Street in the form of a shared use path

East-west and north-south connections:

- Across and along Bulleen Road near Trinity College, Veneto Club, Marcellin College and Carey Grammar in the form of signalised at-grade crossing(s).
- Across and along Bulleen Road south of the Eastern Freeway in the form of signalised at-grade crossings at the Eastern Freeway on/off ramps.
- Across Thompsons Road and Doncaster Busway near Bulleen Park and Ride in the form of signalised at-grade crossings
- Across Bulleen Road and Thompsons Road at the Bulleen Road / Thompsons Road intersection in the form of signalised at-grade crossings

Refer to Chapter 7 – Detailed requirements & benchmarks

DETAILED REQUIREMENTS

- 7.1 Integration with surroundings
- 7.2 Open space infrastructure
- 13.2 Encourage cross-community connectivity
- 13.8 Prioritise pedestrians
- 14.1 Walking and cycling bridge design

DETAILED REQUIREMENTS

- 13.2 Encourage cross-community connectivity
- 13.6 Perceived safety

DETAILED REQUIREMENTS

- 17.5 Enhance habitat and biodiversity
- 18.2 Healthy waterways
- 18.3 Daylighting waterways
- 18.4 Minimise habitat impacts

## KEY BENCHMARKS

The key benchmarks below illustrate specific treatments or approaches which demonstrate potential design outcomes relevant to the final design in this location as described in text below.



**FIGURE 140** Demonstrates: a landscape design that responds to the high speed viewing environment through the use of terraced planting. CityLink, Melbourne. Design: EDAW, Image: GHD



**FIGURE 141** Demonstrates: robust and sustainable roadside planting. Eastern Freeway, Melbourne. Design: VicRoads, Wood Marsh and Tract Consultants, Image: NELP



**FIGURE 142** Demonstrates: a high quality user experience which takes advantage of its setting. Darebin Yarra Trail, Melbourne. Design: VicRoads, Photography: Emma Cross



**FIGURE 143** Demonstrates: well utilised public open space beneath pedestrian bridge at university campus. Burwood Link Bridge, Melbourne. Design: Watson Architecture and GHD, Image: GHD



**FIGURE 144** Demonstrates: buffer planting used to mitigate views and enhance appearance of walls. Eastern Freeway, Melbourne. Design: Wood Marsh, Image: NELP



**FIGURE 145** Refer Objective 3.2. Demonstrates: well considered multi span steel trough bridge with articulated piers and integral crosshead. M80 Ring Road, Melbourne. Design: Peter Elliott and VicRoads, Photography: John Gollings



**FIGURE 146** Refer Objective 3.2. Demonstrates: Planting that enhances visual amenity and softens built elements. Western Freeway, Warrenheip. Image: VicRoads



**FIGURE 147** Refer Objective 1.5. Demonstrates: an elegant structural solution that is timeless in design. Eastern Freeway, Melbourne. Image: GHD



**FIGURE 148** Demonstrates: Inner Northern Busway, Brisbane. Photography: Christopher Frederick Jones



**FIGURE 149** Refer Objective 1.5. Demonstrates: High quality weather protection design. The Pforzheim Central Bus Station, Pforzheim, Germany. Design: Metaraum Architects, Photography: Zoey Braun



**FIGURE 150** Refer Objective 3.2. Demonstrates: irrigated greenery that softens visual impact of the road. Domain tunnel entrance, Citylink, Melbourne. Image: VicRoads



**FIGURE 151** Refer Objective 1.5. Demonstrates: integrated ventilation structure and tunnel approach. Waterview Tunnel, Auckland. Design: Warren and Mahoney, Image: NZ Transport Agency



**FIGURE 152** Refer Objective 1.5. Demonstrates: creative response and landmark feature that celebrates local context. Mullum Mullum Tunnel, EastLink, Melbourne. Design: Wood Marsh and Tract Consultants, Image: VicRoads



**FIGURE 153** Demonstrates: community recreation below structure. Citylink Burnley Bouldering Wall, Melbourne. Image: VicRoads

## ILLUSTRATIVE SECTIONS

Illustrative sections are indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

