



North East Link Urban Design Strategy

April 2019

Acknowledgement

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

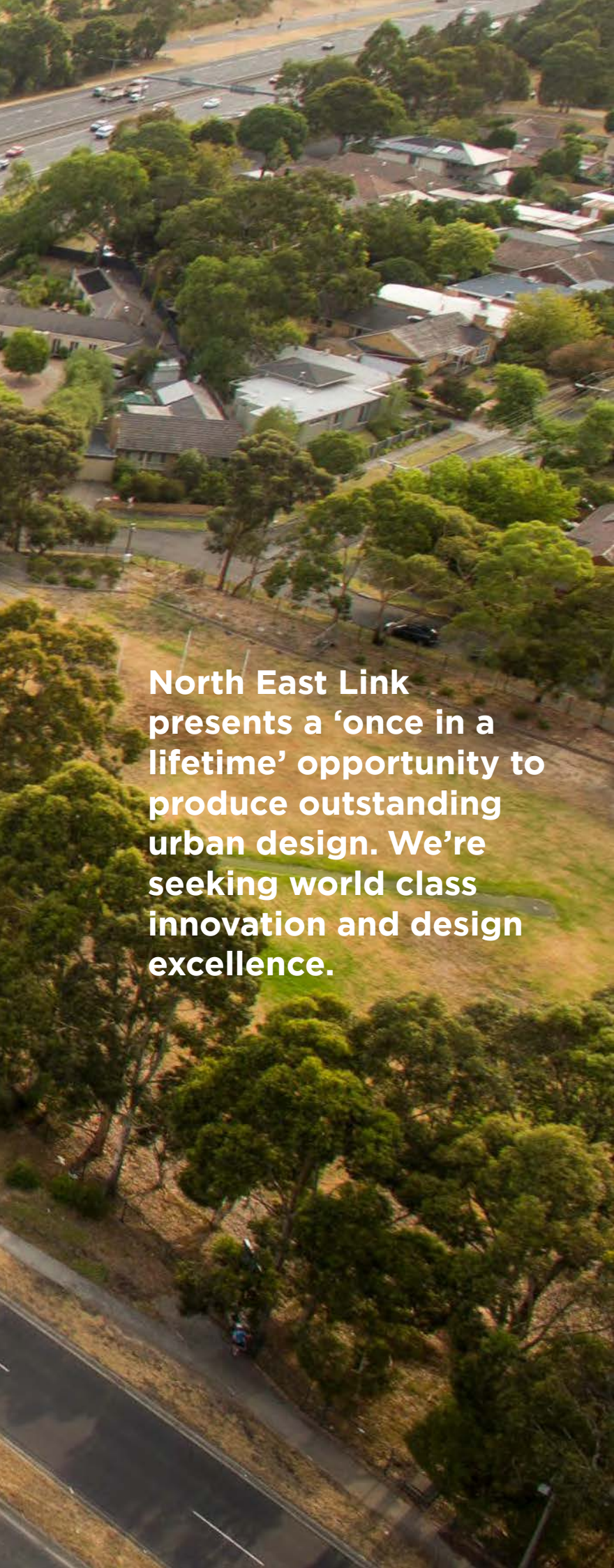
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Contents

1.	Introduction	1	6.	Koonung Creek Valley area	65
1.1	Victoria's Major Transport Infrastructure Program	2	6.1	Contextual narrative	66
1.2	Project description	2	6.2	Values & priorities	67
1.3	North East Link Project	2	6.3	Place-specific requirements	68
1.4	Urban design vision	4		Map K1: Bulleen Road to Doncaster Road	70
1.5	Purpose of this document	5		Map K2: Doncaster Road to Elgar Road	72
1.6	Content & structure	6		Map K3: Doncaster Park and Ride	74
2.	Project background	7		Map K4: Elgar Road to Middleborough Road	76
2.1	Policy & strategic context	8		Map K5: Middleborough Road to Blackburn Road	78
2.2	Consultation & technical inputs	9		Map K6: Blackburn Road to Springvale Road	80
3.	Corridor-wide	11	7.	Detailed requirements & benchmarks	82
3.1	Urban design principles & objectives	12	7.1	Element-based requirements & qualitative benchmarks	84
3.2	Key design directions	14		1. Multi-span bridges	84
	Key direction 1: Develop an integrated design response	15		2. Road bridges	85
	Key direction 2: Support a natural & connected corridor	16		3. Land bridges	86
	Key direction 3: Recognise past, contemporary & shared Indigenous & historic cultural values	17		4. Open cuttings	87
	Key direction 4: Provide a great experience for road users	20		5. Ventilation structures, portals & tunnels	88
	Key direction 5: Create a context sensitive design	22		6. Project buildings & ancillary structures	89
4.	Ridgeline area	27		7. Public open space	90
4.1	Contextual narrative	28		8. Local streets & neighbourhoods	91
4.2	Values & priorities	29		9. Walls, fencing, barriers & screens	92
4.3	Place-specific requirements	30		10. Bus park & ride, & bus lanes	94
	Map R1: M80	32		11. Car parking	95
	Map R2: M80 interchange	34		12. Lighting	95
	Map R3: Grimshaw Street interchange	36		13. Walking & cycling infrastructure	96
	Map R4: Watsonia Neighbourhood Centre	38		14. Walking & cycling bridges	97
	Map R5: South of Watsonia Station	40		15. Walking & cycling underpasses	99
	Map R6: Simpson Barracks	42		16. Navigational nodes & thresholds	100
	Map R7: Lower Plenty Road interchange	44		17. Landscape	101
5.	Yarra River Valley area	47		18. Water	103
5.1	Contextual narrative	48		19. Road signage	105
5.2	Values & priorities	49		20. Materials & finishes	106
5.3	Place-specific requirements	50	7.2	Using design to help manage construction impacts	107
	Map Y1: Manningham Road interchange	52			
	Map Y2: Bulleen Road	54			
	Map Y3: Eastern Freeway interchange	56			
	Map Y4: Bulleen Road to Belford Road	58			
	Map Y5: Belford Road to Yarra Boulevard	60			
	Map Y6: Yarra Boulevard to Hoddle Street	62			





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.

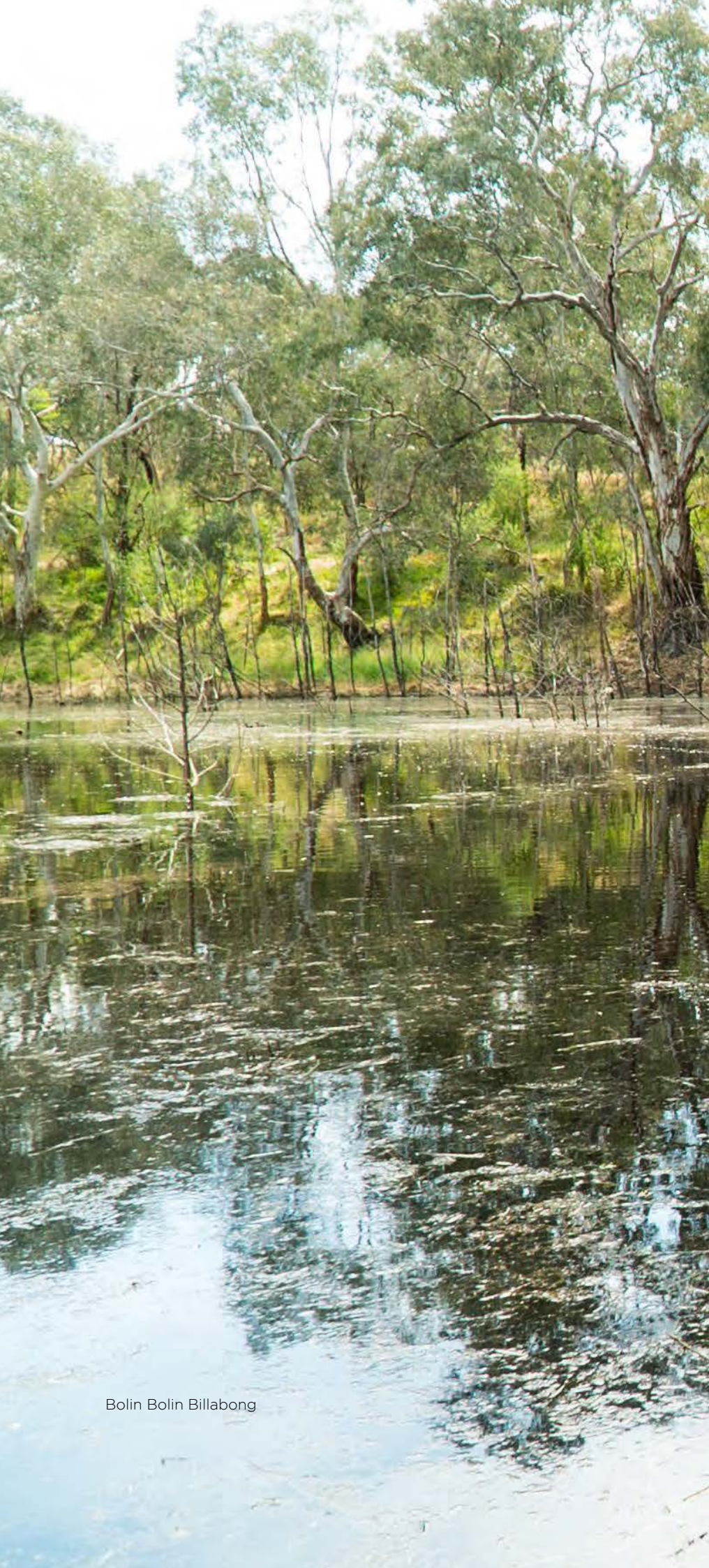
The Urban Design Strategy is an instructive design document that sets the urban design vision and quality expectations for all elements of the project. North East Link presents a ‘once in a life time’ opportunity to produce outstanding urban design. We’re seeking world class innovation and design excellence. 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, Transport for Victoria and VicRoads 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



Wurundjeri
Woi-wurrung

Cultural Heritage
Aboriginal Corporation

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

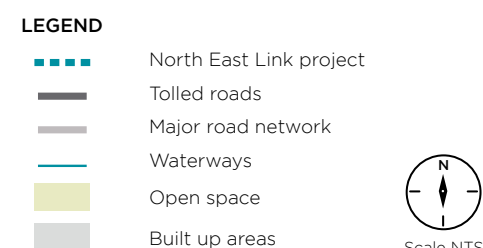
In 2017, the Victorian Government established the North East Link Project (NELP) to plan and deliver the project, overseen by the Victorian Coordinator General.

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.

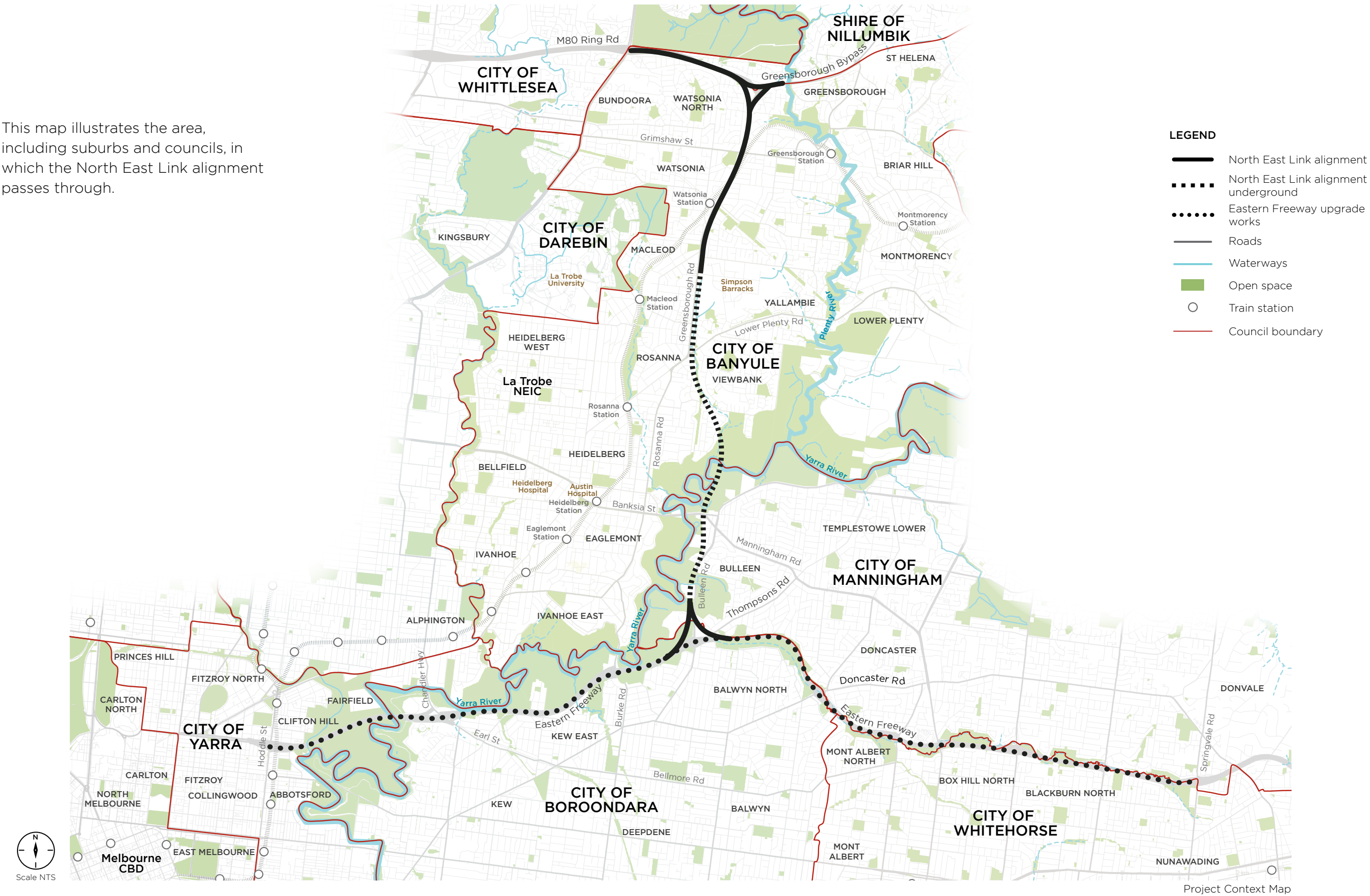
As part this commitment, NELP is collaborating with the Office of the Victorian Government Architect (OVGA) to develop a design approach that includes:

- 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

A legacy for Melbourne

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

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.

The role of urban design

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 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

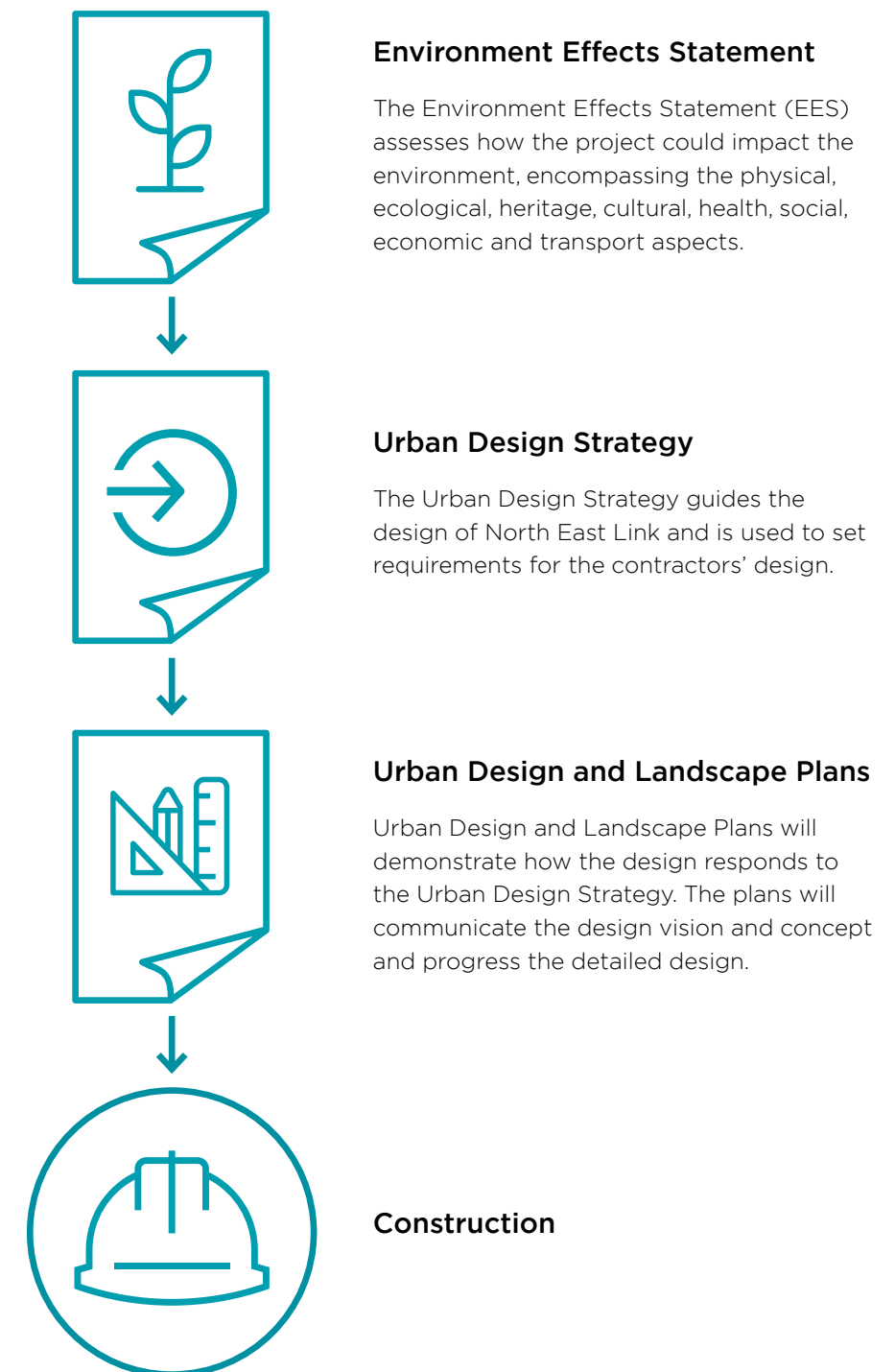
Informed by the Environment Effects Statement (EES) process, this Urban Design Strategy will guide the planning and design of North East Link.

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.

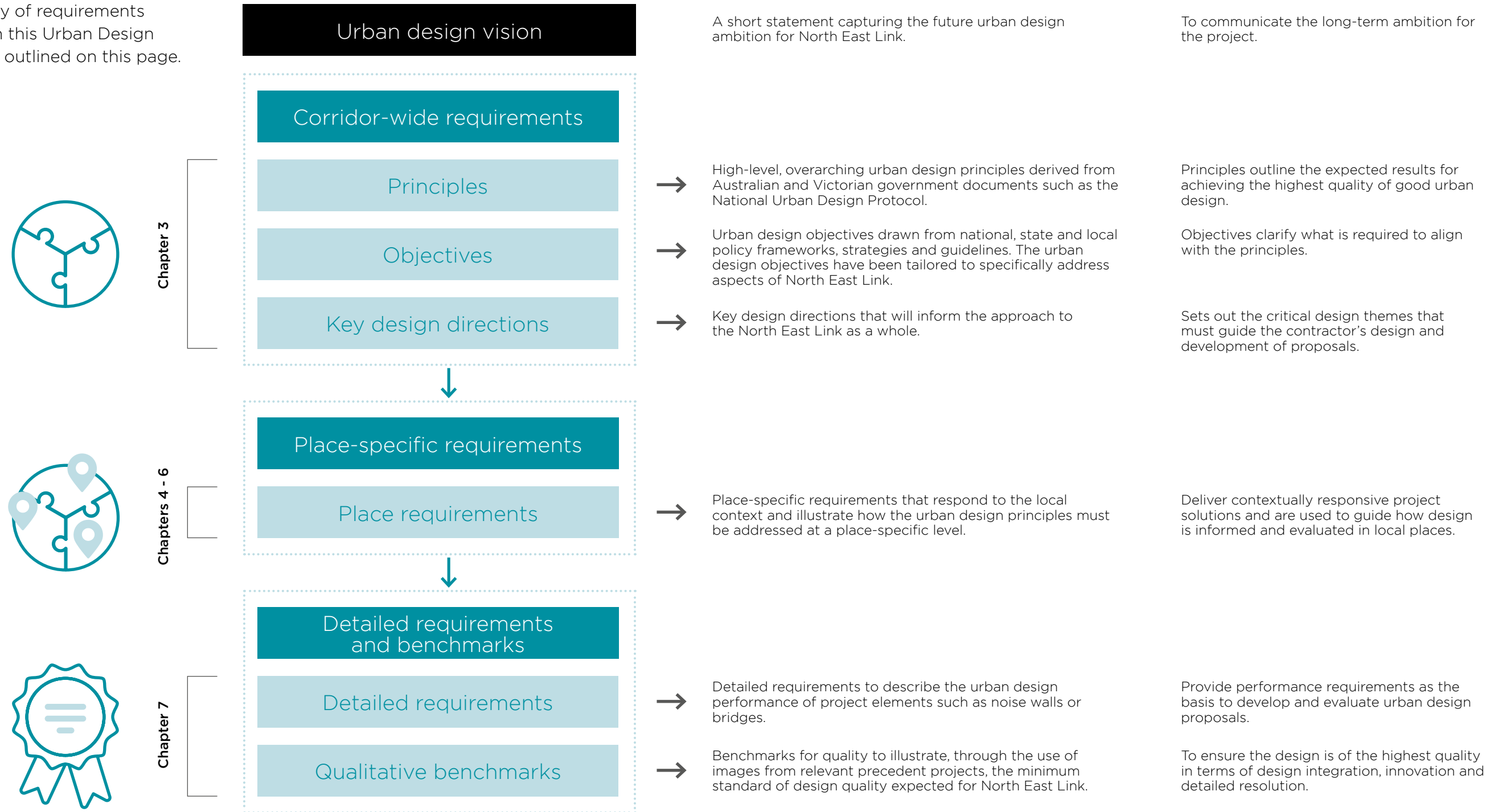
The Urban Design Strategy articulates the urban design performance requirements for the project. Design proposals will be assessed against these requirements.

