4.5 Urban Design and Landscape Plan Documents

4. Project Description and Design Response

4.5 Urban Design and Landscape Plan Documents

The following UDLP design documents support this report.

UDLP attachment documents

The UDLP design documents are included in the following attachments:

- Table 2: Attachment 1 – Architecture and Urban Design
- Table 3: Attachment 2 – Landscape Design.
- Table 4: Attachment 3 – Visualisations, noting that artistic renderings and images indicatively showing new permanent above ground buildings and structures proposed by the Project are provided for context only and will not form part of the UDLP approval. Proposed landscaping is shown at maturity.
- Table 5: Attachment 4 – Urban Design Overshadowing Assessment.

The attachments contain design information such as:

- site plans
- elevations
- sections
- materials and planting schedules
- visualisations.

These documents have been prepared in line with the Project design response to be consistent with the UDS (refer to Section 5) and compliant with the EPRs (refer to Section 6). The UDS and EPRs are performance-based to ensure design changes are assessed and result in appropriate outcomes.

Table 2: Attachment 1 – Architecture and Urban Design

Drawing Number	Revision	Drawing Title
0100 Project Cover Sheet		
NEL-STH-NSA-5700-BAR-DRG-U0100	0	Cover Sheet
NEL-STH-NSA-5700-BAR-DRG-U0101	0	Drawing List
0300 Site and Context Plans		
NEL-STH-NSA-5700-BAR-DRG-U0301	0	Site Plan
NEL-STH-NSA-5700-BAR-DRG-U0302	0	Roof Plan
NEL-STH-NSA-5700-BAR-DRG-U0303	0	Passenger Services Building Plan
1000 Finishes		
NEL-STH-NSA-5700-BAR-DRG-U1001	0	Materiality Schedule – Architectural
3100 GA Elevations		
NEL-STH-NSA-5700-BAR-DRG-U3101	0	Streetscape Elevation – Doncaster Road
NEL-STH-NSA-5700-BAR-DRG-U3102	0	Streetscape Elevation – Bus Interchange
NEL-STH-NSA-5700-BAR-DRG-U3103	0	Streetscape Elevation – Hender Street
3200 GA Plans		
NEL-STH-NSA-5700-BAR-DRG-U3201	0	GA – Bus Interchange
NEL-STH-NSA-5700-BAR-DRG-U3202	0	GA – Drop and Go Zone
3500 GA Sections		
NEL-STH-NSA-5700-BAR-DRG-U3501	0	Typical Section – Multi-level Car Park
NEL-STH-NSA-5700-BAR-DRG-U3502	0	Typical Section – Passenger Services Building
NEL-STH-NSA-5700-BAR-DRG-U3503	0	Typical Section – Bus Interchange
3600 Building Sections		
NEL-STH-NSA-5700-BAR-DRG-U3601	0	Multi-level Car Park – North East Section
NEL-STH-NSA-5700-BAR-DRG-U3602	0	Multi-level Car Park – North West Section
NEL-STH-NSA-5700-BAR-DRG-U3603	0	Multi-level Car Park – South West Section
NEL-STH-NSA-5700-BAR-DRG-U3604	0	Passenger Services Building – Elevations
4000 Overlooking		
NEL-STH-NSA-5700-BAR-DRG-U4000	0	Overlooking Diagram – Section A

4. Project Description and Design Response

Table 3: Attachment 2 – Landscape Design

Drawing Number	Revision	Drawing Title
NEL-STH-NSA-5700-ULS-DRG-0001	0	Cover Sheet
NEL-STH-NSA-5700-ULS-DRG-0006	0	Landscape Drawing Index
NEL-STH-NSA-5700-ULS-DRG-0021	0	Landscape Legend & General Notes
NEL-STH-NSA-5700-ULS-DRG-0101	0	Landscape Master Planting Schedule
Landscape Plans		
NEL-STH-NSA-5700-ULS-DRG-0301	0	Landscape Plan
NEL-STH-NSA-5700-ULS-DRG-0311	0	Landscape Tree Proposed Plan
NEL-STH-NSA-5700-ULS-DRG-0321	0	Landscape Forecourt Plan
Long Sections		
NEL-STH-NSA-5700-ULS-DRG-1101	0	Landscape Long Section
Landscape Tree Retention and Removal Plan		
NEL-STH-NSA-5700-ULS-DRG-3001	0	Landscape Tree Retention and Removal Plan
Construction Compound Plan		
NEL-STH-NSA-5700-ULS-DRG-3011	0	Construction Compound Plan

Table 4: Attachment 3 – Visualisation

Drawing Code	Drawing Title
1	Doncaster Park and Ride – Aerial View
2	Doncaster Park and Ride – View from Hender Street/Gray Street Intersection looking north-west towards Eastern Freeway
3	Doncaster Park and Ride – View from Doncaster Road/Hender Street looking south-west over the Eastern Freeway
4	Doncaster Park and Ride – View from southern end of site showing bus platform area, passenger services building on Hender Street
5	Doncaster Park and Ride – View from corner of Hender Street and Finlayson Street looking north-west towards multi-level car park and forecourt
6	Doncaster Park and Ride – View from Hender Street looking south-west towards drop and go zone, multi-level car park exit and passenger services building
7	Doncaster Park and Ride – View from Platform 1 looking north towards forecourt and multi-level car park
8	Doncaster Park and Ride – View from Platform 1 looking north-west towards the bus platform area and multi-level car park
9	Doncaster Park and Ride – View from Platform 3 looking east towards forecourt and passenger services building

Table 5: Attachment 4 – Urban Design Overshadowing Assessment

Drawing Code	No	Title
NEL-STH-NSA-5700-BAR-DRG-U4100	0	Cover Sheet
NEL-STH-NSA-5700-BAR-DRG-U4101	0	Drawing List
NEL-STH-NSA-5700-BAR-DRG-U4102	0	Sun Shadow Studies – 9am
NEL-STH-NSA-5700-BAR-DRG-U4103	0	Sun Shadow Studies – 12pm
NEL-STH-NSA-5700-BAR-DRG-U4104	0	Sun Shadow Studies – 3pm

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5. Consistency with the Urban Design Strategy

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5. Consistency with the Urban Design Strategy

The North East Link Urban Design Strategy (UDS)* was developed in collaboration with the Traditional Owners of the land, as well as through extensive consultation with local councils, community and other stakeholders including Department of Transport and Planning (DTP), Melbourne Water, Parks Victoria and the Office of the Victorian Government Architect. While the UDS sets the strategic direction and overarching urban design requirements, it is not intended to communicate design plans or proposals. Informed by the EES, the UDS ensures consistent, high-quality and context sensitive urban design outcomes while encouraging innovation and ideas from industry.

The UDS for the Project was approved by the Minister for Planning on 23 March 2020. Its purpose is to:

- establish and communicate the urban design requirements for NELP
- ensure proposals are developed with integrated urban design solutions
- provide the framework for a performance-based assessment of Urban Design and Landscape Plans.

The UDS has a four-tier structure as follows:

- Corridor-wide principles and objectives – set out a corridor-wide design approach across the project, and includes principles, objectives and key directions
- Place-specific requirements – guide design development within three distinct character areas so that existing landscape and natural features influence design
- Detailed requirements and benchmarks – relate to specific project elements and inform the minimum standard of the design quality expected
- Urban Design Framework Plans – set out design and development priorities to five key locations, to guide design and ensure that landscape and visual impacts on these sensitive areas are minimised.

This UDLP is prepared to articulate how the baseline parameters established through the UDS are satisfactorily achieved, with relevant assessments provided in this section.

5.1 Corridor-wide Urban Design Principles and Objectives

Section 3.1 of the Urban Design Strategy (UDS) sets out eight principles, which inform a whole-of-corridor design approach that is applied locally to develop a context sensitive design.

Table 6 outlines an assessment of this UDLP against the principles and objectives of the UDS.

Those principles, complemented by objectives and key design directions, include:

Principle 1: Identity

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

Principle 2: Connectivity and Wayfinding

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

Principle 3: Urban Integration

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

Principle 4: Resilience and Sustainability

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

Principle 5: Amenity

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

Principle 6: Vibrancy

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

Principle 7: Safety

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

Principle 8: Accessibility

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

* The UDS was exhibited for public comment with the EES for the North East Link Project and considered as part of the Minister for Planning's assessment of the EES. As part of the planning approvals (where primary consent is sought and secondary consent requirements are to be complied with), the contractors (as appointed for each project for North East Link) will develop Urban Design and Landscape Plans that respond to the UDS. These plans will be evaluated against the requirements set in this Urban Design Strategy and will be approved by the Minister for Planning.

5. Consistency with the Urban Design Strategy

Table 6: An assessment against the principles and objectives of the UDS

Principle 1: Identity

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

Objectives	Urban Design Outcome	Response
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.	The design response protects, maintains and enhances the identity of local places with respectful consideration of Indigenous and non-Indigenous cultural values. This is demonstrated as follows: – Throughout the life of the NELP (not limited to the park and ride), meaningful ways to represent Indigenous cultural themes and living culture are explored and integrated into the design response through the co-design process and ongoing engagement with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) – The design of the multi-level car park follows the topography of the land, which rises from west to east, creating a lower built form when perceived from the residential interface on Hender Street. Its primary façade is also oriented towards the Doncaster Road frontage, resulting in a shorter façade to Hender Street and thereby minimising visual intrusion onto the Hender Street streetscapes. The inclusion of new trees and planting mixes within the Hender Street setback also assist in mitigating visual impacts onto Hender Street – Selection of materials and plantings takes particular interest in the existing characteristics of the surrounding context and the embedded Indigenous living culture reflected in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP such that local character and cultural meanings will be enhanced consistently and simultaneously – A locally significant English oak tree (estimated to be between 100-150 years old) on Doncaster Road is retained and well protected during the construction phase as a means of protecting local identity and respecting heritage values.
Objective 1.2 **Recognise the Yarra River**	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.	While the Project does not interact with the Yarra River (Birrarung) directly, it seeks opportunities to create connections with the Koonung Koonung Creek in a broader catchment. For instance, new cycling and walking paths, designed with connections to the Koonung Creek Corridor, are incorporated into this Project, serving a complementary role to the parklands and creating practical benefits for the community.
Objective 1.3 **Landscape and visual amenity**	Sensitively enhance landscape and visual outcomes and reduce physical and visual impacts associated with the project	The Project is designed with minimised physical and visual impacts onto adjoining open space and residential properties through sensitive incorporation of landscaping and amenities. Key examples are outlined as follows: – All above-ground buildings and structures (including the multi-level car park building, the passenger services building and bus platforms) are appropriately sited to minimise visual bulk from the overall massing – High quality materials, textures and finishes are integrated into the design to enhance visual amenity – A locally significant English oak tree within the Doncaster Road setback and protected under HO42 of the Manningham Planning Scheme is retained – Revegetation works are incorporated into the design as appropriate to create a pleasant and interesting landscape outcome.

5. Consistency with the Urban Design Strategy

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.	The Project positively responds to the local characteristics of the area by absorbing predominant design features in the surrounding context (such as building materials and finishes, existing vegetation and colour palettes) into the design response. Key design elements demonstrated through this UDLP include: – conventionally landscaped setbacks – inclusion of green / landscaped nodes around the perimeter – retention of a locally significant English oak tree fronting Doncaster Road – establishment of a sense of place through a forecourt area and incidental points of connections within the walking and cycling paths – appropriate planting selection that is heavily drawn from the Ecological Vegetation Classes (EVCs). Overall, the Project creates a coordinated and intuitive journey experience that supports social interactions among commuters and will contribute to human scale connections with the surrounding landscape.
Objective 1.5 **Architectural contribution**	Make a positive architectural contribution to infrastructure including bridges, noise walls and other structures.	The existing characteristics of nearby residential catchments consist of mixed built forms and a diverse range of building materials with landscaping interspersed throughout. The proposed architectural elements, primarily consisting of multi-level car park, passenger services building, bus platforms, and other above-ground permanent structures, are designed to positively respond to the existing characteristics through appropriate siting and selection of materials and finishes. The multi-level car park is oriented with a primary (longer) façade interacting with Doncaster Road and a shorter side elevation to the residential interface along Hender Street. This assists in minimising built form impacts onto residential properties and creating landscape opportunities within the street setbacks. The selection of building materials and finishes references the prevailing character of newer developments in this area. The use of concrete and cladding (with the final finishes to be confirmed in consultation with relevant stakeholders including ultimate land and asset owners as part of design development) is a good example, demonstrating a coordinated and responsive approach in use of materiality. Noise walls are incorporated along part of the Hender Street frontage to prevent unreasonable noise impacts onto surrounding residential properties. Noting that the passenger services building also forms part of the noise attenuation solution, the noise walls are designed as an integral component in the Hender Street streetscape through appropriate alignment and use of materiality. The use of acrylic panels in the noise walls also creates a visual linkage between the park and ride and residential properties. While the Project may represent a change in the immediate neighbourhood due to the overall mass of new built forms, the design has effectively mitigated visual impacts through appropriate siting and careful selection of planting and use of high quality materials and will achieve a successful integration with the surrounding context. Overall, the Project will make a positive architectural contribution to the area.

5. Consistency with the Urban Design Strategy

Principle 2: Connectivity and Wayfinding

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

Objectives	Urban Design Outcome	Response
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.	The Project improves people's ability to move through, across and beyond the park and ride in the following ways: – A new connection with the Eastern Busway promotes public transport connectivity – New walking and cycling paths to the north of the multi-level car park enable the pedestrian level movement to smoothly transit between Doncaster Road, Hender Street and the forecourt and bus platforms, forming a relationship with the surrounding context – New paths proposed within the park and ride are connected to existing pedestrian paths to the east of the multi-level car park allowing for safe and efficient movement – New walking and cycling paths also connect with Koonung Creek Trail within Koonung Creek Corridor, forming an integrated network that supports active transport. Overall, the Project will improve public transport connectivity, support passengers to commute through the park and ride and create a pedestrian friendly experience through the provision of a forecourt and new walking and cycling paths.
Objective 2.2 **Transportation 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.	The Project provides for safe and convenient access to transport choices by way of: – provision of efficient modal interchange between pedestrians, cyclists, buses and cars through the design of access suitable for all travel modes through the design of access – provision of additional walking and cycling paths with direct/convenient access to the Parkiteer and bicycle hoops within the park and ride – provision of a direct connection with the Eastern Freeway, including the Eastern Busway, improving the commuting experience – creation of meaningful connections with Koonung Creek Trail in Koonung Creek Corridor, easing the commute for pedestrians and cyclists – provision of bicycle hoops and a Parkiteer to encourage active transport options. Overall, the project positively contributes to a connected intermodal network benefitting the community.
Objective 2.3 **Legibility and wayfinding**	Provide a coordinated design that promotes visual connections and wayfinding, reduces reliance on signage and minimises visual clutter and obstructions to key views.	The Project creates legibility and wayfinding through suitable landscaping and specific design elements. Key examples are outlined below: – The siting of the forecourt creates a linkage between the multi-level car park and the passenger services building and also formulates a connection with the bus platforms via directly accessible paths – The differentiation of planting types and amenities within the park and ride directs visitors to spaces for parking and bus services. For example, the retained locally significant English oak tree (estimated to be between 100-150 years) reinforces the main entrance on the Doncaster Road frontage guiding commuters to the multi-level car park; the split garden beds within the forecourt reinstate the spatial relationship between the car park and the passenger services building and guide commuters to the bus platforms through interconnected pavement. Signage and lighting will be incorporated within the park and ride where appropriate and necessary, with the final location and design details to be finalised in consultation with relevant stakeholders and ultimate land and asset owners.

5. Consistency with the Urban Design Strategy

Principle 3: Urban Integration

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

Objectives	Urban Design Outcome	Response
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.	The proposed walking and cycling paths, complemented by landscaping design and consistent with the corridor-wide design principles, are incorporated to connect and integrate with the broader commercial, residential, and open space functions and environment. The proposed landscaping has also been carefully designed to create natural screening that filters views of the proposed buildings. Key examples include: – the proposed multi-level car park is designed with direct connections to Doncaster Road and Hender Street allowing for convenient access to the park and ride – the siting of the proposed multi-level car park has considered the residential nature of Hender Street, orientating the secondary (smaller) building façade along Hender Street and the primary (longer) building façade along Doncaster Road – the design of the Drop and Go zone (and subsequently reconfigured Hender Street) has minimised potential impacts on the community and mitigated any severance of communities having regard to traffic, noise, safety, and amenity as detailed in Section 4.4.1 of the Report. The design also incorporates appropriate wayfinding and pedestrian crossings within and adjacent Drop and Go zone to improve pedestrian safety and connectivity – the proposed landscaping around the perimeter of the park and ride, within the forecourt and the street setbacks, assists in mitigating visual impacts from the proposed above-ground permanent buildings – the design has taken advantage of the natural topography and incorporated appropriate building separation. The proposed building separation together with multi-layered landscaping around the perimeter of the park and ride also mitigates visual impacts from new buildings assisting in better integration with the context.
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.	The Project provides an upgraded park and ride, landscaped areas (including forecourt) and new and upgraded walking and cycling paths. The design sensitively addresses social, cultural, functional, and physical aspects of the Project in the following ways: – New elements, such as walking and cycling paths, noise walls and new, enhanced natural landscapes, connect the design outcome with a broader context, which demonstrates an improvement to environmental and social aspects – Provision of a forecourt with new landscape creates a linkage between built environment and natural environment. The Drop and Go zone separates bus operation from cars entering or exiting the park and ride to pick up or drop off passengers and provides a safe and efficient engineered outcome. While the access change on Hender Street results in changes to existing local traffic movements, the design of the Drop and Go zone has considered the potential impacts to nearby residents and implemented feasible design solutions to ensure the safety and amenity of residents and site users will not be unreasonably compromised. Cultural outcomes will be further explored as part of design development through the co-design process with the Wurundjeri Woi-wurrung and in consultation with Manningham City Council, with potential to consider multicultural storytelling opportunities. Functional aspects of the Project have been addressed through the provision of a coordinated landscape design, which also enables WSUD features to better manage stormwater within the park and ride. Physical aspects of the Project have been addressed by incorporating the key characteristics of the surrounding area into the design response.

5. Consistency with the Urban Design Strategy

Principle 3: Urban Integration

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

Objectives	Urban Design Outcome	Response

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.	The design has been positively shaped by the following strategic documents:
		– Plan Melbourne 2017-2050 (and 2019 Addendum) – the Plan sets out broad transport and land use moves for a growing Melbourne. The Project provides an appropriate response to the Plan in the following ways:
		  – The Project will help connect people to jobs and services and goods to market through more frequent and reliable bus services (Outcomes 1 and 3)
		  – The Project is designed to be of high quality, which contributes to a distinctive city of Melbourne (Outcome 4)
		  – The Project also employs a variety of techniques to ensure the sustainability and resilience of the infrastructure through meaningful tree planting and provision of new SUPs (Outcome 6).
		– Healthy Waterways Strategy 2018-2028 – the park and ride does not have a direct interface with waterways. The design has sought to respond to the goals and values within this strategy by ensuring that stormwater is managed appropriately
		– Victorian Cycling Strategy 2018–2028 – through the delivery of a range of SUPs, the design is helping to deliver a safer and better-connected cycling network in Melbourne's east. The design has focused on connecting and integrating into Koonung Creek Trail, contributing to an improvement of the Strategic Bicycle Network
		– Burndap Birrarung Burndap Umarkoo (Yarra Strategic Plan) 2022-2032 – while the park and ride does not have a direct interface with Yarra River (Birrarung), the design integrates with Koonung Creek Corridor (where part of Koonung Koonung Creek extends) through planting selection and water sensitive urban design measures. Finalisation of the design will be in consultation with key stakeholders (such as Manningham city council, Melbourne Water and ultimate land and asset owners).

Objective 3.4 **Minimise footprint**	Minimise negative impacts on the community and the environment by minimising the project footprint and visual bulk, particularly where it intrudes on sensitive land uses including open space and existing vegetated areas.	The overall footprint of the upgraded park and ride is within the existing footprint and will not result in any encroachment to private properties and/or public open space, including Koonung Creek Corridor and its associated riparian habitat area to the west and a small grassed area to the south of the park and ride site. The re-orientation of the multi-level car park provides a longer façade to Doncaster Road and a shorter façade to Hender Street, which assists in minimising visual bulk when viewed from the residential interface. The design of the Drop and Go zone has minimised its footprint by ensuring that the existing kerb line, footpath and trees on the east side of Hender Street are retained. The retained trees also provide visual relief between the multi-level car park and residential properties. The footprint of the multi-level car park and the passenger services building are minimised to ensure that deep soil landscaping buffers can be afforded around the perimeter as appropriate, creating natural screening that supports a smooth transition with direct interfaces. The creation of a landscaped forecourt provides a linkage to the bus platforms, multi-level car park, Drop and Go zone, passenger services building, Parkiteer and new shared use paths, contributing to a positive user experience. The proposed open façades of the multi-level car park and the overall open presence of the bus platforms enable passive surveillance.

5. Consistency with the Urban Design Strategy

Principle 4: Resilience and Sustainability

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

Objectives	Urban Design Outcome	Response
Objective 4.1 **Enduring and 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.	Robust and simple materials are selected to minimise the need for long-term maintenance and maximise longevity and quality. The generously incorporated plantings to the east of the car park building also create visual consistency and coherence between architecture and landscaping, thereby enhancing the built form legacy exhibited in this area. Engagement with relevant asset owners during detailed design ensures that the final outcome is readily maintainable, fit for purpose and can be enjoyed by the community for years to come. Agreements with asset owners ensures the standard and final design accords with the stakeholder's expectations.
Objective 4.2 **Resilience and 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.	The design ensures the infrastructure can survive, adapt and perform when subjected to acute stress in the following ways: – Flood modelling includes consideration of climate change rainfall intensity to ensure the design responds to both current and future anticipated rainfall events; this is reflected in the design of the flood retention and drainage systems. Landscapes are also being designed to support a resilient outcome from new ecosystems that are better able to manage flood events – The design has considered the climate change risk assessment to ensure that the asset is resilient to future conditions in which it will operate. Variables that have been considered include climate change (risks include impacts to asset from flood, heatwave and increase in atmospheric carbon), as well as risks and opportunities related to social cohesion, chronic illness, energy costs, transport accessibility and availability and ageing population. Specific climate resilience workshops will be held with the land and asset owner to identify any further opportunities for consideration as part of design development – The design of the multi-level car park has considered technological change and future fleets through the provision of conduits for future electric vehicle charging stations – The design of the bus platforms enables future increases to bus service frequency, as well as new additional bus services that connect to the park and ride from the local area – A climate and natural hazards risk assessment and treatment plan is being developed in accordance with IS version 2.1 credit Res-1 as part of the 50 points targeted in the IS v2.1 design rating to support delivery of a future-proofed outcome. Risks have been identified by the design team and evaluated for severity and likelihood using Representation Concentration Pathway (RCP) 8.5 climate projections. Mitigation methods are being developed and integrated into the design and operation of the asset to increase the project's resilience to a changing climate.

5. Consistency with the Urban Design Strategy

Principle 4: Resilience and Sustainability

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

Objectives	Urban Design Outcome	Response
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.	Environmental sustainability is being embedded into the design response to sustainability requirements and targets, and opportunities are identified and incorporated in this Project. Design optimisation will continue to be undertaken throughout design development to reduce and optimise material use, operational energy and energy required for construction works, with these savings being captured and quantified throughout the design development and construction process. Material lifecycle impact reductions are being achieved through specification of recycled plastic fibre reinforcement as appropriate to maximise the use of reclaimed asphalt pavement in the pavement design, and through adoption of a 40% Portland cement reduction target for the Project. Energy and greenhouse gas emissions are being reduced through a construction decarbonisation strategy that includes electrification of a proportion of construction plant and equipment, use of alternative fuels, purchase of renewable energy for all construction electricity and optimisation of the proposed construction methodology. In this UDLP, the design has optimised environmental performance through provision of green infrastructure and sustainable use of energy and materials, such as the use of recycled materials where possible. Inclusion of water sensitive urban design (WSUD) treatments also provides a response to existing site conditions, as a WSUD response ensures that stormwater will be harvested and reused. Solar panels are to be installed on the passenger services building to support operation of the park and ride, minimising reliance on the electricity grid. A consistent approach and strategy for the reuse of timber from vegetation removed to facilitate the broader delivery of the NEL Project is currently under development. Once finalised, this will be implemented across all works areas to ensure that opportunities for reuse are applied at a 'whole of project' level, rather than within individual UDLP areas, including to reuse felled timber as soft landscaping in returned public open space.
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.	Maintenance and operation requirements are considered and embedded in the design. The Project design adopts durable materials and drought tolerant plantings; and provides dedicated access for cars, buses, cyclists, and pedestrians to support operational requirements while positively improving functionality and community safety. Future operation requirements are considered through capacity to increase the number of bicycle parking spaces and the inclusion of conduits to support future charging of electric vehicles. The Project also supports NELP's overarching sustainability objectives, including project-wide objective of zero emissions in operation and maintenance. Sustainability initiatives incorporated into the design include solar panels on the passenger services building to minimise reliance on the electricity grid, and WSUD elements to collect and effectively manage stormwater. The design of landscape and building infrastructure is confirmed through coordination and agreements with relevant authorities responsible for ongoing maintenance and operations. As part of design development, design reports will include an operations and maintenance review of the design solution covering maintenance access, material maintenance considerations and durability assessments.

5. Consistency with the Urban Design Strategy

Principle 5: Amenity

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

Objectives	Urban Design Outcome	Response
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.	The design considers site-specific characteristics and incorporates the prevailing characters exhibited in the surrounds to create better places for the community. Key examples are provided below: – The orientation of the multi-level car park provides for its primary façade towards the Doncaster Road frontage and a secondary (shorter) façade towards Hender Street. This design outcome, together with the new trees within the Hender Street setback, adequately reduces visual and built form impacts onto residential properties along Hender Street – A landscaped forecourt is created as part of the design, linking pedestrians to the bus platforms, multi-level car park, Drop and Go zone, passenger services building, the Parkiteer and new shared use paths, which provides a positive user experience. The overall building height of the passenger services building is designed to align with the predominant built forms of residential properties on Hender Street, creating an integrated and cohesive design response to the residential context – New walking and cycling paths are designed to be an integral component of the walking and cycling network along the Eastern Freeway and will support active transport and increase opportunities for pedestrians to interact with open spaces and make the upgraded park and ride attractive to commuters and local residents. Specifically on the western side of Hender Street, a new shared use path has been provided in an area where no formal pedestrian facilities are present in the existing park and ride, which will not only improve access to the park and ride but also enhance the overall amenity of the area – Water sensitive urban design features will provide a natural linkage with Koonung Creek Corridor, effectively managing stormwater – Selection of materials and planting considers the existing characteristics of the local neighbourhood, but also ensures the Indigenous living culture reflected in the surrounding context is incorporated – A place-specific assessment of noise wall requirements has guided the design, as it identifies the heights and material of the noise walls and provides guidance on buffer planting adjacent to noise walls. The forecourt, situated between the multi-level car park and the passenger services building, enhances the functionality of the space, and provides a visual break in built forms when viewed from Hender Street. The design of the forecourt also allows for a landscaped transition between the surrounding residential area and the park and ride, which assists in minimising built form impacts.
Objective 5.2 **Landscape values**	Create positive outcomes for the community with a coherent landscape response that embraces natural qualities and values.	The design of the multi-level car park has considered existing vegetation at the park and ride and surrounding context. New plantings around the perimeter of the park and ride (particularly within the Doncaster Road and Hender Street setbacks) provide a coherent landscaped response, which adequately reduces visual and built form impacts onto residential properties along Hender Street. The retention of a locally significant English oak tree on Doncaster Road signifies reinforcement of the existing landscape feature. Planting selection is heavily drawn from the Ecological Vegetation Classes (EVCs) to ensure future planting provides an appropriate response to the local context. Overall, the landscape response will positively address each interface and embraces the values exhibited in the natural environment.