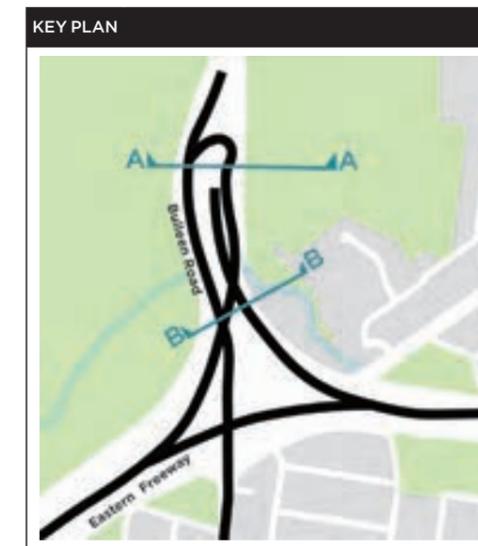
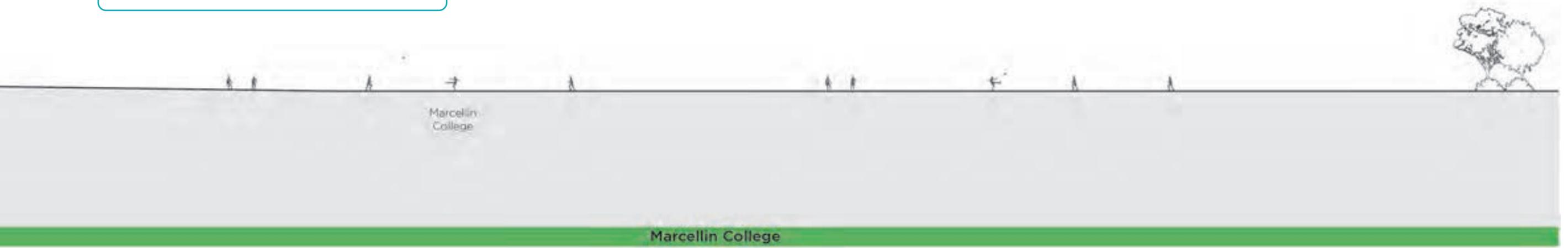
### SECTION AA



### SECTION BB



The Bulleen Road frontage of Marcellin College is important for the identity and visibility of the school to the broader community. Careful consideration must be given to the siting and design of any infrastructure in this area, to positively address this issue.