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

- Environment, Land, Water and Planning, 2011
- Creative State – Victoria’s First Creative Industries Strategy 2016-2020, Creative Victoria
- Crime Prevention Through Environmental Design, Victoria Police
- 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
- M80 Ring Road Upgrade Urban Design Strategy, VicRoads, 2010
- Movement and Place Framework, Transport for Victoria and VicRoads
- 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
- 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
- Banyule Ridgeline Study, 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
- Other **key project documents** such as EES Attachment I –Sustainability approach
- Additional **urban design context analysis** to consider site-specific project impacts and requirements
- 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

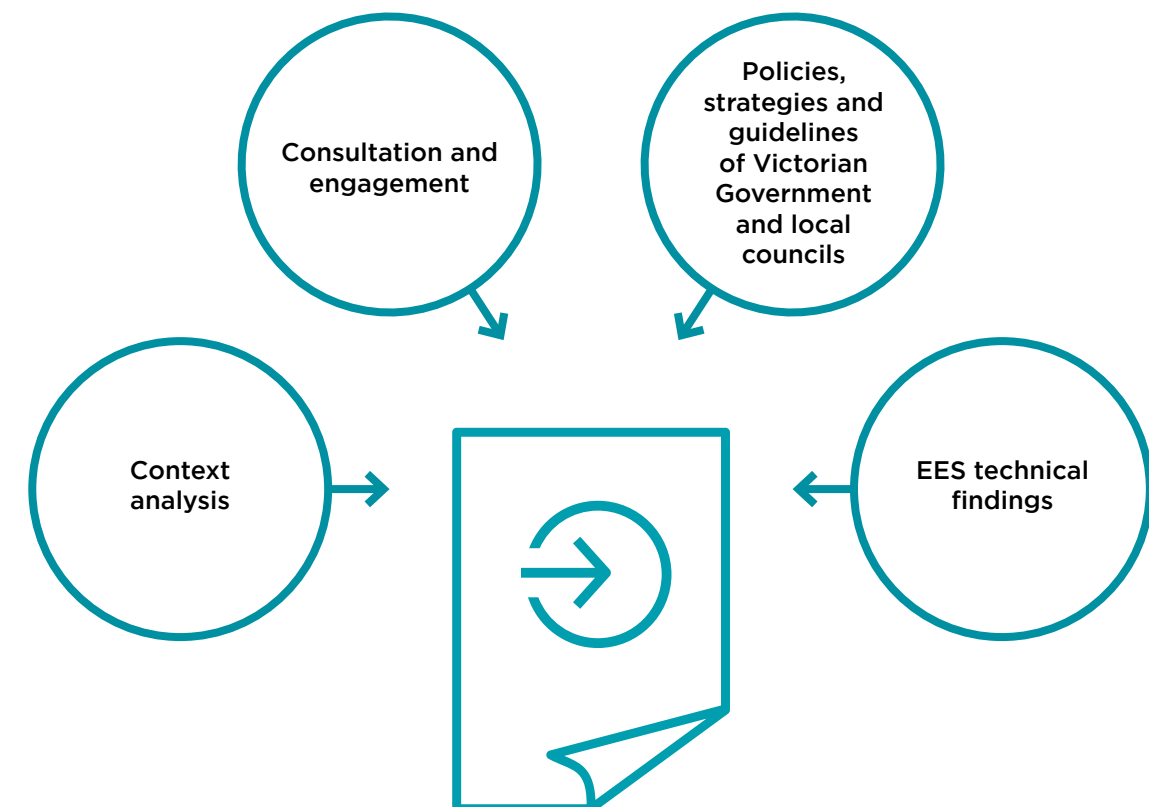
2. PROJECT BACKGROUND

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



3.1 Urban design principles & objectives

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 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.

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 design footprint and visual bulk.

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.

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.

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.

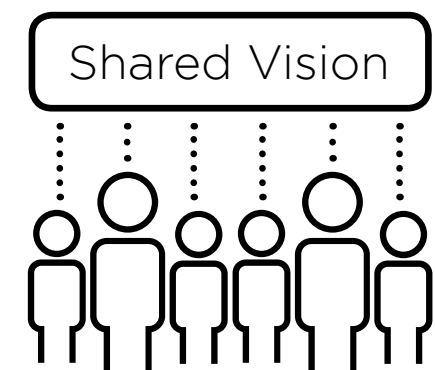
The early integration of design with a multi-disciplinary team throughout the project lifecycle is fundamental to the success of North East Link and to achieve urban design outcomes that ensure:

- 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 considered 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 created, 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
- Impacts to the neighbouring community are avoided and minimised
- 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 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 consider 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

It is recognised 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.

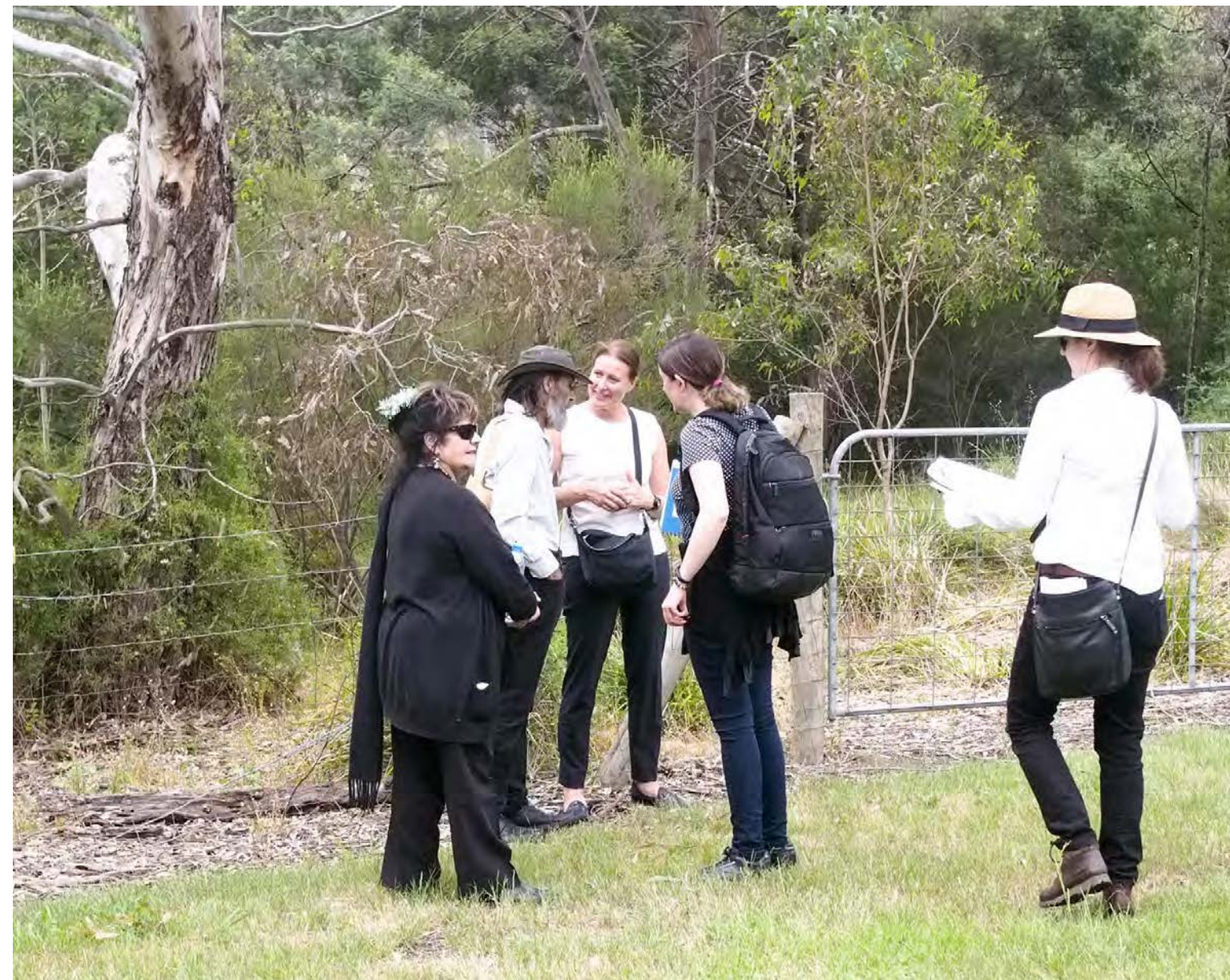
Wurundjeri and Connection to Country

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



2. 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) could 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
- Orchardng and other agricultural history themes
- Simpson Barracks.



‘Wominjeka yearmann koondee biik Wurundjeri balluk’

‘Welcome to the land of the Wurundjeri people’

KEY DIRECTION 4: Provide a great experience for road users

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.

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 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 considered 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 also consider the surrounding context. Project elements must coherently transition into the M80 Ring Road upgrade design.

The **Manningham Road interchange** area is also considered 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 considered 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 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 consider the 'Sentinel' sculpture at Doncaster Road.

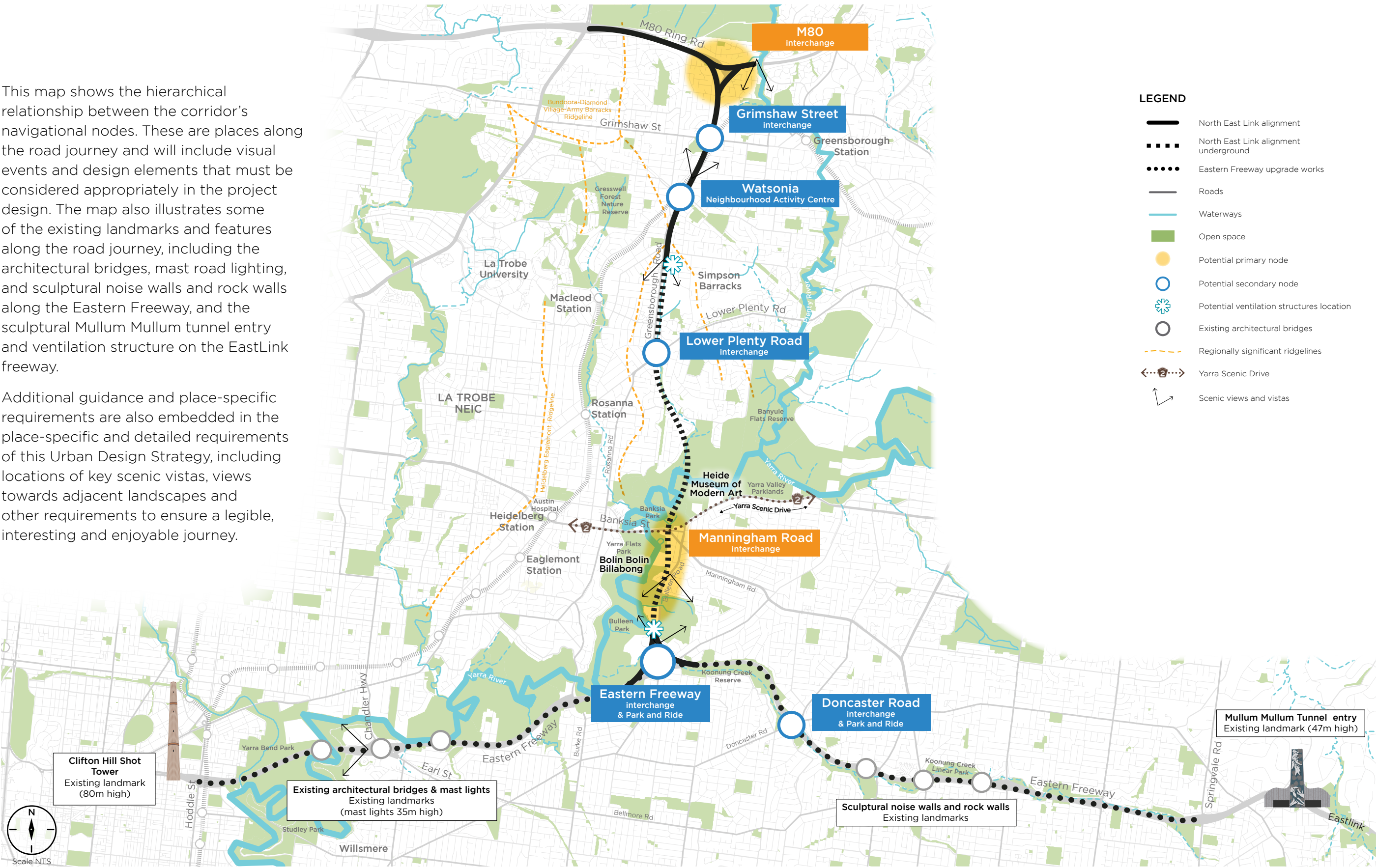
Tunnels

The transition from above county 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.



Proposed Navigational Node Hierarchy Map

KEY DIRECTION 5: Create a context sensitive design

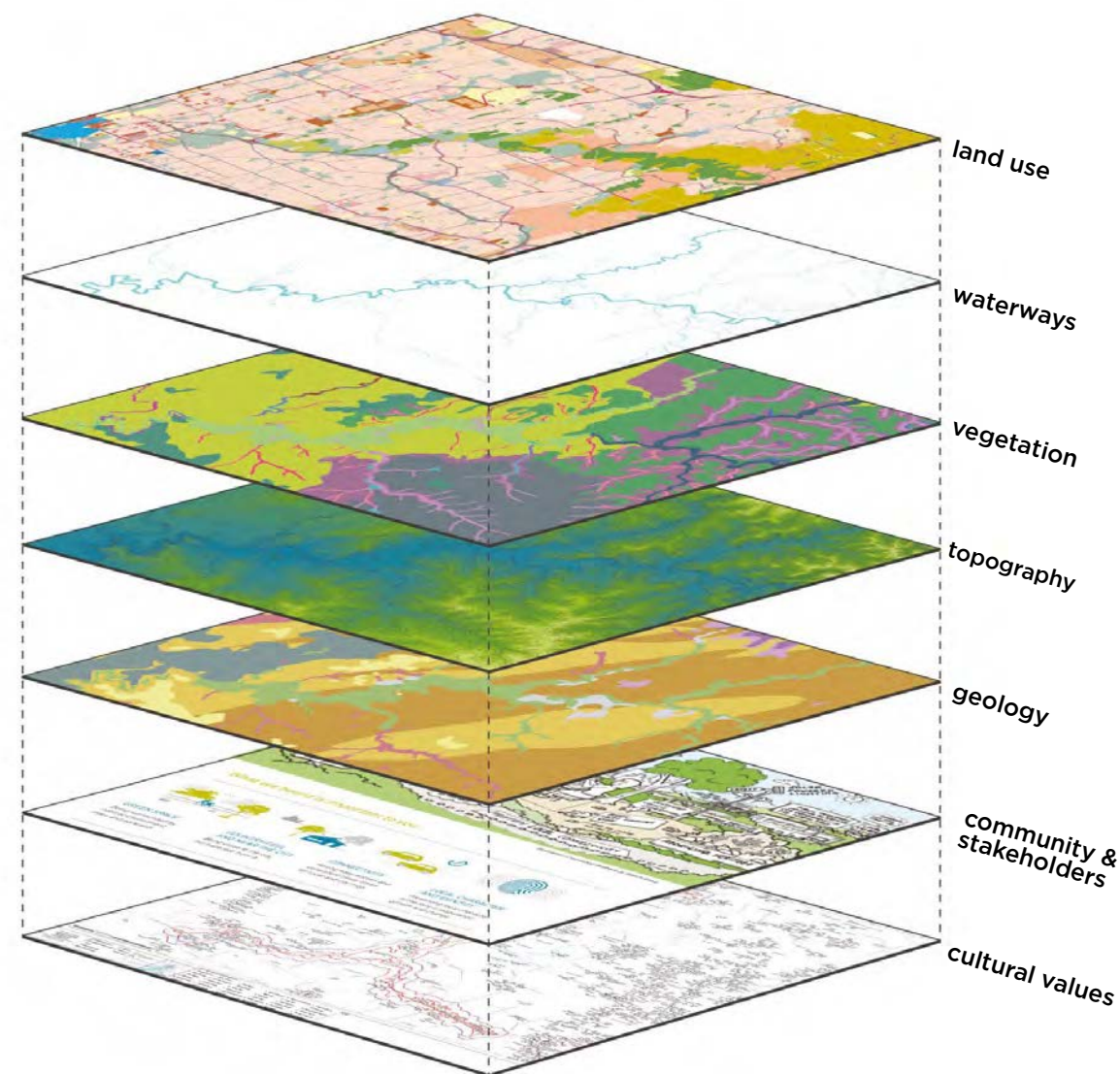
The project must demonstrate a design that protects, maintains and enhances the local context through which the project passes.

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.

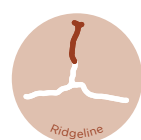
The design for North East Link must be sensitive to the places adjacent and affected by project, and the features, uses, significant elements and community values within each design character area.



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 the term 'landscape character areas'. This strategy considers North East Link and 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:

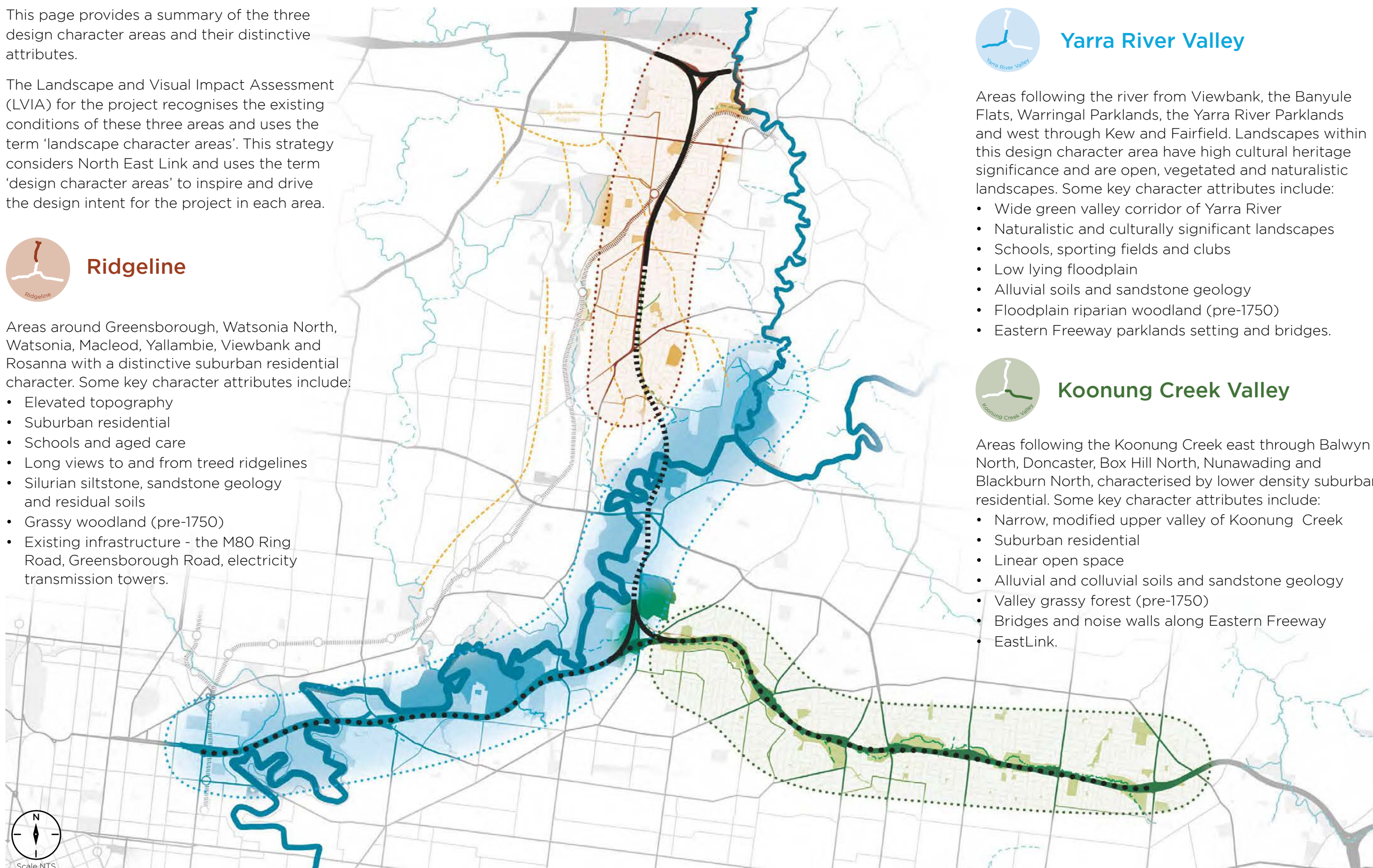
- Wide green valley corridor of Yarra River
- Naturalistic and culturally significant landscapes
- Schools, sporting fields and clubs
- Low lying floodplain
- Alluvial soils and sandstone geology
- Floodplain riparian woodland (pre-1750)
- Eastern Freeway parklands setting and bridges.