5. Consistency with the Urban Design Strategy

Objective 5.3 **High quality**	Provide a high-quality design outcome that makes a positive contribution to the local built and natural environment and minimises physical and visual impact on the surrounding community.	Interface treatments are well detailed and featured by selection of materials, finishes and landscaping. Together with the simplified built form of the multi-level car park and the passenger services building, the Project will positively contribute to the local built and natural environment. The overall mass of the buildings and other above-ground permanent structures is adequately filtered through a multi-layered landscaping design (encompassing groundcovers, low ground planting and canopies) to minimise visual impacts whilst creating physical contact with the surrounding context. A landscaped forecourt has been created as part of the design, linking pedestrians to key areas within the park and ride, and provides a positive, high quality user experience that does not exist within the existing park and ride. Generously incorporated new plantings to the east of the multi-level car park and around the perimeter of the park and ride (particularly within the Doncaster Road and Hender Street setbacks) provide a coherent landscaped response, which adequately reduces visual and built form impacts onto residential properties along Hender Street. The design of the noise walls has considered and mitigated potential impacts on the sensitive interface with residential properties to the east. In terms of the height, the noise walls will not exceed 4 metres and thus, will not create any visual intrusion on this residential streetscape. In terms of materiality, the noise walls are to be constructed of acrylic panels, which allows for a level of visual permeability to interact with the surrounding context and provide passive surveillance opportunities. With regard to amenity, the design ensures full compliance with relevant EPRs (in particular having regard to noise mitigation and overshadowing). As such, the noise walls will read as an integral component of the Hender Street streetscapes upon completion of the Project.
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.	The Project features a 'people-centric' design approach. The approach is demonstrated by: – positioning a functional and visually attractive forecourt at the park and ride to enhance passengers' experience – integrating walking and cycling paths into the local road network to support active transport – providing dedicated points of access for drivers, motorists, pedestrians and cyclists to accommodate different travel modes safely and efficiently – providing high quality connections to various key places and activity centres in the surrounds, improving the transport experience for all users. Overall, the Project provides a pleasant journey for motorists, public transport users, pedestrians and cyclists, with consideration of the varying speeds and journey types.

5. Consistency with the Urban Design Strategy

Principle 6: Vibrancy

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

Objectives	Urban Design Outcome	Response
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.	The Project focuses on a 'people-centric' design outcome. This outcome is realised through: – creation of a high quality open space (forecourt) to enable interactions with the surrounding context at a human scale – introduction of walking and cycling paths complemented by landscaping to integrate active transport with the natural environment – establishment of a smooth and direct link with shared use paths within Koonung Creek Corridor and local roads to improve connectivity and connection within the surrounding context – provision of bicycle facilities and a bicycle repair station to encourage cyclists to access the park and ride safely and conveniently – creation of opportunities for spontaneous social interactions at the forecourt, the passenger services building and the bus platforms through safe and comfortable waiting areas – compliance with DDA to ensure an inclusive and equitable travel experience for all users – inclusion of an indoor waiting lounge in the passenger services building to provide a comfortable and sheltered environment for passengers utilising bus services – provision of amenities (such as seating, a drinking fountain, and a bicycle repair station) to enhance user experience and encourage passive surveillance at the forecourt.
Objective 6.2 **Places for people**	Improve local neighbourhoods where there are opportunities to create inviting, people-friendly streets and public places.	The Project is designed to create a functional public transport hub and provides for an aesthetically pleasing and inviting open space for the community to explore, enjoy and experience. The forecourt, situated between the passenger services building and the multi-level car park, provides an inviting open space for commuters to pause, reflect and rest. The shared use path, incorporated within the landscaped Doncaster Road and Hender Street setbacks, extends to Koonung Creek Corridor to the west. Safe and user-friendly walking and cycling paths are also incorporated through the park and ride with connections to local streets. Specifically on the western side of Hender Street, a new shared use path has been provided where no pedestrian facilities were present in the existing park and ride, which contributes to a more inviting, people-friendly street. New plantings around the perimeter of the park and ride also provides a coherent landscaped response and adequately reduces visual and built form impacts onto local streets. In addition, key principles of CPTED are addressed through the design to ensure the creation of a safe and functional public place. Overall, the Project will deliver an improved inviting and people-friendly public space for the community.

5. Consistency with the Urban Design Strategy

Principle 7: Safety

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

Objectives	Urban Design Outcome	Response
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.	The Project accords with CPTED principles and will deliver a safer place for the community in the following ways: **Natural surveillance** – A forecourt is incorporated as an open and safe public space providing for direct access and open views between the multi-level car park, the passenger services building and the bus platforms – The design incorporates an open air multi-level car park and expansive openings along internal facades of the passenger services building, all contributing to passive surveillance for and between platforms, the multi-level car park and open spaces. **Access control** – Dedicated points of access for drivers, motorists, pedestrians, and cyclists are incorporated to accommodate different travel modes safely and efficiently whilst preventing traffic conflicts – Access to the bus platforms is directly gained from Doncaster Road and the walking and cycling paths within and adjacent to the park and ride. **Territorial management** – Landscape design is appropriately incorporated through the use of planting mixes to avoid obscured spaces and provide for clear lines of sight within the park and ride. **Space management** – Lighting is designed in accordance with relevant EPRs (particularly having regard to LV4) with due consideration of CPTED principles, with the final details subject to relevant Australian standards and Project requirements set by the ultimate land and asset owners. With regard to the Drop and Go zone, the provision accords with CPTED principles and will create a safer place. Refer to the detailed assessment against each of the CPTED principles in Section 4.4.1 of the Report.
Objective 7.2 **Road safety**	Prioritise safety for all users including motorists, cyclists, pedestrians and public transport users, and avoid unnecessary distractions.	The Project prioritises safety for all users and is designed to minimise any safety risks or disruption to local traffic. Key examples of the design are provided below: – The Drop and Go zone is positioned near the intersection of Hender Street and Doncaster Road, creating a new one-way access beyond Finlayson Street. This will separate northbound local traffic on Hender Street and other nearby residential streets from car movements associated with the Drop and Go zone to prevent conflicts or traffic congestion – Dedicated entrances and movement paths for pedestrians and cyclists are provided, which reduce opportunities for safety conflict between passengers and buses – The separation of the Drop and Go zone from cars within the multi-level car park also provides a safer area for vehicles to access the area without having to travel through the multi-level car park, reducing potential conflict points – Cars enter the multi-level car park on Doncaster Road and exit from Hender Street. This arrangement supports safe manoeuvrability when entering and exiting the multi-level car park and separates car movements from buses – Signalised pedestrian crossings are provided between bus platforms for pedestrian safety – The incorporation of the Drop and Go zone will not unreasonably impact existing access to residential properties along Hender Street between Doncaster Road and Finlayson Street, noting that the existing street kerb, footpath and the existing crossovers to residential properties on the east side of Hender Street will be retained – Standard practices for drop and go zones in public spaces will be implemented in this Project (as appropriate), seeking to deliver a controlled environment within the Drop and Go zone where a reasonably low speed limit is adopted to ensure safe access for all users and local residents.

5. Consistency with the Urban Design Strategy

Principle 8: Accessibility

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

Objectives	Urban Design Outcome	Response
Objective 8.1 **Universally inclusive**	Enhance universal access across the affected and surrounding area for all members of the community.	The Project has prioritised Universal Access principles through careful design of pathways, ramps and access to local roads and walking and cycling paths within the Koonung Creek Corridor adjacent to the park and ride. The seven principles of universal access are implemented into the design response in the following ways: – **Equitable use** Equal access is achieved by designing all points of access in compliance with the *Disability Discrimination Act 1992*. The design of pedestrian pathways and bus platforms also complies with the requirements of the Disability Standards for Accessible Public Transport – **Flexibility of use** Flexibility of use is achieved through seamless connections of walking and cycling paths within and beyond the park and ride. An adequate level of flexibility is also demonstrated through alternative routes for pedestrians and cyclists – **Simple and intuitive use** Simplicity is achieved by way of connections carefully designed and integrated at ramps and busways – **Perceptible information** The Project provides adequate contrasts between buildings and landscaping through appropriate selection of materiality and planting – **Tolerance for error** The Project minimises hazards and adverse consequences of accidental or unintended actions by way of clear wayfinding and lighting – **Low physical effort** The Project ensures minimal efforts when manoeuvring within the park and ride through the straight alignment of accessways across the multi-level car park, passenger services building, forecourt and bus platforms – **Size and space for approach and use** Suitable space for all users' movements is achieved through appropriate path widths. The selection of materials, finishes and plantings reinforces a sense of place and user experience when travelling within, across and beyond the park and ride.
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).	The 20-minute neighbourhood promotes 'living locally'. The design includes relocated and/or upgraded SUPs and linkages along and across the park and ride to make it easier, safer, and faster for the community to access services and facilities through active or public transport. The upgraded park and ride provides improved transport connections both within the local area and to surrounding activity centres, providing for significant broader travel connections so as to enhance the community's access to everyday services and facilities and reduce reliance on private cars. Key examples in this UDLP showing how the notion of '20-minute neighbourhoods' is enhanced are outlined below: – A well-integrated walking and cycling path network is provided with signalised pedestrian crossings to ensure pedestrians and cyclists can use active transport safely and conveniently – Direct connection with the Eastern Busway is provided, enabling express buses to connect commuters to the Melbourne CBD where professional opportunities and a wide range of facilities and services are readily accessible – Secure bicycle parking facilities are provided in support of better and easier access to the park and ride via varying modes of transport. Overall, the Project is designed to successfully provide for an integrated network that supports varying modes of transport. The walking and cycling paths are also driven by the 'living locally' concept and designed to connect with local roads and support direct access to and from bus platforms. The connection with the Eastern Busway ensures that the concept is not only realised at a pedestrian level, but also enhanced through fast and convenient access to bus services that are well linked to services and facilities in the Melbourne CBD.

5. Consistency with the Urban Design Strategy

Principle 8: Accessibility

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

Objectives	Urban Design Outcome	Response
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.	New walking and cycling paths within the park and ride are designed with connections to local roads and the shared use paths in adjacent interfaces, enhancing connectivity of active transport. Provision of bicycle facilities is adequately achieved by way of a secure Parkiteer and bicycle hoops, with the potential to increase in number to cater for future demand. Adjacent to the Parkiteer, a bike repair station is also provided to promote active transport with design details subject to consultation with stakeholders and asset owners.

5. Consistency with the Urban Design Strategy

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5. Consistency with the Urban Design Strategy

5.2 Corridor-wide Requirements – Key Design Directions

The Incorporated Document requires that this UDLP is consistent with the Urban Design Strategy (UDS). As provided in Section 3.2 (Key design directions) of the UDS, the Project must demonstrate effective integration of disciplines to deliver an innovative and integrated design solution in response to the five corridor-wide key design directions.

This section outlines this UDLP's consistency with the key design directions provided in the UDS:

1 Key Direction 1
Develop an integrated response

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

2 Key Direction 2
Support a natural and 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.

3 Key Direction 3
Recognise cultural and historic 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.

4 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.

5 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.

Table 7: An assessment of this UDLP against the key design directions.

1 Key Direction 1 Develop an integrated design response	2 Key Direction 2 Support a natural and connected corridor
The project must demonstrate the effective integration of engineering and urban design to deliver an innovative and balanced design solution.	**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.**
The Project has established a multidisciplinary, integrated project team of architects, landscape architects, engineers, planners, transport engineers, sustainability specialists, and other suitably qualified professionals, to work closely together to create a shared vision for the Project. This integrated approach has enabled the team to challenge the EES Reference Design and deliver positive outcomes for community and environmental benefits. This significant level of coordination and integration has also benefited the design of key architectural and landscape landmarks and nodes throughout the scope of this UDLP. The proposed above-ground permanent buildings and structures (such as multi-level car park, passenger services building, bus platforms and noise walls) are designed and sited to minimise visual impact on local communities yet respond meaningfully to the corridor-wide design principles. The Project seeks to deliver an innovative and balanced design response through effective integration of engineering and urban design solutions. Key design components are summarised below: – The primary façade of the multi-level car park is oriented to Doncaster Road, reinstating a sense of identity established on a main road and providing a transition between the Freeway environment and the local neighbourhood character – Visual impacts from the overall mass and bulk of the multi-level car park are adequately minimised from residential properties to the east due to the rise of topography from west to east – Sustainability as a key driver for an innovative and balanced outcome has been carefully designed into the Project through incorporation of green infrastructure such as water sensitive urban design treatments and landscaping buffers within the street setbacks of Doncaster Road and Hender Street. An integrated construction-engineering architectural approach is demonstrated in the following ways: – rainwater tanks installed inside the multi-level car park will be used for planting irrigation and contribute to best practice stormwater management – solar panels installed on the passenger services building will support the operation of the park and ride and minimise reliance on the electricity grid – future electric vehicle charging stations have been considered through provision of conduits designed into the multi-level car park for future implementation – A meaningful, authentic and holistic approach is realised through the co-design process with Indigenous designers to embed Indigenous values and cultures into the design. The tones and textures of corridor-wide elements for the Project contribute to its collective identity, which is vital in maintaining a cohesive language and consistency across the Project. Overall, the Project has developed an integrated design response that recognises the connection between people, places and the natural environment and will positively contribute to environmental, social and economic outcomes.	Three key priorities have guided the Project design, including 'stitching communities together', 'supporting natural systems' and 'supporting open space systems'. The Project demonstrates a design outcome consistent with the key design direction as follows: – **Stitching communities together** The upgraded park and ride will provide more frequent and faster bus services connecting the community with facilities and services locally and in the Melbourne CBD. Sustainable and active transportation options are also incorporated into the design; this is achieved by providing bicycle facilities within the park and ride and incorporating new walking and cycling paths around the perimeter of the park and ride with direct connections to the forecourt and bus platforms, the shared use path in Koonung Creek Corridor and Hender Street. The provision of the Drop and Go zone on Hender Street is designed to allow for retention of existing pedestrian paths to the east and incorporation of separate shared use path and walking path to the west, thereby enhancing the safety and efficiency of active transport connectivity. Overall, it will provide diversity to the transportation options and positively contribute to the quality of transport modes and connecting the community with services and facilities – **Supporting natural systems** The park and ride interfaces with part of Koonung Creek Corridor. The Project therefore maximises this opportunity to recognise and celebrate the natural systems through appropriate planting and landscape design. For instance, the design has incorporated the seasonable cycles and natural processes of existing planting in the Corridor into the planting selection in support of the expansion of natural systems. The design also incorporates water sensitive urban design treatments to maximise the Creek's drainage function while embracing its environmental values – **Supporting open space systems** The Project incorporates a forecourt between the multi-level car park and the passenger services building. This forecourt is also designed to connect with the shared use paths within and adjacent to the park and ride, creating an integrated open space network. Overall, the Project supports Koonung Creek Corridor by connecting the park and ride to the open space through walking and cycling paths in the natural corridor.

5. Consistency with the Urban Design Strategy

3 Key Direction 3
Recognise past, contemporary and shared Indigenous and 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 Project has carefully balanced the key priorities of this key design direction into the design response. Key design solutions include:

- **A shared story**
  The Project values the opportunity for a collaborative approach with relevant stakeholders and the Wurundjeri to embed local knowledge, understandings and shared values through an upgraded park and ride. Having benefited from workshops with relevant stakeholders and the co-design process with Indigenous designers, a collaborative approach is realised through siting of the buildings and landscaping design details
- **Wurundjeri and connection to Country**
  The Project has an ongoing partnership and collaboration with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC). Through the preparation of this UDLP, the co-design approach has continued, ensuring the Wurundjeri Woi-wurrung voice is structurally embedded into the design response. For instance, Indigenous seasonality is demonstrated through planting selection and place making as a cultural reminder of past, contemporary and emerging Indigenous identity
- **Places and influences**
  The identity of Melbourne is evolving in a manner that celebrates its own history not only in terms of liveability, but also in recognition of the deeply rooted Indigenous culture. Guided by this design philosophy, the Project incorporates design opportunities to celebrate historical heritage values and themes of the natural landscapes presented in the surrounds, enhancing liveability. This is also realised through this upgraded park and ride, which values and enhances user experience, with visual and amenity impacts adequately minimised. Appropriate landscape details are incorporated to reinforce its own cultural, social and environmental identity of the surrounds
- **Interpretation of heritage themes**
  Opportunities to interpret and incorporate heritage themes are explored in the preparation of this UDLP. For instance, the design of signage for wayfinding has considered seasonal colouration reflected in the traditional land; Indigenous forms of landscape marking are employed in planting selection along walking and cycling paths and the open spaces. Preservation of a locally significant English oak tree (estimated to be between 100-150 years old) and integration into the landscape design is also a key example.

4 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 UDS identifies a design hierarchy under this key design direction encompassing primary nodes, secondary nodes, and tunnels. While this park and ride is not a key node, it is situated adjacent to one of the secondary nodes, known as the Doncaster Road interchange (which is significant for bus users and marks entry to the park and ride).

The Project ensures a design response that caters for all travel modes (including buses, motorists, pedestrians, and cyclists) through distinct access, each associated with suitable accessways that enable intuitive navigation.

Consideration of pedestrians is particularly addressed through the design in the following ways:

- provision of a signalised traffic light at the intersection of Hender Street and Doncaster Road
- retention of the existing footpath and existing trees on the eastern side of Hender Street minimising disruption to pedestrian movement in the residential abuttal
- incorporation of a shared use path and pedestrian zone on the western side of Hender Street improving safety for pedestrians, entering and exiting cars at the Drop and Go zone, and shared use path users
- inclusion of new trees and plantings within the northern part of Hender Street improving pedestrians' visual experience traveling through the Drop and Go zone.

The Project focuses on a 'people-centric' approach and will deliver a joyful experience for all users through the creation of a forecourt and interesting planting mixes throughout the park and ride.

5 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 UDS identifies an urban design approach that has divided the project into three distinct design character areas: Ridgeline, Yarra River Valley, and Koonung Creek Valley.

The park and ride is situated in the Koonung Creek Valley character area; the two other design character areas are not applicable to this UDLP. Relevant to this Key Design Direction, the Project provides a context-sensitive design response to the local context in the following ways:

- It expands the linear landscapes of Koonung Creek Corridor by adequately maintaining the construction footprint within the park and ride with no encroachment to adjacent open spaces
- It positively contributes to the integration of walking and cycling paths that support active transport through inclusion of additional shared use paths around the perimeter of the park and ride with connections to part of Koonung Creek Trail in Koonung Creek Corridor and local roads
- It provides a forecourt, a high quality open space, within the park and ride, revitalising spontaneous social interactions.

It enables the siting and massing of the multi-level car park towards the Doncaster Road frontage so that a shorter side elevation with a generously landscaped setback is designed to interface with the residential context along Hender Street. The orientation of the multi-level car park minimises unreasonable visual bulk when viewed from the east and enables the new building to sit comfortably within its surrounding context. While the Drop and Go zone will result in an altered layout of Hender Street in comparison to existing conditions, the landscape response ensures that the local context is protected and maintained through suitable planting mix. A detailed assessment against the key design requirements of the Koonung Creek Valley character area is also provided in Section 5.3.2 of the Report.

Overall, the Project will benefit the community by way of improved transport infrastructure and enhanced quality open spaces.

5. Consistency with the Urban Design Strategy

5.3 Design Character Areas

The North East Link Urban Design Strategy (UDS) defines three distinctive design character areas – Ridgeline, Yarra River Valley and Koonung Creek Valley – each containing rich landscape and biodiversity values. This UDLP applies to land within the Koonung Creek Valley character area.

5.3.1 Koonung Creek Valley

The Koonung Creek Valley character area is characterised by low density residential neighbourhoods, with wetlands and open waterways, recreational landscapes and quality parklands running parallel to the Eastern Freeway that are highly valued by local communities.

Koonung Creek Reserve is a key linear parkland that extends from Mountain View Road in the west to Doncaster Road in the east, incorporating wetland area and multiple ecological vegetation classes that provide high landscape amenity value. This area supports a diversity of flora and fauna, and large open areas of exotic grass used for recreation and open space purposes.

Koonung Koonung Creek runs west throughout and underneath the Koonung Creek Valley character area through the suburbs of Balwyn North, Mont Albert North, Box Hill North and Doncaster. The NELP EES identified it as an important strategic ecological corridor.

The road corridor is an attractive landscape setting, with rock escarpments and established plantings along the corridor creating a freeway within a landscape. As part of the Eastern Freeway Upgrades, the existing award-winning sculptural curved-concrete noise walls are being retained where possible as significant architectural contributions to both the motorist experience given their scale and the pedestrian experience given the high-quality double-sided textured finish.

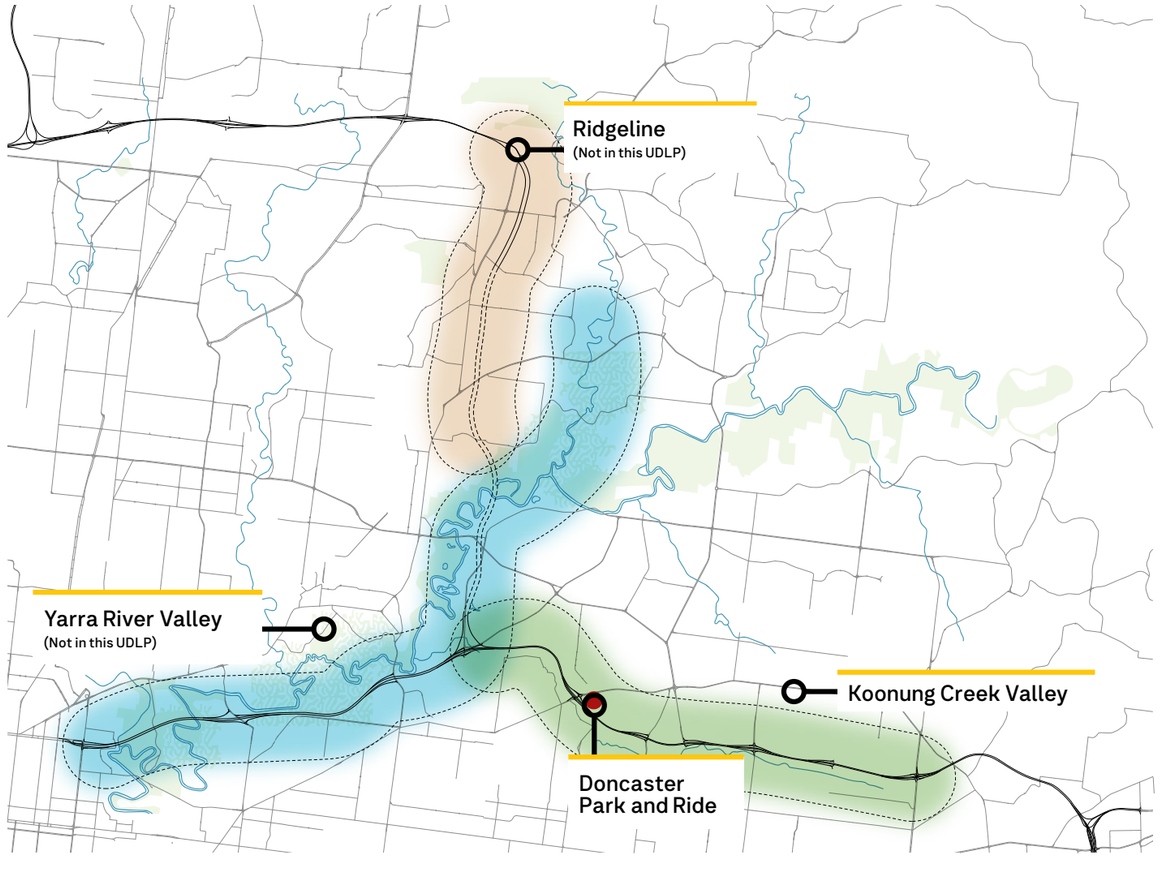

Figure 56: Doncaster Park and Ride in the Design Character Areas as identified in the Urban Design Strategy

5. Consistency with the Urban Design Strategy

Key Design Requirements of Koonung Creek Valley

Table 8 provides an assessment of this UDLP against key design requirements of the Koonung Creek Valley character area demonstrating how these requirements are satisfied.

Table 8: an assessment of Key Design Requirements of the Koonung Creek Valley Character Area

Key Design Requirements / Response
1K Optimise the existing open space functions and upgrade the open spaces that run parallel to the Eastern Freeway
The Project adopts a people-centric design approach and promotes the benefits of public open space by way of: – creation of a forecourt between the multi-level carpark and the passenger services building, with direct access also provided from Hender Street and the bus platforms, ensuring the useability of public open space in a transport hub – provision of walking and cycling paths with connections to local roads and shared use path within the adjacent Koonung Creek Corridor – appropriate selection of vegetation and landscaping within the park and ride, particularly within the Doncaster Road setback where a locally significant English oak tree is preserved and integrated into the landscape design.
2K Respect the original architectural and landscape design of the Eastern Freeway
The Project recognises and respects the distinct character and identity of the original architectural and landscape design of the Eastern Freeway. In the preliminary design phase, the Project considered the design of the Doncaster Road Interchange (which will be delivered through the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP) and incorporated key characteristics of the surrounding context. The design responds to, and references, the key features of the Eastern Freeway by: – Creating a strong presence to the natural environment (Koonung Creek Corridor) through the integration of walking and cycling paths – Incorporating appropriate planting mixes, heavily drawn from ecological vegetation classes (EVCs), within the perimeter of the park and ride – Selecting a palette of colours and material finishes directly drawn from the surrounding landscape and context – Utilising simple structures and forms for the new buildings at the park and ride to keep in line with the design character of road and bridge structures in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.
3K Maximise opportunities to connect the communities to the north and south of the Eastern Freeway
The park and ride is located to the east of the Eastern Freeway. The Project is designed to connect the community to the north and south of the Eastern Freeway by way of: – smooth connection with the Eastern Busway so that express buses can operate efficiently – inclusion of various points of access that are suitably located for all modes of transport with motorists separated from pedestrians and cyclists ensuring a safe journey for all users – incorporation of the Drop and Go zone on Hender Street thereby preventing potential congestion impacts onto the main road (Doncaster Road) without unreasonably disrupting local traffic on and near Hender Street. The incorporation of the Drop and Go zone on Hender Street is a resolved opportunity to connect communities with better and more reliable bus services with the following considerations: – potential changes to local traffic movements arising from the Drop and Go zone are reasonably mitigated through the design. For instance, a key change is the travel time, which concerns cars marking left turns from Hender Street onto Doncaster Road originating from a small residential catchment. The change in travel times, however, will be negligible by nature given the convenient and safe access readily available at the intersections of Harcourt Street and Pettys Lane, both within close proximity – the positive changes brought about by this arrangement outweigh the potential changes to local traffic movements in this area as it has enabled a more efficient and safer experience for all users by directing buses to exit via Doncaster Road and private cars to exit through the Drop and Go zone. Overall, the Project will serve the community as a focal point in the form of a transport hub with appropriate responses to all interfaces through suitable planting and creating a quality open space to enhance passengers' journey experience.
4K Improve transport and road connections to key activity centres
The Project will enhance the quality and accessibility of bus services through provision of public transport connections to existing facilities and services within the local area and key activity centres in a broader context. New walking and cycling paths within the park and ride are also designed to be well integrated into adjacent local roads and shared use paths within Koonung Creek Corridor, providing a safe journey to key activity areas such as Birralee Primary School, commercial services on Doncaster Road and other existing amenities and facilities in the vicinity.
5K Create a great bus user experience and upgrade the existing Doncaster Park and Ride into a well-resolved facility
The Project provides a direct connection between the Eastern Busway and the park and ride and ensures local bus services via local roads are appropriately integrated into the design. Further, the Project provides for an expansion of bus platforms (compared to existing) so that more efficient and reliable bus services can be delivered upon completion of the Project. The Project also features a forecourt where enjoyment, positive social interactions and passive surveillance are simultaneously achieved. The selection of plantings takes into consideration of landscape design and noise walls incorporated in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP for a coordinated and coherent design outcome. Overall, the Project will provide a positive and engaging visual experience and a safe and efficient commuting experience for users.