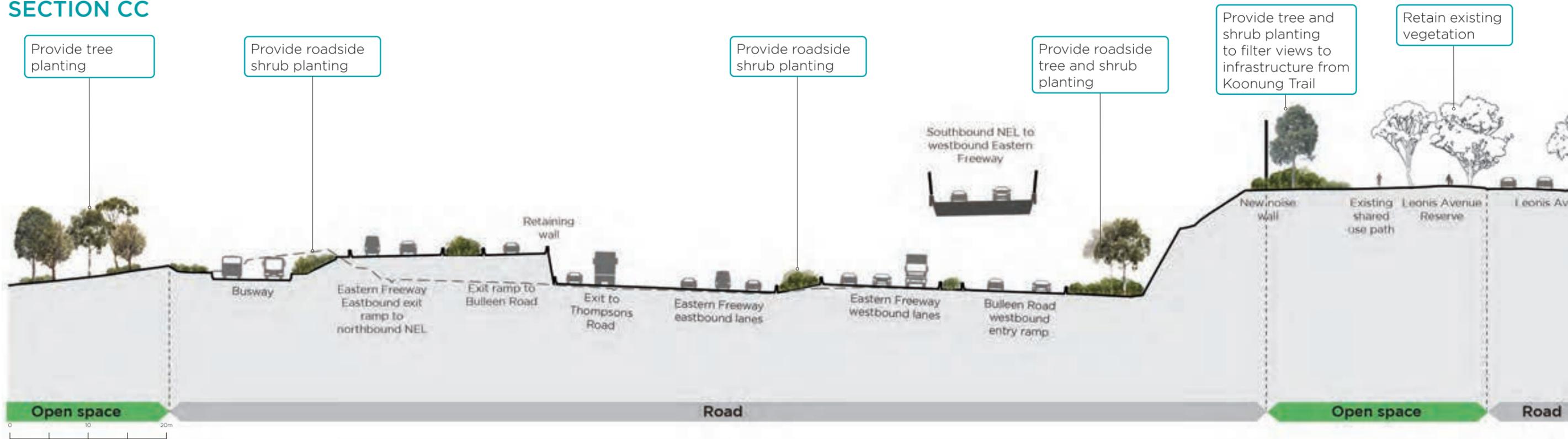


LEGEND	
	Proposed surface
	Existing surface
	Proposed building
	Requirements
	Proposed vegetation
	Existing vegetation

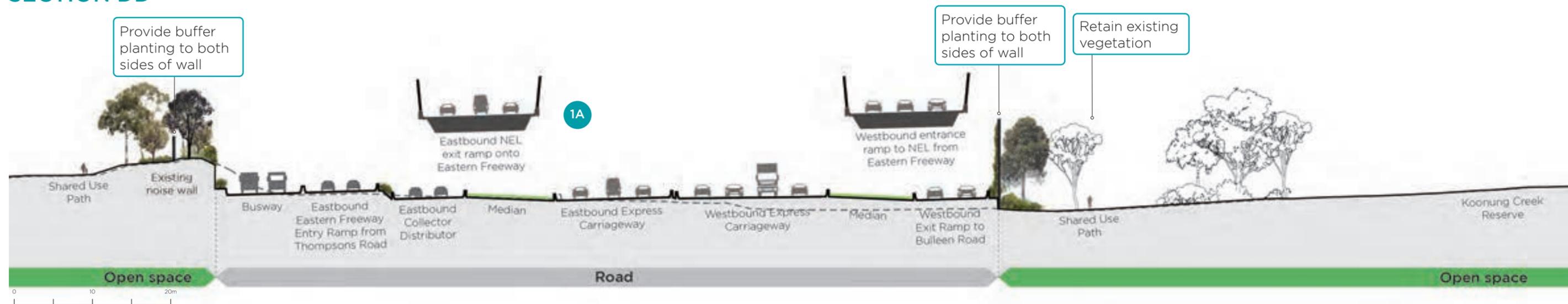
## ILLUSTRATIVE SECTIONS

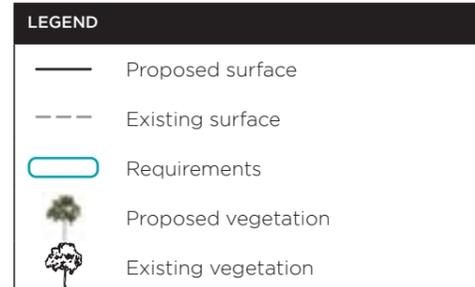
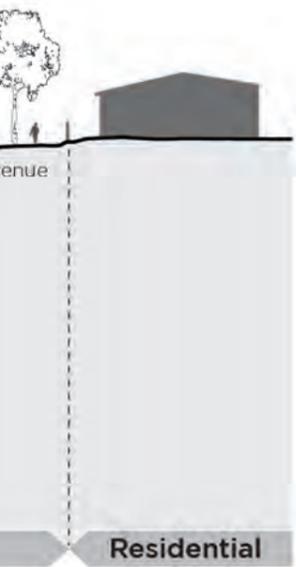
Illustrative sections are indicative only and subject to change. The final project design does not have to reflect this particular layout in order to be in accordance with the UDS.

### SECTION CC



### SECTION DD





## ACTION PLAN & IMPLEMENTATION STRATEGY

### Key components to be developed by the Project

The table below contains the key place-specific requirements identified by stakeholders including the NELP Urban Design Advisory Panel and Councils, and will be delivered by the Project. Whilst these key requirements are considered most relevant to this precinct, the final design must be in accordance with all of the place-specific requirements in the Urban Design Strategy. The broader infrastructure elements for delivery have not been included in this table so as not to limit the final design response and allow for innovation.