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:

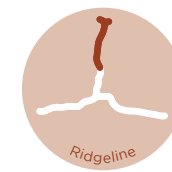
- Narrow, modified upper valley of Koonung Creek
- Suburban residential
- Linear open space
- Alluvial and colluvial soils and sandstone geology
- Valley grassy forest (pre-1750)
- Bridges and noise walls along Eastern Freeway
- EastLink.



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.

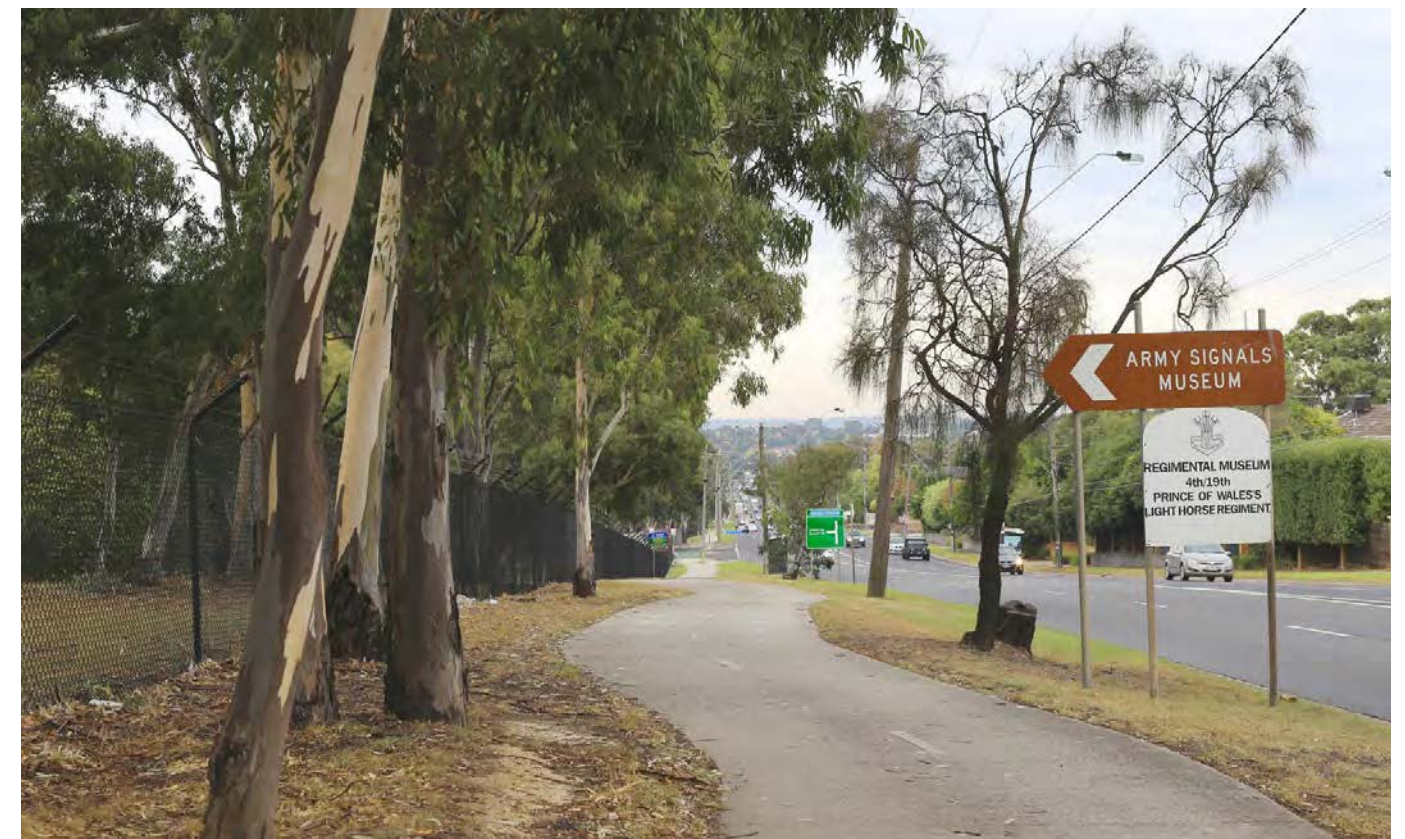


Ridgeline

- 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

Ridgeline

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.

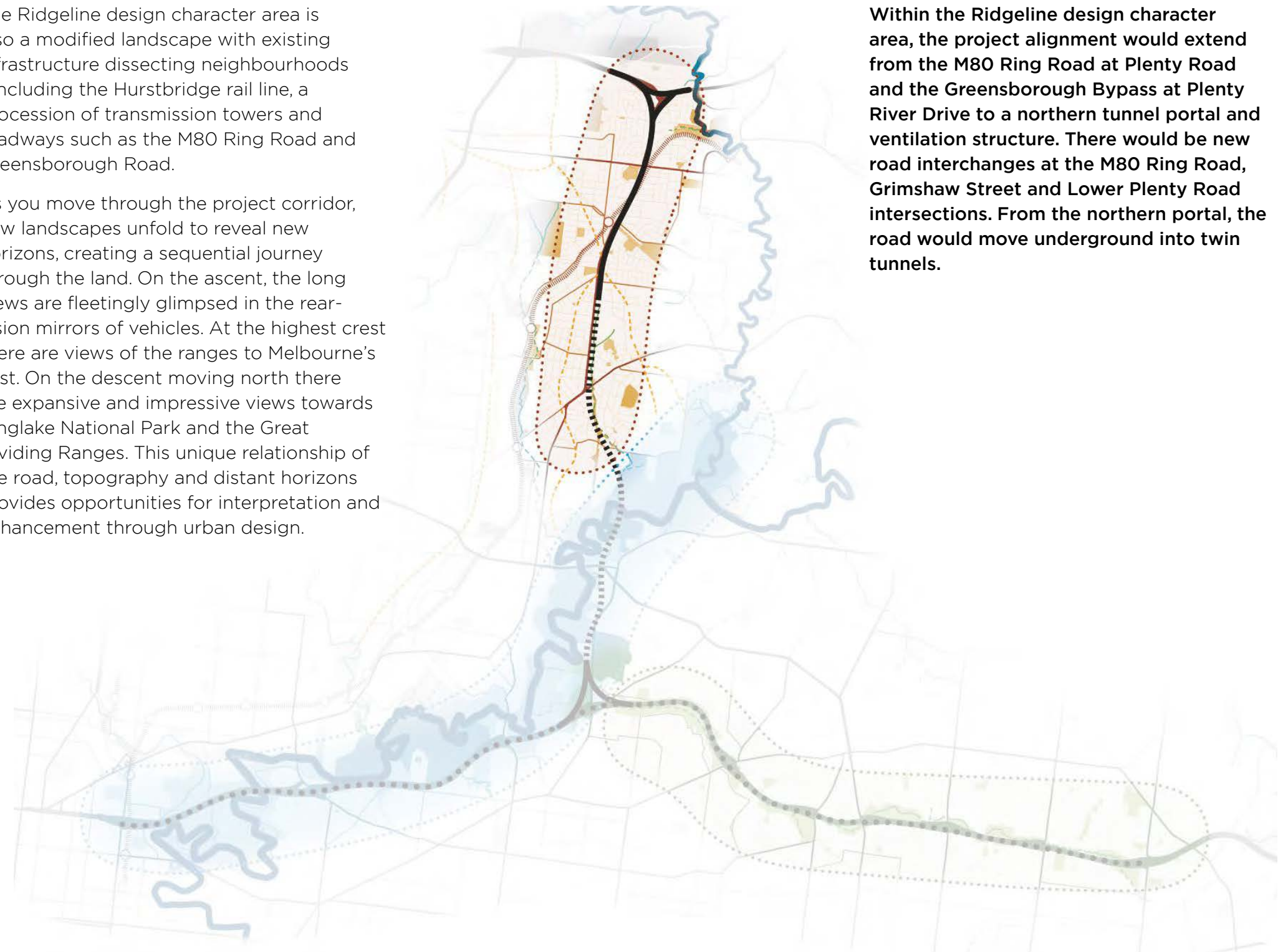
The northern-most section of the corridor ends at the M80 Ring Road which is the gateway to the Nillumbik green wedge to the north-east.

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

Ridgeline

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 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

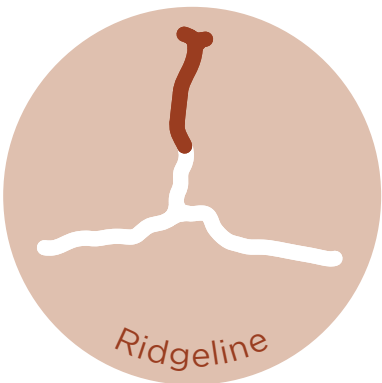


Watsonia Library



Gresswell Forest in Macleod

4.3 Place-specific requirements



Place-specific requirements that must be met and considered 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.

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

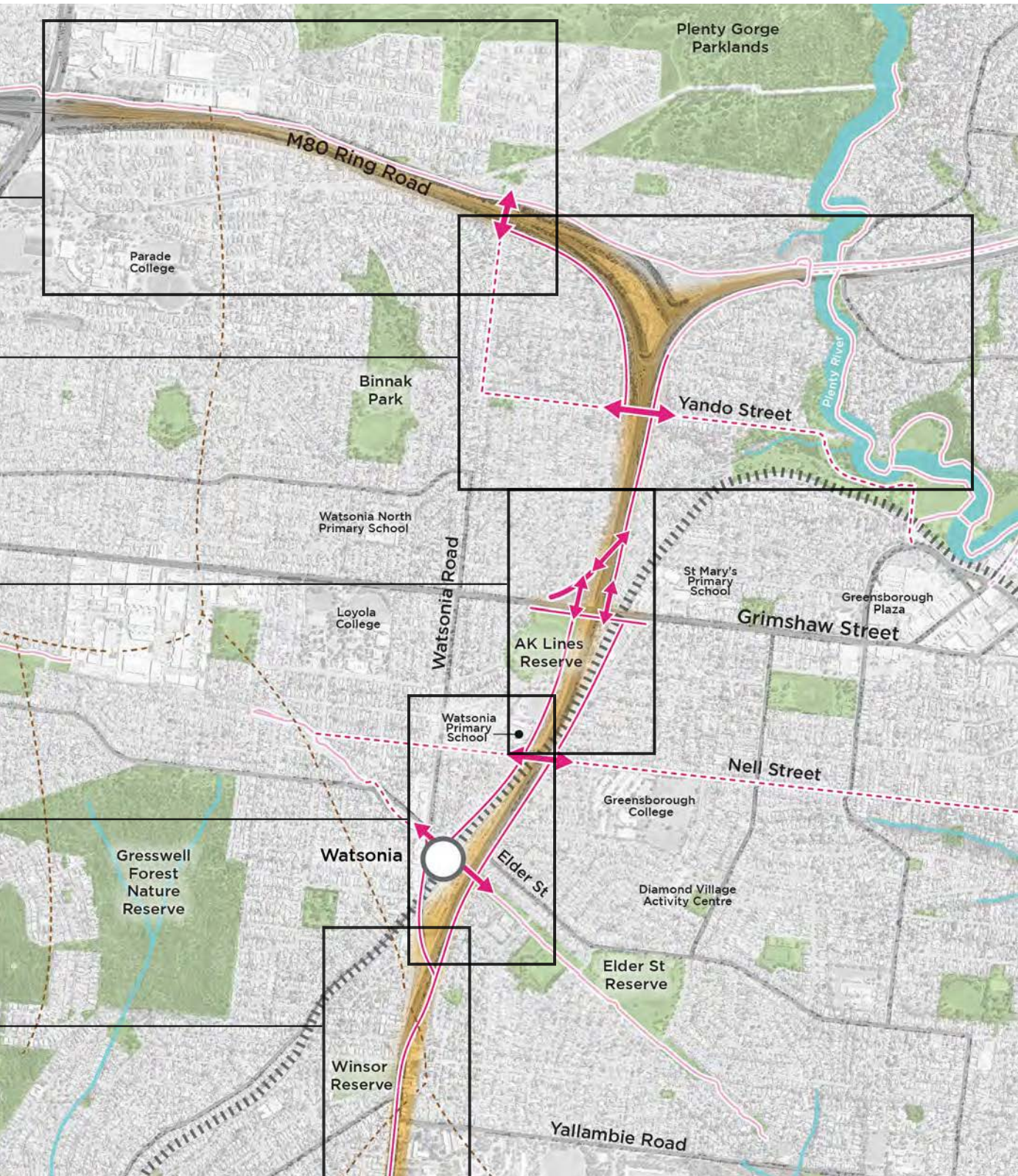
GRIMSHAW STREET INTERCHANGE

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



Scale NTS

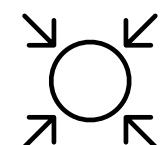
MAP R1:
M80





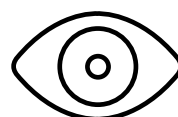
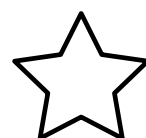
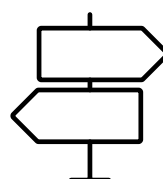
Identity

- 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.



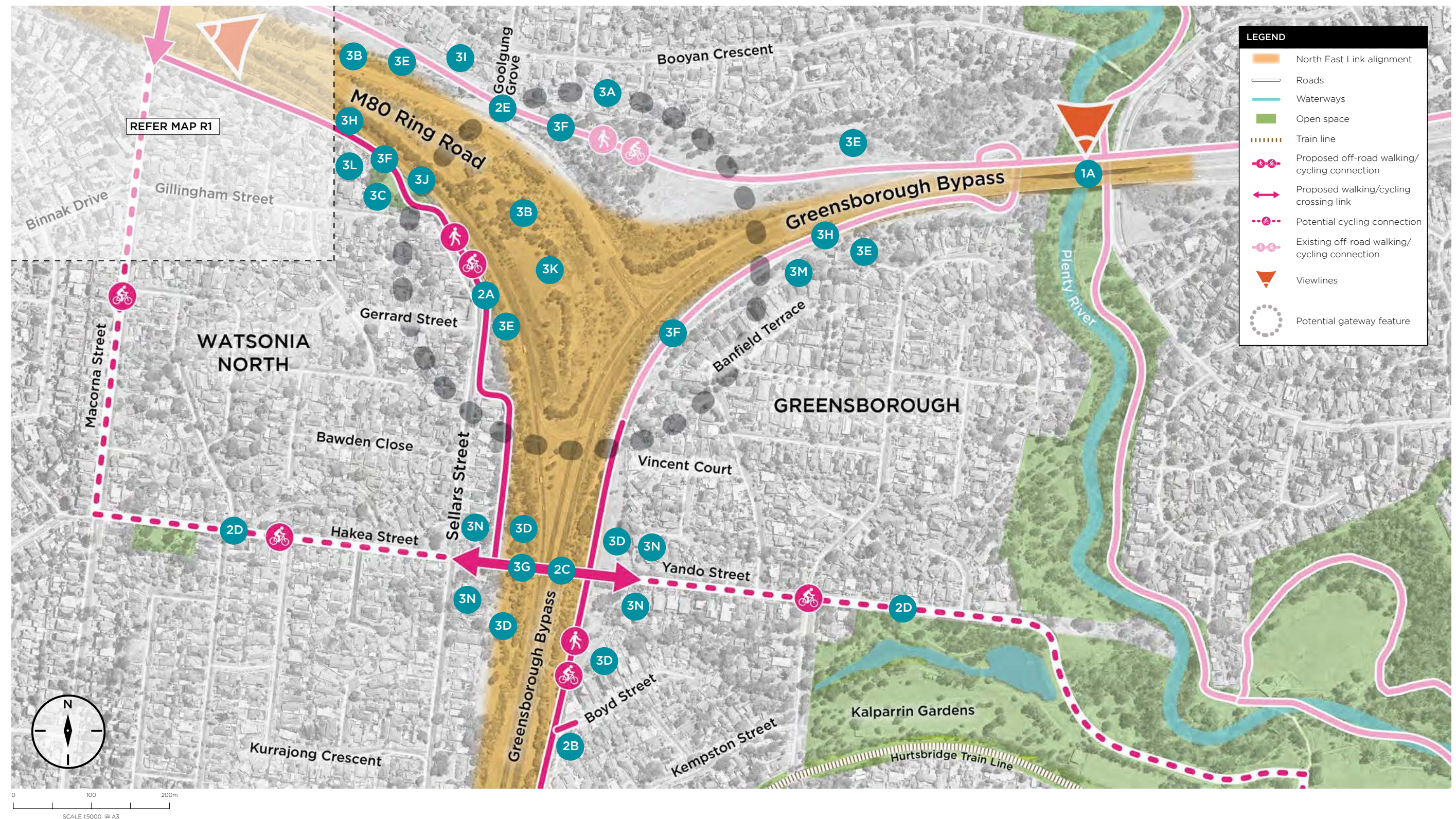
Amenity, Vibrancy & Safety

- 3A Minimise overlooking and overshadowing to residential properties adjacent to M80 Ring Road interchange in the south-west, including Gillingham Street.
- 3B Reinstall 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 Reinstall 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.



M80 Ring Road

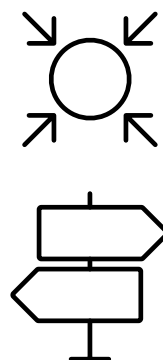
MAP R2: M80 INTERCHANGE





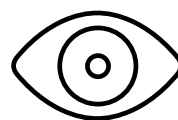
Identity

- 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** **Consider providing a safe walking and cycling connection to local streets (e.g to Booyan Crescent via Goolgung Grove from the M80 Ring Road Path).*

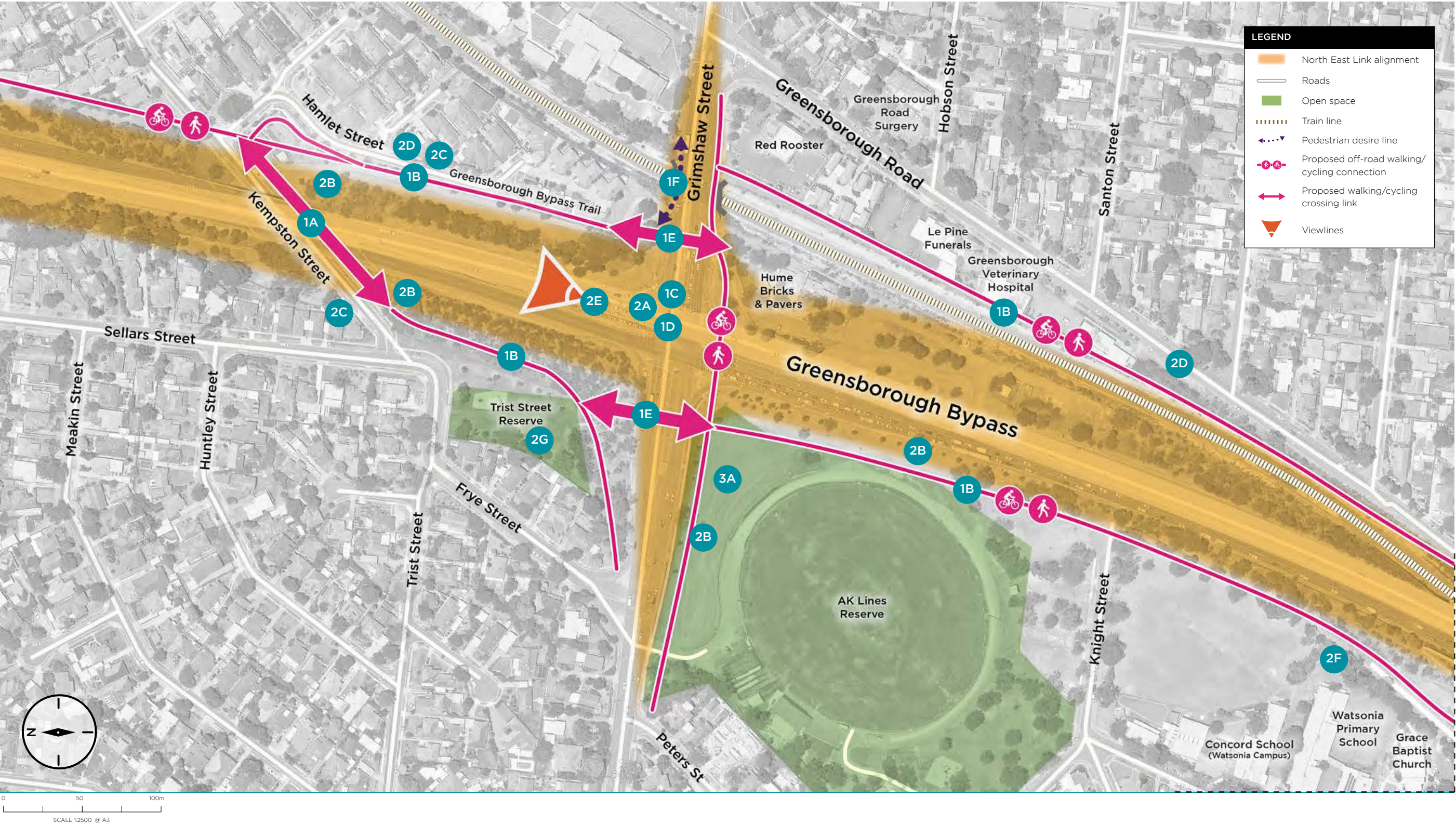


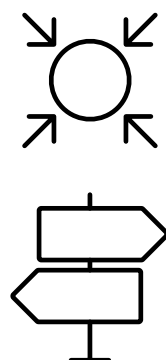
Amenity, Vibrancy & Safety

- 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.