5. Consistency with the Urban Design Strategy

6K	Support active transport along the Koonung Creek Trail
	The Project supports active transport along Koonung Creek Trail by connecting new and upgraded shared use paths at the park and ride with new and upgraded underpasses and paths at the Doncaster Road Interchange. Specifically, the Project is designed with connections to Koonung Creek Trail, which further extends to a new underpass at the Doncaster Road Interchange. The underpasses at the Doncaster Road Interchange, including upgraded connecting paths on the Doncaster Road bridge, will be delivered through the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.
7K	Reinstate and enhance buffer vegetation to filter views to freeway infrastructure and blend interfaces with surrounding treed neighbourhood character
	The Project incorporates canopy trees and landscaping buffers along Doncaster Road and Hender Street to revitalise environmental and ecological values, which also assist in mitigating visual impacts from the multi-level car park and other above-ground buildings and structures at the park and ride. Generously incorporated new plantings to the east of the multi-level car park and around the perimeter of the park and ride will provide a coherent landscape response, which adequately reduces visual and built form impacts of the park and ride and filters views from surrounding local streets. Retention of existing trees along the east side of Hender Street provides further visual relief. The Project is also designed to focus on a diverse range of plantings and provide appropriate noise walls that are located to the south of passenger services building on Hender Street. The passenger services building is designed to be visually coherent with the noise walls to ensure that the building itself can serve as a noise attenuation and present a simplified façade to the street. The preservation of a locally significant English oak tree into the landscape design also shows how the existing streetscapes are adequately enhanced. Overall, the Project will enhance visual and landscape amenity.
8K	Celebrate, maximise and reinstate natural vegetation, wetlands and open waterways including Koonung Creek
	The Project is designed to: – reinstate the landscaped background within the Koonung Creek Corridor by incorporating a wide range of new plantings encompassing canopy trees, a mix of shrubs, understory plants and ground covers to maximise biodiversity and habitat potential – support the drainage function of the Koonung Creek Corridor by incorporating appropriate WSUD treatments – provide complementary landscaping surrounding the new walking and cycling paths at the park and ride. Overall, the Project will maximise and reinstate social, cultural and ecological values and provide a positive contribution to the Koonung Creek Corridor.

5. Consistency with the Urban Design Strategy

5.3.2 Place-specific Requirements

The Urban Design Strategy sets out place-specific requirements to guide response to the local context of the Project. A response to Inset K3 (Doncaster Park and Ride) is provided in Table 9.

Table 9 provides an assessment of this UDLP against the place-specific requirements of the UDS, demonstrating how these requirements are satisfied.

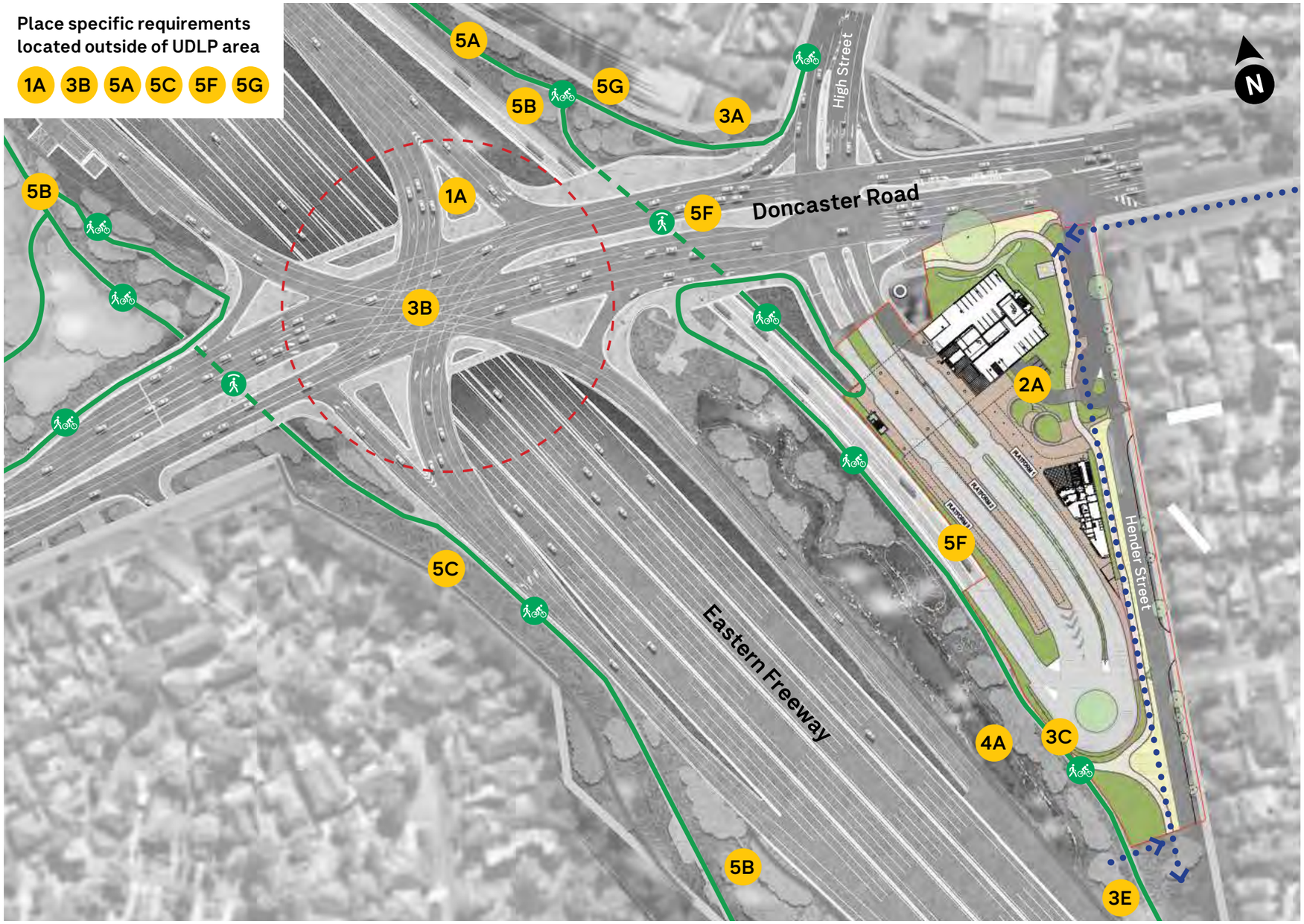

Figure 57: Insert Map K3 – Doncaster Park and Ride (source: Urban Design Strategy)

5. Consistency with the Urban Design Strategy

Table 9: An Assessment against Place-specific Design Requirements

1. 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.

Not applicable – refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP for detailed information and associated landscape design response for relocation of the sculpture.

2. 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.

The Project seeks to upgrade the park and ride by way of:

- provision of 28 bicycle hoops and 26 bicycle spaces in a Parkiteer within the passenger services building (noting the existing park and ride contains a total of 25 spaces)
- provision of 435 car spaces (including 14 accessible parking spaces), two staff parking spaces, two parking spaces for bus drivers, and 10 motorcycle spaces (noting the current provision is approximately 400 car parking spaces)
- adequately landscaped treatments around the perimeter of the park and ride (including the street setbacks of Doncaster Road and Hender Street) contributing to the natural environment cultivated through Koonung Koonung Creek. The design has also incorporated effective treatments to enhance the landscape outcome surrounding the Drop and Go zone and resolved to retaining all existing trees on the east of Hender Street and incorporating new plantings within the street setbacks to assist in mitigating visual and built form impacts of the park and ride
- whilst potential development opportunities may not be viable to be introduced through the Doncaster Road frontage of the park and ride, the Project ensures faster, easier, and more efficient bus services to the community and will positively contribute to potential development opportunities along Doncaster Road
- provision of walking and cycling paths throughout the park and ride with connections to local roads and Koonung Creek Trail within Koonung Creek Corridor
- adequately distancing the multi-level car park from Koonung Creek Corridor through the siting of bus platforms
- furnishing the west side of Hender Street through inclusion of new canopy trees, planting mixes and a new shared use path for walking and cycling.

3. Connectivity, Wayfinding and Accessibility

3A Integrate new path links with the surrounding network and consider future improvements to pedestrian connections from the Koonung Trail to Doncaster Road.

New walking and cycling paths are designed throughout the park and ride with direct connections with Koonung Creek Corridor shared use paths and local roads. The new paths will enable pedestrians and cyclists to:

- access the forecourt, situated between the multi-level car park and the passenger services building, from Hender Street directly or the shared use path leading to Doncaster Road
- move safely across the park and ride via signalised crossings along the Doncaster Road frontage and between bus platforms
- travel from the shared use path within the park and ride to Koonung Creek Trail in Koonung Creek Corridor.

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

Not applicable – refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP for details.

3C Provide a walking and cycling connection from the Koonung Creek Trail to Hender Street.

New walking and cycling paths are designed with access directly from Hender Street, extending around the perimeter of the park and ride and connecting with Koonung Creek Trail to the west. Overall, the Project will provide an integrated network of walking and cycling paths that support active transport.

3D Maintain and enhance the local east west pedestrian connection along Doncaster Road adjacent to the Doncaster Park and Ride.

Within the park and ride, the Project maintains the existing east-west pedestrian connection along Doncaster Road through a clearly delineated and landscaped shared use path for the benefit of the community.

The east-west pedestrian connection along Doncaster Road generally falls outside the area subject to this UDLP. Refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP, which shows new or upgraded underpasses and walking and cycling paths at the Doncaster Road Interchange.

3E Should project works directly impact on existing shared use paths, consider upgrades to existing paths between the Doncaster Park and Ride and Massey Street within the project boundary to improve the function and appearance.

The Project is designed to form connections with Koonung Creek Trail in Koonung Creek Corridor and to local roads so as to establish an integrated network that supports active transport within the park and ride and beyond.

5. Consistency with the Urban Design Strategy

4. Resilience and 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.

The Project values the natural and ecological values embedded in the Koonung Creek Corridor and reinstates a relationship between the community and natural environment through sensitively crafted built environment.

Key design solutions include appropriate water sensitive urban design treatments, public open space amenities and planting mixes (based on historic Ecological Vegetation Classes) throughout the park and ride.

5. Amenity, Vibrancy and 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.

Not applicable – provision of noise walls and associated landscape design (which softens visual presence of noise walls) to the north of the Eastern Freeway is detailed in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP and will be delivered in accordance with the referenced UDLP as approved.

5B 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 Eastern freeway. Landscaping and planting is to complement the existing open space planting themes and local character.

Not applicable – landscape treatments (such as vegetation and mounding) adjacent to the Eastern Freeway road reserve are detailed in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP and will be delivered in accordance with the referenced UDLP as approved.

5C Ensure new noise walls to the south of the Eastern Freeway address visual amenity on the road and residential interfaces and deter graffiti at lower levels while maximising light penetration to enhance solar access to residential properties and the Koonung Creek Trail.
Use landscaping to filter views to walls from surrounding dwellings and from the Koonung Creek Trail.

Not applicable – provision of noise walls and associated landscape design (which softens visual presence of noise walls) to the south of the Eastern Freeway is detailed in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP and will be delivered in accordance with the referenced UDLP as approved.

5D Ensure visual permeability and solar access from the Doncaster Park and Ride to Koonung Creek to enhance visual amenity.

The Project sites all above-ground permanent buildings and structures to ensure that visual permeability and solar access to Konnung Koonung Creek will not be unreasonably compromised.

The location of bus platforms also provides a physical separation between the multi-level car park and Koonung Creek Corridor, and a level of visual relief between the built environment of the park and ride and the natural environment.

The Project is designed to minimise any potential overshadowing cast onto Koonung Koonung Creek to ensure adequate solar access to the natural environment and associated riparian habitat.

5E Maintain view lines across the Koonung Creek corridor from the walking and cycling path to promote passive surveillance and a comfortable journey.

The Project has considered the importance of maintaining sightlines across the Koonung Creek Corridor and has incorporated appropriate design solutions to ensure users' visual experiences will not be unreasonably compromised.

The forecourt, situated between the multi-level car park and the passenger services building, supports an outlook from residential properties into the Koonung Creek Corridor to the west. It also serves as a breathing space between the shared use path along Hender Street and bus platforms and provides passive surveillance opportunities between buildings.

Landscape design features a multi-layered planting presence, allowing for adequate visual penetration from all interfaces while complementing existing structures at each interface.

5F Provide a grade-separated walking and cycling crossing of Doncaster Road.

Not applicable – a grade-separated shared use path (SUP) is provided through the Doncaster Road underpass to the north and designed to realign with existing walking and cycling paths forming part of the Koonung Creek Trail. These works will be delivered in accordance with the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP as approved.

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).

Not applicable – refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP for details, as the area in front of the Tende Beck Scout Hall falls outside the Project area subject to this UDLP.

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

5. Consistency with the Urban Design Strategy

5.4 Detailed Requirements and Benchmarks

The element-based requirements for North East Link (NEL) as per Section 7 of the UDS encompasses aspects of the Project as outlined below.

- 6. Project buildings and ancillary structures
- 7. Public open space
- 8. Local streets, schools and neighbourhoods
- 9. Walls, fencing, barriers and screens
- 10. Bus park and ride, and bus lanes
- 11. Car parking
- 12. Lighting
- 13. Walking and cycling infrastructure
- 16. Navigational nodes and thresholds
- 17. Landscape
- 18. Water
- 20. Materials and finishes.

5.4.1 Key Design Requirements

Table 10 provides an assessment of this UDLP against detailed requirements and benchmarks of the UDS as relevant, demonstrating how these requirements are satisfied.

Table 10: An Assessment against the Element-based Requirements and Qualitative Benchmarks

Element-based requirements and qualitative benchmarks	
6. Project buildings and ancillary structures	
6.1	**Siting** New above-ground service and utility infrastructure are located to avoid or minimise impacts to existing to adjoining properties, and to reduce the need to remove vegetation. The number and size of utility buildings and structures within public open space are minimised. Above-ground utility buildings and structures are co-located with nearby existing structures and adjacent to vegetation to better integrate with the surrounding area. They are located to maintain the amenity and function of the places they occupy, and minimise visual impacts on significant buildings, monuments, trees, open spaces and landscape vistas.
	New above-ground service and utility infrastructure are designed into the multi-level car park and the passenger services building to minimise visual impacts from public open spaces and residential properties in the vicinity. **Substation** A substation is to be installed next to the shared use path adjacent to the northern end of the Drop and Go zone. It is designed to be modest in scale and co-located with existing or new road infrastructure in order to minimise its visibility. It has a maximum height of less than two metres above ground level with a footprint of approximately 25 square metres. While the location of the substation is largely governed by utility service owner requirements, the simple built form in structure and material palette ensures that the substation meets functional requirements while imposing minimal visual impacts on the surrounding context. Refer to the plans (NEL-STH-NSA-5700-BAR-DRW-U0301, U0302, U3101 and U3103) in Attachment 1: Architecture and Urban Design. **Telecommunications Monopole** Details of the monopole replacement are provided in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.
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.
	The Project sensitively integrates the multi-level car park, the passenger services building, the bus platforms, and other above-ground permanent structures into the surrounding context. The Project has: – oriented the primary façade of the multi-level car park towards the Doncaster Road frontage and provided a secondary (shorter) façade to Hender Street so as to adequately mitigate visual presence to residential interfaces and also provide an active response to a main road where robust developments are contemplated in the context of strategic planning – incorporated patterned concrete panels in a neutral tone to the stair cores on the west and east elevations, and architectural screens in the form of perforated cladding to the remainder of the two facades to enhance visual appearance and provide a context sensitive interface with residential properties in the surrounds – incorporated a moderately scaled passenger services building (in terms of height and massing) as a transitioning built form interfacing with residential properties to the east without intrusion onto the residential streetscapes – incorporated new walking and cycling paths that are complemented by landscaping. Utility services associated with this Project (with the exception of the substation) have been designed into the multi-level car park and the passenger services building; therefore, will not result in any unreasonable or obstructive visual impacts.

5. Consistency with the Urban Design Strategy

7. Public open space

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.

The Project maximises design opportunities through which the design response supports continuity of public realm and reads as an extension of surrounding public open space.

The Project has:

- sited new buildings and other above-ground permanent structures appropriately
- created a centralised forecourt, establishing connectivity between the park and ride and surrounding community through finely built environment
- provided direct access to the forecourt via Hender Street for public recreational purposes and also connecting with walking and cycling paths in a broader context
- incorporated the Drop and Go zone on Hender Street with the CPTED principles at the core of the design to not only prevent any severance of the community (noting the east side of Hender Street is retained) but also enhance the overall streetscapes through appropriate planting mixes
- provided new plantings around the perimeter of the park and ride creating a coherent landscaped response that will adequately reduce visual and built form impacts of the park and ride from Hender Street
- avoided encroachment and/or any potential impacts onto Koonung Creek Corridor to the west through integration of landscaping design.

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.

Noting that the existing park and ride currently does not contain a formal or naturalised open space, the Project has maximised the design and created a high quality, multifunctional and effective transport hub that offers bus services but also serves the community as an attractive public open space.

The design complements and builds on the forecourt through landscape design and provision of other amenities to ensure that the community (particularly users) are provided with a pleasant journey experience through seamless connections to Koonung Creek Trail within Koonung Creek Corridor and safe and convenient access to local streets.

The park and ride is also provided with appropriate canopies across bus platforms and has designed the Parkiteer within the passenger services building.

The locations and design details of specific furniture and amenities will be determined as part of design development in consultation with key stakeholders and ultimate land and asset owners to ensure that all design components delivered through this UDLP are fit for purpose.

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.

The Project creates a multifunctional, purposeful and interesting transport hub that caters for diverse purposes. It:

- Supports a key node by the provision of a forecourt, which is safe and attractive to passengers for rest or pause; this forecourt also activates the open space between the multi-level car park and the passenger services building and offers passive surveillance
- Recognised 'incidental spaces' through the interactions between the walking and cycling paths and landscaping
- Incorporated amenities and park furniture such as seating on an 'incidental' but coherent basis, allowing commuters to pause and rest and promoting incidental physical activities and spontaneous social interactions.

5. Consistency with the Urban Design Strategy

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.

The forecourt, as designed in this Project, is inclusive, pleasant, and inviting through direct access via Hender Street and seamless connections to the surrounding walking and cycling paths and bus platforms.

The 'unroofed' (fully open to the sky) design of the forecourt enables natural daylight to flow into the space creating an informal connection with nature.

The creatively incorporated seating and other facilities (or amenities), complemented by appropriate lighting, further enhance the useability and aesthetic values of the space. The final location and design details of all amenities and lighting will be determined as part of design development and delivered to the satisfaction of future asset owners.

While the Drop and Go zone on Hender Street is not a public open space where outdoor recreation or leisure is anticipated, the Project has considered the application of the CPTED principles as the core of the design of the Drop and Go zone. This will not only create a safe and functional environment for motorists and pedestrians as they travel through the area but also promote the physical linkage with the forecourt and the park and ride as a whole.

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.

The forecourt is designed to form connections with the community through direct access between the park and ride and the adjacent residential street (Hender Street).

The 'open to sky' design of the forecourt also provides opportunities for passive surveillance as it allows for open sight lines to the street, the bus platforms and between the multi-level car park and the passenger services building. It also ensures that natural daylight is maximised.

Signalised pedestrian crossings are provided between platforms (with design details subject to consultation with relevant stakeholders and ultimate asset owner).

The Drop and Go zone on Hender Street is designed to create a safe, comfortable and welcoming space for motorists and pedestrians in the following ways:

- The CPTED principles, encompassing natural surveillance, access control, territorial reinforcement and space management, have been considered in the design to ensure that a safe and functional environment is created for motorists and pedestrians, where opportunities for inappropriate social behaviour are discouraged, activity, vibrancy and useability are promoted and a sensible level of security for public safety is established.
- Landscape design has integrated the Drop and Go zone into the Hender Street streetscapes for an overall enhanced design outcome.
- Appropriate lighting is to be provided through the park and ride and will be confirmed as part of design development in consultation with relevant stakeholders and future asset owners.

8. Local streets, schools and neighbourhoods

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.

Pedestrian experience has been a key driver in this Project. New walking and cycling paths throughout the park and ride provide safe and direct connections to local roads and shared use paths in Koonung Creek Corridor and align with the aspiration of the notion of 20-minute neighbourhoods.

The design provides smooth connections between buildings within the park and ride, particularly when moving between the multi-level car park, the passenger services building and bus platforms, for safer and more efficient access to bus services.

The Hender Street streetscapes will be enhanced through a continuous shared use path and a separate new pedestrian path on the west side and the retention of existing footpath on the east, which creates improved connectivity within and surrounding the park and ride for a pedestrian friendly experience.

The incorporation of the Drop and Go zone on Hender Street has considered the CPTED principles and will provide a safe and functional experience that promotes positive experiences for motorists and pedestrians.

Appropriate wayfinding through signage and pedestrian crossings in the vicinity of the Drop and Go zone will also contribute to a pedestrian friendly area.

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.

This UDLP does not include transformational changes to existing streets with the exception of the road reconfigurations to Hender Street. However, the changes to Hender Street are limited to the Drop and Go zone, which is designed to be integrated into the existing local road network with southbound access at the intersection of Hender Street and Finlayson Street maintained.

Landscape design is incorporated on the west side of Hender Street, encompassing walking and cycling paths, trees and additional plantings, all positively contributing to the enhancement of existing streetscape.

Existing trees on the east side of Hender Street will be retained to maintain the landscaped aspect of the existing streetscape and provide visual relief between the Drop and Go zone and residential properties in this interface.

The final location and details of landscape design elements, such as seating and lighting, will be resolved in accordance with relevant requirements and guidelines as part of design development in consultation with ultimate land and asset owners.

5. Consistency with the Urban Design Strategy

8.3 **Transition**

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

A sensitive design approach is implemented for a smooth transition between the park and ride and residential properties to the east of Hender Street, which successfully brings the two disparate built forms together through considered siting of the Drop and Go zone, provision of safe pedestrian crossings and incorporation of landscaping within the Hender Street setback.

Particular attention is given to the transition of new built forms at the park and ride from sensitive receptors such as residential areas; noise walls are incorporated towards the southern half of Hender Street to ensure appropriate noise attenuation measures are in place.

The design of the multi-level car park capitalises on opportunities to use earth embankments and screen planting to minimise the visual height and bulk of the building when viewed from residential properties to the east. Taller buildings have been sited more centrally within the park and ride, enabling the creation of landscaped setbacks to provide amenity and assist in screening new built form from sensitive interfaces.

The incorporation of the Drop and Go zone on Hender Street will not result in any changes to the existing footpath and crossovers on the east side of Hender Street; as such, the existing access arrangement for residential properties adjacent to the Drop and Go zone will not be affected.

8.4 **School Interfaces**

Liaise with schools that interface the project to identify appropriate interface treatments. The design of road infrastructure around schools carefully considers local identity, sense of arrival, legibility of access points and operational requirements. The landscape design response filters and screens any views of road infrastructure from school grounds where appropriate.

Not applicable – no schools directly interface with the Project.

9. Walls, fencing, barriers and screens

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.

Noise attenuation elements throughout the Project are critical urban design elements that define or enhance the interfaces with Hender Street, fulfilling a functional and aesthetic role.

In this UDLP, noise attention measures are primarily incorporated along the Hender Street frontage, including the east elevation of the passenger services building and the noise walls extending to the southern boundary where residential properties are adjacent. The Project enables the siting and alignment of noise walls to be fully integrated into the Hender Street streetscape and the landscape design to minimise potential visual impacts arising from 'hard' materials.

The final location, height and design of noise walls are subject to further acoustic modelling and assessments of noise attenuation measures as required by relevant standards and requirements and will be confirmed in the detailed design phase.

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.

The Project adopts a coordinated approach to the design of noise walls, fences, screens and traffic barriers by integrating individual element with the surrounding features.

Key examples are outlined below:

- Guided by the acoustic modelling, noise walls are designed to achieve full compliance with relevant EPRs; in terms of material selection, the noise walls are constructed of acrylic panels, which provides for visual consistency along the street frontage and a level of permeability that reduces visual impacts onto residential properties to the east
- Pedestrian fencing is shown in this UDLP where required; in terms of transitions in fencing, the consistency in use of material and height creates visual continuity throughout the park and ride
- Consideration of the layering or interface of the walls, fences, barriers, and screens have been incorporated into the landscape design and visual consistency is achieved through selection of materials and finishes at relevant locations
- Finishes of high quality are material specific and reflective of the context it serves; for instance, the combination of precast panels and perforated cladding onto the Hender Street façade of the multi-level car park reinforces a positive response to the street and emphasises integration of craftmanship into the design
- The east elevation of the passenger services building is positioned along Hender Street and adjacent to the noise wall; as such, it provides a noise mitigation function and has reduced the length of noise walls required in this interface and activates the street through the change in materiality.

5. Consistency with the Urban Design Strategy

9.3 **Local context and scale**

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

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

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

Walls are appropriately designed to address the speed at which they are viewed.

Design on public and residential interfaces reflects a pedestrian scale, whereas the roadside interface reflects the scale of a high-speed vehicle environment.

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

The Project has carefully considered walls, fencing and screens as key features in response to the surrounding areas.

The use of materiality has considered the dominant characteristics of the area and seeks to bolster Indigenous culture and values through the co-design process. Key examples include:

- the colours incorporated across this UDLP (including architectural elements and landscape design) are inspired by indigenous landscape.
- the use of concrete finishes and steel is also a noticeable reference of newer developments in the surrounding context.
- the noise wall is situated with sufficient distance from residential properties to avoid negative impacts from coloured light.

For pedestrians and cyclists, the design focuses on maximising visual appeal and amenity at eye level. This is demonstrated through appropriate building separation where landscape design can be incorporated along/adjacent to the shared use paths around the perimeter of the park and ride and open spaces (including the forecourt).

The final location, height and design details of noise walls are subject to further acoustic modelling and assessment of noise attenuation measures and will be confirmed in the detailed design phase in consultation with key stakeholders and ultimate land and asset owner.

9.4 **Interfaces**

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

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

The nearest residential catchments are located on the east side of Hender Street and on both sides of Doncaster Road.

In this UDLP, noise walls are located along the southern half of the Hender Street frontage and the southern boundary of the park and ride; due to the location, the Project will not create unsafe areas between noise walls and residential properties.

The noise wall also serves as a barrier to prevent pedestrians accessing bus lanes and bus platforms and ensures that all commuters will use safe access points as provided.

9.5 **Transitions**

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

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

The noise walls are designed to achieve a smooth transition between interfaces particularly having regard to residential catchments and open spaces. Screen plantings are also provided where possible such that visual presence of noise walls, barriers and fencing may be further mitigated from direct lines of sight when viewed from adjacent properties at oblique angles.

9.6 **Visual connectivity and solar access**

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

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

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

Noise attenuation measures and barriers, where required, are designed at low heights and constructed of materials that assimilate with the surrounding landscaping. This design approach will minimise visual impacts and maintain direct sightlines when viewed from adjacent residential properties.

Noise walls are to be installed along the southern part of the Hender Street frontage, adjacent to the passenger services building. As the noise walls are constructed of semi-transparent acrylic panels, adequate sunlight to landscaping adjacent to the noise walls can be naturally gained. The noise walls are up to 4 metres in height and will not cast shadow onto the residential properties on the east side of Hender Street. Additionally, a light touch of green is incorporated into the colour of the noise walls, which highlights the integration with the landscaped streetscape.

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.

Anti-throw screens have been incorporated into the multi-level car park and provide a high quality robust outcome.

The treatment of all material faces has considered the surrounding context and responded accordingly through colour and scale.

All screens or barriers will allow an adequate level of transparency to maximise opportunities for passive surveillance and views to the surrounding landscape.