Summary of key place-specific requirements		Type	Key stakeholders	Delivery timeframe
2D	A walking and cycling crossing of the Eastern Freeway linking the new walking and cycling path to the Koonung Creek Trail.	Walking and cycling connection	Manningham, Boroondara, DoT	During construction
2E	An alternative grade-separated crossing of Bulleen Road for pedestrians and cyclists traveling along the Koonung Creek Trail.	Walking and cycling connection	Boroondara, DoT, Manningham	During construction
4A	Provide planting to enhance visual amenity, biodiversity and habitat link along the Koonung Creek corridor.	Landscaping and biodiversity	Manningham, Boroondara, Melbourne Water	During construction (Final stages of construction)

Eastern Freeway Interchange Table 1 - Implementation plan

## Opportunities for development or upgrades by others

The table below lists opportunities and proposals for the surrounding precinct that could be developed or upgraded by others. This list includes relevant draft and approved local and state government plans / strategies or key opportunities (by others) identified through the EES process.

Opportunity	Reference
<p><b>Draft Koonung Park Management Plan 2016, Manningham City Council, May 2016</b></p> <p>The Draft Plan contains a list of actions for the improvement of Koonung Park. Key actions outlined in the draft management plan include:</p> <ul style="list-style-type: none"> <li>• Multi use courts including provision for tennis, basketball, netball and futsal soccer</li> <li>• New landscaping and planting throughout the park</li> <li>• Creation of new paths to improve access to community facilities</li> <li>• Improvements to the car park</li> </ul>	<p><a href="http://www.yoursay.manningham.vic.gov.au/koonung-park">www.yoursay.manningham.vic.gov.au/koonung-park</a></p>
<p><b>Boroondara Open Space Strategy, Boroondara City Council, Decemeber 2013</b></p> <p>The Boroondara Open Space Strategy identifies upgrades to Columba Street Reserve to improve provision of neighbourhood level unstructured and informal recreational facilities</p>	<p><a href="http://www.boroondara.vic.gov.au/sites/default/files/2017-05/Boroondara-Open-Space-Strategy.pdf">www.boroondara.vic.gov.au/sites/default/files/2017-05/Boroondara-Open-Space-Strategy.pdf</a></p>

Eastern Freeway Interchange Table 2 - Opportunities for implementation by others

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# Appendix

Metro Tunnel construction hoardings in  
Swanston Street, Melbourne



## 9.1 Alignment with Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017

In 2017, the Victorian Parliament passed the Yarra River Protection (Wilip-gin Birrarung Murrong) Act. This UDS aligns with and supports the relevant principles under the Yarra River Protection (Willip-gin Birrarung Murrong) Act 2017 as listed below.

8. General principles Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017	Outline of, and response to, relevant principles from the Act in this UDS
(1) Proposed development and decision-making should be based on the effective integration of environmental, social and cultural considerations in order to improve public health and wellbeing and environmental benefit.	<p>This UDS requires the integration of environmental, social and cultural considerations when designing North East Link, as referenced in:</p> <ul style="list-style-type: none"> <li>1.4 Urban design vision</li> <li>2.1 Policy and strategic context</li> <li>3.1 Urban design principles &amp; objectives:                             <ul style="list-style-type: none"> <li>Principle 6, Objective 6.1 Putting people first</li> </ul> </li> <li>3.2 Key direction 1: Develop an integrated design response</li> </ul>
(2) Decision-makers should take into account the best practicably available information about the potential impacts of climate change so as to avoid, so far as possible, serious or irreversible damage resulting from climate change.	<p>This UDS provides guidance and addresses potential impacts of climate change through the following</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives:                             <ul style="list-style-type: none"> <li>Principle 4, Objective 4.2 Resilience and future proofing</li> <li>Principle 4, Objective 4.3 Environmental Sustainability</li> </ul> </li> </ul>
(3) Decision-makers should take into account the impact of any individual action or policy on public health and wellbeing and seek to ensure that public health and wellbeing is enhanced by the action or policy.	<p>Public health and wellbeing are central to this UDS, including:</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives:                             <ul style="list-style-type: none"> <li>Principle 7, Objective 7.1 Safer places</li> <li>Principle 8, Objectives 8.1 Universally inclusive</li> <li>Principle 8, Objective 8.2 Twenty-minute neighbourhoods</li> <li>Principle 8, Objective 8.3 Active transport</li> </ul> </li> </ul>
(4) Each generation should ensure that the environmental, social and cultural benefits that have been acquired are maintained or enhanced for the benefit of future generations.	<p>This UDS ensures that environmental, social and cultural benefits that have been acquired are maintained and enhanced when designing North East Link, as referenced in:</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives:                             <ul style="list-style-type: none"> <li>Principle 1, Objective 1.1 Sense of place</li> <li>Principle 5, Objective 5.1: Improved amenity</li> </ul> </li> <li>3.2 Key direction 3: Recognise past, contemporary &amp; shared Indigenous &amp; historic cultural value</li> </ul>
(5) Protection of the environment and delivery of sustainable development is a responsibility shared by all levels of government, industry, business, communities and the people of Victoria.	<p>Protection of environment and sustainability are fundamental in the design of North East Link, including</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives:                             <ul style="list-style-type: none"> <li>Principle 4, Objective 4.2 Resilience and future proofing</li> <li>Principle 4, Objective 4.3 Environmental sustainability</li> </ul> </li> </ul>