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

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 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 pedestrian connection from the new walking and cycling path to the north side of Grimshaw Street.



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 consider 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** **Consider improvements to Trist Street Reserve such as landscaping, paths and additional park infrastructure.*



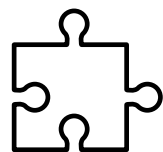
Resilience & Sustainability

- 3A** **Consider integrated Water Sensitive Urban Design infrastructure (such as a wetland or raingarden) at AK Lines Reserve to manage and treat stormwater. Collaborate with relevant authorities for the storage and reuse of treated water to irrigate.*

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

MAP R4:
WATSONIA NEIGHBOURHOOD CENTRE

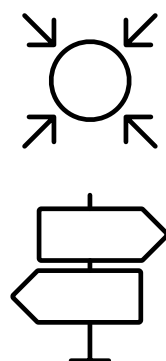




Urban Integration

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

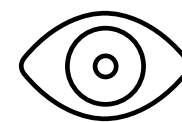
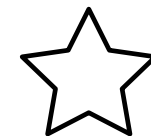
Ensure new infrastructure supports a new east-west cycling connection (to be delivered by others) along Nell Street and Nell Street West.

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

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



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

**Consider enhancements to the quality of public open space for the shopping strip and improvements to create a high quality entrance to the station focused around Watsonia Library.*

3E

**Consider improvements to the amenity and quality of the open space along the transmission easement between Greensborough Road and Frensham Road by:*

- *improving landscaping (suitable for within this type of easement)*
- *implementing Water Sensitive Urban Design infrastructure (such as vegetated swales or raingardens) to manage stormwater*
- *providing vegetated buffers to screen views to residential fencing*
- *upgrading the existing East-West Power Easement Trail (between Greensborough Road and Frensham Road).*



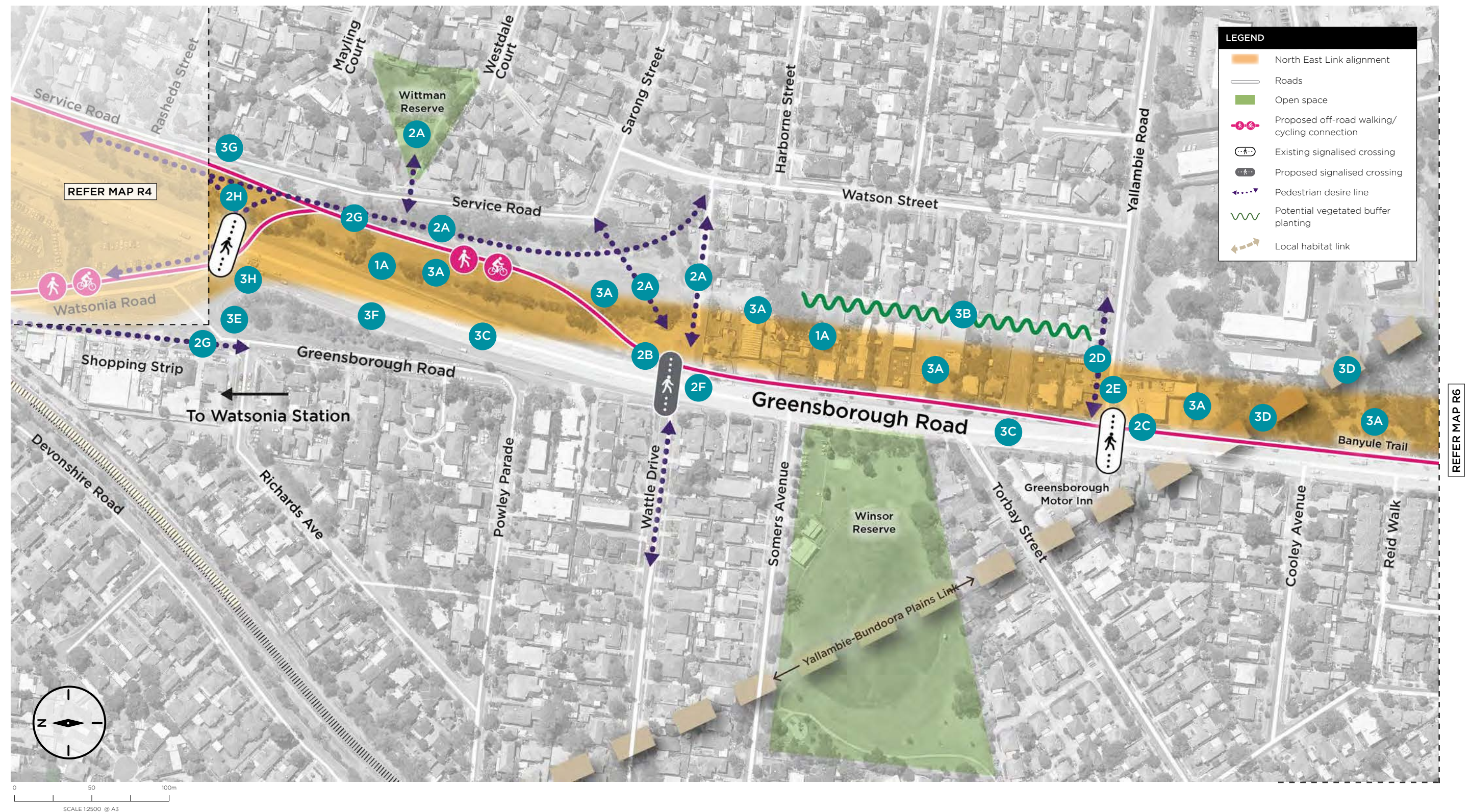
Resilience & Sustainability

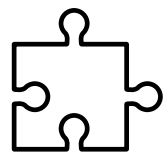
4A

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.*

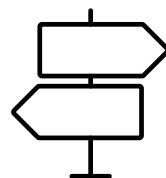
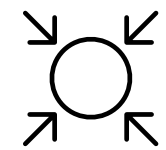
MAP R5: SOUTH OF WATSONIA STATION





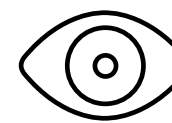
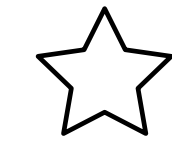
Urban Integration

- 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 feature at the intersection of Greensborough Road and Watsonia Road to create a sense of entry into Watsonia Shopping Centre. Ensure that the intersection is configured to enhance walkability and allows for additional future development at ground level.*

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

MAP R6:
SIMPSON BARRACKS





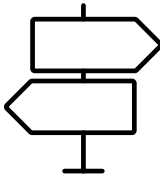
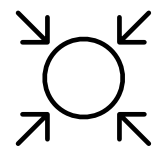
Identity

- 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 by:*

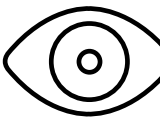
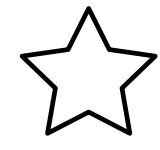
- Collaborating with the Simpson Barracks to explore the use of built form to interpret cultural and historic aspects of the Barracks
- Creating space/s for community gathering and reflection
- Integrating memorial elements and/or commemorative planting.

**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

- 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** **Consider providing wayfinding and access to Banyule Creek from the Banyule Shared Trail.*



Amenity, Vibrancy & Safety

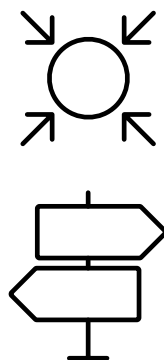
- 3A** Provide additional buffer planting to filter views from residential areas to walls and road infrastructure.
- 3B** Minimise impacts to Banyule Creek from road infrastructure and enhance and extend the natural values of Banyule Creek to improve appearance, biodiversity, habitat and recreational 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 under 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 through improved walking links across the Lower Plenty Road interchange and connecting to River Gum Walk.
- 1G** **Consider providing wayfinding and access to Banyule Creek from the Banyule Shared Trail.*
- 1H** **Consider providing a path link from Coleen Street to Erskine Road.*



Resilience & Sustainability

- 2A** Provide landscaping to improve appearance and use indigenous planting to support biodiversity and habitat.
**Consider Water Sensitive Urban Design infrastructure to manage stormwater and 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.*
**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** **Consider enhancing landscaping along the grassed easement to improve user amenity for walkers and cyclists.*
- 3D** **Consider restoration and enhancements to Banyule Creek to the south of Lower Plenty Road.*

**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

Yarra River Valley

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.

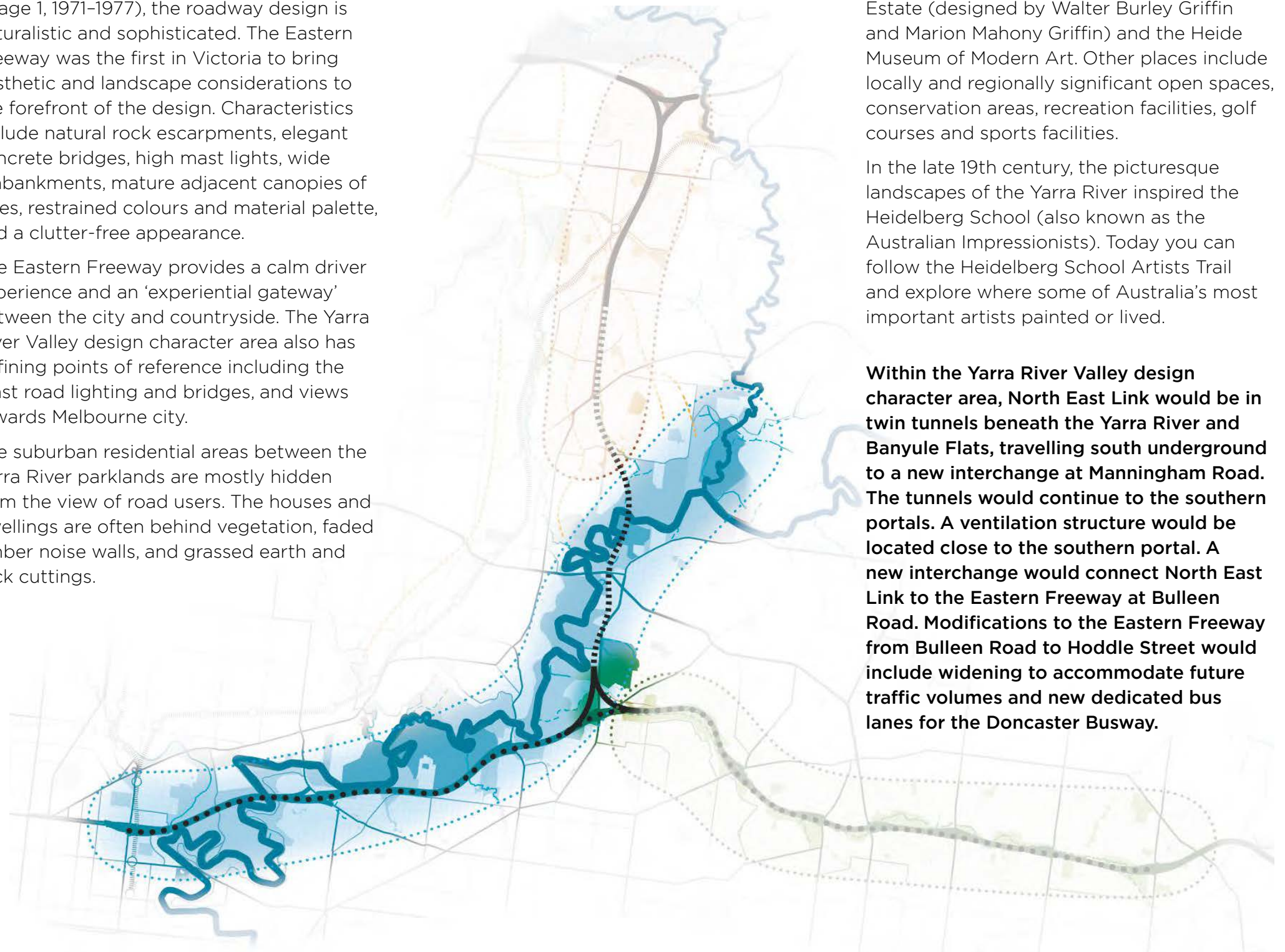
The Eastern Freeway provides a calm driver experience and an 'experiential gateway' between the city and countryside. The Yarra River Valley design character area also has defining points of reference including the mast road lighting and bridges, and views towards Melbourne city.

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

Yarra River Valley

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.

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 carefully considered 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

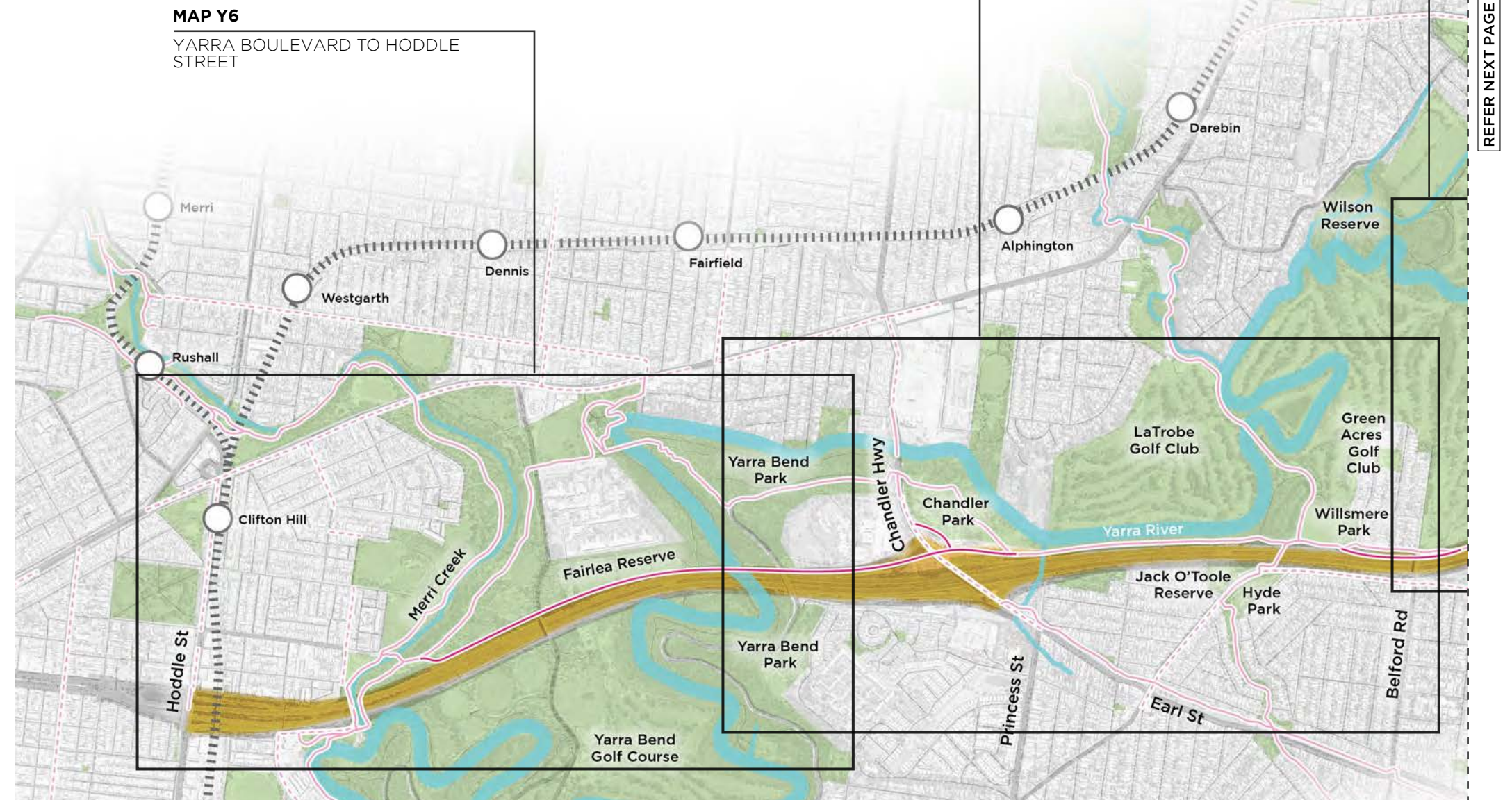


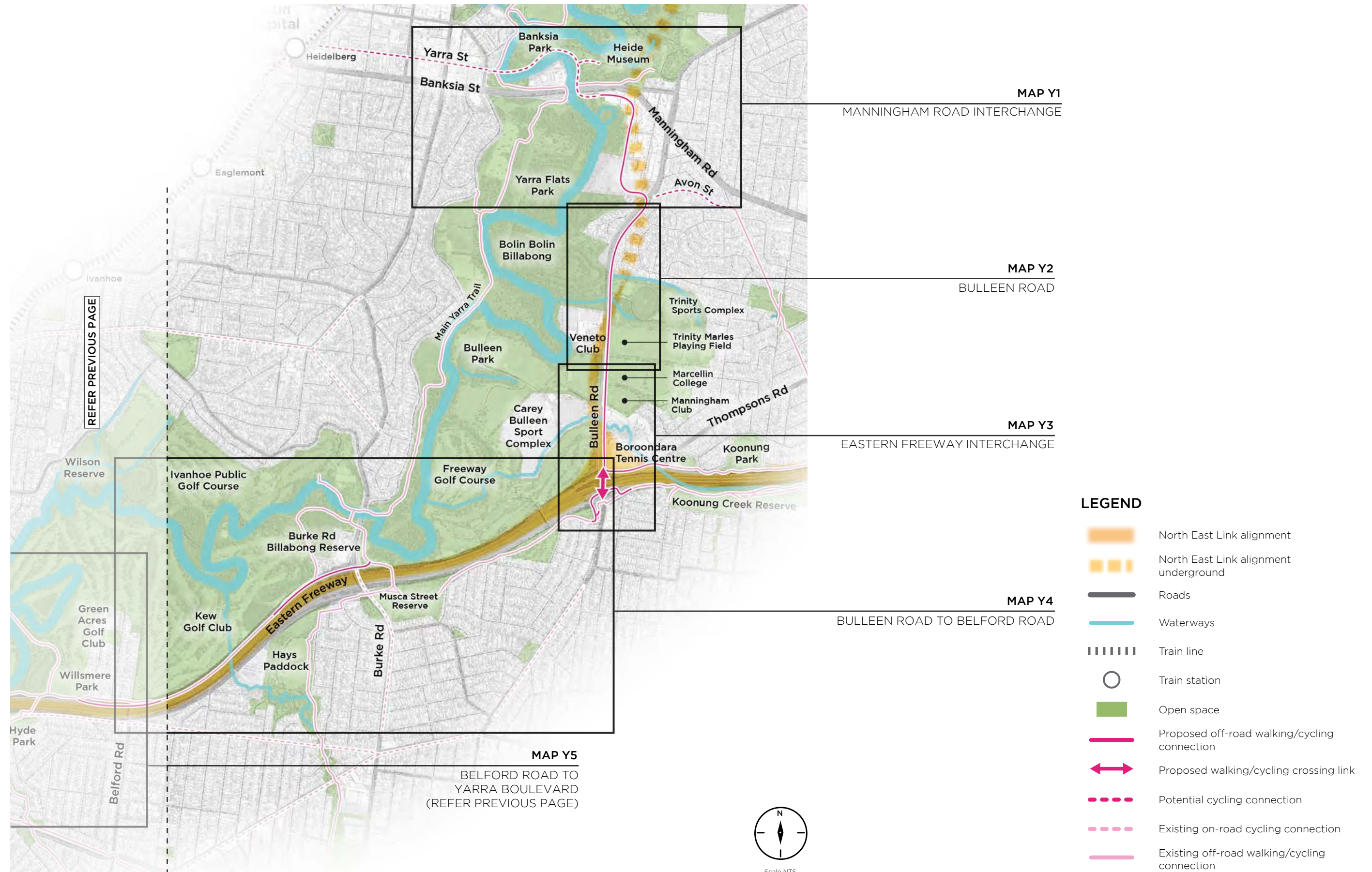
Place-specific requirements that must be met and considered at specific locations within the Yarra River Valley design character area are outlined in this section. These requirements have been prepared in close collaboration with key stakeholders so the community's expectations and local level issues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