5. Consistency with the Urban Design Strategy

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.
		Retaining walls and noise walls have been carefully considered as integrated systems that seamlessly interface with abutting land forms.
		Planting has been considered and incorporated into the design response where possible to reduce visual impacts from new buildings and structures.
		Appropriate maintenance access has been considered and will be confirmed in the detailed design phase.
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.
		Potential opportunities for graffiti or other forms of vandalism to walls, fencing and screening have primarily been addressed through careful siting of the new above-ground buildings and structures and landscape plantings to impose a level of physical barrier to public access.
		Appropriate materials have been considered and will be further explored as part of design development in line with the design-based resolution to deter graffiti.
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.
		The Project, where walls and barriers are required, has prioritised the use of high quality, durable materials, such as steel and concrete. Acrylic panels are used in the noise walls, which are widely accepted across Freeways in Victoria, visually attractive and easy to maintain and replace. These materials contribute to potential reduction in maintenance and replacement costs and will ensure the longevity of the intended design response for the selected materials are robust and can maintain their appearance and integrity against the test of time.

10. Bus park and ride, and bus lanes

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.
		Bus platforms provide a high quality experience for commuters by directly connecting with the Eastern Busway and walking and cycling paths within the park and ride. Inclusion of signalised pedestrian crossing lights between platforms promotes and ensures pedestrian safety.
		Bus services will operate at the three platforms in accordance with the bus operator's timetables.
		In consultation with the ultimate land and asset owner, the bus bay arrangement is designed to support future increases to the number and frequency of bus services that the new Eastern Busway will enable.
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.
		The Project promotes well detailed but simplified built form and materials in the design of the multi-level car park, the passenger services building and other above-ground buildings and structures. Key aspects of the Project are outlined below: – The buildings and bus platforms are integrated into the landscape design, all positively contributing to architectural values in the surrounds – The creation of a forecourt provides for additional amenities and recreational opportunities for users – Weather protection measures have been incorporated into the design, including the waiting areas within the platforms. Provision of canopies across all bus platforms is one example of where functionality is demonstrated while advocating for aesthetic values – Inclusion of walking and cycling paths around the perimeter of the park and ride improves connectivity and supports active transport; the siting of all buildings, together with a forecourt, promotes passive surveillance contributing to a safe, enjoyable and functional public open space – The design of the park and ride does not preclude future investigation of complementary land use and street activation opportunities such as commercial activities and public facilities (noting that future opportunities will be subject to the ultimate land and asset owner).

5. Consistency with the Urban Design Strategy

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.

The Project acknowledges that integrating innovative design solutions adds value to the design and has incorporated suitable design solutions in the following ways:

- The design incorporates open façades to the multi-level car park, which is further enhanced by new plantings and trees and creates a structurally integrated and naturally ventilated building
- The waiting lounge in the passenger services building is designed to be a climate controlled and comfortable area for passengers to rest when waiting for bus services. Rest rooms are also provided as part of amenity enhancement
- The provision of a forecourt – a landscaped open space - promotes a high quality user experience through positively integrated public amenity
- The design also incorporates future use of conduits for charging stations for electric vehicles and allows for additional secured bicycle facilities within the park and ride should future demand be identified (all subject to the ultimate land and asset owner).

10.4 **Transport and active travel connections**

Interchanges provide the ability for commuters to undertake effective, safe and comfortable intermodal 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.

The Project seeks to deliver more than a transport hub as it intends to realise an integrated design outcome that connects with the community and natural environment. Driven by this notion, the design has:

- prioritised the 'people-centric' design focus and appropriately scaled and sited all buildings and structures
- enabled users to access the park and ride by cars or active transportation modes from distinct points of entry
- incorporated walking and cycling paths with connections to local roads and shared use paths within the Koonung Creek Corridor for a complete and attractive journey
- provided high quality bicycle amenities (such as bicycle hoops and Parkiteer storage)
- provided wayfinding through signage so that points of entry and exit for facilities and bus platforms 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.

Bus platforms are placed within the western half of the park and ride with connections to the Eastern Busway to provide better separation between the operational bus infrastructure and the rest of the park and ride. Distinct and identifiable point of entries are incorporated for users' convenience and safety.

Beyond functionality, the design of the busway also features landscaping strips extending along each individual lane. The landscaping strips surrounding the bus turnaround creates a user experience that is connected with the built environment but also dissolved into nature.

Bus lanes are designed with quality material for durability and longevity.

5. Consistency with the Urban Design Strategy

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.

The multi-level car park is designed to be separated from other activities by:

- providing the entry via Doncaster Road and the exit via Hender Street to reduce queuing time and potential conflicts, and to maintain the efficiency of Doncaster Road
- providing a Drop and Go zone with designated access from Hender Street to minimise disruptions and conflicts with local traffic
- separating the Drop and Go zone from the multi-level car park and bus access to ensure efficiency for cars and buses is maximised
- providing canopy trees within the setbacks of Doncaster Road and Hender Street and the forecourt to provide amenity and shade and create attractive buffers that mitigate visual impacts onto residential properties to the east
- incorporating walking and cycling paths with connections to local roads and shared use paths in Koonung Creek Corridor
- integrating water sensitive urban design (WSUD) measures into the design to maximise the drainage function of Koonung Creek Corridor and reduce surface water flow impacts
- incorporating new plantings within the Hender Street setback to create an attractive and naturalised presence to respective streetscapes.

The multi-level car park also delivers an improved parking outcome within a more spatially efficient footprint, compared to existing conditions. The reduction in area required for car parking compared to existing conditions enables more opportunities for the Project to deliver the landscape outcomes sought by this requirement.

11.2 Connectivity and safety

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

Car parking areas support the ease of movement for pedestrians and cyclists and avoid or minimise the potential for conflict with vehicles.

Access points to walking and cycling paths are clearly defined and are separate from vehicle movements.

Inclusion of walking and cycling paths around the perimeter of the park and ride is one of the key features in this Project, as it creates clear separation from the multi-level car park and bus platforms and reinforces the sense of 'dedicated' purpose that supports active transport. Where pedestrian and cycle paths intersect with car movements, appropriate and safe crossing points are integrated into the design.

Landscape design throughout the park and ride is featured by multi-layered planting mixes, which provide clear sightlines, passive surveillance and visual relief.

Active surveillance is provided through provision of appropriate lighting and CCTV.

The final locations and design details of these elements will be determined as part of design development in consultation with the ultimate land and asset owner.

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.

Entries to the multi-level car park, the Drop and Go zone and the bus platforms are distinctively separated from one another to ensure legible and clear points of entry are provided to cater for varying modes of transport.

Access for pedestrians and cyclists is further separated from cars for safety.

Signalised crossings are provided at the Doncaster Road entry and between bus platforms for pedestrian safety.

5. Consistency with the Urban Design Strategy

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.

Integrated lighting is a key feature in this Project, seeking to concurrently mitigate safety concerns and enhance the vibrancy and identity of the park and ride.

Functional lighting with adequate illumination levels is designed into the open space and shared use paths within the park and ride in line with the CPTED principles. The specifications of lux plots will be determined during the detailed design phase and subject to the satisfaction of the public land manager.

Design details of lighting incorporated adjacent to bus accessways, platforms, multi-level car park and the drop and go zone will be determined as part of design development in line with the project requirements set out by the ultimate land and asset owners.

12.2 Feature lighting

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

Lighting of the park and ride, including the multi-level carpark, bus platforms and the Drop and Go zone, will be determined as part of design development in line with the project requirements set by the ultimate land and asset owners.

No feature lighting is proposed within the park and ride.

12.3 Light pollution

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

Lighting within or adjacent to areas of identified fauna habitat or environmental sensitivity, such as the Koonung Creek Corridor, will be designed with minimised disturbance, including shielding or orienting away from specific areas if required.

Lighting interfacing with residential properties along Hender Street will be designed with minimised light pollution, which is achieved through appropriate siting (including the angle of lighting) and illumination levels.

The Project team will undertake modelling of light levels (lux plots) as part of design development, which determines areas at risk of light spill and potential light pollution and confirms suitable locations and design details of lighting delivered through this UDLP.

12.4 Maintenance

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

All lighting is sited in accordance with relevant Australian standards for road lighting and subject to a road safety audit; design details are to be finalised in accordance with the requirements by the relevant road authority. LED light fittings are also considered in the design for all new lighting to maximise operational life span.

The Project has considered the potential impacts on residential properties within proximity of the Project area and is designed to comply with relevant functional and safety requirements.

The final location and design details of all light fittings will be finalised in consultation with relevant stakeholders and ultimate land and asset owner to ensure easy access for ongoing maintenance.

12.5 Energy efficiency

Energy efficient lighting is used to reduce ongoing energy consumption.

Energy efficient LED fittings will be considered to reduce ongoing energy consumption as part of the design response and finalised in the detailed design phase.

Appropriate provision of energy efficient lighting can be achieved for all new functional and feature lighting elements within the park and ride.

The final location and design of lighting will be finalised as part of design development in consultation with ultimate land and asset owner.

5. Consistency with the Urban Design Strategy

13. Walking and cycling infrastructure

13.1 Pedestrian and cycling network

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

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

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

The Project does not have any impacts on the existing pedestrian and cycling paths, including the paths approved through other NELP UDLPs.

The Project incorporates walking and cycling paths around the perimeter of the park and ride (including new shared use paths on the western side of Hender Street) to form linkages with local roads and walking and cycling paths in the surrounding context; all linkages are designed into a unified network that supports active transport.

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.

The Project encourages and promotes active transport in the following ways:

- Inclusion of walking and cycling paths around the perimeter of the park and ride, enabling a complete experience for pedestrians and cyclists
- Provision of connections to local roads and the Koonung Creek Trail, contributing to an integrated network
- Provision of bicycle facilities including 28 bike hoops and a Parkiteer (containing 26 bicycle spaces)
- Inclusion of seating areas (such as within the forecourt and adjacent to the Drop and Go zone) in celebrating and embracing a connection with natural and built environment at a pedestrian scale
- Improved community access to key activity centres and commercial activities within the local and broader region, which enhances access to everyday services and facilities.

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.

The Project provides for ample walking and cycling opportunities to access the park and ride.

New walking and cycling paths are designed with connections to local streets and Koonung Creek Trail within Koonung Creek Corridor. These paths are adequately separated from bus platforms so that pedestrian safety is prioritised; where points of connections are needed between paths, the design ensures that a safe and continuous journey experience is provided.

The Project also retains a pedestrian connection along the Doncaster Road frontage, enhancing connectivity through a key transport corridor.

Overall, the Project creates a cycling environment that is safe, visually appealing, and accessible for all users.

13.4 Path separation

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

Mode separation is not pursued in this Project as the walking and cycling paths within the park and ride are sufficient in width to accommodate dual mode of travel simultaneously.

These paths are designed to create a complete journey experience rather than intersecting, to minimise potential conflicts.

Direct, clear and convenient connections to local roads and shared use paths beyond the site are integrated into the design to enhance the overall journey experience.

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.

Pedestrian crossings are provided at strategic locations, such as between bus platforms, within the Drop and Go zone, at the Hender Street intersection and at the points of entry and exit of the multi-level car park, to ensure a safe journey for all users. All pedestrian crossings are designed to be regularly spaced to ensure that safe, direct and convenient movements are provided around and through the park and ride.

5. Consistency with the Urban Design Strategy

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.

Walking and cycling paths are designed in compliance with the DDA requirements and with clear sightlines to promote passive surveillance. Access is also directly gained via Hender Street or other connections visible from public open space, reinforcing perceptions of safety.

13.7 **Shade**

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

Canopy trees are incorporated throughout the park and ride adjacent to the pedestrian and walking paths and the forecourt to provide amenity and shade.

Preservation of a locally significant English oak tree on Doncaster Road and inclusion of new canopy tree plantings within the street setbacks of Doncaster Road and Hender Street are designed to protect pedestrian amenity through expansive canopy coverage. The retained existing street trees on the east side of Hender Street, together with new canopy trees on the west, will provide amenity and shade for pedestrians and cyclists with enhanced streetscapes.

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.

Key pedestrian zones are designed across the park and ride through paving incorporated from the forecourt to bus platforms and around the perimeter of the park and ride, for enhanced connectivity at all levels.

Walking and cycling paths within the park and ride are complemented by suitable planting and provided with amenities (such as seating and a drinking fountain) at appropriate yet 'incidental' intervals, thereby improving users' journey experience.

Outdoor furniture and fixtures such as bins and bicycle parking hoops are provided at appropriate locations, with the final location to be confirmed as part of design development in consultation with relevant stakeholders and future asset owners.

13.9 **Wayfinding**

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

The design and location of wayfinding elements will be explored as part of design development, ensuring that wayfinding around the park and ride is appropriate and sensitive to the environment and to users of varying abilities.

The design and siting of shared use paths and pedestrian paths within and around the perimeter of the park and ride also serve a wayfinding function, enabling pedestrians and cyclists to efficiently move through and around the perimeter of the park and ride and into adjoining street and public open space networks

13.10 **Wayfinding signage design**

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

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

Standard route naming is adopted along entire routes, negotiated with the relevant authority.

Individual branding incorporating graphic devices is employed, such as the Koonung Creek Trail branding.

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

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

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

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

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

Wayfinding will communicate the location of key destinations as well as cultural storytelling. Signage will be durable to minimise ongoing maintenance and utilise a standard palette of graphics and naming conventions.

Landscape design is used throughout the park and ride as a means of guiding pedestrian and cyclist movements without introducing further built form elements such as unnecessary signage or permanent barriers that may result in visual clutter or obstruction.

The final design and location of wayfinding and directional signage will be designed in accordance with relevant standards and guidelines and confirmed as part of design development in consultation with relevant stakeholders and ultimate land and asset owners.

5. Consistency with the Urban Design Strategy

16. Navigational nodes and thresholds

16.1 Hierarchy

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

A clear and legible hierarchy has been established for the NEL Project, heightening the significance of key urban design elements. As part of this approach, functional elements that contribute to visual clutter have conversely been hidden where possible.

Doncaster Road Interchange and the park and ride are identified as a potential secondary node as shown on the Proposed Navigational Node Hierarchy Map contained in the NEL Urban Design Strategy. For details of the upgrades to the Doncaster Road Interchange, refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.

In this UDLP, the park and ride complements the significant role played by the Doncaster Road Interchange. The multi-level car park, passenger services building and bus platforms are all recognised as memorable architectural elements that are distinguishable from the surrounding context.

The new buildings within the park and ride are set back from and orientated toward the Koonung Creek Corridor to create opportunities for informal views through to existing natural features. An appropriate landscaping scheme that incorporates species drawn from the local EVC is implemented to respond to the local characteristics of the area and provide an enhanced urban setting for users and the local community.

16.2 Structure 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.

Elegant and identifiable structures have been deployed as wayfinding markers and navigational nodes throughout the NEL Project. The disparate structures across the NELP have been considered as a family, where retaining walls, road bridges, noise walls and walking and cycling bridges adopt a cohesive and consistent design language.

This approach is reflected in this UDLP. For instance, as the park and ride is considered a potential secondary node in the NEL Urban Design Strategy, the multi-level car park reinforces a navigational identity at this location; and the selection of materials and finishes as well as planting mixes is meaningfully designed to bolster the design pillar of Connection to Country.

16.3 Visual Clutter

Visual clutter is to be minimised including from road lighting.

The design approach reduces visual clutter through the concealment of functional elements, the avoidance of superfluous materials and the use of colours that reflect site context.

17. Landscaping

17.1 Green corridors

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

The Project abuts Koonung Creek Corridor to the west, which forms part of the green corridors along the Freeway. Whilst the Project area subject to this UDLP does not in itself constitute a 'green corridor', the landscape design is incorporated to provide a visual connection with Koonung Creek Trail in this interface.

New plantings (including canopy trees) incorporated within the street setbacks of Doncaster Road and Hender Street will provide a positive response to the established characters of these interfaces. The selection of plantings is heavily drawn from the local Ecological Vegetation Classes (EVCs) to ensure that the future planting outcome will enhance the quality of the surrounding environment.

Overall, the design will complement the natural environment of the Corridor and contribute to the overall design outcome intended to be realised through the NELP as a whole.

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.

The Project contributes to the Doncaster Road and Hender Street frontages through suitable plantings and attractive design elements that provide an enhanced landscape outcome.

For instance, retention of the locally significant English oak tree situated within the Doncaster Road setback positively contributes to the existing roadway identity for drivers and protects local heritage. Within the streetscapes of Hender Street, existing trees will be retained on the eastern side and new trees and plantings are incorporated on the western side. The selection of planting is heavily drawn from the local Ecological Vegetation Classes (EVCs) to ensure a contextually appropriate setting, bolster biodiversity and enhance local identity. The use of species from the local EVCs will also be adaptive to climate change and support ecology.

Overall, this design approach, combined with the incorporation of walking and cycling paths within the street setbacks, will create a diverse and unique sequence of landscape experiences that connect to the immediate and broader context.

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.

Landscape design builds on the existing and historic landscape character of the park and ride. It builds to form connections with the Koonung Creek Corridor and bolster biodiverse plantings within and beyond the park and ride.

5. Consistency with the Urban Design Strategy

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.

Existing landscaping is largely located within the street setbacks of Doncaster Road and Hender Street and occasionally scattered across the park and ride with no unified regularity. Whilst the majority of the existing trees are to be removed, the design has retained a locally significant English oak tree on Doncaster Road and demonstrated planting values through the proposed landscape design. Specifically, the locally significant English oak tree on Doncaster Road is protected by adequate setbacks from new buildings and works and installation of protection fencing during construction; and the landscape design incorporates appropriate planting mixes around the perimeter of the park and ride and between the new buildings to ensure that the loss of vegetation is adequately replaced, and landscape values enhanced.

The NELP proposes the concept of repurposing trees, which essentially involves salvaging and milling reusable timber from trees that need to be removed. The NELP is also working with local groups, including councils and schools, to reuse timber from the project for community benefit. This exercise is under continuous development and once finalised, this will be implemented across all works areas to ensure that opportunities for reuse are considered at a 'whole of project' level, rather than within individual UDLP areas, including to reuse felled timber as soft landscaping in returned open public space.

17.5 **Enhance habitat and biodiversity**

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

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

The Project optimises landscaping opportunities in the interface with the Koonung Creek Corridor where existing bushland character and ecological values are retained. The landscape design extends and enhances existing vegetation through a layered palette of groundcovers, understory plantings, large shrubs, and canopy trees.

Further assessment of existing and potential ecological conditions will be undertaken to inform the final location and selection of plant species as part of design development, in consultation with the relevant public land manager, to ensure opportunities to create fauna habitat and links will be further investigated and maximised.

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.

Canopy trees and planting mixes are incorporated within the street setbacks of Doncaster Road and Hender Street, assisting in filtering or screening views of the multi-level car park and other new above-ground permanent buildings and structures at the park and ride. These plantings also support a canopy of mature trees as the dominant landscape outcome and will enhance the driver experience by enhancing the presence of streetscapes.

The Project has minimised the punctuation of built form and structures above treed ridgelines in the following ways:

- As the bus platforms and the passenger services building are of single storey in height, the incorporated planting mixes surrounding these structures will effectively mitigate potential visual impacts when viewed from oblique angles
- The landscape design mitigates any impacts from the multi-level car park by:
  - incorporating planting mixes on the west side of Hender Street and retaining existing trees on the east side to mitigate visual impacts onto residential properties
  - incorporating canopy trees within the Doncaster Road setback, including retention of a locally significant English oak tree (estimated to be between 100-150 years old), and providing new plantings to the east of the multi-level car park to soften and screen built form from surrounding interfaces
  - incorporating planting mixes through the garden beds at the forecourt between the car park and the passenger services building to break up continuity of built forms when viewed from Hender Street and also provide visual relief for commuters
  - maintaining an open connection with the Koonung Creek Corridor to the west through landscape design to ensure that visual impacts from the car park can also be mitigated by the Corridor.

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.

A key driver of the landscape design is to connect the park and ride visually and functionally with Koonung Creek Corridor and provide an appropriate response to the local character.

The design incorporates suitable plantings as a means of naturalising the built environment thereby enhancing its original conditions.

5. Consistency with the Urban Design Strategy

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 t ake precedence.

Services are located to optimise tree planting.

Planting of canopy trees has been considered into the design particularly having regard to the street setbacks of Doncaster Road and Hender Street, the western interface abutting Koonung Creek Corridor and the forecourt.

The final locations of canopy trees are to be coordinated with technical engineering design processes and utility service providers to avoid and minimise existing and proposed conflicts between trees and service infrastructure. This will be confirmed through the detailed design phase.

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.

All earthworks, including excavation, road batters and retaining walls, are designed to ensure that final grades and soil depth will support the establishment and ongoing growth of the plantings in this UDLP, including the establishment of canopy trees.

Setbacks, soil and conditions for the selected planting mix will be designed to accord with relevant standards, with a careful assessment of species suitability and maintenance requirements to be further explored and finalised as part of design development in consultation with ultimate asset owners.

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.

Species from adjoining EVCs and the existing landscape context (particularly open space) are incorporated throughout the Project to maintain and enhance existing areas of established habitat and biodiversity.

Ongoing consultation with the ultimate land and asset owner and relevant councils will be carried out as part of design development to ensure that every range of species included in the planting schedules will be applied in accordance with relevant guidelines and requirements set by future asset owners.

Opportunities to incorporate culturally significant species and plantings will also be further explored through the co-design process with Wurundjeri Woi-wurrung Aboriginal Cultural Heritage Corporation (WWCHAC) as part of design development.

17.11 **Buffer planting and land form**

andscape 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.

The Project retains existing trees and vegetation along the east side of Hender Street. Together with the new planting within the Hender Street setback, adequate visual relief is provided to residential properties in this interface.

The design of the multi-level car park takes advantage of the topography of the land (which rises from west to east) and allows the car park to present a lower height when viewed from the residential context of Hender Street. This is further complemented by use of landscape design within the Hender Street setback, which softens the appearance of the building mass and provides visual amenity.

The landscape design incorporated within the street setbacks of Doncaster Road and Hender Street adopts a multi-layered planting mix (with the locally significant English oak tree retained), seeking to mitigate visual impacts from the multi-level car park and bus platform. To the west, where the Koonung Creek Corridor lies, the plantings are heavily drawn from the Ecological Vegetation Classes (EVCs) fostering connections with the natural environment. To the south, where the shorter frontage lies and is adjacent to the bus turnaround, the design focuses on establishing vertical connections through plantings. Appropriate buffering planting is also incorporated into the design where possible to reduce potential visual impacts and improve the overall landscaping outcome.

5. Consistency with the Urban Design Strategy

18. Water

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

A 'water-sensitive design' approach is incorporated throughout the Project. Generally, the design incorporates a bioretention area that is integrated into the landscape design and rainwater tanks to treat stormwater runoff in accordance with Best Practice Environmental Management (BPEM) guidelines.

Overall, appropriate water sensitive design treatments are incorporated in this Project with consideration of Koonung Koonung Creek and will provide habitat value, improve biodiversity, contribute to urban ecology and add value to the experience of open spaces.

18.2 Healthy Waterways

The project maintains or improves the river health of the waterway 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.

The Project does not contain waterways.

For design treatments to Koonung Koonung Creek adjacent to the park and ride, refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.

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.

The Project does not contain waterways.

For design treatments to Koonung Koonung Creek adjacent to the park and ride, refer to the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.

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.

The Project does not result in further encroachment to riparian, riverbed and aquatic habitat situated in the surrounding context.

For the design response to Koonung Creek Corridor adjacent to the park and ride, refer to the Eastern Freeway – Burke Road to Tram Road UDLP.

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.

Drainage infrastructure is designed and incorporated as an integral component into the new buildings and the landscape design so that it will serve the primary drainage function but also positively contribute to the quality and function of open spaces within and adjacent to the Project.

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.

The design provides for a series of new and enhanced water sensitive urban design (WSUD) assets that are integrated into the landscape design for a coordinated design outcome.

The key WSUD assets include a bioretention area within the street setbacks and rainwater tanks located inside the buildings. Details of the WSUD assets including engineering integration into the adjacent Koonung Creek Corridor will be finalised as part of design development and to the satisfaction of future asset owners.

Opportunities for community education, stormwater reuse, and other integrated water initiatives will be further explored during the detailed design phase and as part of broader community engagement in collaboration and consultation with councils and Melbourne Water as the relevant land and waterway manager.

5. Consistency with the Urban Design Strategy

18.7 **Raingarden and wetland design**

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

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

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

The Project does not propose any wetlands due to the size of the park and ride.

The Project incorporates context-sensitive water sensitive urban design treatments featuring a bioretention area and rainwater tanks. The bioretention area is integrated into the landscape design, contributing to the diversity of planting and an enhanced visual quality of the design. The rainwater tanks are designed into the building and will not be visible from public views, thereby minimising any adverse impacts.

Overall, the Project provides a balanced transition from Koonung Creek Corridor (where aesthetics and recreational values of the natural environment are featured) to an upgraded transport hub where public amenities and functional purposes are integrated into the design.

20. Materials and finishes

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.

The Project has selected materials and finishes that are of high quality, durable, robust and easy to maintain. For instance, the use of concrete and steel (both of high quality), requires minimum maintenance and will weather and age well over time, providing an elegant appearance over the life of the buildings.

Refer to the material schedule – architectural (Drawing No. NEL-STH-NSA-5700-BAR-DRG-U1001) in Attachment 1: Architecture and Urban Design.

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.

The colour palette for the materials and finishes speaks a cohesive and continuous language, echoing the design characters of the surrounding context.

The muted façades of the main buildings are visually recessive, reinforcing the respectful design approach to sensitive interfaces including residential properties and Koonung Creek Corridor.

Colours of all architectural elements and landscape design across this UDLP are inspired by indigenous landscape and will be further informed through the co-design process with Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) and finalised as part of design development in consultation with the ultimate land and asset owner.

Within the bus platforms, the materials and finishes are selected to provide an adequate level of visual connections with the surrounding landscaping while serving a wayfinding purpose, particularly with regard to the canopies where relatively vibrant colours are selected.

20.3 **Reflectivity**

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

The selection of material seeks to minimise light pollution from reflectivity. Where the design has a direct interface with residential properties and sensitive land uses, the use of materials has avoided expanses of glass and polished cladding across building facades. For instance, on the east elevation of the passenger services building, the use of glass and polished cladding is avoided due to its direct interface with residential properties. Simultaneously, the design incorporates visually permeable elements (openings) to activate the façade and provides for a positive interaction with residential properties in this interface. With regard to other sensitive land uses, the key consideration is given to the western interface where Koonung Creek Corridor is situated. Benefitting from the physical separation from the Busway, the design has also incorporated materials in muted colours to avoid visual dominance and glaring effect.

20.4 **Vandalism**

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

The Project adopts materials and finishes that discourages and minimises the potential for vandalism including graffiti. For instance, anti-graffiti coatings are considered in the design of the noise walls where a direct interface with the public is not avoidable; planting mixes are also incorporated to restrict public access to new structures.

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.

The Project does not have a direct interface with the Freeway; due to the western abuttal with Koonung Creek Corridor, it is reasonably distanced from the Freeway corridor. The Project, therefore, will have little impact on high quality road users' experience that will be delivered through the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP.

Meaningful connections with the Freeway are achieved through the design integration with Koonung Creek Corridor, which features landscaping and plantings primarily drawn from the Ecological Vegetation Classes (EVCs) to assimilate into the Corridor creating a visually consistent landscape outcome.

20.6 **Use resources efficiently**

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

The Project has selected materials and finishes within the Project based on their sustainability merits, and seeks opportunities to minimise overall material consumption through the reuse of reclaimed materials and integration of recycled products, which will be identified and integrated across a series of detailed design packages. Opportunities to further reduce the overall use of materials and increase the proportion of reused and recycled materials will be explored and identified as part of design development.

5. Consistency with the Urban Design Strategy

Artist impression – indicative only

5.4.2 Using Design to Help Manage Construction Impacts

The design approach is to avoid, minimise and mitigate adverse impacts on the community from temporary works and construction activities.