9. Environmental principles Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017	Outline of, and response to, relevant principles from the Act in this UDS
(1) If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation or for failing to assess the risk-weighted consequences of the options.	Addressed in this UDS under the following:  3.1 Urban Design principles & objectives, Principle 3, Objective 3.4 Minimise footprint Principle 4, Objective 4.3 Environmental Sustainability
(2) Environmental practices and procedures should ensure that biodiversity and ecological integrity is maintained or enhanced in ways that are proportionate to the significance of the environmental risks and consequences being addressed.	Enhancements in biodiversity and ecological integrity are supported by this UDS. This is addressed in the following principle:  3.1 Urban Design principles & objectives, Principle 4, Objective 4.3 Environmental Sustainability  3.2 Key design directions, 2: Support a natural and connected corridor
(3) If approaches to managing environmental impacts on one segment of the environment have potential impacts on another segment, the best practicable environmental outcome should be sought.	The UDS does not preclude or contradict this statement.
(4) There should be a net gain for the environment in the area of Yarra River land arising out of any individual action or policy that has an environmental impact on Yarra River land.	This UDS supports design outcomes that enhance the quality of the environment in the area of the Yarra River and strengthen existing green corridors. This is supported by the following:  3.1 Urban Design principles & objectives: Principle 1, Objective 1.2 Recognise the Yarra River (Birrarung)  3.2 Key design directions, 3: Recognise past, contemporary and shared Indigenous and historical cultural values  7. Detailed requirements and benchmarks, 17. Landscape 17.1 Green corridors
10. Social principles Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017	Outline of, and response to, relevant principles from the Act in this UDS
(1) The existing amenity of Yarra River land, including its natural features, character and appearance, should be protected and enhanced for the benefit of the whole community.	This UDS requires that amenity of Yarra River land and associated features is protected and enhanced when designing North East Link, as referenced in the following:  3.1 Urban Design principles & objectives: Principle 1, Objective 1.2 Recognise the Yarra River (Birrarung) Principle 6. Objective 6.1 Putting people first Principle 6. Objective 6.2 Places for people  3.2 Key design directions, 5: Create a context sensitive design