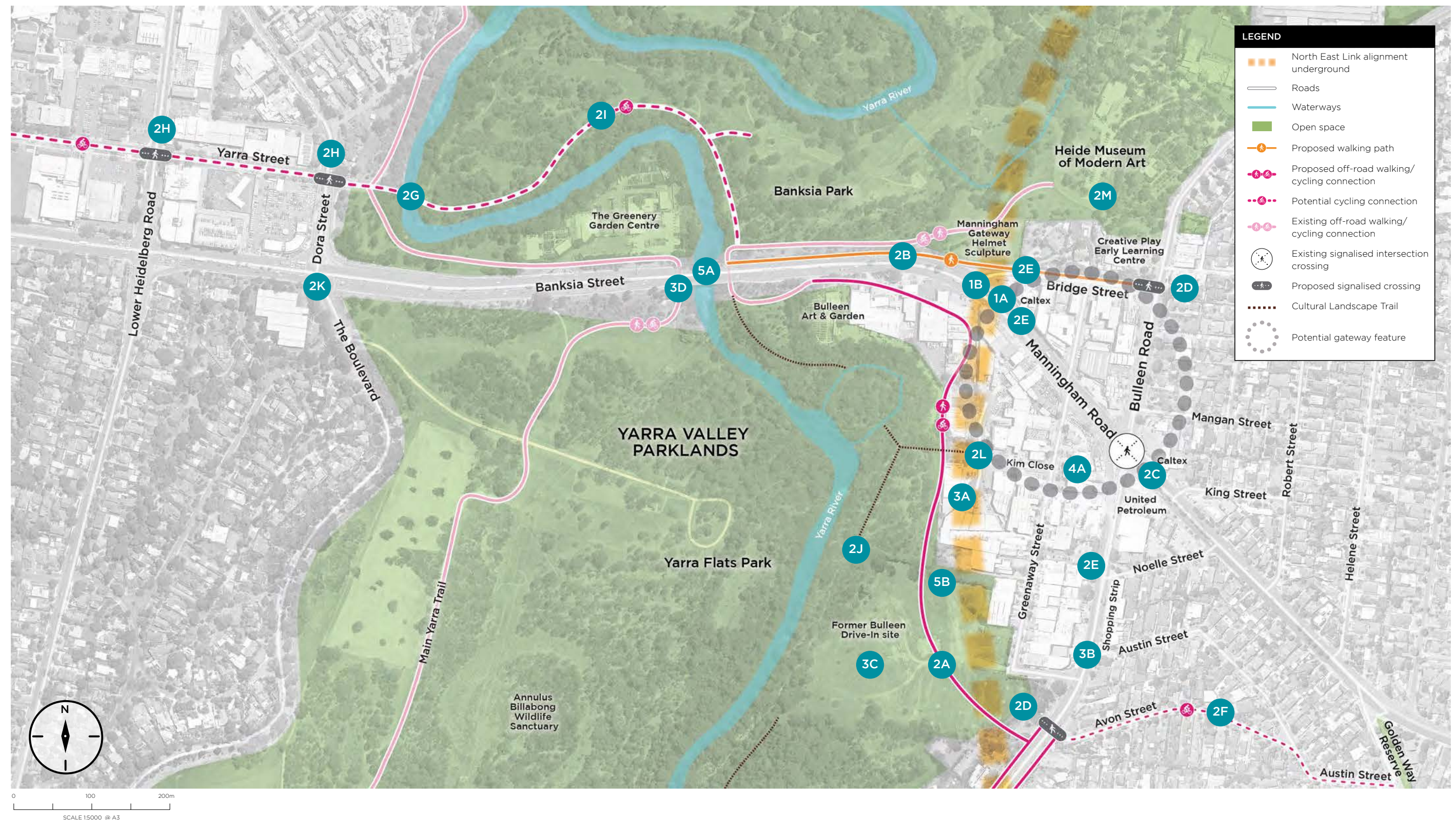
KEY PLAN

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.





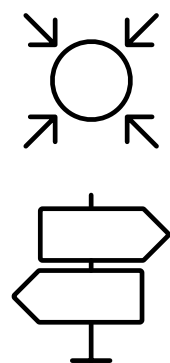
MAP Y1: MANNINGHAM ROAD INTERCHANGE





Identity

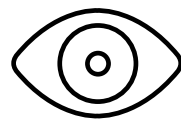
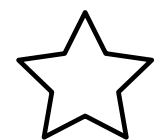
- 1A** Create a high quality navigational feature at the Manningham Road interchange that complements and respects the role of the existing Manningham Gateway 'Helmet' sculpture in Banksia Park, and signifies the entry into this important cultural and heritage precinct which includes the Heide Museum of Modern Art and the Yarra River Parklands.
- 1B** Demonstrate efforts to retain the existing significant River Red Gum tree near the Caltex site.



Connectivity, Wayfinding & Accessibility

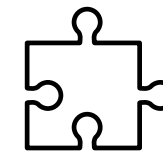
- 2A** Provide off-road walking and cycling paths through Yarra Flats Park and to the east of Bulleen Road to improve connectivity from Banksia Street down towards Koonung Creek Trail further to the south.
- 2B** Provide a pedestrian path on the northern side of Bridge Street to connect Bulleen Road 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** **Consider high quality walking and cycling paths connections at the Manningham interchange that are convenient and link to key destinations and desire lines.*
- 2M** **Consider future options for vehicle and pedestrian access to the Heide Museum of Modern Art.*



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 minimise visual impact of flood mitigation and other structures.*

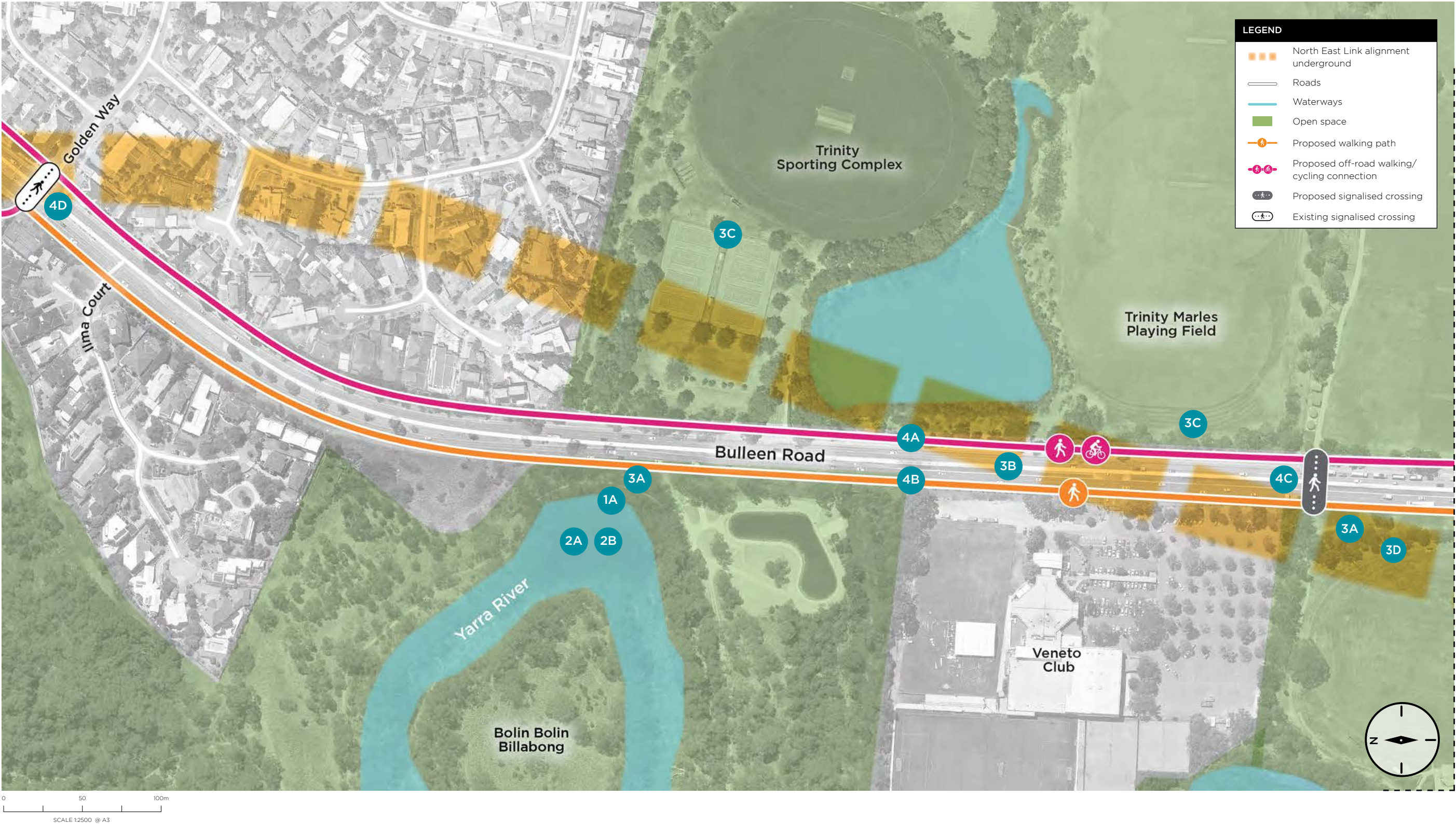


Resilience & Sustainability

- 5A** Enhance biodiversity and habitat links along the Yarra River corridor.
**Consider providing habitat infrastructure beneath the Manningham Road bridge to support habitat connectivity along the Yarra River corridor.*
- 5B** **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





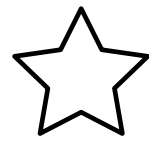
Identity

- 1A** **Consider improvements to the interface with the Bolin Bolin Billabong and consider enhancements to the environmental and cultural values of the area such as revegetating and providing facilities to support informal recreation (in consultation with the Wurundjeri).*

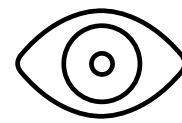


Resilience & Sustainability

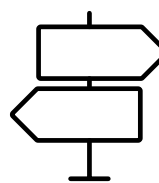
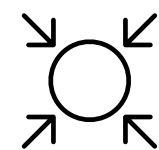
- 2A** Enhance biodiversity and habitat links along the Yarra River corridor.
- 2B** **Consider the implementation of 'naturalistic' Water Sensitive Urban Design elements (such as wetlands) to treat stormwater and to return flows to the Yarra River and surrounding billabongs to support river health.*



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.
- 3D** Design the ventilation structure and buildings to be well integrated with floodwalls and other built form; and consider design innovations, landscape and landform to mitigate visual impacts.



Connectivity, Wayfinding & Accessibility

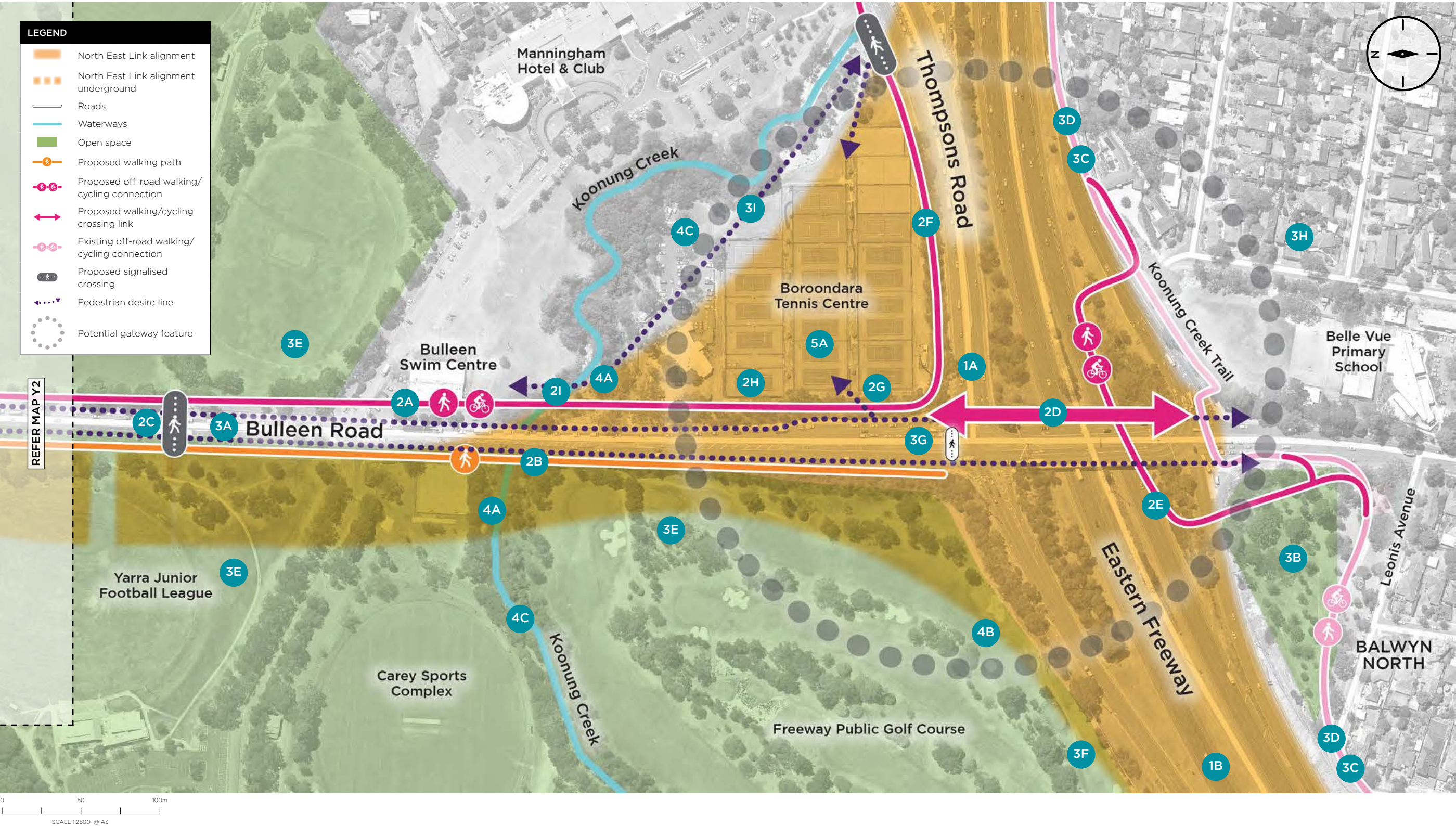
- 4A** Provide an off-road walking and cycling path on the east side of Bulleen Road to improve north-south connections.
- 4B** Provide a footpath along the west side of Bulleen Road to improve north-south and east-west connections.
- 4C** Provide signalised crossings across Bulleen Road to improve pedestrian 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.

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



Bulleen Park

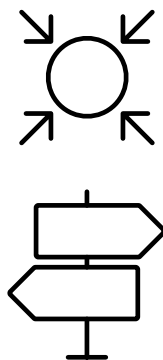
MAP Y3:
EASTERN FREEWAY INTERCHANGE





Identity

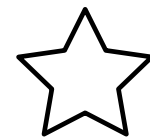
- 1A** Design the Eastern Freeway interchange to be a navigational node by using distinctive elements to provide features and landmarks for navigation for all modes of transports. Landscaping is to take inspiration from surrounding natural assets such as the Yarra River and will maximise indigenous planting 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.



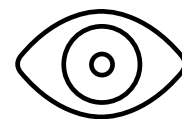
Connectivity, Wayfinding & Accessibility

- 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** **Consider improvements to landscape along Bulleen Road adjacent to Bulleen Park and Ride facility.*
- 2I** **Consider improvement to connectivity to nearby schools by creating a crossing over the Koonung Creek north of the new Bulleen Park and Ride facility.*



Amenity, Vibrancy & Safety

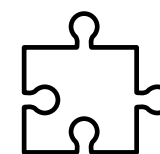


- 3A** Provide roadside planting with large canopy trees along Bulleen Road to enhance the area's 'green' character and role as a gateway to Melbourne's north-east.
- 3B** Reinststate and enhance buffer planting along the interface with the Eastern Freeway interface at Leonis Avenue Reserve.
- 3C** Ensure 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. Plant indigenous trees and vegetation to filter views.
- 3F** Reinststate and enhance buffer planting along the Eastern Freeway interface.
- 3G** Design elevated structures at the Eastern Freeway interchange to minimise the bulky appearance when viewed from surrounding neighbourhoods such as Balwyn North.



Resilience & Sustainability

- 4A** Provide planting to enhance visual amenity, biodiversity and habitat links along the Koonung Creek corridor.
- 4B** Reinststate and enhance buffer planting along the Freeway Public Golf Course interface.
 - *Consider Water Sensitive Urban Design infrastructure to capture, treat and reuse stormwater run off from Bulleen Park and Ride facility.*
- 4C** **Consider improvements to Koonung Creek to enhance appearance and environmental values at the interface with the project corridor.*



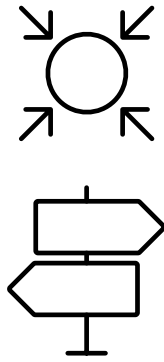
Urban Integration

- 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).

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

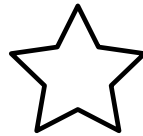
MAP Y4:
BULLEEN ROAD TO BELFORD ROAD



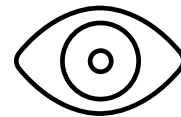


Connectivity, Wayfinding & Accessibility

- 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** Reinststate 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.*

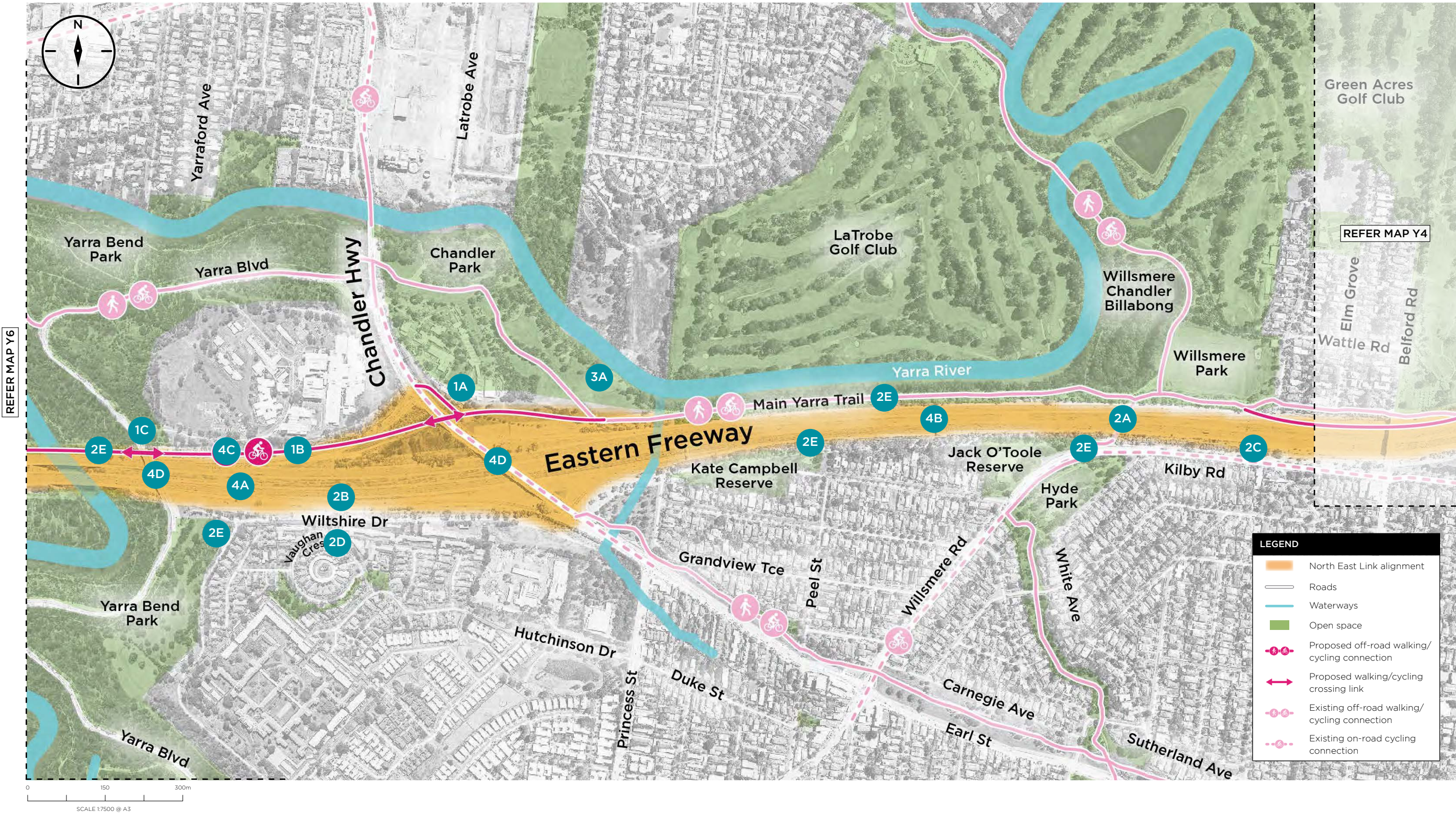


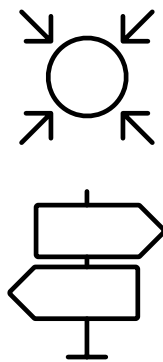
Identity

- 4A** **Consider relocation of the existing mast lights as part of the lighting design where the lights cannot be retained in their current location. If reuse is not possible, consider a design for replacement lighting that draws on the original mast light design.*
- 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.*

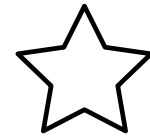
MAP Y5:
BELFORD ROAD TO YARRA BOULEVARD



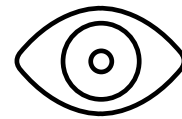


Connectivity, Wayfinding & Accessibility

- 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 **Consider implementing a wetland at Chandler Park to receive and treat stormwater from the Eastern Freeway and surrounding residential areas.*