Design requirements for temporary and construction works are to be designed and carried out in accordance with the urban design principles and objectives, and requirements outlined in Section 7.2 of the UDS, to meet the Environmental Performance Requirement (EPR LV2). The following key items are listed in Section 7.2 of the UDS:

- maintaining access and connections
- maintaining community functions
- protecting viability and amenity
- protecting features
- landscaping
- temporary uses
- visual impacts and presentation
- waste generation and reuse
- innovation.

The Construction Environmental Management Plan (CEMP) and associated supporting management plans have been developed, addressing the key items as listed in Section 7.2 of the UDS, demonstrating how the Project uses design to help manage construction impacts.

As the construction compound is located within the UDLP boundary of the Doncaster Park and Ride and suitable control measures will be put in place prior to the commencement of construction activities, any potential impact on the community will be minimised. The location of the construction compound has considered the temporary and permanent works to minimise the need to re-establish a construction compound in other areas at a later date, which also contributes to minimising impacts on the community.

The Construction Environment Management Plan has been prepared to respond to relevant environmental performance requirements and address issues such as:

- noise, dust and vibration controls
- site compound layouts including the locations, security, visual appearance from the public, worker parking
- temporary traffic management including roads, pedestrians and cyclists
- temporary barriers, signage, fencing
- communication protocols
- protection of features such as vegetation, memorials, cultural heritage features
- staging of the works
- hours of construction works.

For the location of the construction compound at Doncaster Park and Ride, refer to the plan (NEL-STH-NSA-5900-UUD-DRG-3011) in Attachment 2: Landscape Design.

6. Compliance with Environmental Performance Requirements

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6. Compliance with Environmental Performance Requirements

The Incorporated Document requires at Clause 4.9.3(b) that a UDLP must be accompanied by an explanation demonstrating how the UDLP would comply with the EPRs included in the approved EMF. The EPRs set out the minimum environmental standards and outcomes the Project must achieve during design, construction, and operation.

Figure 58: Pedestrian Crossing between Bus Platforms

6.1 Environmental Management Framework

The purpose of the Environmental Management Framework (EMF) is to provide a transparent and integrated governance framework to manage the environmental aspects of the North East Link Project (NELP) in order to meet statutory requirements, protect environmental values and sustain stakeholder confidence.

In setting out the governance framework for managing environmental effects, the EMF provides clear accountabilities for compliance with the Environmental Performance Requirements (EPRs). The EPRs are a suite of performance-based environmental standards and outcomes that apply to the design, construction, and operation of the NELP.

This performance-based approach allows sufficient flexibility to encourage innovation by contractors to determine how each EPR is achieved.

6.2 Environmental Performance Requirements

The EPRs have been approved by the Minister for Planning as part of the Environmental Management Framework and contain the following sections:

1. Environmental Management Framework (EMF)
2. Aboriginal Heritage (AH)
3. Air Quality (AQ)
4. Arboriculture (AR)
5. Business (B)
6. Contamination and Soil (CL)
7. Flora and Fauna (FF)
8. Ground Movement (GM)
9. Groundwater (GW)
10. Historical Heritage (HH)
11. Land Use Planning (LP)
12. Landscape and Visual (LV)
13. Noise and Vibration (NV)
14. Social and Community (SC)
15. Surface Water (SW)
16. Sustainability and Climate Change (SCC)
17. Traffic and Transport (TT).

This section of the UDLP lists all the EPRs and demonstrates how the Project, described in, and delivered through this UDLP, complies with the applicable EPRs.

* In accordance with the EMF, the NEL UDLPs are not required to include or provide environmental management plans (such as Construction Environmental Management Plan, Worksite Environmental Management Plan, Operation Environmental Management Plan, etc.) that are noted in response to relevant EPRs; an Independent Environment Auditor has been appointed to review and verify these environmental management plans and conduct audits of contractor works to assessment compliance.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
1. Environmental Management (EMF) – Australian Standard AS/NZS ISO 14001:2015 Environmental management systems – requirements with guidance for use – EPA Publication 1834, Civil construction, building and demolition guide (EPA Victoria November 2020)		
EMF1 D C O	**Deliver project in general accordance with an Environmental Management System** Develop, implement and maintain an Environmental Management System (EMS) that conforms to Australian Standard AS/NZS ISO 14001:2015 Environmental Management Systems – requirements with guidance for use through design, construction and operation of North East Link.	**Design, construction, and operation** The Project has prepared an Environmental Management System (EMS) that conforms with Australian Standard AS/NZS ISO 14001:2015. The EMS will guide the design and construction of the Project. The EMS conforms with the Environmental Management Framework (EMF), which is a statutory requirement under the Incorporated Document.
EMF2 D C O	**Deliver project in accordance with an Environmental Strategy and Management Plans** Prepare and implement an Environmental Strategy, Construction Environmental Management Plan (CEMP), Worksite Environmental Management plans (WEMPs), Operation Environmental Management Plan (OEMP) (operator only) and other plans as required by the Environmental Performance Requirements (EPRs) and in accordance with the Environmental Management Framework (EMF). The Environmental Strategy, CEMP, WEMPs and OEMP must be developed in consultation with relevant stakeholders as listed in the EMF and as required by The State or under any statutory approvals. The CEMP must be prepared with reference to best practice and EPA Publication 1834, Civil construction, building and demolition guide.	**Design, construction, and operation** The Project has prepared an Environmental Management System (EMS) that conforms with Australian Standard AS/NZS ISO 14001:2015. The EMS will guide the design and construction of the Project. The EMS conforms with the Environmental Management Framework (EMF), which is a statutory requirement under the Incorporated Document.
EMF3 D C O	**Audit and report on environmental compliance** Appoint an Independent Environmental Auditor (IEA) to: – review the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs for compliance with the EMF and the EPRs – undertake environmental audits of compliance with and implementation of the EPRs and the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs. The IEA must include persons with expertise, based on qualifications and experience, appropriate to allow the roles specified for the IEA in the EMF to be properly carried out; including a person(s) appointed by the EPA as an environmental auditor for contaminated soil and groundwater given the potential risk of acid sulfate soils, and to ensure that there is no risk of vapour or gas intrusion from former landfills. Audits must occur during construction and for five years after opening of North East Link, or as otherwise agreed with the Minister for Planning. A six monthly summary report must be provided to the Minister for Planning that summarises the findings of audits carried out during the reporting period. A close-out report must be provided to the Minister for Planning at the conclusion of the auditing and reporting period. The summary reports must be made publicly available on a project website for the period of construction and a minimum of five years after opening of North East Link.	**Design, construction, and operation** MRPV has appointed an Independent Environmental Auditor (IEA). Part of the IEA's role is to verify that the UDLP and all relevant EPR plans comply with the Project requirements. Implementation of the plans and elements of the UDLP (where relevant to the EPRs) is regularly audited by the IEA to ensure compliance with the EPRs. The IEA provides a six-monthly summary audit report to the Minister for Planning that summarises the findings of audits carried out during the reporting period. The summary reports will be publicly available on the Project website during the specified timeframes.
EMF4 D C	**Complaints Management System** Prior to the commencement of works a process for recording, managing, and resolving complaints received from affected stakeholders must be developed and implemented. The complaints management arrangements must be consistent with Australian Standard AS/NZS 100002: 2014 Guidelines for Complaints Management in Organisations. The complaints management system must be consistent with the Communications and Community Engagement Plan required under EPR SC3.	**Design and construction** A Communications and Community Engagement Management Plan has been prepared by the Project as per the requirement under EPR SC3 and made available as per Clause 4.14 (Availability of approved plans and documents) of the Incorporated Document. The Plan includes a complaints management system consistent with Australian Standard AS/NZS 100002:2014.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
2. Aboriginal Heritage (AH) – *Aboriginal Heritage Act 2006* – *Aboriginal Heritage Regulations 2007*		
AH1 D C	**Comply with the Cultural Heritage Management Plan** Implement and comply with the Cultural Heritage Management Plan (CHMP) approved under the Aboriginal Heritage Act 2006.	A Cultural Heritage Management Plan (CHMP) No.15576 has been prepared for the North East Link Project and approved under the *Aboriginal Heritage Act 2006*. **Design** The CHMP identifies sensitive areas and registered sites within the Project area. The Project will comply with the conditions of the CHMP including: – avoiding and minimising impacts on sensitive areas/exclusion zones identified in the CHMP – ensuring that urban and landscape design considers Aboriginal places and any management triggers. In addition to compliance with the CHMP, the Project has embedded Indigenous design and consultation with the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) throughout the UDLP preparation and design process. **Construction** During construction, the Project will carry out development activities in compliance with CHMP No. 15576, including (but not limited to): – CHMP inductions presented by the Registered Aboriginal Party (RAP) and heritage advisor for all personnel involved in ground disturbing activities – Provision of reporting and documenting procedures as relevant to site investigations and discoveries – Ongoing consultation with the WWCHAC for the Project area.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
3. Air Quality (AQ) – *Environment Protection Act 2017* – Environment Protection Regulations 2021 – Environment Reference Standard (Ambient Air) – EPA Publication 1834, Civil construction, building and demolition guide (EPA Victoria November 2020)		
AQ1 C	**Implement a Dust and Air Quality Management and Monitoring Plan to minimise air quality impacts during construction** Prepare and implement a Dust and Air Quality Management and Monitoring Plan(s), in consultation with EPA, which sets out best practice measures and controls to minimise and monitor impacts on air quality during construction. The plan(s) must: – set out how the project will monitor and control the emission of smoke, dust, fumes, odour and other pollution into the atmosphere during construction using best practice measures with reference to EPA Publication 1834, Civil construction, building and demolition guide – identify the main sources of dust and airborne pollutants, and the location of sensitive land uses relevant to each construction area – describe the monitoring requirements for each construction area including real-time particulate matter monitoring to manage dust control were deemed to be required, and with reference to sensitive receptors and utilising consistent and common monitoring equipment across the project – describe the air quality triggers for investigation, the mitigation measures, and the processes for implementing appropriate controls.	**Construction** The Dust and Air Quality Management and Monitoring Plan has been prepared in consultation with the EPA and verified by the Independent Environmental Auditor. The plan outlines measures for dust and air quality management on the Project.
AQ2	**Design tunnel ventilation system to meet EPA requirements for air quality** Design, construct and operate the permanent tunnel ventilation system in accordance with the requirements of the EPA Victoria Development Licence and the EPA Victoria Operating Licence. The design should include provision for retrofitting of tunnel ventilation particulates pollution control equipment if subsequently required.	Not applicable – this Project does not involve a tunnel.
AQ3	**In-tunnel air quality performance standards** Design, construct and operate a tunnel ventilation system to introduce and remove air from the tunnels to meet the in-tunnel air quality requirements for carbon monoxide (CO) and for NO2 listed below and in accordance with the EPA Victoria Development Licence and EPA Victoria Operating Licence. In tunnel air quality must meet the following CO standards: – Maximum peak CO value of 150 ppm – 15-minute average CO value of 50 ppm – 2-hour average CO value of 25 ppm. The tunnel ventilation system must also be designed and operated so that the tunnel average nitrogen dioxide (NO2) concentration is less than 0.5 ppm as a rolling 15-minute average. Develop and implement contingency measures to manage in-tunnel air quality in the event of incidents or emergencies. Apply best practice Australian management techniques to minimise impacts on health from in-tunnel exposure to PM2.5 and PM10.	Not applicable – this Project does not involve a tunnel.
AQ4 C O	**Monitor ambient air quality** Develop and undertake an ambient air quality monitoring program in consultation with EPA Victoria to measure the air quality impacts of North East Link during construction and operation. The ambient air quality monitoring program must be undertaken at a minimum of six locations (including a site where the highest increases of air pollution are predicted to occur), unless otherwise agreed by EPA Victoria; include at least one year of monitoring before operation; continue for 5 years after commencement of North East Link operation; and, for the ventilation structures, be in accordance with the EPA Victoria Operating Licence. Monitoring results must be compared against the indicators and objectives (excluding odour) in Table 2.2 of the Environment Reference Standard (Ambient Air). Results (unvalidated) of the monitoring program are to be made publicly available on a website related to the project, or through EPA Victoria's Air Watch website, on a daily basis.	**Construction and operation** MRPV has developed and will undertake and report the results of an ambient air quality monitoring program in consultation with EPA Victoria in accordance with this EPR.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
AQ5 O	**Monitor compliance of in-tunnel air quality and ventilation structure emissions** Monitor the in-tunnel air quality and ventilation structure emissions during operation of the ventilation system to demonstrate compliance with EPR AQ2, EPR AQ3 and the EPA Victoria Operating Licence to the satisfaction of EPA Victoria. Report the monitoring results publicly after validation and in accordance with the EPA Victoria Operating Licence. If standards outlined in EPR AQ2, EPR AQ3 and the EPA Victoria Operating Licence are not met, report to EPA Victoria, investigate the cause of the exceedance, and take remedial action as appropriate to the satisfaction of EPA Victoria.	Not applicable – this Project does not involve a tunnel.
AQ6 C	**Construction Haulage Vehicle Fleet** Incentives must be provided for contractors and subcontractors to preferentially select on-road heavy vehicles for haulage that comply at a minimum with the Euro V European emission standards. The incentives must seek to increase the proportion of on-road heavy vehicles that comply at a minimum with Euro V European emission standards within the project's construction haulage fleet over the construction life of the project.	**Construction** Incentives and procurement strategies will be developed to seek to increase the proportion of on-road heavy vehicles that comply, at a minimum, with Euro V European emission standards, within the Project's construction haulage fleet over the construction life of the Project.
4. Arboriculture (AR) – *Planning and Environment Act 1987* – AS4970-2009 Protection of Trees on Development Sites – Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017		
AR1 D C	**Develop and implement a Tree Removal Plan** Develop and implement a Tree Removal Plan, as part of the CEMP, that identifies all trees within the Project boundary and includes: – trees to be removed or retained as part of the works – confirmation of the condition and arboricultural value of the amenity trees to be removed – the canopy area of all trees to be removed – the procedure for tree removal that addresses the requirements of EPR FF1, EPR FF2 and EPR FF5. Tree retention must be maximised to the extent practicable through detailed design and selection of construction methods to minimise canopy loss, and in accordance with EPR FF1, including by retaining trees where practicable and minimising potential impacts to trees. This includes the River Red Gum (Caltex Tree) at 39 Bridge Street, Bulleen. Arboricultural assessments are to verify existing details and inform the detailed design, Tree Removal Plan and Tree Canopy Replacement Plan (required by EPR AR3) in order to maximise tree retention and long-term viability of amenity plantings in accordance with Australian Standard AS4970:2009 Protection of Trees on Development Sites. The Tree Removal Plan must be informed by a pre-construction site assessment to confirm the area and number of trees and other vegetation proposed to be impacted. Trees to be retained must be protected in accordance with EPR AR2. Vegetation removal is to occur in a staged manner with removal only occurring once necessary for the current stage of works. The area and number of trees and other vegetation actually removed is to be confirmed through a post-construction assessment.	**Design** An assessment of impacts on vegetations and associated workshops were undertaken in the early stages of design development, which identified impacts and retention opportunities to maximise amenity tree retention and minimise tree canopy loss. All trees within, and adjacent to, Doncaster Park and Ride have been assessed by a suitably qualified professional. Based on this assessment, the Project provides: – a Tree Removal Plan showing the extent of tree removal and confirming that a locally significant English oak tree situated within the Doncaster Road setback will be retained (refer to the Plan, NEL-STH-NSA-5700-ULS-DRG-3001, in Attachment 2: Landscape Design) – a Proposed Tree Plan showing the extent of tree canopy coverage (refer to the Plan, NEL-STH-NSA-5700-ULS-DRG-0311, in Attachment 2: Landscape Design). **Construction** A Tree Protection Plan and a Tree Removal Plan are developed as sub-plans to the Construction Environmental Management Plan (CEMP) and have been verified by the IEA. Ongoing on-site inspections will be carried out by a suitably qualified professional to ensure all works are occurring in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites. Trees subject to protection will be monitored for a three year period following completion of construction works in that location to assess ongoing viability, with maintenance or replacement of stressed or damaged specimens to be undertaken. A review of the design and construction footprints associated with this Project has been undertaken in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites. The design requires extensive tree removal for this project. Where trees are to be retained, specific Arboriculture Impact Assessments consider the relevant construction activities to identify specific mitigations measures required to protect retained trees. Such measures may include establishing tree protections zones (TPZs), structural root zones (SRZs), trunk and ground protection and restricting activities within the TPZ and SRZ. Construction methods such as underground boring, hydro excavation and directional drilling will be employed where possible to limit or prevent impact to trees. The area and number of trees and other vegetation removed will be confirmed through a post-construction assessment. Adherence to the Tree Protection and Tree Removal Plans will ensure retention is maximised to the extent practical.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
AR2 D C	**Implement a Tree Protection Plan(s) to protect trees to be retained** The CEMP must include a Tree Protection Plan(s), which is to be developed and implemented in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites. The Tree Protection Plan(s) must provide details of any tree protection actions that will ensure that trees proposed to be retained are adequately protected from the impact of construction or related activities, prior to those works being undertaken. Tree Protection Plans must be prepared based on detailed construction drawings and surveyed tree locations. Trees subject to protection must be monitored for a three-year period following completion of construction works in that location to assess ongoing viability, with maintenance or replacement of stressed or damaged specimens to be undertaken.	**Design and construction** Arboricultural impact assessments, which detail the number, location, and extent of trees to be retained, are carried out as part of design development informing the final design and with consideration of suitable construction methodology. The assessments are based on arborist tree survey data, validated against feature survey to maximise accuracy, and ensure tree protection data can be fully integrated into final construction drawings. A Tree Protection Plan is prepared by a qualified arborist in accordance with Australian Standard AS 4970-2009 and outlines the mechanisms through which retained trees will be protected through the construction period. It also details the requirements for monitoring tree health during and post construction. Trees that meet the criteria for monitoring will be monitored by a suitably qualified professional arborist. The Project's Tree Protection Plan has been verified by the IEA in accordance with the EMF and details the requirements for tree retention, which must be adhered to throughout the construction phase.
AR3 D C	**Implement a Tree Canopy Replacement Plan** Develop and implement a Tree Canopy Replacement Plan to replace the canopy of native vegetation and amenity plantings removed as a result of the project and achieve a net gain in tree canopy cover by 2045. The plan must: – show the location, size (including canopy spread) and species of replacement trees, in consultation with councils and other relevant land managers – specify requirements to support the long-term viability of all replacement plantings including appropriate soil requirements, establishment works and ongoing maintenance – maintain at least a ratio of 2:1 for replacement of amenity plantings – replanting should generally follow the hierarchy of: – Within the North East Link Project boundary - as first priority, in locations in close proximity to where trees are removed – Outside the Project boundary and within 400m walking catchment from where trees are removed – Within Victorian Government and local Council land within the municipalities of Manningham, Boroondara, Nillumbik, Yarra, Whitehorse and Banyule outside the Project boundary – Within the wider north east area of metropolitan Melbourne outside the Project boundary, if required. Note: all locations selected must provide for long-term tree growth – Within the Project boundary, include understorey plantings in addition to the tree canopy replacement plantings where feasible in consultation with Councils and/or the land manager – Specify requirements for the ongoing responsibility for maintenance and monitoring of the Tree Canopy Replacement Plan. The replacement planting should commence as soon as possible and in stages, once tree removal extent is confirmed and suitable replacement trees have been determined in consultation with relevant councils and authorities. A post-construction assessment is to be undertaken to confirm the extent of tree removal and that the Tree Canopy Replacement Plan will achieve the net gain target set out above.	**Design and construction** A Tree Canopy Replacement Plan will be prepared in accordance with this EPR. Replacement of amenity plantings will maintain a ratio of 2:1 as required by this EPR. The Plan is informed by tree data from the EES and will be updated to capture validated data from a full arboricultural assessment of the Project, including native and amenity vegetation so that canopy replacement can be accurately informed. As part of implementation of this Plan, the replanting program will ensure that the 2:1 ratio is met for amenity trees impacted by the Project and will fulfil other replanting requirements of this EPR. This replanting ratio has been incorporated in the landscape design. A post-construction vegetation reconciliation report will be prepared to capture the extent of tree removal so that canopy replacement can be reassessed against target values to ensure the required net gain is achieved through the Project. Further engagement will occur with Manningham City Council, Major Road Projects Victoria and the ultimate land and asset owner to support the implementation of the Tree Canopy Replacement Plan as required by this EPR.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
5. Business (B) – *Planning and Environment Act 1987* – *Land Acquisition and Compensation Act 1986* – Australian Standard AS/NSZ 10002:2014 Guidelines for Complaint Management in Organisations		
B1	**Business disruption mitigation plan** Prepare and implement a Business Disruption Mitigation Plan in accordance with the Victorian Small Business Engagement Guidelines (Victorian Small Business Commission) to ensure that business disruption for small businesses, including all disrupted businesses in the Bulleen Industrial Precinct, arising from the project is mitigated to the extent practicable.	Not applicable – as no businesses are operating within the area subject to this UDLP, no businesses will be unreasonably affected.
B2	**Business Relocation Strategy** MTIA must develop and implement a Business Relocation Strategy to assist businesses directly affected by acquisition. The strategy must be developed in consultation with affected businesses, relevant local Councils, relevant local trader associations, and other affected stakeholders affected, immediately on approval of the EMF. The strategy must include, but not be limited to: – identification of affected businesses and other relevant stakeholders – provision of a program to support the relocation of businesses including identifying services and support programs – appointment of an independent specialised relocation adviser(s) to support affected businesses – procedures to disseminate information, including through the Business Liaison Group (EPR B8) regarding the business relocation strategy and services, key project milestones that may impact on business relocations, and other changes that may affect businesses during the closure of existing operations – assistance in the provision of targeted marketing and promotional initiatives to build community and customer awareness for relocated businesses – procedures to work with business and landowners to endeavour to reach agreement on the timeframe for possession of the land – procedures to engage with businesses and other stakeholders, and through which affected businesses and relevant local trader associations can provide comment or feedback in relation to the relocation strategy and its associated services. The State should also work with councils to identify and assess the feasibility of alternative location options for displaced businesses. In parallel with the Business Relocation Strategy, the independent specialised relocation adviser(s) must provide individual business planning and support to the businesses in the Bulleen Industrial Precinct, including to prepare and implement individual business plans prepared with each business in the Bulleen Industrial Precinct (except where a business has requested not to be part of such assistance) that: – understands at a fine-grained level their current operation – desire to relocate or cease operations – business needs for new sites – preliminary specific site identification – practical and reasonable assistance to implement these plans. Note: the requirements of this EPR are in addition to any rights or entitlements available under compulsory acquisition legislation.	Not applicable – as no businesses are operating within the area subject to this UDLP and this UDLP does not involve any acquisition, no businesses will be directly affected by acquisition.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
B3	**Employee Assistance Strategy** MTIA must develop and implement an Employee Assistance Strategy to provide relevant workforce support measures for employees of businesses closing or relocating as a consequence of acquisition for the Project. The strategy must include, but not be limited to: – the identification of affected businesses and employees – provide a co-ordinated link to support services for affected employees (for example, access to a range of services such as training advice, careers advice, resume workshopping, advice on government entitlements, referral to other job support services, and skills assessments) – the identification of relevant government agencies and support services – procedures to disseminate information including through the Business Liaison Group (EPR B85), regarding the employee assistance strategy and services, key project milestones that may impact on business closures and relocations, and other changes that may affect businesses and their employees during the closure of existing operations. In parallel with the Employee Assistance Strategy, MTIA with appropriate expert advice, must prepare and implement a package of individual employee assistance plans prepared with and for each employee who requests it, in consultation with the employer, that: – understands at a fine-grained level their future employment plans – need for training and development – factors that would influence their desire to remain employed with a Bulleen Industrial Precinct business – practical and reasonable assistance to implement their assistance plan.	Not applicable – as no businesses are operating within the area subject to this UDLP and this UDLP does not involve any acquisition, no businesses will be directly affected by acquisition.
B4	Minimise disruption to businesses from land acquisition and temporary occupation Minimise disruption to businesses from permanent acquisition or temporary occupation of land to the extent practicable, and work with affected businesses and land owners to endeavour to reach agreement on the terms for possession of the land in accordance with relevant legislation. Efforts to provide for Bulleen Art and Garden's continued operation from its current site should be undertaken.	Not applicable – as no businesses are operating within the area subject to this UDLP and the UDLP does not involve permanent acquisition or temporary occupation of land outside the Project boundary, no businesses will be directly affected.
B5 D C	**Minimise and remedy damage or impacts on third party property and infrastructure** Through detailed design and construction, and in consultation with relevant land owners and parties as necessary, design and construct the works to minimise, to the extent practicable, impacts to, and interference with, third party property and infrastructure and to ensure that infrastructure and property is protected during construction and operation. Any damage caused to property or infrastructure as a result of North East Link must be appropriately remedied in consultation with the property or asset owner.	**Design** This UDLP encompasses the park and ride at Doncaster and the northern section of Hender Street (north of Finlayson Street). The design has mitigated any risk of damage to third party property and infrastructure by minimising the footprint as much as possible. Access to residential properties adjacent to the Drop and Go zone on Hender Street, including the footpath, street trees and street kerbs on the east side of Hender Street, is retained in this UDLP. Close engagement with directly affected property and asset owners will be carried out as part of design development; any potential impacts to third party properties and infrastructure (as/if identified) will be addressed through appropriate remedies in consultation with the property and/or asset owner. This will include identification of moderate to high-risk activities being undertaken adjacent to businesses/utilities. **Construction** Appropriate traffic management will be implemented in accordance with traffic management plans. Should any damage be sustained to third party property or infrastructure that is determined to be caused by the Project, the damage will be appropriately remedied in consultation with the property or asset owner.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
B6	**Minimise access and amenity impacts on businesses** Any reduction in the level of access, amenity, or function of any business or commercial facility must be minimised to the extent and duration necessary to carry out the relevant construction related works. Affected business and commercial facilities must be provided with adequate notification of potential impacts and temporary access arrangements. Emergency access must be maintained at all times. Access must be maintained for customers, delivery and waste removal unless there has been a prior arrangement with affected businesses. As well as minimising impacts above, temporary occupation of sites for construction must: – minimise impacts on the viability of nearby businesses – minimise adverse amenity impacts on views and amenity experience from nearby businesses – minimise significant increases in travel time from residential areas to businesses and shopping precincts including Watsonia Village – not reduce car parking available to shoppers and traders in shopping areas including Watsonia Village. All permanent access to business and commercial facilities affected by North East Link works is to be reinstated, or relocated as agreed with the relevant property owner, including associated landscaping and reinstatement works, and temporary access arrangements put in place for construction must be removed when relevant construction activities have ceased.	Not applicable – as no businesses are operating within the area subject to this UDLP, no businesses will be directly affected.
B7 D C	**Protect utility assets** Protect or, where required, relocate utility assets to the reasonable satisfaction of the service provider and/or asset owners.	**Design and construction** The design has considered major existing and proposed utilities. Any structures/permanent infrastructure will be appropriately located to avoid existing or proposed utilities where possible if avoidance cannot be achieved. Protection or relocation measures will be implemented in consultation with utility service provider and asset owners.
B8 D C	**Business liaison groups** Contractors must participate in the Business Liaison Groups established and managed by the North East Link Project to facilitate business and stakeholder involvement for the construction phase of the project. Participation must include: – attendance at meetings – regular and timely reporting of design and construction activities and key project milestones – provision of advance notice about changes to traffic and parking conditions and the duration of impact – timely provision of relevant information, including response to issues raised by the group – regular reporting and monitoring of business community feedback, impacts and discussion of mitigation measures and their effectiveness – recording, managing and resolving complaints from affected businesses in accordance with the complaints management process required under EPR EMF4.	**Design and construction** The Project will participate in the Southern Business Liaison Group (SBLG) established by MRPV as needed and required under this EPR. Participation will accord with the EPR requirements, including providing feedback on the Project received from the business community and responses to Project issues if raised. Feedback from the SBLG will be considered and used (as appropriate) to inform continuous improvement in project delivery, stakeholder engagement and construction operation.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response

6. Contamination and Soil (CL)

- *Dangerous Goods Act 1985*
- *Environment Protection Act 2017*
- *Environment Protection Regulations 2021*
- Environment Reference Standard (Land, Ambient Air)
- *Occupational Health and Safety Act 2004*
- National Environment Protection (Assessment of Site Contamination) Measures 2013 (ASC NEPM)
- PFAS National Environmental Management Plan 2018
- Occupational Health and Safety Regulations 2007
- AS1940 Storage Handling of Flammable and Combustible Liquids
- AS 4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil
- AS 4439.2:1997 Wastes, sediments, and contaminated soils (Part 2: Preparation of leachates — Zero headspace procedure)
- AS 4439.3:1997 Wastes, sediments, and contaminated soils (Part 3: Preparation of leachates – Bottle leaching procedure)
- Industrial Waste Resource Guideline 702 Soil Sampling
- Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil, 2003
- A Victoria publications:
- 1698 Liquid Storage and Handling Guidelines
- 1834, Civil construction, building and demolition guide (EPA Victoria November 2020)
- 1827.1 Waste classification assessment protocol (EPA Victoria 2020)
- 1828.2 Waste disposal categories – characteristics and thresholds (EPA Victoria 2021)
- 1968: Guide to classifying industrial waste
- 655.1 Acid Sulfate Soil and Rock
- 1698 Liquid Storage and Handling Guidelines
- 1834, Civil construction, building and demolition guide (EPA Victoria November 2020)
- 1827.1 Waste classification assessment protocol (EPA Victoria 2020)
- 1828.2 Waste disposal categories – characteristics and thresholds (EPA Victoria 2021)
- 1968: Guide to classifying industrial waste

CL1 C

Implement a Spoil Management Plan

Prepare and implement a Spoil Management Plan (SMP) in accordance with relevant regulations, standards, and best practice guidelines and with reference to the Spoil Management Strategy contained within the EES (Technical Report O). The SMP must be developed in consultation with EPA Victoria, any relevant public land managers and, in respect of transport of spoil, the relevant road authorities. The SMP must include processes and measures to manage spoil, define roles and responsibilities and include requirements and methods for:

- Complying with applicable regulatory requirements
- Completing a detailed site investigation (in accordance with Australian Standards AS 4482.1:2005 Guide to the investigation and sampling of sites with potentially contaminated soil, AS 4439.2:1997 Wastes, sediments and contaminated soils (Part 2: Preparation of leachates — Zero headspace procedure), AS 4439.3:1997 Wastes, sediments and contaminated soils (Part 3: Preparation of leachates —Bottle leaching procedure), EPA Victoria Industrial Waste Resource Guideline 702 with respect to the twenty times leachable concentration threshold approach (the 'Twenty Times Rule'), and EPA Publication 1828.2 Waste disposal categories - characteristics and thresholds) prior to any excavation of potentially contaminated areas to identify location, types and extent of impacts and to characterise spoil to inform spoil and waste management
- Identifying the nature and extent of spoil (clean fill and contaminated spoil)
- Identifying, in consultation with the waste industry, the capacity for contaminated spoil material to be treated and/or disposed
- Storage, handling, transport, and disposal of spoil in a manner that protects human health and the environment and is consistent with the transport management plan(s) required by EPR T2. This includes requirements and methods for the appropriate treatment/ remediation of any contaminated excavated spoil and contaminated residual material left on site
- Design and management of temporary stockpile areas
- Minimising impacts and risks from disturbance of acid sulfate soils (as per EPR CL2), odour (as per EPR CL3) and vapour and ground gas intrusion (as per EPR CL4)
- Transport of spoil along appropriate roads with reference to the transport management plan(s) required by EPR T2
- Management of hazardous substances, including health, safety and environment procedures that address risks associated with exposure to hazardous substances for visitors, the general public; and local fauna; contain measures to control exposure in accordance with relevant regulations, standards and best practice guidance and to the requirements of WorkSafe and EPA Victoria; and include method statements detailing monitoring and reporting requirements

CL1 Continues over ...