<p>(2) Community consultation and participation should play an essential and effective role in the protection, improvement and promotion of Yarra River land.</p>	<p>Community and stakeholder consultation resulted in a Design Character Area specifically for the Yarra River Valley. Refer to:</p> <ul style="list-style-type: none"> <li>2.2 Consultation &amp; technical inputs</li> <li>3.2 Key design directions, 5: Create a context sensitive design</li> </ul>
<p><b>11. Recreational principles</b> Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017</p>	<p><b>Outline of, and response to, relevant principles from the Act in this UDS</b></p>
<p>(1) Community access to, and use and enjoyment of, Yarra River land should be protected and enhanced through the design and management of public open space for compatible multiple uses that optimise community benefit.</p>	<p>This UDS supports community access to Yarra River environs and promotes enhancement of the open space, as referenced in:</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives: Principle 6 Objective 6.1 Putting people first</li> <li>3.2 Key direction 2: Support a natural &amp; connected corridor</li> </ul>
<p>(2) Public open space should be used for recreational and community purposes that are within the capacity of that space, in order to sustain natural processes and not diminish the potential of that open space to meet the long-term aspirations of the community.</p>	<p>This UDS supports the design of public open spaced that meet the long-term aspirations of the community, as referenced in:</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives: Principle 5 Objective 5.2 Landscape values Principle 6 Objective 6.1 Putting people first</li> <li>3.2 Key direction 2: Support a natural &amp; connected corridor</li> <li>7. Detailed requirements &amp; benchmarks, 7 Public open space</li> </ul>
<p><b>12. Cultural principles</b> Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017</p>	<p><b>Outline of, and response to, relevant principles from the Act in this UDS</b></p>
<p>(1) Aboriginal cultural values, heritage and knowledge of Yarra River land should be acknowledged, reflected, protected and promoted.</p>	<p>This UDS protects and promotes indigenous history and cultural values. This is addressed in the following:</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives: Principle 1 Objective 1.2 Recognise the Yarra River (Birrarung)</li> <li>3.2 Key direction 3: Recognise past, contemporary &amp; shared Indigenous &amp; historic cultural value</li> </ul>
<p>(2) The role of the traditional owners as custodians of Yarra River land should be acknowledged through partnership, representation and involvement in policy planning and decision-making.</p>	<p>This UDS acknowledges the role of traditional owners as Yarra River land custodians and proposes an approach that recognises, protects and promotes their cultural values, as referenced in:</p> <ul style="list-style-type: none"> <li>3.1 Urban design principles &amp; objectives: Principle 1, Objective 1.2 Recognise the Yarra River (Birrarung)</li> <li>3.2 Key direction 3: Recognise past, contemporary &amp; shared Indigenous &amp; historic cultural value</li> </ul>

<p>(3) The cultural diversity and heritage of post-European settlement communities should be recognised and protected as a valued contribution to the identity, amenity and use of Yarra River land.</p>	<p>Post-European settlement historical heritage is supported by the UDS, as referenced in:</p> <p>3.2 Key direction 3: Recognise past, contemporary &amp; shared Indigenous &amp; historic cultural value</p>
<p><b>13. Management principles</b> <b>Yarra River Protection (Wilip-gin Birrarung Murrong) Act, 2017</b></p>	<p><b>Outline of, and response to, relevant principles from the Act in this UDS</b></p>
<p>(1) There should be coordination between all levels of government and government agencies when designing policies and programs and making decisions in relation to Yarra River land.</p>	<p>Key Victorian Government stakeholders consulted in the development of this UDS include the Department of Environment Land Water and Planning (DELWP), Transport for Victoria, VicRoads, Melbourne Water, Parks Victoria and the Office of the Victorian Government Architect (OVGA). Key local government stakeholders consulted included representatives from the municipalities of Banyule, Boroondara, Manningham, Whitehorse, Whittlesea, Yarra and Nillumbik.</p> <p>2.2 Consultation &amp; technical inputs</p>
<p>(2) When designing policies and programs, the best practicable measures available at the time should be used.</p>	<p>Key Victorian Government stakeholders consulted in the development of this UDS include the Department of Environment Land Water and Planning (DELWP), Transport for Victoria, VicRoads, Melbourne Water, Parks Victoria and the Office of the Victorian Government Architect (OVGA). Key local government stakeholders consulted included representatives from the municipalities of Banyule, Boroondara, Manningham, Whitehorse, Whittlesea, Yarra and Nillumbik.</p> <p>2.2 Consultation &amp; technical inputs</p>
<p>(3) Implementation of natural resource management should aim for continuous improvement and extend beyond compliance with relevant laws and requirements.</p>	<p>The UDS requires that the design of North East Link is of high quality and beyond compliance in order to superior outcomes, as referenced in:</p> <p>3.2 Key directions: Key Direction1: Develop an integrated design response</p>