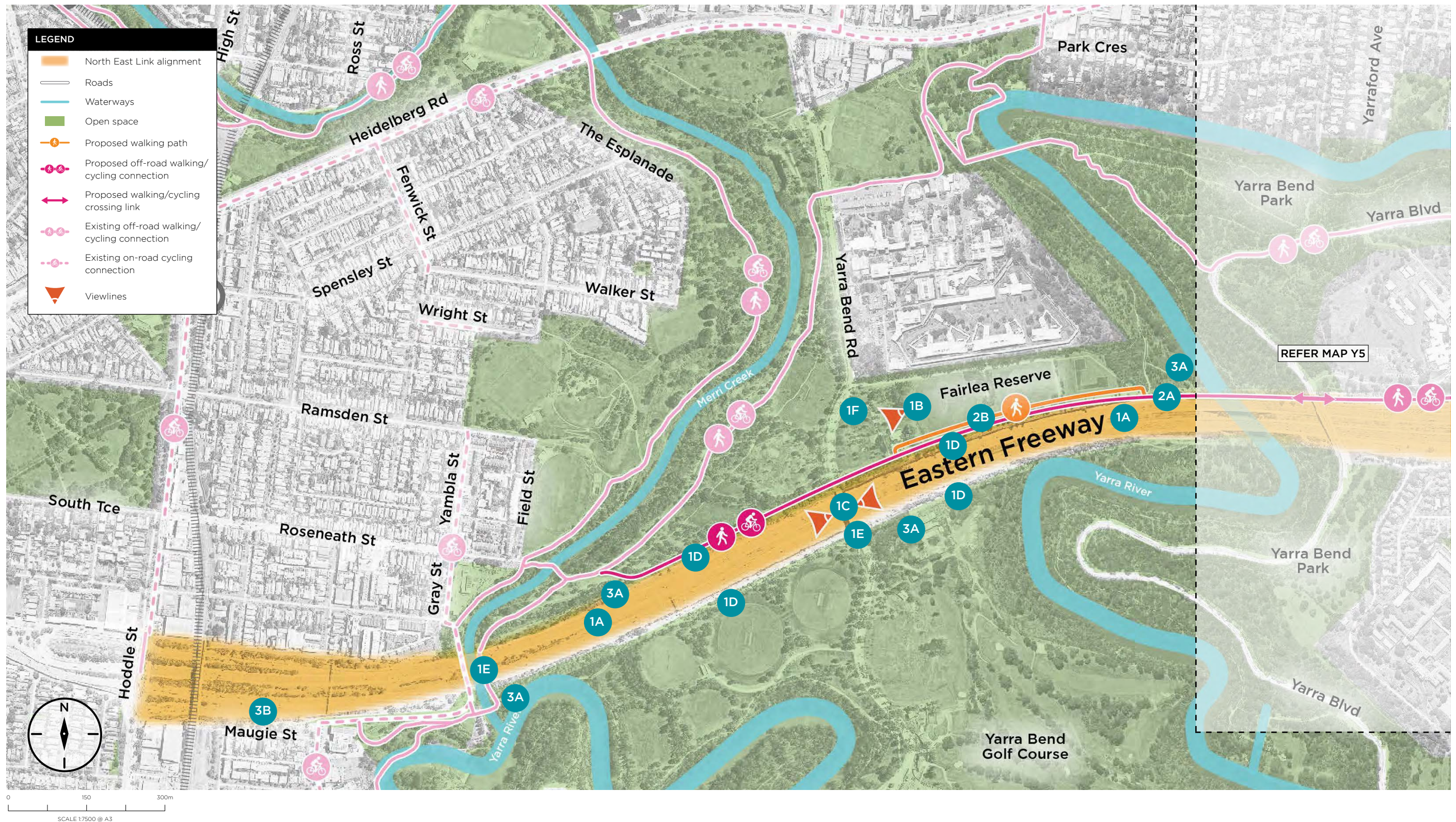


Identity

- 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 **Consider relocation of the existing mast lights east of the Chandler Highway as part of the lighting design where the lights cannot be retained in their current location. If reuse is not possible, consider a design for replacement lighting that draws on the original mast light design.*
- 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.

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

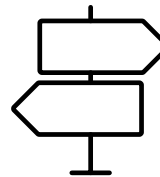
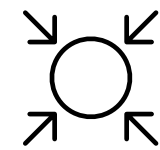
MAP Y6: YARRA BOULEVARD TO HODDLE STREET





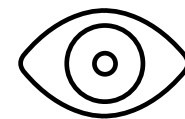
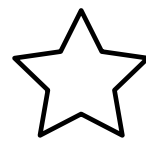
Identity

- 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 to interpret the cultural heritage values of the former Yarra Bend Asylum at Yarra Bend Park.*



Connectivity, Wayfinding & Accessibility

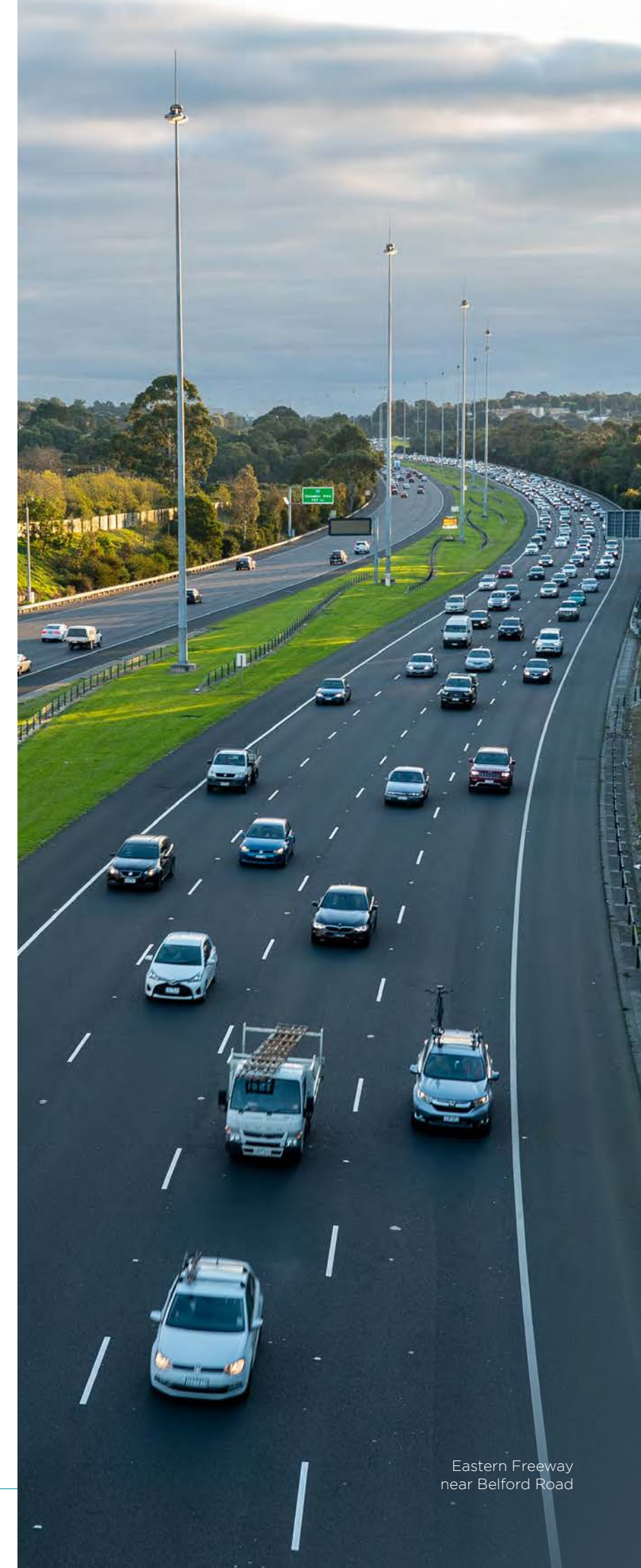
- 2A** Provide a new cycling connection to the north of Eastern Freeway as part of the Eastern Bicycle Corridor. This new bicycle corridor alignment should avoid removing existing trees where possible.
- 2B** Upgrade the existing River Circuit Trail at Fairlea Reserve to provide a footpath for walkers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



Amenity, Vibrancy & Safety

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



Eastern Freeway
near Belford Road

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Koonung Creek Valley area



6.1 Contextual narrative

Koonung Creek Valley

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.

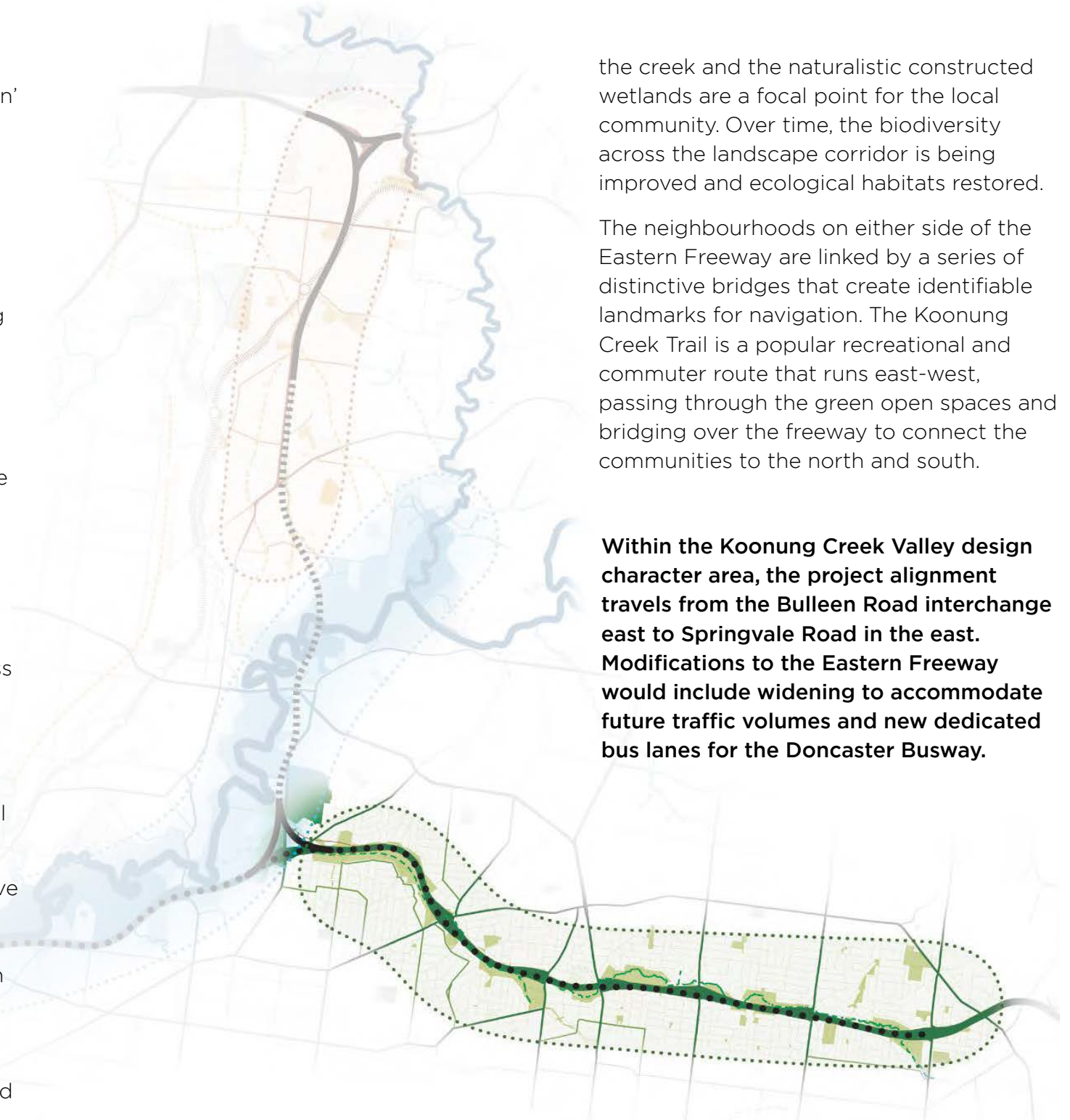
The linear green open spaces along the Eastern Freeway are highly valued by the community for recreation, socialising, fitness and to provide opportunities to reflect and connect with nature. These green spaces provide a variety of opportunities for recreation, ranging from dog walking and informal kick-around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

Koonung Creek Valley

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 minimise 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

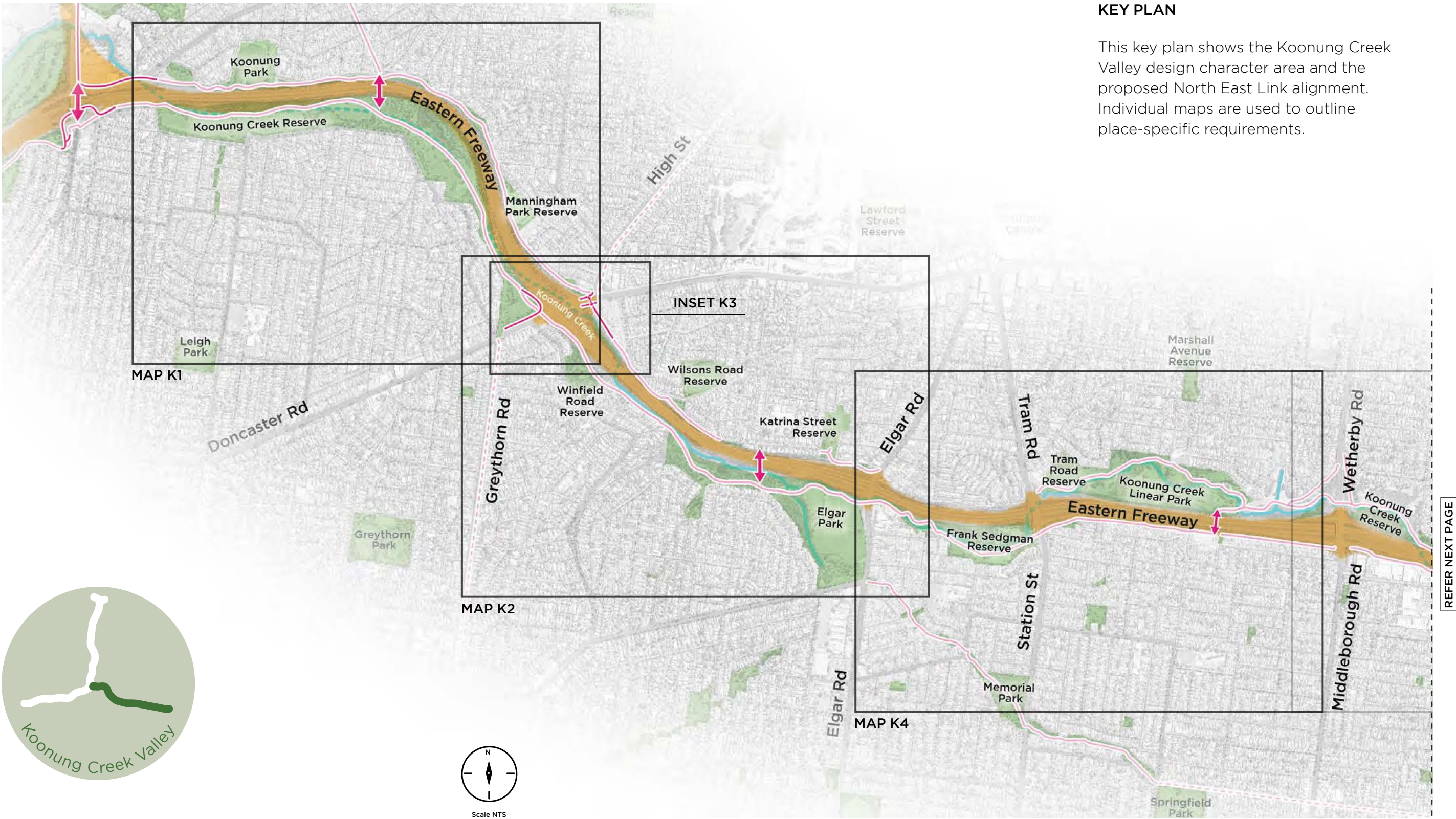


Doncaster Park and Ride



Walking paths along the Koonung Creek open space system

6.3 Place-specific requirements

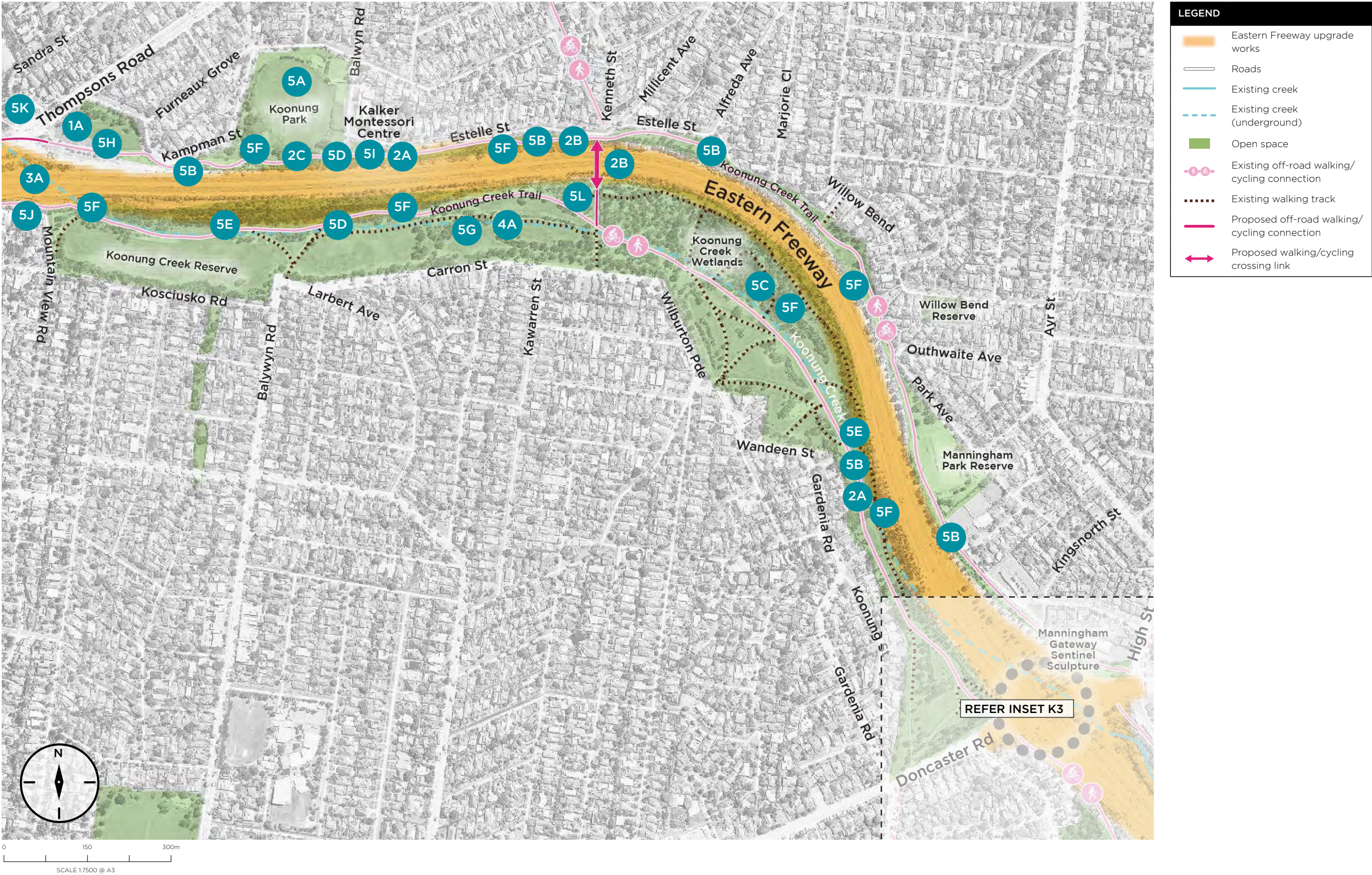


Place-specific requirements that must be met and considered at specific locations within the Koonung Creek Valley design character area are outlined in this section. These requirements have been prepared in close collaboration with key stakeholders so the community's expectations and local level issues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



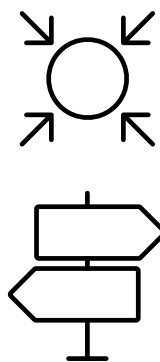
MAP K1:
BULLEEN ROAD TO DONCASTER ROAD





Identity

- 1A** **Consider enhancing the Thompsons Road intersection to support a safer pedestrian environment and cater for public transport such as for the Bulleen Park and Ride facility.*



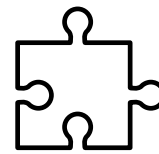
Connectivity, Wayfinding & Accessibility

- 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** **Consider providing additional separated walking paths in high use areas along the parklands adjacent to the Eastern Freeway to reduce potential for conflict between walkers and cyclists along the Koonung Creek Trail.*



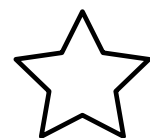
Urban Integration

- 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:

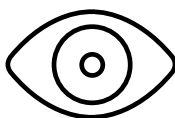
Additional planting, improving sightlines and creating a more consistent landscaping theme