Construction

The Project has prepared a Spoil Management Plan (SMP) in consultation with the EPA and in accordance with relevant regulations, standards, and best practice to manage spoil, define roles and responsibilities in line with this EPR.

The SMP has been verified by the IEA in compliance with the requirements of the EMF.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
6. Contamination and Soil (CL) – Continued		
	– Identifying where any contaminated or hazardous material is exposed during construction (notably through former landfills, service stations and industrial land) and how it will be made safe for the public and the environment. Environmental values of land and National Environment Protection (Assessment of Site Contamination) Measures 2013 guidance on criteria protective of those environmental values must be considered for the land uses in these areas. This must include methods for: – construction of appropriate cover (soil, concrete, geofabric etc) such that no contamination is left exposed at the surface or where it may be readily accessed by the public and local fauna such that it cannot generate runoff or leachate during rain events – maintenance of the cover – identification of the nature and depth of the contaminants – mitigating impacts during sub-surface works in those areas, e.g., drilling and excavation. – Monitoring and reporting – Identifying locations and extent of any industrial waste, priority waste, reportable priority waste, other waste, and the method for characterising industrial waste, priority waste, reportable priority waste and other waste prior to excavation – Application of the *Environment Protection Act 2017* waste management hierarchy, including: – Ongoing identification and, where practicable, adoption of options for the re-use of spoil – Identification of options for management of spoil – Identifying suitable sites for disposal of any waste. This includes identifying contingency arrangements for management of waste, where required, to address any identified capacity issues associated with the licensed landfill's ability to receive PIW and other waste – In areas used for temporary construction works, and the construction of surface water management works, contamination attributable to the project must be appropriately remediated in consultation with the relevant land manager.	
CL2 C	**Minimise impacts from disturbance of acid sulfate soil** The SMP referenced in EPR CL1 must include requirements and methods to minimise impacts from disturbance of acid sulfate soil, including but not limited to: – characterising acid sulfate soil and rock prior to excavation – developing appropriate stockpile areas including lining, covering and runoff collection to prevent release of acid to the environment, including wetlands, and impact to human health – identifying suitable sites for re-use management or disposal of acid sulfate soil and rock – preventing oxidation that could lead to acid formation, if possible, through cover and/or scheduling practices, i.e., ensuring acid sulfate soil and rock is not left in stockpiles for any length of time and/or addition of neutralising compounds. Requirements and methods must be in accordance with relevant sections of EPA Publication 1834 Civil construction, building and demolition guide, EPA Victoria Publication 655.1 Acid Sulfate Soil and Rock, and the Department of Sustainability and Environment's Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil.	**Construction** The preparation of a Spoil Management Plan (SMP) referenced in EPR CL1 has considered this EPR. Based on initial investigations, the likelihood of potential acid sulfate soil is minimal within the Doncaster Park and Ride site (the area subject to this UDLP). Where potential acid sulfate soil (PASS) is intersected, these areas will have specific management controls for the spoil generated as per the SMP for the construction phase. The SMP has been verified by the IEA in compliance with the requirements of the EMF.
CL3 C	**Minimise odour impacts during spoil management** The SMP referenced in EPR CL1 must include requirements and methods for odour management (in accordance with EPA Victoria requirements) during the excavation, stockpiling and transportation of contaminated material including: – Identifying the areas of contamination that may pose an odour risk – Monitoring of the excavated material for possible odour risk – Management measures to minimise odour.	**Construction** The Spoil Management Plan (SMP) referenced in EPR CL1 outlines control measures to eliminate or minimise odour if odorous spoil is encountered. This includes avoiding or minimising stockpiling of odorous materials, with direct removal and disposal being the primary objective. If stockpiling is required, odour mitigation measures will be implemented in accordance with the controls outlined in the SMP. The SMP has been verified by the IEA in compliance with the requirements of the EMF. The Project Communications and Community Engagement Team will work with potentially impacted residents and relevant councils if odour is anticipated or reported in accordance with this EPR.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
CL4 C	**Minimise risks from vapour and ground gas intrusion** Relevant North East Link sections must be designed and constructed to prevent ingress of vapours and gases associated with any construction that interfaces with landfill sites or contaminated areas. The SMP referenced in EPR CL1 must include requirements for assessment, monitoring and management of intrusive vapour including potentially toxic, flammable, or explosive conditions in enclosed spaces or other impacts on human health and the environment. The plan must address vapour risks associated with excavation of impacted soils, extraction of impacted groundwater, open excavations and stockpiles and gases associated with landfills. This must include, where relevant: – Securing of the excavation and stockpile area from the public and signage warning of open excavations – Monitoring of vapours and odours while excavations are open, and stockpiles remain onsite – Mitigation measures to prevent fugitive releases of vapours and gasses during construction.	**Construction** The nearest former landfill to Doncaster Park and Ride is located at Doncaster (Greythorn) Reserve. Investigations indicate that there is a low risk of off-site vapour migration from the former landfill site. The preparation of a Spoil Management Plan (SMP) as specified in EPR CL1 has considered the requirements under EPR CL4 and addressed applicable spoil management measures including vapour and gas management. The SMP has been verified by the IEA.
CL5 D C	**Manage chemicals, fuels and hazardous materials** The CEMP and OEMP must include requirements for management of chemicals, fuels and hazardous materials including: – minimising chemical and fuel storage on site and store hazardous materials and dangerous goods in accordance with the relevant guidelines and requirements – complying with the Victorian WorkCover Authority and Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids and with reference to EPA Victoria Publication 1834 Civil construction, building and demolition guide and 1698 Liquid Storage and Handling Guidelines – developing and implementing management measures for hazardous materials and dangerous substances, including: – Creating and maintaining a dangerous goods register – Disposing of any hazardous materials, including asbestos, in accordance with regulations and relevant guidelines – Implementing requirements for the installation of bunds and precautions to reduce the risk of spills – Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits.	**Design** The design is prepared to have avoided, where possible, chemical and fuel storages in locations that may impact on sensitive receivers and human health and the environment. **Construction** A Construction Environmental Management Plan (CEMP) has been prepared by the Project in accordance with this EPR and has been verified by the IEA in compliance with the requirements of the EMF. Waste and spoil will be managed in accordance with EPA and Worksafe Victoria legislation and regulations.
CL6 O	**Minimise contamination risks during operation** The OEMP must include requirements and methods for minimising contamination risks during operation and maintenance of North East Link including: – maintaining relevant controls and preventing impacts during operation from contaminated material, odour, vapour, and gas – maintaining controls implemented as part of North East Link to make any known areas of contamination or hazardous material that were exposed during construction (notably through former landfills) safe for the public and the environment – mitigating impacts during sub-surface works in any identified areas of contamination or hazardous materials, e.g., drilling and excavation – implementing contingency measures, where required, to address any potential contamination, odour, vapour or gas impacts or incidents – monitoring any potential mobilisation of contaminants towards ecological and recreational assets including the Yarra River and wetlands and must include a groundwater monitoring program, intervention trigger levels and mitigation actions.	**Operation** MRPV will prepare an Operational Environmental Management Plan (OEMP) to manage soil and groundwater conditions during operation.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
7. Flora and Fauna (FF) – *Environment Protection and Biodiversity Conservation Act 1999* – *Conservation, Forests and Lands Act 1987* – *Flora and Fauna Guarantee Act 1988* – *Planning and Environment Act 1987* – *Water Act 1989* – *Wildlife Act 1975* – State Environment Protection Policy (SEPP) Waters 2018 (Vic) – Environment Reference Standard (Water) – Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017		
FF1 C	**Avoid and minimise impacts on fauna and flora** The CEMP must include requirements and methods for avoiding, or where avoidance is not feasible minimising to the greatest extent reasonably possible, for: – managing fauna that may be displaced due to vegetation removal or encountered on site during construction works in compliance with the *Wildlife Act 1975* and in consultation with public land managers where relevant – complying with the *Fisheries Act 1995* – undertaking pre-clearing surveys and inspections to confirm the on-site location of fauna immediately prior to habitat removal or, where relevant, works on waterways, and to assist fauna to safety as necessary – prepare a Kangaroo Management Plan for the project interface with Simpson Barracks and for the M80 interchange in consultation with DELWP – contingency and reporting procedures for the event that a listed threatened species is identified in order to mitigate any potential for significant impacts on the listed threatened species – protection of all vegetation inside and adjacent to the Project area that is not required to be removed, provided that such measures should be limited to activities undertaken inside the Project boundary – surveys, inspections, and management actions must be undertaken by a qualified wildlife ecologist or aquatic ecologist with all necessary authorisations obtained prior to removal of fauna habitat. The CEMP must be prepared in consultation with relevant land managers. – A copy of the flora and fauna sub plan(s) of the approved CEMP must be provided to relevant land managers and each relevant municipal Council.	**Construction** The Project has prepared a Construction Environmental Management Plan (CEMP) that responds to the requirements that seeks to manage and minimise construction ecological impacts for relevant areas of the Project as noted in this EPR; and incorporates 'Avoid and Minimise' statements to be prepared for each stage of construction to justify removal of native vegetation and pre-clearance surveys undertaken prior to construction. A Flora and Fauna Management sub-plan has been prepared as part of the CEMP and will be provided to the relevant land managers and municipal councils as required. The CEMP has been verified by the IEA in compliance with the requirements of the EMF. Suitably qualified wildlife handlers will assess vegetation prior to removal to ensure fauna is identified and managed in accordance with the Wildlife Act.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
FF2 D C	**Minimise and offset native vegetation removal** Through detailed design, avoid, or where avoidance is not feasible, minimise to the greatest extent reasonably possible, the removal of native vegetation and fauna habitat and impacts on habitat connectivity, in particular in relation to *Environment Protection and Biodiversity Conservation Act 1999* (Cth) or *Flora and Fauna Guarantee Act 1988* listed threatened species. This must include minimising removal of Matted Flax Lily, the locally endemic Studley Park Gum, and the loss of potential foraging habitat for the Powerful Owl, Swift Parrot and Grey-headed Flying Fox. Key areas for minimisation efforts must include Simpson Barracks, Yarra Bend, Trinity Grammar wetlands, Banksia Parkland, River Gum Walk Creek Bend Reserve and the Koonung Creek valley. The CEMP must include requirements for protection of native vegetation and listed species, including establishment of no-go zones to protect vegetation and habitat to be retained and Tree Protection Plan(s) as required by EPR AR2. No-go zones must also be established for: – the Grey-headed Flying fox Campsite within the Yarra Bend Park – Bolin Bolin Billabong – the Plains Grassy Woodland community between Enterprise Drive and the M80 Ring Road in Bundoora – the portion of 49 Greenaway Street, Bulleen (former Drive-in) heavily vegetated with trees along the Yarra River – surface impacts in the Banyule Flats and Warringal Parklands and the Heide Museum of Modern Art. Every effort must be made to avoid ecological impacts in other locations that are known to provide high habitat value for significant fauna species. Where the removal of native vegetation is unavoidable the project must meet the offset requirements of the Guidelines for the removal, destruction or lopping of native vegetation, DELWP December 2017 except as otherwise agreed to by the Secretary to DELWP. Where appropriate for the landscape and project location, tree replacement (as required by EPR AR3) and landscaping is to use locally indigenous species (utilising seed collected from species within the project boundary where appropriate and practical), which are suited to the landscape profile and setting being revegetated and seek to maximise habitat value and connectivity for native fauna. Where practicable and appropriate for the landscape and project location, best practice measures must be applied to retain and reinstate topsoil to support growing conditions for native species. Where topsoil cannot be retained or reused for North East Link, alternative opportunities for reuse must be explored.	**Design** The Project will undertake an arboricultural and ecological survey prepared by suitably qualified professionals* to inform constructability and detailed design and ensure the removal of native vegetation and fauna habitat is minimised to the greatest extent practical and reasonable. * Suitably qualified professionals may include a project arborist and other specialists where required by EPRs in relation to ecological, habitat, heritage and/or cultural matters. **Construction** A Flora and Fauna Management sub-plan has been developed as part of the CEMP. It includes processes and procedures to minimise native vegetation removal and impacts on fauna during construction, as well as consideration of best practice measures to retain and reinstate topsoil to support growing conditions for native species. Retention and reinstatement of topsoil is consistent with the Sustainability Management Plan (SuMP) and Spoil Management Plan (SMP). The CEMP has been verified by the IEA in compliance with the requirements of the EMF.
FF3 C	**Avoid introduction or spread of weeds and pathogens** The CEMP must include measures to avoid the spread or introduction of weeds and pathogens during construction, including vehicle and equipment hygiene.	**Construction** A Construction Environmental Management Plan (CEMP) has been prepared, which includes requirements for managing weeds and pathogens. The CEMP has been verified by the IEA in compliance with the requirements of the EMF.
FF4 C	**Protect aquatic habitat** In consultation with public land managers and Melbourne Water where relevant, design, locate and construct structures to minimise short and long term adverse impacts on riparian, riverbed and aquatic habitat in waterways and wetlands, including billabongs. The CEMP must contain and require implementation of measures to minimise adverse impacts from construction activities on riparian, riverbed and aquatic habitat and aquatic fauna connectivity.	**Construction** A Flora and Fauna Management sub-plan as part of the Construction Environmental Management Plan (CEMP) is prepared and implemented, containing measures to minimise adverse impacts from construction activities on riparian, riverbed and aquatic Habitat (noting that Koonung Creek Corridor is located to the west, outside the area subject to this UDLP). Consultation will be carried out with public land managers and Melbourne Water as relevant and required.
FF5 C	**Obtain *Flora and Fauna Guarantee Act 1988* permits** Prior to commencement of relevant works, a permit(s) must be obtained to take and destroy flora species protected under the *Flora and Fauna Guarantee Act 1988*.	**Construction** From the initial investigation, no significant or sensitive flora and fauna are identified within the Project area subject to this UDLP. In accordance with the Construction Environmental Management Plan (CEMP) and relevant Worksite Environmental Management plans (WEMPs), and in consultation with the Department of Energy, Environment and Climate Action (DEECA), the Project will obtain any necessary approvals and permits prior to construction activities that may destroy flora species protected under the *Flora and Fauna Guarantee Act 1988*.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
FF6 C O	**Implement a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan** Prepare and implement a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan with no objection from the relevant water authorities.* The Groundwater Dependent Ecosystem Monitoring and Mitigation Plan must be informed by the groundwater modelling and groundwater monitoring required by EPR GW1 and EPR GW2, and must include (but not be limited to): – identification of Groundwater Dependent Ecosystems (GDEs) predicted to be impacted prior to relevant construction commencing, including Bolin Bolin Billabong if relevant – details of the monitoring procedures and program for each relevant GDEs including monitoring periods appropriate to each GDE – specific procedures to monitor groundwater levels at GDEs predicted to be impacted including monitoring as close as possible to the GDE (considering ecological and access constraints) and for aquatic GDEs monitoring the surface water levels and quality as appropriate, including Bolin Bolin Billabong. These procedures should include: – groundwater monitoring of the alluvium by specific monitoring bores as close as possible to billabongs must be undertaken before, during and after construction – monitoring of water levels and water quality in billabongs must be undertaken before, during and after construction. – estimation of water balance input and output volumes to and from billabongs must be undertaken before, during and after construction, based on analysis of the monitoring of water levels in the billabong and surrounding groundwater monitoring bores – identification of relevant monitoring and management programs by Melbourne Water or other authorities and how these are referenced in the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan – measures to mitigate monitored changes in water levels and quality that could impact the billabongs or other GDEs, which take into account the natural variability – where the survival of Groundwater Dependent Large Trees not requiring removal is predicted to be affected by groundwater drawdown during construction or operation based on groundwater modelling outputs, include measures to maintain the health of large trees – in relation to any trees unlikely to survive during operation as a consequence of groundwater drawdown, processes for offsets to be obtained in accordance with EPR FF2 – the process for review of the Plan, including how the groundwater modelling and monitoring under EPR GW1 and EPR GW2 will be considered and the GDE monitoring program and periods subsequently reviewed. * All reasonable endeavours must be made to reach a position of no objection, provided the stakeholder responds within a reasonable timeframe.	**Construction and operation** The need for a Groundwater Dependent Ecosystem Monitoring and Mitigation Plan is determined as part of the Groundwater Management Plan (GMP) (through which the risk is assessed, and a determination made as to whether this Plan is triggered by the Project with relevant procedural requirements outlined). The Project has prepared a Groundwater Management Plan, which has the objective to avoid or minimise adverse effects on groundwater and groundwater-related receptors, including groundwater dependent ecosystems. It is also noted that during the pre-construction works phase, development site-specific risk assessments for the management zones, a monitoring program will be developed into the Groundwater Management Plan as well as the site-specific Worksite Environment Management Plans and verified by the IEA (including the Groundwater Impact Assessment). The GMP has been verified by the IEA in compliance with the requirements of the EMF.
FF7 C O	**Implement a salvage and translocation plan for Matted Flax-lily** Where direct impacts on Matted Flax-lily occur, a salvage and translocation plan must be developed and implemented to the satisfaction of the Department of Environment, Land, Water and Planning and the Commonwealth Department of Environment and Energy, prior to the commencement of relevant works.	**Construction and operation** There are no Matted Flax-lily identified within the area subject to this UDLP. MRPV is responsible for implementation of the salvage and translocation plan for Matted Flax-lily in accordance with the *Environment Protection and Biodiversity Conservation Act (EPBC Act) 1999* approval conditions. The Project team will notify MRPV should any Matted Flax-lily be identified.
FF8	**Minimise intense noise and vibration impacts on Australian Grayling** The CEMP must include and require implementation of reasonable measures to avoid and mitigate intense noise and vibration impacts in or near the Yarra River (e.g., from activities such as pile driving and similar activities). This must include, to the extent practicable: – Selection of work methods to minimise noise and vibration – Avoiding activities that may generate intense noise and vibration and impact on the Australian Grayling during critical migration or breeding periods (March to June, September to November) as defined within the National Recovery Plan for the Australian Grayling Prototroctes maraena (Backhouse, G, Jackson, J & O'Connor, J 2008) – Management and monitoring of noise and vibration in accordance with the CNVMP (EPR NV4).	Not applicable – the Project area subject to this UDLP is not in or near the Yarra River (Birrarung).

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
FF9 D C	**Protect fauna habitat values in existing waterbodies that are modified for drainage purposes** Where existing waterbodies within or near the project boundary are to be modified for drainage purposes (for example Simpson's Lake, billabongs, and the southernmost waterbody in the Freeway golf course), the CEMP must include and require implementation of measures to minimise impacts on waterbirds and other fauna that use the wetlands including: – retain dead and alive standing trees and other vegetation in and surrounding the waterbody – as far as practicable, undertake activities outside the typical nesting period for waterbirds (typically September to January) – minimise the construction period to the extent practicable and refill the wetlands post construction if they have been drained – use of gross pollutant traps and water quality treatment measures to the requirements of the relevant waterway manager.	**Design** The park and ride adjoins part of the Koonung Creek Corridor to the west. The design of Koonung Creek Corridor and the surrounding landscaping is detailed in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP (approved September 2024). This UDLP has considered the Eastern Freeway Upgrades UDLP in the design. **Construction** A Construction Environmental Management Plan (CEMP) has been prepared with due considerations of potential impacts to fauna habitat in existing waterbodies (should it be deemed necessary). The CEMP has been verified by the IEA in compliance with the requirements of the EMF.
FF10	**Studley Park Gum Mitigation** To mitigate impacts on the Studley Park Gum, a Studley Park Gum Management Framework must be developed, and corresponding management plan must be developed and implemented in consultation with DELWP.	Not applicable – there are no Studley Park Gums identified within the area subject to this UDLP.
8. Ground Movement (GM)		
GM1 D C	**Design and construction to be informed by a geotechnical model and assessment** Develop and maintain geological and groundwater model(s) (as per EPR GW1) to inform tunnel and trench design and the construction techniques to be applied for the various geological and groundwater conditions. The model(s) are to: – identify sensitive receptors that may be impacted by ground movement – inform monitoring of ground movement and ground water levels prior to construction to identify pre-existing movement – inform tunnel design and the construction techniques to be applied for the various geological and groundwater conditions – assess potential drawdown and identify trigger levels for implementing additional mitigation measures to minimise potential primary consolidation settlement – assess potential ground movement from excavation and identify trigger levels for implementing additional mitigation measures to minimise potential ground movement.	**Design and construction** As this UDLP does not involve tunnelling or deep trenches, the Project is considered of low risk in respect to the ground movement requirements contained within this EPR. A Ground Movement Plan (GMP) has been developed, outlining a procedure for high risk activities that have the potential to cause ground movement should such activities be identified. The GMP includes mitigation measures, which will be appropriately implemented in response to the Ground Movement Risk Assessment. The GMP has been verified by the IEA in compliance with the requirements of the EMF.
GM2 D C	**Implement a Ground Movement Plan to manage ground movement impacts** Develop and implement a Ground Movement Plan(s). The Ground Movement Plan must be informed by EPR GM1 and EPR GW1 (predictive model) and: – address the location of structures/assets which may be susceptible to damage by ground movement – identify baseline ground movement monitoring prior to construction. A baseline monitoring report is to be compiled summarising the results of the baseline surveys undertaken and included in the plan – identify appropriate ground movement impact acceptability criteria – identify appropriate mitigation measures should the geotechnical model (EPR GM1), predictive groundwater model (EPR GW1), or subsequent monitoring program indicate acceptability criteria may not be met – establish ground movement monitoring requirements for the area surrounding proposed project works to measure ground movement consistency with the anticipated ground movement in the predictive model.	**Design and construction** A Ground Movement Plan (GMP) has been developed and will be implemented during the construction phase. This management plan will respond to and comply with all items as listed in this EPR. Based on the results of preliminary modelling and local geological conditions, it is unlikely that there will be any material impacts to buildings or structures in proximity to work areas within this UDLP. The GMP has been verified by the IEA in compliance with the requirements of the EMF.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
GM3 C	**Carry out Condition surveys for potentially affected property and infrastructure** Conduct condition survey(s) of property and infrastructure predicted to be affected by ground movement based on the results of the geological and groundwater model (EPR GM1) or, where a property owner reasonably expects to be potentially affected and has requested a pre-construction condition survey. Develop and maintain a database of pre-construction and as-built condition information for each potentially affected structure identified as being in an area susceptible to damage (see EPR GM1) or where a property owner has requested a pre-construction condition survey, specifically including: – a list of identified structures/assets which may be susceptible to damage resulting from ground movement resulting from project works – results of pre-construction condition surveys of structures, pavements, significant utilities, and parklands to establish baseline conditions and potential vulnerabilities – records of consultation with land owners in relation to the condition surveys – post-construction stage condition surveys conducted, where required, to ascertain if any damage has been caused as a result of project works – pre-and post-condition assessments must be proactively shared with the property owner – all stakeholder engagement activities must be undertaken in accordance with the Communications and Community Engagement Plan (see EPR SC2).	**Construction** Condition surveys are being undertaken for property and subsurface assets as part of the site investigation enabling works phase. As stated in the Ground Movement Plan, condition surveys are to be undertaken on assets and structures that have been identified to be at risk of damage from ground movement.
GM4 C	**Rectify damage to properties and assets impacted by ground movement or settlement** For properties and assets (including natural landscapes and parklands) damaged by ground movement caused by the project, undertake necessary repair works or other actions as agreed with the relevant property or asset owner (or land manager). For places listed on the Victorian Heritage Register, consultation with Heritage Victoria must be undertaken. Establish an independent mediation process for the assessment of claims for property and asset damage that cannot be agreed between the Project and the property or asset owner.	**Construction** It is unlikely that the Project scope will trigger any issues associated with ground movement. There are no places on the Victorian Heritage Register that will be impacted by Project civil works. Remedial options are included in the Ground Movement Plan (GMP) and will be implemented as required by relevant EPRs. The GMP has been verified by the IEA in compliance with the requirements of the EMF.