**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.

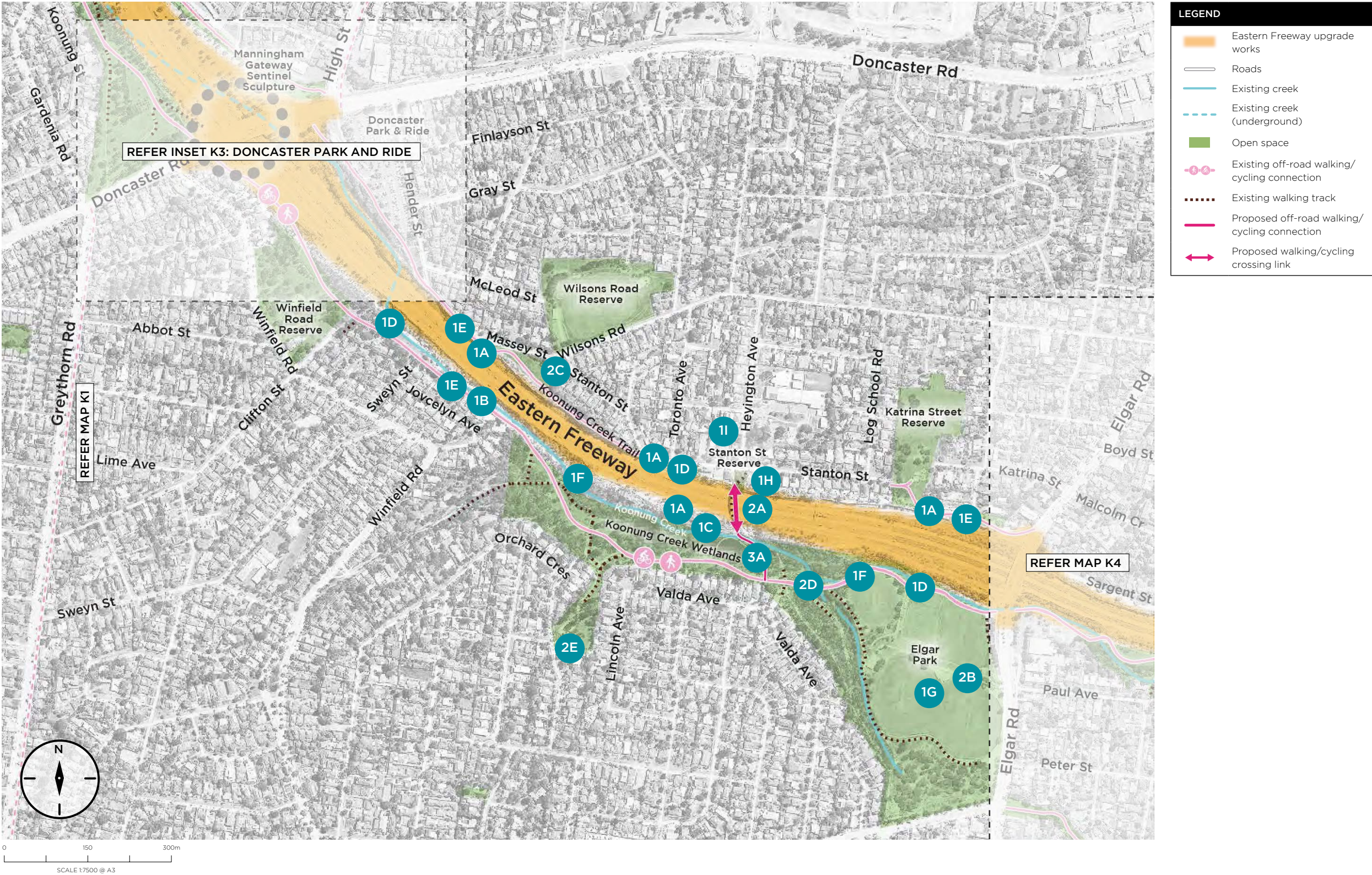


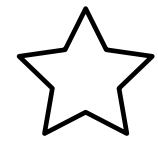
- 5C** Maintain wetlands as a focal point for the community in the Koonung Creek Reserve. Retain the natural values of the wetlands. Retain and/or enhance community infrastructure (such as seating, boardwalks, interpretation, informal paths, shade) to support the enjoyment of the wetlands.

- 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** **Consider upgrades to the Koonung Creek Reserve to provide additional seating and enhance environmental values (refer to Boroondara Open Space Strategy).*
- 5H** **Consider improvements to lighting along the Koonung Creek Trail and extend planting on hill side in 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.

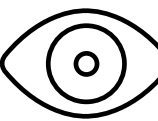
**Opportunities which are outside the scope but may be delivered by others and/or would be beneficial for the contractor to implement.*

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** **Consider opportunities to provide exercise equipment or fitness stations, and bicycle maintenance stations at strategic locations along the Koonung Creek Trail.*

1G

**Consider Whitehorse City Council's planned improvements to Elgar Park which include:*

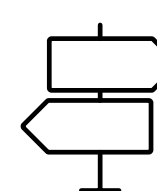
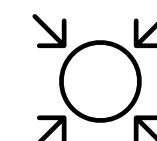
- *Upgrading the Koonung Creek Trail including increasing path width, path realignment to improve sightlines and wayfinding signage*
- *Improving connectivity through Elgar Park and between the Koonung Creek Trail and Bushy Creek Trail*
- *Providing amenity nodes and pause points along the Koonung Creek 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 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** **Consider providing additional separated walking paths in high use areas along the parklands adjacent to the Eastern Freeway to reduce potential for conflict between walkers and cyclists on the Koonung Creek Trail.*
- 2E** **Consider providing low stress cycling routes to key local destinations and facilities (refer to Whitehorse City Council's proposed Easy Ride Routes).*

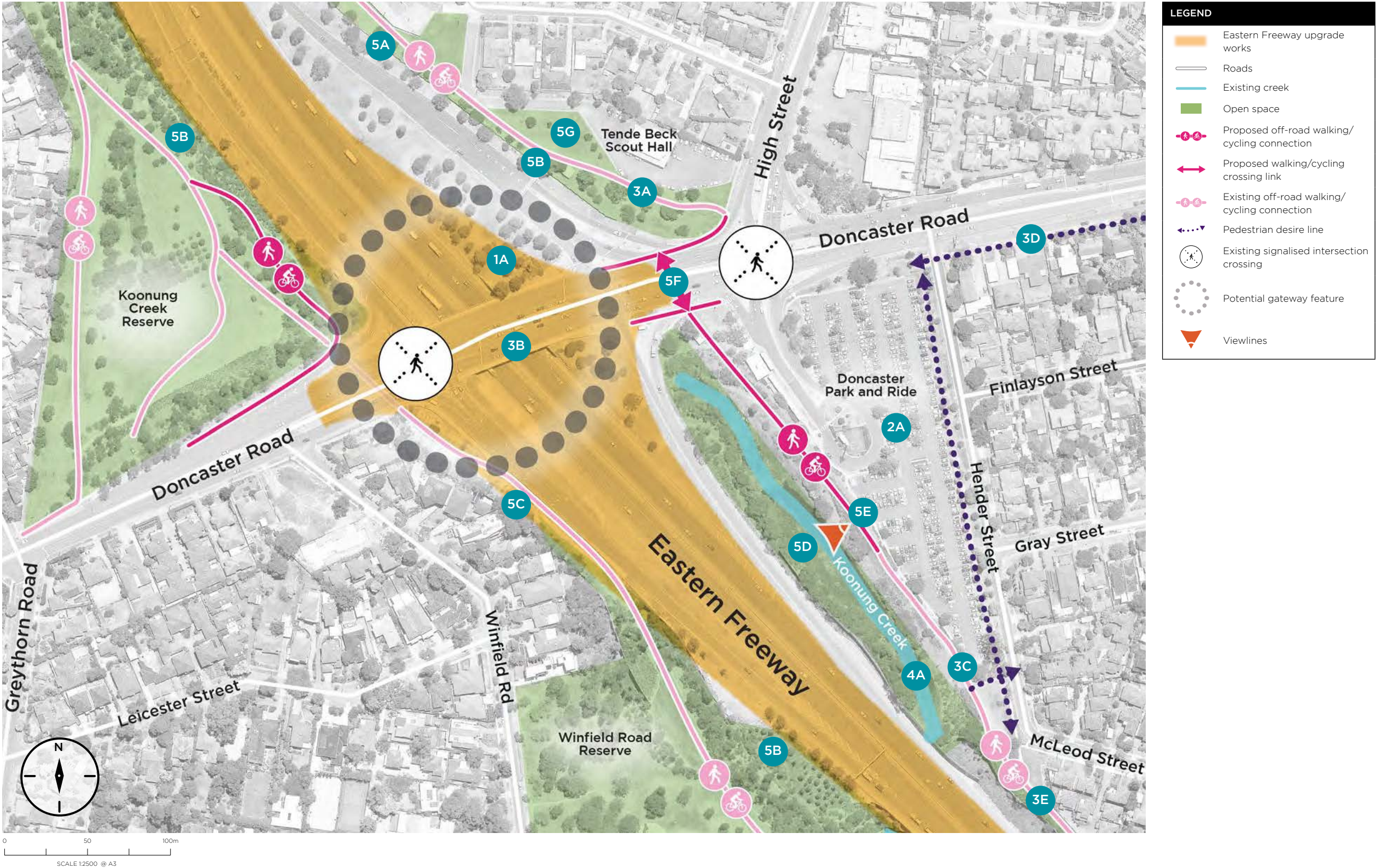


Resilience & Sustainability

- 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.*

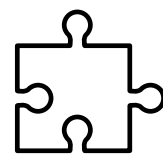
INSET K3:
DONCASTER PARK AND RIDE





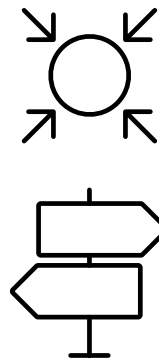
Identity

- 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** **Consider replacing existing paths between the Doncaster Park and Ride and Massey Street to cater for increased demand and 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.

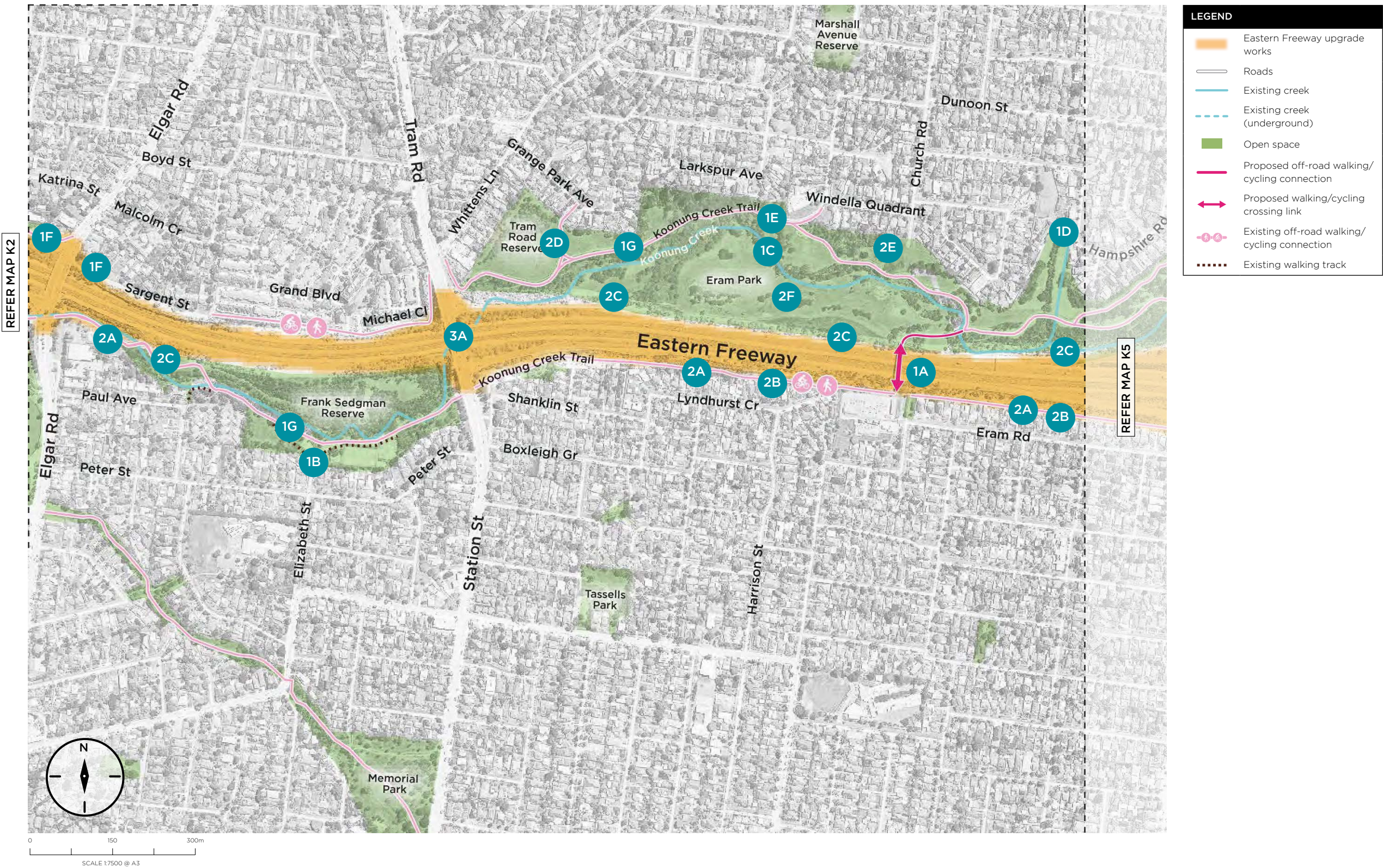


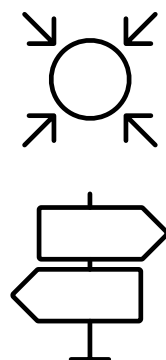
Amenity, Vibrancy & Safety

- 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 consider 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).*

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

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.
- 1C** **Consider improving the ability for pedestrians to cross Koonung Creek to access under-utilised open space within Eram Park.*
- 1D** **Consider a new path to link the Koonung Creek Trail to Colston Close and Hampshire Road playspace (refer to Manningham City Council's Koonung Creek Linear Park Management Plan 2011).*
- 1E** **Consider upgrades to secondary paths and complete gaps in the Koonung Creek Trail on the north side of the Eastern Freeway within the Koonung Creek Linear Park (refer to Manningham City Council's Koonung Creek Linear Park Management Plan 2011).*
- 1F** **Consider upgrades to interconnecting path sections of the Koonung Creek Trail (to the east and west of Elgar Road) to a consistent and high quality path for walking and cycling.*
- 1G** **Consider providing additional separated walking paths in high use areas along the parklands adjacent to the Eastern Freeway to reduce potential for conflict between walkers and cyclists on the Koonung Creek Trail.*



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** **Consider enhancements to Eram Park to support dog recreation activities in consultation with Manningham City Council.*

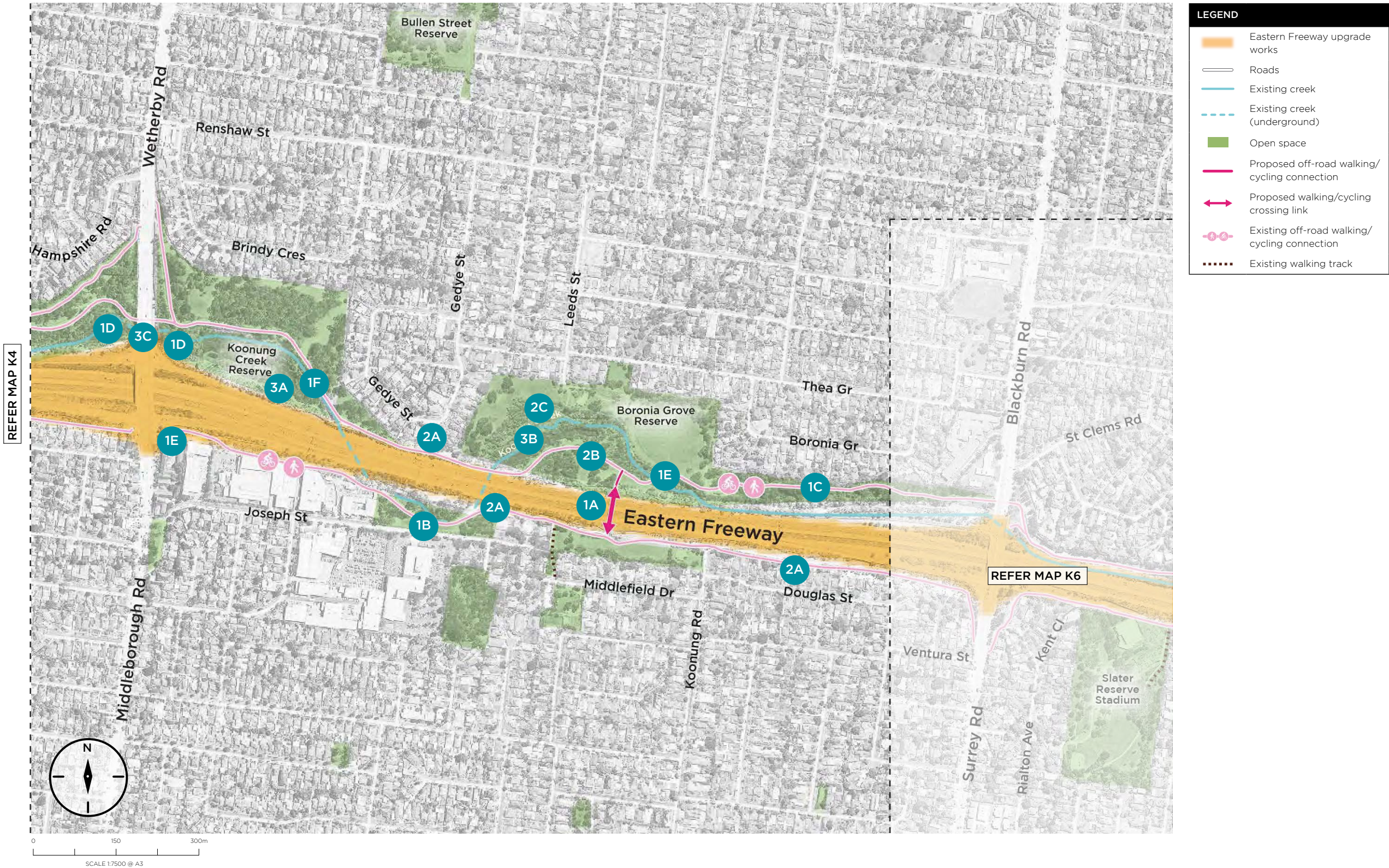


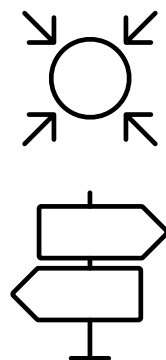
Resilience & Sustainability

- 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.