9. Groundwater (GW)

- *Water Act 1989*
- *Water Industry Regulations 2006 (Vic)*
- *Environment Protection Act 2017*
- *Environment Protection Regulations 2021*
- *State Environment Protection Policy (SEPP) Waters 2018*
- Environment Reference Standard (Land, Water)
- VicRoads Integrated Water Management Guidelines (June 2013)

EPA Publications:

- 1834, Civil construction, building and demolition guide (EPA Victoria November 2020)
- 275 (1991) Construction techniques for sediment pollution control
- 668 (2006) Hydrogeological assessment groundwater quality) guidelines
- 669 (2000) Groundwater Sampling Guidelines
- Ministerial Guidelines for Groundwater Licensing and the Protection of High Value Groundwater Dependent Ecosystems (2015)
- Australian groundwater modelling guidelines (Barnett et al. 2012)

GW1 D C	**Design and construction to be informed by a groundwater model** Develop a predictive and numerical groundwater model in consultation with EPA Victoria, informed by field investigations, to predict changes in groundwater levels and flow and quality, as they are affected by construction, and develop mitigation strategies, as per EPR GM1. The groundwater model must be of a standard that is at least comparable to the modelling documented within the Report on Additional Groundwater Modelling prepared by GHD and dated July 2019 and must be updated to take account of any changes to construction techniques or operational design features, and additional monitoring data from EPR GW2. The groundwater model must be developed with a process that involves independent review by the Independent Environmental Auditor consistent with the Australian Groundwater Modelling Guidelines (June 2012).	**Design and construction** A Groundwater Model has been developed with the understanding of the geology, hydrogeology, groundwater levels and groundwater quality. The model will inform design and construction for works intercepting groundwater, as well as the management and mitigation requirements. The Groundwater Model is included in the Groundwater Management Plan, which has been verified by the IEA.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
GW2 D C	**Monitor groundwater** Develop and implement a pre-construction, and construction groundwater monitoring program to: – establish baseline water level and quality conditions throughout the study area, including the delineation (to the extent practicable) of those portions of existing contaminant plume(s) that may be impacted by the project – calibrate the predictive model prior to commencement of construction, manage construction activities, and verify the model predictions – assess the adequacy of proposed design and construction methods, and where required, identify, and implement any additional measures required to mitigate impacts from changes in groundwater levels, flow, and quality. A post-construction groundwater monitoring program must be developed and implemented to: – confirm the acceptability of resultant water quality and water level recovery (and potential mounding) as predicted by the numerical groundwater model. Acceptability is to be assessed with consideration to the Groundwater Dependent Ecosystem Monitoring and Mitigation Plan (as required by EPR FF6) and other identified environmental values of groundwater – confirm the effectiveness of applied measures as identified in the Groundwater Management Plan (refer EPR GW4) and if required, identify and implement contingency measures to restore groundwater to an acceptable level. The duration of post-construction monitoring must be a minimum of two years or until acceptable restoration of groundwater and a relatively stable hydrogeological regime, taking into account prevailing climatic conditions and natural variability, has been confirmed by the Independent Environmental Auditor, in consultation with EPA Victoria and Melbourne Water. The pre-construction, construction and post-construction monitoring program(s) must be developed in consultation with EPA Victoria and Melbourne Water and be consistent with EPA Victoria Publication 668 Hydrogeological assessment groundwater quality guidelines, EPA Victoria Publication 669 Groundwater Sampling Guidelines, and the State Environment Protection Policy (Waters).	**Design** The design has adopted a staged approach to managing groundwater monitoring as required by this EPR. The approach includes development of an initial monitoring program to support design. The Project has established the baseline of standing water levels and chemical and physiochemical conditions of the groundwater. The Project will continue collecting groundwater data to further inform design and construction mitigation requirements and for refinement of the Groundwater Model. The standing groundwater levels across the area as identified indicates that there will be minimal interaction with, and impacts on, the groundwater. **Construction** The construction phase will be informed by site-specific risk assessments for groundwater management zones, and a groundwater monitoring strategy will be implemented. A Groundwater Monitoring Plan that outlines this strategy has been developed in consultation with the EPA and Melbourne Water and verified by the IEA in compliance with the requirements of the EMF.
GW3	**Minimise changes to groundwater levels through tunnel and trench drainage design and construction methods** Design long term tunnel and trench drainage and adopt construction methods which minimise changes to groundwater levels during construction and operation to manage, mitigate and/or minimise to the extent practicable: – Requirements for groundwater management and disposal – Mobilisation of contaminated groundwater – Dewatering and potential impacts of acid sulfate soils, including both unconsolidated sediments and lithified sedimentary rock – Potential impacts on waterways and potential groundwater dependent ecosystems, including terrestrial ecosystems – Any other adverse impacts of groundwater level changes such as subsidence. Design and implement engineering control measures and/or ground treatment to limit to the extent practicable groundwater inflow and groundwater drawdown during excavation, construction and operation of tunnels and trenches, cross passages and subsurface excavations. The Groundwater Management Plan (as required by EPR GW4) must contain measures and/or controls to minimise groundwater inflow during construction to excavations and groundwater drawdown, including contingency measures that should monitor and indicate adverse impacts that are occurring. These must include measures to: – minimise to the extent practicable reduction or loss of groundwater discharge to waterways or loss of water availability for terrestrial ecosystems – manage, mitigate and minimise the oxidation of acid sulfate soil materials and acidification of groundwater – manage, mitigate and minimise any movement of contamination that is identified – manage, mitigate and minimise impacts on environmental values and risk of vapour intrusion – ensure that groundwater seepage is collected, treated, and disposed during construction in accordance with the *Environment Protection Act 2017* waste management hierarchy and EPA Victoria requirements. Obtain a trade waste agreement from the relevant water authority where disposal to sewer is required or approval from EPA and the relevant water authority (as required) if discharge= to waterways is determined to be appropriate.	Not applicable – as this UDLP does not include any road tunnels, this EPR for tunnel and trench drainage design is not applicable.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
GW4 D C	**Implement a Groundwater Management Plan to Protect groundwater quality and manage groundwater interception** A Groundwater Management Plan must be developed in consultation with EPA Victoria and Melbourne Water and implemented to protect groundwater quality and manage interception of groundwater including documenting the measures required to achieve EPR GW2 and EPR GW3. The Groundwater Management Plan must be informed by the groundwater modelling required by EPR GW1 and updated where required in response to modelling results, new information resulting from the monitoring programs required by GW2 and assessment of the adequacy or effectiveness of controls. The Groundwater Management Plan must include requirements and construction methods to protect groundwater quality including where appropriate, but not limited to: – Selection and use of sealing products, caulking products, lubricating products and chemical grouts during construction that will not diminish the groundwater quality – Selection and use of fluids for artificial recharge activities that will not diminish the groundwater quality – Requirements to ensure compatibility of construction material with groundwater quality to provide long term durability for infrastructure design life – Design and development of drainage infrastructure that minimises clogging and maintenance risks from dissolved constituents in groundwater precipitating out of solution – Measures to assess, remove and dispose of contaminated groundwater and impacted soils associated with excavation and construction – Reinjection borefields for hydraulic control of drawdowns (or contaminated groundwater plumes) – Remedial grouting. The Groundwater Management Plan must include requirements and methods for management of groundwater interception during construction including where appropriate, but not limited to: – identification, treatment, disposal and handling of contaminated seepage water and/or slurries including vapours in accordance with relevant legislation and guidelines – assessment of barrier/damming effects – subsidence management – dewatering and potential impacts on acid sulfate soils, including both unconsolidated sediments and lithified sedimentary rock – protection of waterways and potential groundwater dependent ecosystems – management of unexpected contaminated groundwater e.g., using treatments, hydraulic controls, grouting and exclusion methods – management of possible impact to groundwater monitoring and management by third parties of existing contamination plumes – contingency actions when interventions are required. The Groundwater Management Plan must also include a review to confirm the status of potential use of extraction bores within the estimated construction drawdown area. Where required, measures must be developed and implemented, to the satisfaction of Southern Rural Water, to maintain water supply to identified, impacted groundwater users.	**Design** The design has considered, and will address through detailed design, any groundwater potential impacts and suitable mitigation outcomes. **Construction** A Groundwater Management Plan (GMP) has been developed in consultation with the EPA and Melbourne Water and implemented to protect groundwater quality and manage interception of groundwater, including documenting the measures required to achieve EPR GW2 and GW3. The GMP has been verified by the IEA in compliance with the requirements of the EMF.
GW5 O	**Manage groundwater during operation** Prepare as part of the OEMP and implement measures for management, monitoring, reuse where possible and disposal of groundwater inflows during operation that comply with relevant legislation and guidelines (and include provisions of EPR FF6 where relevant), including but not limited to: – State Environmental Protection Policy (Waters) – Environment Reference Standard (Land) – Environment Protection Regulations 2021 – *Water Act 1989* and Water Industry Regulations 2006 – *Occupational Health and Safety Act 2004* and Occupational Health and Safety Regulations 2017. The OEMP must include contingency measures and emergency response plans if unexpected groundwater contamination is encountered and requires disposal. A trade waste agreement from the relevant water authority must be obtained in accordance with regulatory requirements, where disposal to sewer is proposed. Approval from EPA and the relevant water authority (as required) must be obtained in accordance with regulatory requirements, where discharge to waterways is proposed.	**Operation** MRPV will prepare an Operational Environmental Management Plan (OEMP) to manage groundwater during operation.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
10. Historical Heritage (HH) – *Heritage Act 2017* – Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage Victoria 2014		
HH1 D C	**Design and construct to minimise impacts on heritage** – Undertake detailed design of the permanent and temporary works to minimise impacts to the greatest extent practicable on the cultural heritage values of heritage places in consultation with Heritage Victoria and/or local councils (as applicable). – Prior to commencement of works with capacity to affect heritage places, structures or features, directly or indirectly, develop and implement in consultation with the relevant heritage authority: – Physical protection measures for potentially affected heritage places, structures or features as appropriate – Where required, a methodology for any required dismantling, storage or reinstatement of heritage fabric (with reference to the ICOMOS Burra Charter 2013) and works to ensure an appropriate setting if relocation is required.	**Design** One heritage tree, an English Oak, scientifically described as Quercus robur and located within the Doncaster Road nature setback, is protected under a Heritage Overlay – Schedule 42 (HO42) of the Manningham Planning Scheme. Appropriate setbacks are provided in this UDLP to ensure minimal impacts on the tree as well as the heritage place protected by HO42. **Construction** An arboricultural assessment report will be carried out and completed by a suitably qualified arborist in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Site, prior to construction. The arboricultural assessment report will consider the physical setting of the heritage place as identified under HO42 and identify mitigation strategies including physical measures appropriate to the heritage place in accordance with relevant Australian standards during the construction phase. All protection measures will be carried out by a qualified arborist prior to construction and monitored during construction.
HH2 C	**Implement an Archaeological Management Plan to avoid and minimise impacts on historic archaeological sites and values** Develop and implement an Archaeological Management Plan in consultation with Heritage Victoria detailing measures to avoid, minimise, mitigate and manage disturbance of archaeological sites and values affected by the project. Undertake investigations in accordance with the Guidelines for Investigating Historical Archaeological Artefacts and Sites, Heritage Victoria 2015 and to the satisfaction of the Executive Director, Heritage Victoria. The Archaeological Management Plan must include: – Requirements for background historical research, excavation methodology, research design, reporting and artefact management, artefact conservation, and analysis – Protocols for managing previously unidentified historical archaeological sites discovered during the works.	**Construction** The Project has a contingency plan in place as part of the Construction Environmental Management Plan (CEMP), as there are no identified Victorian Heritage Inventory (VHI) sites within the Project area subject to this UDLP.
HH3 C	**Monitor condition of heritage sites** Undertake pre-construction and post-construction condition survey(s) in accordance with EPR GM3 for heritage places at risk of impact from settlement and structural integrity disturbance as a result of the project. Measures to manage and monitor potential vibration impacts on heritage places during construction must be implemented in accordance with the Construction Noise and Vibration Management Plan required by EPR NV4 and Groundwater Management Plan required by EPR GW4. Report the results of monitoring for heritage places to the Executive Director, Heritage Victoria and take remedial action, if required, to the satisfaction of the Executive Director, Heritage Victoria.	**Construction** The Project has a contingency plan in place as part of the Construction Environmental Management Plan (CEMP), as there are no identified Victorian Heritage Inventory (VHI) sites within the Project area subject to this UDLP.
HH4 C	**Undertake archival photographic recording** Prior to commencement of relevant works, undertake archival photographic recording of all heritage places (including trees) and their settings, demolished or modified by the works in accordance with Heritage Victoria's specification for the archival photographic recording of heritage places or alternative applicable Heritage Victoria guidelines as updated, to the satisfaction of the Executive Director, Heritage Victoria.	**Construction** The Project has a contingency plan in place as part of the Construction Environmental Management Plan (CEMP), as there are no identified Victorian Heritage Inventory (VHI) sites within the Project area subject to this UDLP. In an unlikely event where VHI sites may be identified as potentially impacted by this UDLP, the Project will undertake archival photographic recording in accordance with Heritage Victoria guidelines.
HH5 C	**Minimise impacts on heritage trees** Comply with any requirements of Heritage Victoria if the trees that are to be impacted by the project are listed on the Victorian Heritage Register.	**Construction** The Project has a contingency plan in place as part of the Construction Environmental Management Plan (CEMP), as there are no identified Victorian Heritage Inventory (VHI) sites within the Project area subject to this UDLP.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
11. Land Use Planning (LP) *– Planning and Environment Act 1987*		

LP1
D C
	Minimise land use impacts
	The project must be designed and constructed to:
	– minimise the construction and design footprint and avoid, or, where avoidance is not feasible, minimise to the greatest extent reasonably possible, any temporary and permanent impacts on the following land uses:
	  – parks and reserves including passive and active open space and pathways
	  – significant landscapes including those around the Yarra River
	  – other sensitive land uses such as educational facilities
	  – sport, recreational and community facilities
	  – residential properties
	  – commercial and industrial sites
	  – sites of identified cultural or social value including Heide Museum of Modern Art and Bulleen Art and Garden.
	– consolidate or minimise the fragmentation of, and provide access to, residual land parcels to support future viable land use to the extent practicable.
		Design
		The Project has minimised land use impacts by way of reducing the design footprint at all interfaces to the extent feasible, practical, and reasonable. The design of this UDLP is accommodated within the Project Boundary including all above-ground permanent buildings and works that are fully contained with the existing park and ride site; as such, the design does not require acquisition of new land parcels.
		Key aspects are outlined below.
		– **Parks and reserves**
		The park and ride adjoins Koonung Creek Corridor. The proposed walking and cycling paths within the park and ride; together with the proposed landscaping design, form natural connections with the Corridor. New buildings and structures within the park and ride are appropriately setback from the interface with Koonung Creek Corridor, which in turn minimises unreasonable built form impacts, protects appropriate solar access and creates opportunities for a landscaped transition between the park and ride and adjoining open space.
		– **Residential properties**
		The park and ride fronts Hender Street to the east, which encompasses single to double storey residential properties. The multi-level car park is sited to ensure visual impacts from the overall massing onto this residential interface are minimised. Landscaping is also incorporated along the Hender Street setback providing screening of new buildings and structures. With regard to residential properties to the north (beyond Doncaster Road), the physical distance (approximately 60m to the nearest residential properties at 413 Doncaster Road, Doncaster) is considered sufficient to adequately mitigate visual impacts.
		The Project is also sensitively sited to avoid any overshadowing or unreasonable overlooking onto nearby residential properties.
		– **Sporting, recreational and community facilities**
		No sporting, recreational or community facilities are directly abutting the park and ride (noting that the Scout Hall and an existing childcare centre are located on the opposite side of Doncaster Road, approximately 60m from the site).
		– **Land parcels**
		The design makes efficient use of the allocated land parcels with adequate access to adjacent land, which in turn avoids creation of any residual or fragmented land parcels.
		Construction
		The construction footprint will be minimised (where reasonable and feasible) to the area subject to this UDLP.

LP2 D	**Minimise impacts from location of new services and utilities** New above ground services and utility infrastructure are to be located in a way that minimises impacts to existing residential areas, public open space and recreational facilities. This must include considering options to co-locate infrastructure where practicable.	**Design** New above-ground service and utility infrastructure is designed into the multi-level car park and the passenger services building to minimise visual impacts onto public spaces and residential properties in the vicinity. Where relocation is unavoidable, further civil coordination will be undertaken in the detailed design phase to ensure potential impacts are resolved or duly mitigated. A substation is to be installed adjacent to the northern end of the drop and go zone. It is designed to be modest in scale and co-located with existing or new road infrastructure to minimise its visibility. The simple built form in structure and material palette ensures that the substation will have minimal impacts on the surrounding context.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
LP3 D	**Minimise inconsistency with strategic land use plans** Design and development of the project must have regard to relevant approved urban design and land use strategies, plans and frameworks including the Yarra Strategic Plan and Draft Yarra River Bulleen Precinct Land Use Framework Plan when approved or any approved superseding document. Consultation must occur with land managers and authorities responsible for the implementation of the relevant strategic land use plans and policies. in preparing Urban Design Framework Plans required by the Incorporated Document. An integrated approach must be adopted to the Manningham Interchange in consultation with Manningham City Council which supports viable future land uses (such as commercial and industrial) and includes maximising the developable area at surface level to the extent practicable in addition to requirements for the Urban Design Framework Plan for this interchange to be approved under the Incorporated Document as part of the Urban Design Strategy. The project must avoid, or where avoidance is not feasible, minimise to the greatest extent reasonably possible, impacts on residential, commercial, industrial, open space, culturally valued and community facility land uses from project development and operations which would be inconsistent with approved strategic land use policies.	**Design** EPR LP3 notes two key strategic land use plans, including Yarra Strategic Plan and Draft Yarra River Bulleen Precinct Land Use Framework Plan. The park and ride at Doncaster Road falls outside the area subject to these two strategic land use plans. This EPR also gives considerations to the Urban Design Framework Plans in the UDS (which encompass the Manningham / Bulleen Road and Bulleen Road / Eastern Freeway Interchanges) and specifically notes the 'Manningham Interchange'. The park and ride at Doncaster Road falls outside the area subject to the Manningham Interchange. Notwithstanding the above, an integrated approach has been adopted in consultation with Manningham City Council to ensure this UDLP is consistent with relevant policy provisions. Considerations are also given to strategic land use plans at a municipal level into the preparation of this UDLP are outlined below: Manningham Open Space Strategy (2014) The Strategy identifies the site in Precinct 5 (Ruffey) with no specific reference or recommendations to the park and ride site. The Koonung Creek Linear Park (located to the immediate southwest and described as 'Koonung Creek Corridor' in this project) is considered one of the key open spaces where provision of a community garden within the Linear Park is recommended. An overall improvement to the Koonung Linear Park is articulated in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP; further, new walking and cycling paths within the park and ride are designed with connections to the shared use path within the Koonung Linear Park and will be delivered through this Project. Overall, the Project is aligned with the intent of Council's Open Space Strategy. Koonung Creek Linear Park Management Plan (2011) Areas F1 and F4 shown on Map F in this strategic document are relevant to this UDLP. An overall improvement is achieved through upgrading road works illustrated in the Eastern Freeway Upgrades – Burke Road to Tram Road UDLP. New walking and cycling paths (including shared use paths) in this UDLP will further support active transportation and enhance the quality and accessibility of Koonung Creek Linear Park. Transport Action Plan (2021) The Plan notes that 'Council will strongly advocate for the Doncaster Park & Ride to be further developed to provide a Transited Oriented Development (TOD)', which will support public transport services and enhanced land use (mixed use) development opportunities. This UDLP is largely consistent with the scope of works specified in the Incorporated Document (December 2019, amended September 2023), the NEL UDS and EPRs, which supports a transport hub that promotes public transport services and advocates high quality open spaces. The positive changes to the local transport network will in turn encourage and support increased developments in the surrounding context, particularly on Doncaster Road where mixed use developments of higher density are contemplated by strategy planning provisions. In terms of commercial opportunities, this UDLP does not preclude the possibility of future commercial activities, which may be achieved through internal layout reconfigurations within the park and ride (subject to consultation and agreement with relevant land and asset owners).

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
LP4 D	**Minimise overshadowing from noise walls and elevated structures and overlooking from elevated structures** Overshadowing from elevated structures and noise walls to residential properties (including existing solar panels), community facilities, open spaces, waterways and valuable natural habitats must be minimised through detailed design. Consultation must occur with directly affected property owners and occupiers to inform formulation of parameters for these structures including location, design and materials. Unless with the consent of an affected landowner or in exceptional circumstances, the extent of additional overshadowing of residential properties from non-transparent structures: Should be no greater than the existing overshadowing of secluded private open spaces associated with residential properties cast by existing structures including existing noise walls and other structures (e.g., elevated walkways) between the hours of 9.00 am to 3.00 pm as measured on September 22. If additional overshadowing occurs it must not be greater than 50% of the secluded private open space or 40 sqm, whichever is the greater, between the hours of 9.00 am to 3.00 pm as measured on September 22. Overlooking from elevated structures, especially within a distance of 15 metres to secluded open space and habitable room windows of residential properties, must be minimised through detailed design as far practicable. Consultation must occur with directly affected property owners and occupiers to inform formulation of parameters, designs, and materials for these structures.	**Design** <u>Overshadowing</u> A detailed assessment and review of potential overshadowing has been undertaken through the development of this UDLP to ensure that the design of noise walls and above-ground buildings avoids or minimises overshadowing to residential properties, community facilities, open spaces, and nature areas as much as practicable in line with this requirement. Due to the orientation and setback of the proposed buildings, the Project will not result in any additional shadow onto secluded private open spaces of residential properties in the surrounding context between the hours of 9.00am to 3.00pm on 22 September as specified in this EPR. Refer to Attachment 4: Urban Design Overshadowing Assessment for details. <u>Overlooking</u> – Multi-level car park The multi-level car park interfaces with residential properties on Hender Street and part of Doncaster Road. As the nearest residential properties on Doncaster Road are approximately 60m from the building, the Project will not result in any unreasonable overlooking. With regard to residential properties on Hender Street, an overlooking assessment has been carried out and demonstrated compliance against the requirements specified under this EPR. The overlooking assessment confirms that direct views (measured within a 45 degree angle and from a standard eye level of 1.7m on each level of the multi-level car park) will be cast onto the Hender Street roadway. As such, the design is sufficiently distanced from residential properties and will not result in any unreasonable overlooking, especially within a distance of 15 metres as specified in this EPR, to existing secluded private open spaces and/or habitable room windows (noting that the shortest distance between the multi-level car park and existing habitable room windows exceeds 30 metres). Refer to the plan (NEL-STH-NSA-5700-BAR-DRG-U4000) in Attachment 1: Architecture and Urban Design for details. – Passenger services building Openings are incorporated to the Parkiteer, forming part of the Hender Street elevation. However, the building (including the openings) is at ground level and distanced more than 15 metres from the habitable room windows and existing secluded private open spaces to the east. Overlooking into secluded private open spaces and existing habitable room windows, therefore, is minimised.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
LP5	**Prepare and implement a Public Open Space Relocation and Replacement Plan** Prior to operation of the Project, the Proponent in conjunction with the State and in consultation with relevant stakeholders including DELWP, Parks Victoria, Melbourne Water and Birrarung Council, must develop and implement a Public Open Space Relocation and Replacement Plan to provide for replacement of public open space permanently required for the project, where not already being replaced in accordance with EPR SC5. The plan should reflect an underlying philosophy of replacement on a like-for-like basis. The Public Open Space Relocation and Replacement Plan must set out the process for selecting and acquiring replacement public open space, including but not limited to: – identifying public open space to be permanently required for the project, including public land used for parkland, reserves, passive open space, and active open space including recreation facilities (where not addressed by EPR SC5) – a process for the acquisition of replacement land, including within the Public Acquisition Overlay or land in key strategic locations – assessment of the suitability of potential replacement land by reference to: – the location and characteristics of the land – relevant approved strategic land use plans and policies, including those within planning schemes – existing and proposed public purpose reservations – the Yarra Strategic Plan (when released), reference to the Yarra River Bulleen Land Use Framework Plan (when released). – an approach for the preparation of functional concept plans for the future use of each replacement site, where the plans will be prepared with input from relevant councils, land managers, public asset owners and stakeholders (in the case of formal sporting uses being replaced) – a program identifying the timing and scope of works to be undertaken to implement the functional concept plans and provide appropriate or upgraded facilities at the replacement sites – in addition, where public open space is to be temporarily lost during construction, residual public open space should be enhanced where practical to minimise and mitigate land use impacts. Note: Land in a Road Zone is excluded from the replacement calculation and land on a land bridge that is part of the access network will not count as replacement public open space.	As required by EPR LP5, prior to operation of the Project, MRPV will develop and implement the Public Open Space Relocation and Replacement Plan in advance of the operation of the North East Link Project.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
12. Landscape and Visual (LV) – *Planning and Environment Act 1987* – Australian Standards AS 4282-1997 Control of the obtrusive effects of outdoor lighting		
LV1 D	**Design to be in accordance with the Urban Design Strategy** Urban Design and Landscape Plans must be developed and implemented for permanent above-ground buildings or structures (excluding preparatory buildings and works) in accordance with the North East Link Project – Incorporated Document. The design response must be in accordance with the North East Link Urban Design Strategy and, to the extent practicable: – Avoid or minimise landscape and visual, overlooking, and shading (with reference to EPR LP4) impacts in extent, duration and intensity – Maximise opportunities for enhancement of public and private receptors including public amenity, open space and facilities, and heritage places by the project including by facilitating value add/capture opportunities – Respond to opportunities and constraints identified in an Urban Design Framework Plan forming part of the approved Urban Design Strategy for key interchanges, activity centres and interfaces identified in the Incorporated Document (where applicable) – Identify residential areas with the potential for high visual impact and develop targeted design options to avoid or minimise amenity impacts on these areas, including as a result of the proposed noise walls – Detailed design to ensure landmark elements balance visual impact with minimal overshadowing.	**Design** The Project has been prepared in accordance with the UDS; and consistency with the UDS is demonstrated in the compliance table in Section 5 of this UDLP. Specifically in response to LV1, the Project provides an appropriate design response in the following ways: – It complies with overshadowing and overlooking requirements that are addressed through EPR LP4 and will not result in any unreasonable amenity impacts on nearby residential properties (in particular with regard to Hender Street) and other sensitive land uses in the surrounds (such as a child care centre to the north of Doncaster Road, Koonung Creek Corridor to the west, and a small grassed area to the south) – It identifies and makes good use of opportunities to enhance public amenity, open space and facilities as part of the design response. For instance, the buildings, the forecourt and paths along the perimeter of the park and ride are sensibly designed to provide an enhanced public transport hub with an open space, while also creating a pleasant journey experience enabling seamless connections with the freeway, local roads and existing facilities and amenities in the surrounds – It provides a balanced outcome that is consistent with the EES, UDS and EPRs as a transport hub, but also serves the community as an aesthetically pleasing open space. Key examples are: – the buildings are adequately setback or moderately scaled thereby minimising unreasonable visual and amenity impacts when viewed from the sensitive interfaces to the west and the east where the Koonung Creek Corridor and residential properties are located respectively – the provision of a forecourt provides the opportunity for commuters to pause and enjoy the benefits from open space – the walking and cycling paths within the park and ride are connected to shared use paths forming part of the Koonung Creek Trail to the west and local roads, thereby enhancing an integrated network advocating active transport whilst improving safety for pedestrians and cyclists – Beyond the immediate interfaces, the Project has considered other sensitive land uses in the surrounds, including the Scout Hall and an existing child care centre. However, as the Scout Hall and the child care centre are located on the north side of Doncaster Road, the physical distance of approximately 60m from the park and ride will adequately mitigate any visual and amenity impacts.
LV2 C	**Minimise landscape and visual impacts during construction** Temporary and construction works must be located, designed, and carried out in accordance with a Construction Compound Plan to be approved under the Incorporated Document and the Urban Design Strategy guidance on using design to help manage construction impacts. Areas disturbed by temporary and construction works must be reinstated with no objection from the relevant land manager, waterway manager and any relevant public asset owners. * Design of acoustic sheds used during construction, to contribute to the image and identity of the area. Develop and implement measures to use temporary landscaping, features or structures (including viewing portals) during construction to minimise adverse visual impact of project works and provide visual appeal. Temporary landscape treatments, features or screening must be reused across the project, where appropriate. Implement landscaping enhancement including early tree planting (with reference to EPR AR3 as part of permanent works) prior to construction works commencing, where practicable. * All reasonable endeavours must be made to reach a position of no-objection, provided the relevant stakeholder responds within a reasonable timeframe.	**Construction** A Construction Compound Plan (CCP) helps manage construction impacts. The design for a CCP seeks to minimise adverse visual impacts and provide visual appeal where possible. It also identifies where temporary and construction works will be located and describes the proposed construction activities, hours of operation, potential environment and community impacts including mitigation and management controls associated with the construction and operation of the relevant construction compound in accordance with the requirements in the NELP Incorporated Document (December 2019, amended September 2023) and under relevant EPRs. The Doncaster Park and Ride Construction Compound Plan was approved on 19 March 2024 and amened on 19 March 2024. Any temporary and construction works will be located, designed, and carried out in accordance with the approved Construction Compound Plan (including subsequent amendments as approved). Any future Construction Compound plans (CCPs) or amendments to CCPs will be subject to future ministerial approval. For the location of the Doncaster Park and Ride Construction Compound, refer to the plan (NEL-STH-NSA-5700-ULS-DRG-3001) in Attachment 2: Landscape Design.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
LV3 D C	**Minimise construction lighting impacts** Develop and implement effective measures to minimise light spillage and glare during construction including from construction vehicles and equipment to protect the amenity of adjacent neighbourhoods, parks, community facilities and any known significant native fauna habitat to the extent practicable. Such measures must have regard to the content of guidelines or Australian Standards pertaining to outdoor lighting and best available technology and best practice.	**Design and construction** Design of temporary lighting will consider impacts on sensitive residential receivers and light sensitive native fauna and will include measures to minimise light spill impacts. Lighting design will consider Australian Standards AS4282-1997 Control of the obtrusive effects of outdoor lighting. Construction lighting will be managed in accordance with the Construction Environmental Management Plan (CEMP), which has been verified by the IEA in compliance with the requirements of the EMF.
LV4 D	**Minimise operation lighting impacts and maximise operational lighting benefits for open space** Design and install lighting used during operation of permanent structures and resulting from the orientation of all permanent structures (including from vehicle headlights) in accordance with relevant standards, including but not limited to relevant guidelines and Australian Standards pertaining to outdoor lighting and the protection of beneficial uses. Design and install lighting to minimise light spill and disturbance to significant fauna sites including the Grey-headed Flying fox colony at Yarra Bend, wetlands and waterways immediately adjacent to roadways. Subject to consultation with and the views of future asset owners, provide sensitively designed lighting to shared user paths and open spaces to provide improved safety for users without causing unreasonable effects on residential amenity or environmental and landscape values. Designs must consider Crime Prevention Through Environmental Design, including effects on safe movements of pedestrians and cyclists; including within undercrofts, bicycle and pedestrian tunnels and open spaces areas.	**Design** Lighting design seeks to minimise lighting impacts on the surrounding environment, which is achieved by using appropriate level of illumination and/or lighting frequencies to mitigate illumination effects. Light spill assessments will be undertaken as part of design development with measures to minimise unreasonable operational lighting impacts investigated and implemented as required under this EPR. Crime Prevention Through Environment Design (CPTED) principles will be considered throughout the lighting design to ensure that appropriate lighting levels are based on lighting modelling and will be applied to respective areas through consultation with councils, relevant stakeholders, and future asset owners. No known significant fauna sites and/or sensitive fauna are located within the vicinity of the park and ride site. The final design and location of lighting will be resolved as part of design development, in consultation with the future land and asset owner and in accordance with relevant operational requirements.