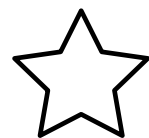
MAP K5:
MIDDLEBOROUGH ROAD TO BLACKBURN ROAD



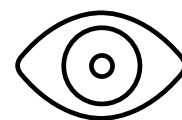


Connectivity, Wayfinding & Accessibility

- 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 it under-utilised 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** **Consider providing additional separated walking paths in high use areas along the parklands adjacent to the Eastern Freeway to reduce potential for conflict between walkers and cyclists along the Koonung Creek Trail.*



Amenity, Vibrancy & Safety



- 2A** Ensure narrow areas along the Koonung Creek Trail have good lighting, open sightlines and are attractive to users.
- 2B** **Consider opportunities to provide exercise equipment or fitness stations and bike maintenance stations at strategic locations along the Koonung Creek Trail.*
- 2C** **Consider enhancing Boronia Grove Reserve (refer to Manningham City Council's Koonung Creek Linear Trail Future Works Program 2011) in consultation with Manningham City Council to include improvements such as planting infill bushland in between remnant vegetation, exercise equipment, and linking the trail to footpath networks and upgrades the trail near Boronia Grove.*



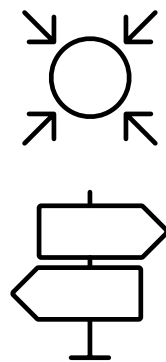
Resilience & Sustainability

- 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 across Wetherby Road at Koonung Creek Reserve by providing habitat infrastructure.*

*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

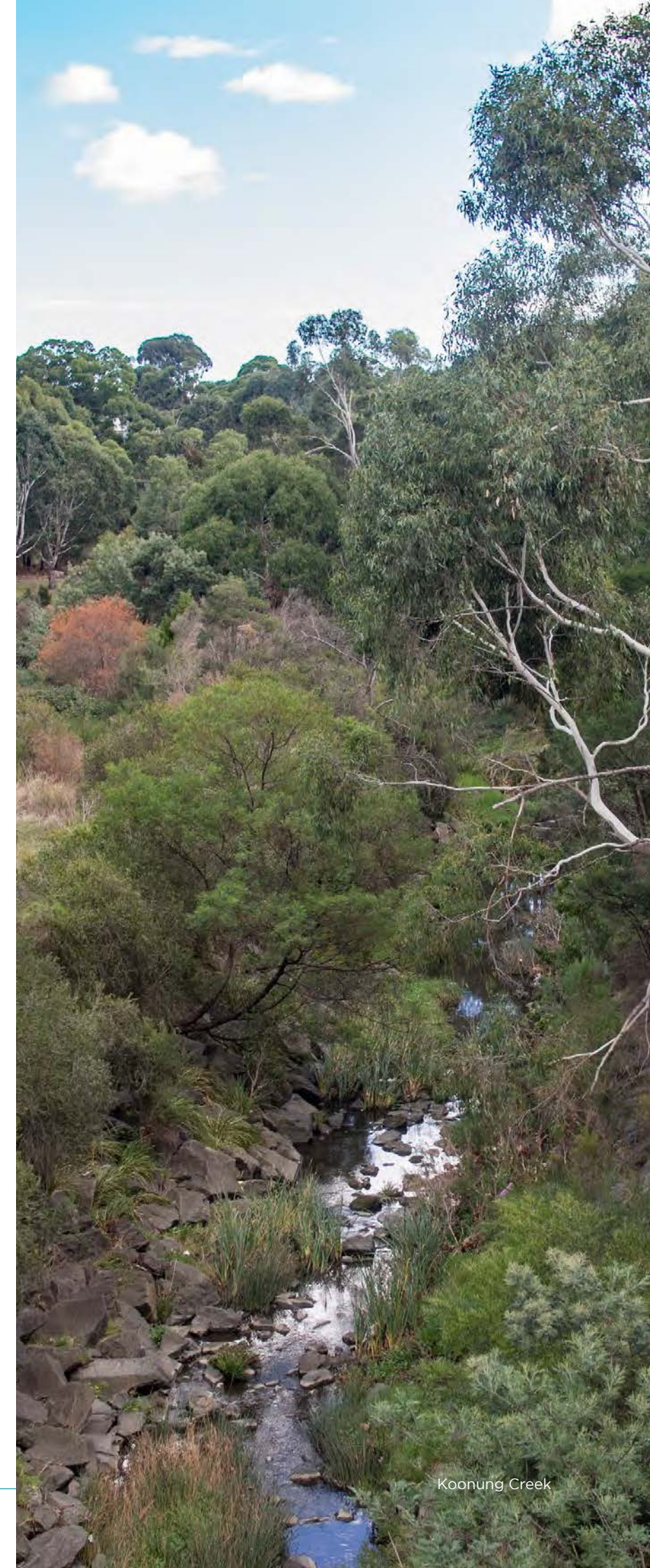
- 1A** Replace existing bridge over the Eastern Freeway and Koonung Creek near Kett Street with new walking and cycling crossings that connects to the Koonung Creek Trail and surrounding path networks. Entries to bridge are to be clear, legible and are to include wayfinding to the entry points.
- 1B** **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** **Consider providing additional separated walking paths in high use areas along the parklands adjacent to the Eastern Freeway to reduce potential for conflict between walkers and cyclists along the Koonung Creek Trail.*
- 1D** **Consider upgrading connections from Kett Street to the walking and cycling bridge over the Eastern Freeway (including upgrading the existing goat track).*



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

The background image is a photograph of a lush green grassy hillside. A dark, angular, metallic-looking structure is positioned on the slope. In the background, there are tall, thin trees under a clear blue sky. A concrete path is visible in the bottom right corner.

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. 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 with careful consideration of 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 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 elevated roads and structures on road users is 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 consider 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.



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

2.4 Views

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

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. Cutting design should consider innovative and integrated solutions for new land uses.

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

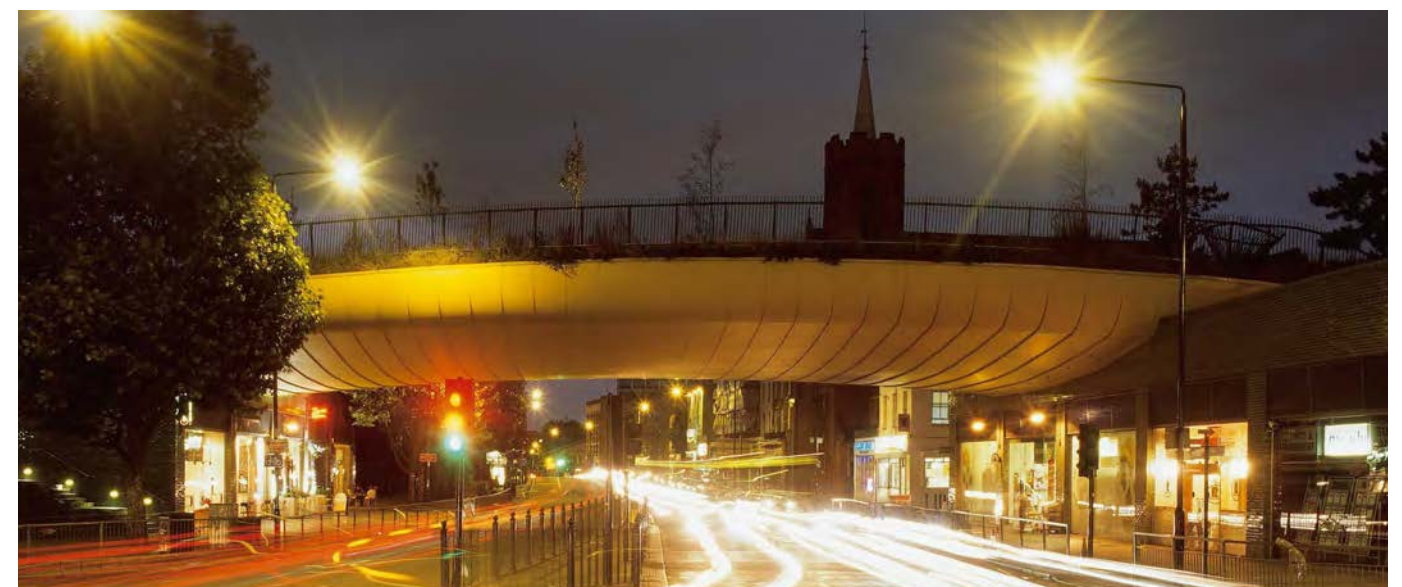
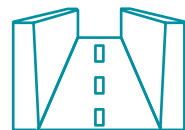


FIGURE 14 Demonstrates: design of bridge underside provides street level amenity. The Green Bridge, London.
Design: CZWG Architects LLP, Photography: © Barbara Piemonte



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 minimised.

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.

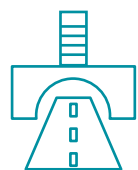
Cuttings are designed to mitigate adverse amenity impacts for adjacent residents and the local community, and to provide spaces that are considered and well resolved as part of the overall design solution.

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. Vedeggio-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.



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

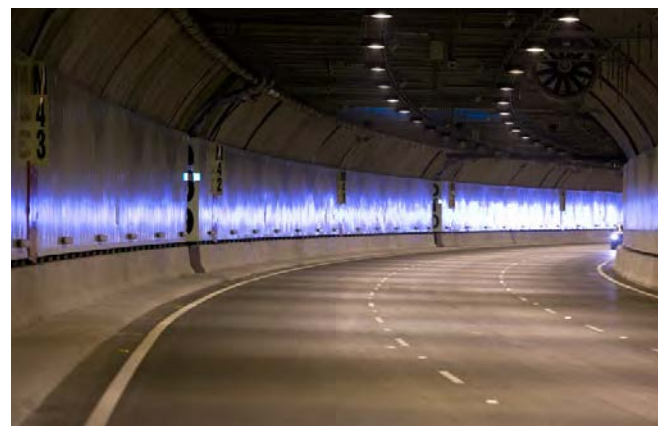


FIGURE 22 Demonstrates: Appropriate use of tunnel lining to improve user comfort, alter the tunnel profile and conceal mechanical services. EastLink, Melbourne.
Design: Wood Marsh, Image: EastLink



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 with consideration of 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.



6. Project buildings & ancillary structures



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

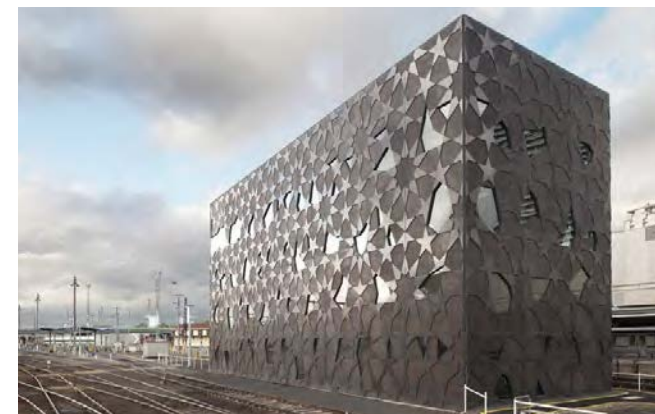


FIGURE 25 Demonstrates: well designed building facade that complements the rail yard environment. Yardmasters building at Southern Cross Station, Melbourne. Design: McBride Charles Ryan Architects, Photography: John Gollings



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 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 & 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.

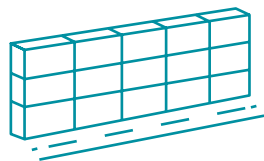
Seating, shade, shelter and lighting are provided, as appropriate, and at regular intervals, transport stops, on key pathways and in community places associated with the project.

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



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 are 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 narrow areas between noise walls and residential properties is minimised, and innovative solutions are considered 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 carefully consider 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 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 use. Anti-throw screens have good visual permeability when viewed from adjacent areas, to maximise passive surveillance.



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*

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.

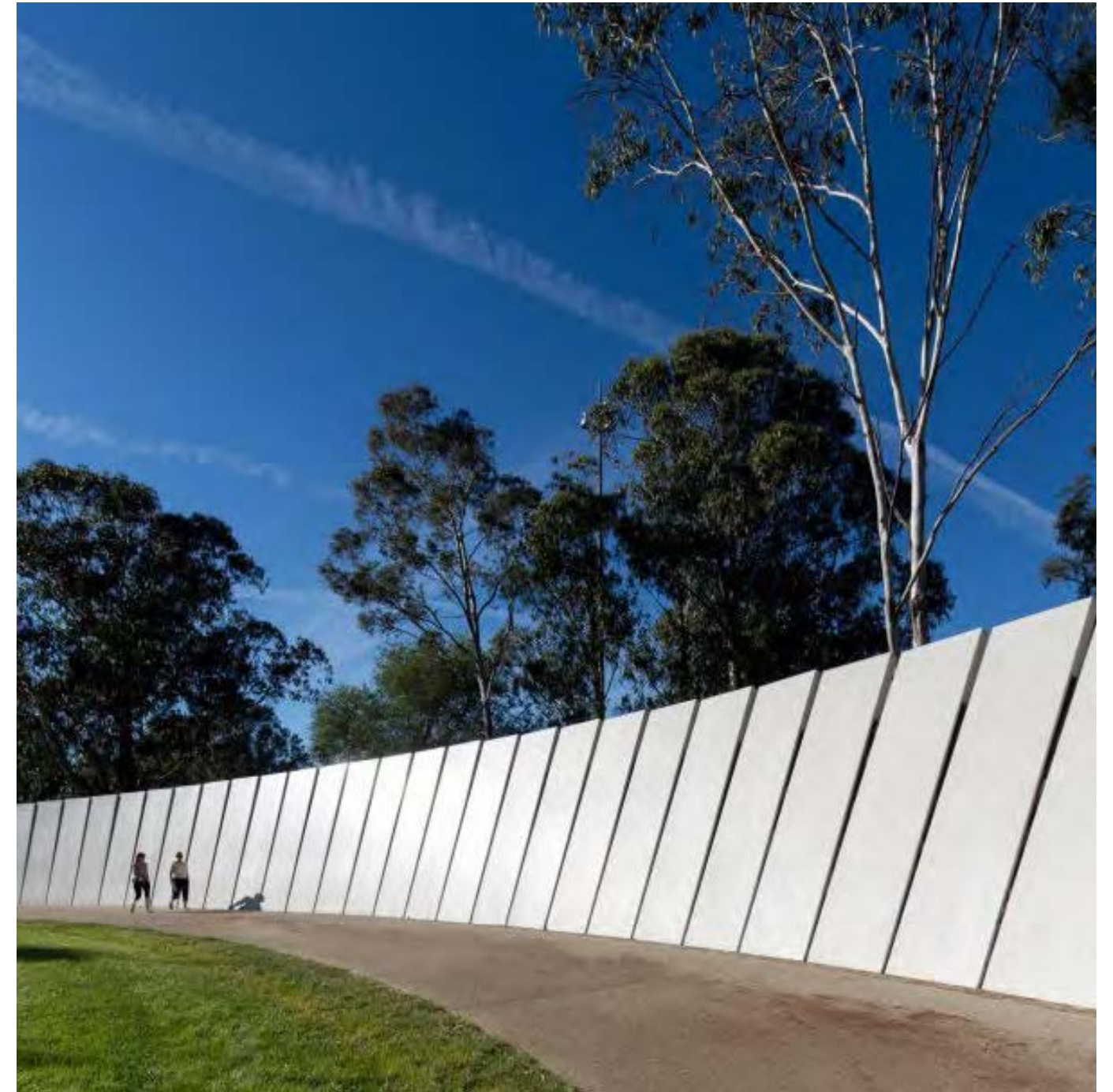


FIGURE 43 Demonstrates: well considered architectural walls add to the pedestrian experience along the path. *Design: Lahz Nimmo Pty Ltd and Spackman Mossop Michaels, Photography: Brett Boardman*



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: Metarum Architects, Photography: Zooney 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

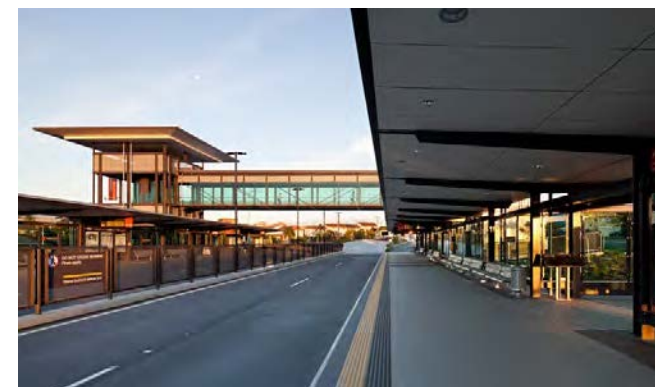


FIGURE 48 Demonstrates: weather protected waiting areas with clear sightlines. Eastern Busway, Brisbane. Design: Cottee Parker, Photography: Christopher Frederick Jones



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.

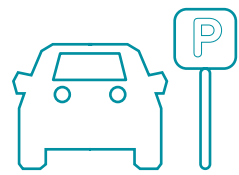
Clear sight lines and well integrated connections are provided to feeder bus services and other modes of transport. The entry and exit to facilities and stops are identifiable and easy to access.

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 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 carefully considers impacts to sensitive adjacent land uses.

12.3 Light pollution

Lighting employed in the project is designed sensitively for the surrounding environment and to 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

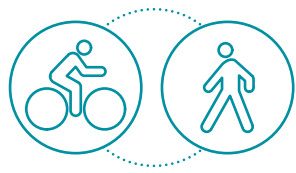
Energy efficient lighting is used to reduce ongoing energy consumption.



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

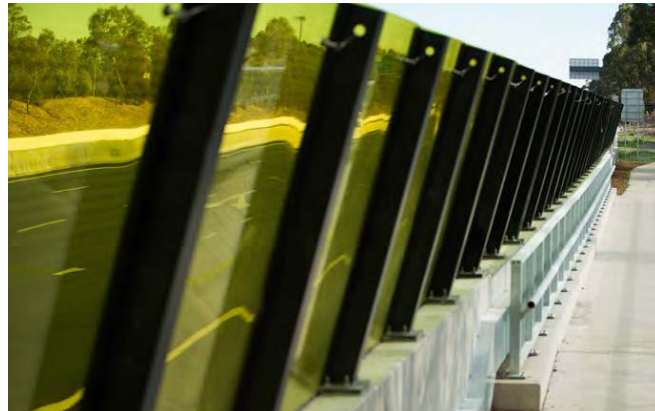


FIGURE 53 Demonstrates: use of transparent material to provide visual permeability to the road for improved perceived cyclist safety. M80, Melbourne. Design: Peter Elliott, Image: VicRoads



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 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 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 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 consider 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*

7. DETAILED REQUIREMENTS & BENCHMARKS



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 to consider 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 consider 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 considered 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*



FIGURE 68 Demonstrates: clear visual connections through underpass with highly textured vibrant walls. *Design: Jasmax, 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 could 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*

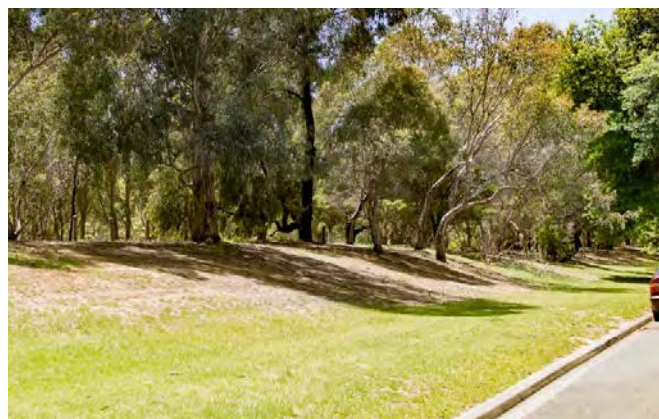


FIGURE 72 Demonstrates: buffer planting and mounds filter views from residential areas. Koonung Creek Reserve, Melbourne. *Image: NELP*



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.

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 landscape 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.

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 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.

Impacts from signage and toll points are minimised to local communities and to the quality of the public realm.

Signage infrastructure is located sensitively, with consideration 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 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 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 considered 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.

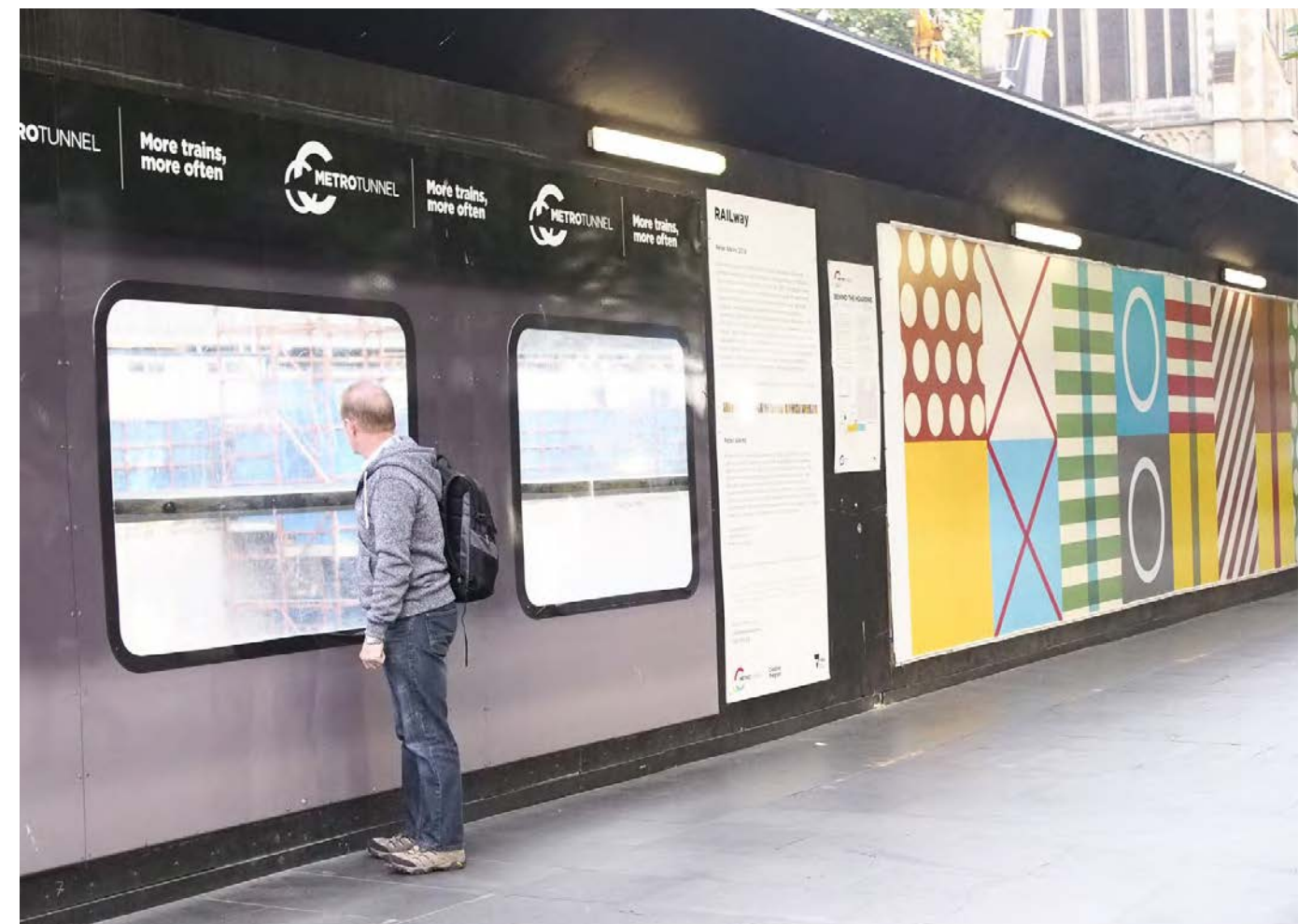
Protecting viability and amenity

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 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



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

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 consider 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.



Metro Tunnel construction hoardings in Swanston Street, Melbourne