D Design C Construction O Operation

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
13. Noise and Vibration (NV) – *Environment Protection Act 2017* – Environment Protection Regulations 2021 – Environment Reference Standard (Ambient Sound) – Australian Standards AS 2187.2, Explosives – Storage and use – Use of explosives – Australian Standard 2436 2010 Guide to Noise Control on Construction, Maintenance and Demolition Site (reconfirmed 2016) – VicRoads Road Design Note RDN 6-1 Interpretation and application of VicRoads traffic noise reduction policy 2005 – VicRoads Traffic Noise Measurement Requirements for Acoustic Consultants – September 2011 EPA Publications: – EPA Publication 1834, Civil construction, building and demolition guide (EPA Victoria November 2020) – 1826.4 (2021) Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues – New South Wales Interim Construction Noise Guideline (ICNG) (2009) – New South Wales Roads and Maritime Services Construction Noise and Vibration Guideline (CNVG) (2016) – New South Wales Roads and Maritime Services Noise Mitigation Guideline (2015) – ASHRAE Chapter 48 Sound and Vibration Control Standards – German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) – British Standard BS6472- 1:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting.	
NV1	**Achieve traffic noise objectives** Design, construct and maintain the works to meet the following traffic noise objectives. (a) Traffic noise from North East Link Project Roads* must be no greater than: – 63 dBA (L10,18hr) measured between 6 am and midnight at Category A buildings** – 63 dBA (L10, 12hr) measured between 6 am and 6 pm at Category B buildings**. (b) For Category A and Category B buildings on non-Project Roads which: – Abut the North East link project roads, or directly intersect with North East Link project roads, and – where total traffic noise for the design year and with Project exceeds the thresholds listed in paragraph (a). The combined noise from North East Link Project Roads and non-Project roads must not be more than 2 dBA higher than the predicted traffic noise level under the design year 'do nothing' scenario. Intersecting non-Project Roads must be modelled for a distance of 100 m from the intersection with North East Link Project Roads or to the first traffic intersection (whichever is the lesser). (c) Night-time traffic noise for category A buildings must meet the WHO 2009 interim target of LAeq night 55dB when adjusted to Australian conditions as per the EES Technical Appendix C i.e., be no greater than 58dB LAeq 8hr (including façade correction). The 8hour time period is to be between 2200-0600hrs as consistent with the Better Apartment Design Standards (d) The noise criteria in paragraphs (a), (b), and (c) above and (e) are to apply to the lowest habitable level of Category A buildings and Category B buildings at both the year of opening and 20 years thereafter. Traffic noise mitigation measures must be maintained throughout this period. For the purposes of this EPR, Category A buildings and Category B buildings to be considered are those that are either existing or known to have planning approval prior to exhibition of the North East Link Environment Effects Statement (e) Where external traffic noise cannot be mitigated through project design solutions to meet the criteria outlined in paragraphs (a), (b) and (c), at-property treatments will be required to be designed and constructed so that internal noise levels achieve the following: – 35dBA for bedrooms assessed as an LAeq, 8 h from 10pm -6am – 40dBA for living areas assessed as LAeq, 16h from 6am-10pm. At-property treatments would be undertaken in accordance with section 7.3 of the NSW Road and Maritime Services document 'Noise Mitigation Guidelines 2015 – Roads and Maritime Services', and in consultation with the owner of the relevant building. In circumstances where at-property treatments are proposed, the Independent Environmental Auditor must review the project design solutions to confirm that the criteria outlined in paragraphs (a), (b) and (c), could not be achieved by the adoption of reasonable and feasible detailed design measures. * Project Roads are defined to be the M80 Ring Road (east of Plenty Road), the Greensborough Bypass (west of the Plenty River bridge and up to the M80 interchange with North East Link), the upgrade of the Eastern Freeway (between Hoddle Street and Springvale Road) and the new North East Link freeway (connecting the M80 Ring Road to the Eastern Freeway), including all access ramps. . ** Category A Buildings and Category B Buildings means: – Category A Buildings – Residential dwellings, aged persons homes, hospitals, motels, caravan parks and other buildings of a residential nature – Category B Buildings – Schools (including buildings within the Carey Sports Complex), kindergartens, libraries and other noise-sensitive community buildings. . Note: If a resident of a dwelling advises NELP that they consider their residence to be noise affected, external noise levels must be investigated against the above criteria. If the external noise levels do not comply and mitigation is not feasible (as confirmed by the IEA) then at property treatment to achieve the required internal noise levels must be undertaken in accordance with (e) above.	Doncaster Park and Ride and adjoining residential properties do not share an interface with a 'Project Road' or 'Non-Project Road', as defined by this EPR. Notwithstanding, the Project responds to the intent of this requirement by incorporating a number of noise attenuation measures to prevent unreasonable noise impacts* to nearby residential properties during hours of operation. Key considerations incorporated in this UDLP are outlined below: – The passenger services building is positioned along the Hender Street frontage to act as a physical barrier that mitigate operational noise from the bus lanes – To the south of the passenger services building, noise walls (up to 4m and constructed of acrylic panels) are proposed to minimise noise impacts from bus operations (including the roundabout area) as the new busways are located closer to residential properties compared with the existing layout – Existing noise impacts from traffic movements on Doncaster Road, bus services and the at-grade car park within the park and ride have been factored into the design to ensure that future operation of the upgraded park and ride will not generate unreasonably increased noise impacts onto the surrounding residential properties – The design of the multi-level car park exit and the Drop and Go zone will likely result in an increase to existing traffic volumes within part of Hender Street, between Doncaster Road and Finlayson Street, and during peak hours. However, as this is a controlled environment where cars travel at low speeds, potential noise impacts onto surrounding residential properties will be adequately managed. Overall, this UDLP is designed to accord with relevant noise requirements and will not result in unreasonably increased noise impacts to the surrounding residential properties. * *The Environment Protection Act 2017* (the Act) acknowledges that some noise is inevitable and cannot be eliminated, whether noise is unreasonable noise will be considered in this context. Under section 166 of the Act, a person must not emit or permit the emission of unreasonable noise from a place or premises that are not residential premises. Unreasonable noise is defined in section 3(1)(a) of the Act as noise that is unreasonable having regard to (i) its volume, intensity or duration, (ii) its character, (iii) the time, place and other circumstances in which it is emitted, and (iv) how often it is emitted any prescribed factors.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV2	**Monitor traffic noise** Traffic noise monitoring must be carried out for at least the following time periods: – Baseline traffic noise must be re-measured after project award and prior to construction works – Traffic noise must be re-measured within six months of project opening during normal traffic flows (outside school or public holidays). For the purpose of determining compliance, the measurements conducted after project opening must be adjusted to the 10-year traffic flows – Traffic noise must be re-measured 10 years and 20 years after project opening. All traffic noise monitoring must be undertaken in accordance with the VicRoads Traffic Noise Measurement Requirements for Acoustic Consultants – September 2011, to verify conformance with the external traffic noise objectives set out in EPR NV1. The adequacy of the monitoring program is to be verified by the Independent Environmental Auditor. Remedial action must be taken in the event that the measured traffic noise levels demonstrate that the external traffic noise objectives set out in EPR NV1 are not met. The timeframe and the criterion for remedial action must be determined by the IEA and reporting of compliance must be provided to the Minister for Roads or his/her successor.	Traffic noise referred to in EPR NV2 relates to the noise emanating from Project Roads and non-Project Roads specified in EPR NV1, which is not applicable to this UDLP. The vicinity of the Doncaster Park and Ride will be considered as part of the overall traffic noise monitoring strategy undertaken by MRPV, including baseline monitoring prior to construction.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV3 C	**Minimise construction noise impacts to sensitive receptors** Construction noise and vibration must be managed in accordance with the Construction Noise and Vibration Management Plan (CNVMP) required by EPR NV4. <u>Non-residential sensitive receptors</u> For sensitive land uses (based on AS/NZS 2107:2016) implement management actions as per EPR NV4 if construction noise is predicted to or does exceed the internal or external noise management levels set out in the table below, and a noise sensitive receptor is, or is predicted to be, adversely impacted. If construction exceeds the noise management levels below, in determining whether a noise sensitive receptor is, or is predicted to be, adversely impacted: – Consider the duration of construction noise – Consider the existing ambient noise levels – Consult with the owner or operator of the noise sensitive receptor – Consider any specific acoustic requirements of land uses listed below to determine whether a noise sensitive receptor is adversely impacted.	**Construction** A Construction Noise and Vibration Management Plan (CNVMP) has been developed, which includes measures to meet the construction noise management levels and construction noise guideline targets. Application of the noise hierarchy will be implemented to minimise disruption as far as reasonably practicable. The CNVMP has been verified by the IEA in compliance with the requirements of the EMF.

Land use	Construction noise management level, LAeq (15 min) applies when properties are in use
Classrooms in schools and other educational institutions	Internal noise level 45 dB(A)
Healthcare facilities with inpatient care including hospital wards and operating theatres, and rehabilitation centres	Internal noise level 45 dB(A)
Places of worship	Internal noise level 45 dB(A)
Active recreation areas characterised by sporting activities and activities which generate their own noise, making them less sensitive to external noise intrusion	External noise level 65 dB(A)
Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation School grounds used for teaching purposes are to be considered as passive recreation areas, where feasible and reasonable ***	External noise level 60 dB(A)
Community centres	Depends on the intended use of the centre. Refer to the recommended upper internal levels in AS/NZS 2107:2016 for specific uses
Industrial premises	External noise level 75 dB(A)
Offices, retail outlets	External noise level 70 dB(A)
Other noise sensitive land uses as identified in AS/NZS 2107:2016	Refer to the noise levels in AS/NZS 2107:2016

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
	Residential receptors For residential dwellings, management actions must be implemented as per EPR NV4 if noise from construction works during normal working hours is predicted to or does exceed the noise management levels for normal working hours below. **Unavoidable Works** Unavoidable Works must be verified by the Independent Environmental Auditor for each instance they are undertaken, as per EPR NV4 and include the following: – The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads – Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm – Maintenance and repair of public infrastructure where disruption to essential services and/or considerations of worker safety do not allow work within standard hours – Tunnelling works including mined excavation elements and the activities that are required to support tunnelling works (i.e., spoil treatment facilities) – Road and rail occupations or works that would cause a major traffic hazard – Other works where a contractor demonstrates and justifies a need to operate outside normal working hours and exceed the noise guideline targets such as work that once started cannot practically be stopped. Note: * Where any reference is made to the rating background level (RBL) or background LA90; the 'average background': - it applies to each discrete time period to ensure that averaging does not necessarily occur over day, evening or night-time hours. For example, background noise between 0100 and 0400 may be substantially different to that between 2200 and 0100 and hence should not be averaged over the entire night-time period; and - over the assessment period as per Victorian noise policy practices is to be used. This applies to all receptors and all time periods. ** In relation to sensitive receptors, the construction noise guideline targets apply to construction works and construction compounds. *** Consultation with affected schools should be undertaken to designate the most sensitive areas where teaching occurs within school grounds.	See previous page.

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response

NV4
C
	Implement a Construction Noise and Vibration Management Plan (CNVMP) to manage noise and vibration impacts
	Prepare, implement, and maintain a Construction Noise and Vibration Management Plan (CNVMP) in consultation with EPA Victoria, relevant councils and relevant stakeholders. The CNVMP must comply with and address the Noise and Vibration EPRs, be informed by the noise modelling and monitoring results and must include (but not be limited to):
	– identification and assessment of noise and vibration sensitive receptors along the project alignment, including but not limited to:
	  – habitat for listed threatened fauna likely to be impacted by the project (refer to EPR FF8)
	  – buildings used for shop, gallery, commercial, office or industrial purposes including Bulleen Art and Garden and the Heide Museum of Modern Art
	  – school buildings and school grounds
	  – residential buildings.
	– construction noise and vibration targets as per EPRs NV3, NV5, NV8, NV9, NV10, NV11 and NV12, including any details of conversions between alternative metrics
	– details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities that have the potential to generate airborne noise and/or surface vibration impacts on surrounding sensitive receivers
	– how construction noise (including truck haulage) and vibration would be minimised (see EPR T2)
	– a requirement for preliminary tests using the actual equipment to validate modelling for vibration and regenerated noise and review, with predictions to be remodelled as necessary and confirm prevention/mitigation/remediation measures confirmed
	– management actions and notification and mitigation measures to be implemented with reference to the Appendix B and Appendix C of the New South Wales Roads and Maritime Services Construction Noise and Vibration Guideline 2016 (CNVG)
	– any processes and measures to be implemented as part of the Communications and Community Engagement Plan including managing matters of interest raised by key stakeholders through CCEP processes, and measures concerning complaints management (see EPR SC2)
	– requirements to assess and manage vibration impacts to scientific or medical establishments to the higher of ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook), or manufacturers equipment levels (unless by agreement with occupant)
	– measures to ensure effective monitoring of noise and vibration associated with construction with consideration to the construction noise and vibration targets
	– measures to minimise noise and vibration impacts from temporary traffic diversions and altered access to parking facilities
	– the Unavoidable Works (refer to EPR NV3) that would be undertaken, including their location, timing and duration. The CNVMP must either include a clear rationale for defining works or a list of the type of planned works that constitute Unavoidable Works and response strategies to mitigate the impacts of these Unavoidable Works, consistent with Chapter 4 of EPA Victoria Publication 1834 Civil construction, building and demolition guide and with reference to Appendix B and Appendix C of the CNVG. The Independent Environmental Auditor must verify that the proposed Unavoidable Works meet the definition of Unavoidable Works (refer to EPR NV3) for each instance they are undertaken. Details of Unavoidable Works must be made publicly available. For emergency Unavoidable Work, a rationale must be provided to the satisfaction of the Independent Environmental Auditor as soon as practicable
	– noise from construction works during weekend/evening work hours and the night period must meet the weekend/evening work hours and night period noise guideline targets unless they are unavoidable works verified by the Independent Environmental Auditor. All reasonable measures must be implemented to mitigate the impacts of such unavoidable works. A clear framework for managing Unavoidable Work must be developed and include noise level thresholds and details of mitigation measures. The framework must be approved by the Independent Environmental Auditor
	The CNVMP must be reviewed (including consultation with external stakeholder as required) and updated as appropriate on a six-monthly basis and verified by the Independent Environmental Auditor.
	* The CNVMP applies to construction works and construction compounds.
		Construction
		A Construction Noise and Vibration Management Plan (CNVMP) has been developed, which includes measures to meet the construction noise and vibration guideline targets and requirements for noise modelling, to predict impacts on sensitive receivers and establish noise management levels that inform mitigation measures.
		The CNVMP was prepared in consultation with the EPA and relevant councils and has been verified by the IEA in compliance with the requirements of the EMF.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV5 D C	**Establish vibration guidelines to protect utility assets** Prior to commencement of relevant works, undertake condition assessments of above and below ground utility assets (EPR GM3) and consult with asset owners to establish and agree construction vibration guidelines to maintain asset integrity. In all cases the asset owner's criteria takes precedence. Where construction vibration guidelines are not proposed by the asset owner, reference should be made to the relevant sections of German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) for guideline assessment procedures for buried pipework or underground infrastructure. The integrity of the asset should be reviewed and assessed (by the contractor, in conjunction with the asset owner) to confirm these values are appropriate. If necessary, based on this assessment, limits must be reduced to the level necessary to maintain asset integrity. Monitor vibration levels during construction to demonstrate compliance with agreed vibration guidelines. Identify contingency measures to be implemented if guidelines are not met. Where necessary rectify any defects that are attributable to the project. An overview of the key vibration guidelines values is presented below. In all cases, the supporting documentation within the Standard which describes, clarifies, and sometimes modifies the tables below must be considered. **Table A: Guideline values for vi, max, for evaluating the effects of short-term vibration on the lining of underground cavities** Line | Lining material | Guideline values for vi, max in mm/s perpendicular to lining surface 1 | Reinforced or sprayed concrete, tubbing segments | 80 2 | Concrete, stone | 60 3 | Masonry | 40 Note: The guideline values were measured during nearby mine blasting operations and apply only to the lining of underground structures, but not to any associated installations. **Table B: Guideline values for vi, max, for evaluating the effects of short-term vibration on buried pipework** Line | Lining material | Guideline values for vi, max in mm/s perpendicular to lining surface 1 | Steel, welded | 100 2 | Vitrified clay, concrete, reinforced concrete, prestressed concrete, metal (with or without flange) | 80 3 | Masonry, plastics | 50	**Design** The Project has undertaken necessary steps to assess, consult and design as required by this requirement. Monitoring will be undertaken as required. **Construction** A Construction Noise and Vibration Management Plan (CNVMP) has been developed, which includes measures to meet the construction noise and vibration guideline targets. The CNVMP has been verified by the IEA in compliance with the requirements of the EMF.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV6 D C	**Design permanent tunnel ventilation system and relevant fixed infrastructure to meet EPA requirements for noise** Design and construct the permanent tunnel ventilation system and relevant fixed infrastructure that is subject to EPA Publication 1826.4 Noise Protocol to achieve compliance with EPA Publication 1826.4 Noise Protocol and in accordance with the EPA Victoria Development Licence. Where EPA Victoria Publication 1826.4 Noise Protocol does not apply, design and implement the permanent tunnel ventilation system to comply with the internal lower Recommended Design Sound Levels as defined in AS/NZS 2107 for the types of occupancies, relevant to spaces within the affected Category A and Category B buildings, as defined in EPR NV1. If the existing internal background noise level within any identified relevant Category A or Category B buildings already exceeds the upper Recommended Design Sound Level in AS/NZS 2107 for the types of occupancies relevant to spaces within these buildings, then noise from the fixed plant associated with the Project must not exceed the existing background levels within these buildings.	**Design** The Project is designed to accord with EPA Publication 1826.4 (Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues). Relevant noise attenuation measures have been incorporated into this UDLP as required.
NV7	**Design permanent tunnel ventilation system and relevant fixed infrastructure to meet EPA requirements for noise** Measure noise from the permanent tunnel ventilation system and relevant fixed infrastructure that is subject to EPA Publication 1826.4 Noise Protocol on commencing road operation and monitor noise from the tunnel ventilation system post opening of the North East Link, as agreed with EPA Victoria, to verify compliance with EPA Publication 1826.4 Noise Protocol and the EPA Victoria Operating Licence. Identify and implement contingency measures to be implemented if noise level limits are not met.	Not applicable – as the Project does not include any road tunnels, this requirement for tunnel ventilation is not relevant to the scope of this UDLP.
NV8 C	**Minimise construction vibration impacts on amenity** Implement management actions if the following guideline target levels for vibration from construction activity to protect human comfort of occupied buildings (including heritage buildings) are not achieved (levels are calculated from the British Standard BS6472-1:2008 Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting.).	**Construction** A Construction Noise and Vibration Management Plan (CNVMP) has been developed, which includes measures to meet the construction noise and vibration guideline targets. The CNVMP has been verified by the IEA in compliance with the requirements of the EMF.

	Vibration Dose Values (m/s$^{1.75}$)			
	Day (7am to 10 pm)		Night (10pm to 7am)	
Type of space occupancy	Preferred Value	Maximum Value	Preferred Value	Maximum Value
Residential	0.2	0.4	0.1	0.2
Offices, schools, educational institutions, places of worship	0.4	0.8	0.4	0.8
Workshops	0.8	1.6	0.8	1.6

Notes

1. The Guideline Targets are non-mandatory; they are goals that should be sought to be achieved through the application of practicable mitigation measures. If exceeded, then management actions would be required.
2. The Vibration Dose Values may be converted to Peak Particle Velocities within a noise and vibration construction management plan.
3. For the purpose of this EPR, the guideline target levels for 'offices, schools, educational institutions, places of worship' also apply to the Heide Museum of Modern Art and the outdoor sculpture exhibition area at Heide Museum of Modern Art.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV9 C	**Minimise construction vibration impacts on structures** Construction vibration targets for structures based on German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) must be adopted. All sections of the German Standard DIN 4150 – Part 3 – Structural Vibration in Buildings – Effects on Structures (2016) standard apply, noting the guideline levels detailed in Section 5 and Section 6 (and any references sections). An overview of the key vibration guidelines values is presented below. In all cases, the supporting documentation within the Standard which describes, clarifies, and sometimes modifies the tables below must be considered. . **Table A: Guideline values for vibration velocity, vi, max, for evaluating the effects of short-term vibration on structures**	**Construction** A Construction Noise and Vibration Management Plan (CNVMP) has been developed, which includes measures to meet the construction noise and vibration guideline targets. The CNVMP has been verified by the IEA in compliance with the requirements of the EMF.

Type of structure		Guideline values for vi, max in mm/s				
		Foundation, all directions, i = x, y, z, at a frequency of:			Topmost floor, horizontal direction, i = x, y	Floor slabs, vertical direction, i = z
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz (a)	All frequencies	All frequencies
Column Line	**1**	**2**	**3**	**4**	**5**	**6**
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (eg listed buildings)	5	5 to 15	8 to 20	8	20 (b)

Note: Even if guideline values as in line 1, columns 2 to 5, are complied with, minor damage cannot be excluded.
(a) At frequencies above 100 Hz, the guideline values for 100 Hz can be applied as minimum values.
(b) Paragraph 2 of 5.1.2 must be observed.

Guideline values for vi, max, for evaluating the effects of long-term vibration on buildings

Type of building		Guideline values for vi, max in mm/s	
		Topmost floor, horizontal direction, all frequencies	Floor slab, vertical direction, all frequencies
Column Line	**1**	**2**	**3**
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	10	10
2	Residential buildings and buildings of similar design and/or occupancy	5	10
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (eg listed buildings)	2.5	10 (a)

Note:Even if guideline values as in line 1, column 2, are complied with, minor damage cannot be ruled out.
(a) Section 6.1.2 must be observed.
(b) Vibration levels above apply to all works, including unavoidable works as defined in NV3.

6. Compliance with Environmental Performance Requirements

<table>
<tr><th>EPR Code</th><th>Environmental Performance Requirement</th><th>Project Response</th></tr>
<tr><td>NV10
C</td><td>Minimise impacts from ground-borne (internal) noise
Implement management actions in consultation with potentially affected land owners to protect amenity at residences where the following ground borne noise guideline targets based on Section 4.2 of the New South Wales Interim Construction Noise Guidelines are exceeded during construction.
<table><tr><th>Time of Day</th><th>Internal noise level measured at the centre of the most affected habitable room</th></tr><tr><td>Evening (6 pm to 10 pm)</td><td>LAeq (15 minute) = 40 dBA</td></tr><tr><td>Night (10 pm to 6 am)</td><td>LAeq (15 minute) = 35 dBA</td></tr></table>Notes
1. Levels are only applicable when ground borne noise levels are higher than airborne noise levels.
2. Management actions include community consultation to determine acceptable level of disruption and provision of respite accommodation in some circumstances.
3. Noise levels above apply to all works, including unavoidable works as defined in NV3</td><td>Construction
The Project has developed and is implementing a Construction Noise and Vibration Management Plan (CNVMP).
As the Project does not include any road tunnels, this requirement that seeks to minimise impacts from ground-borne (internal) noise is not relevant to the scope of works within this UDLP.</td></tr>
<tr><td>NV11</td><td>Minimise amenity impacts from blast vibration
Implement management actions if the following vibration values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.
<table><tr><th>Category (as defined in AS 2187.2-2006)</th><th>Type of blasting operations</th><th>Peak component particle velocity (mm/s)</th></tr><tr><td>Sensitive Site</td><td>More than 20 blasts</td><td>5 mm/s for 95% blasts per year
10 mm/s maximum (unless by agreement with occupier)</td></tr><tr><td></td><td>Less than 20 blasts</td><td>10 mm/s maximum (unless by agreement with occupier)</td></tr><tr><td>Non-sensitive site (with occupants)</td><td>All blasting</td><td>25 mm/s maximum value (unless by agreement with occupier).</td></tr><tr><td>Scientific equipment</td><td>All blasting</td><td>Existing ambient levels or ASHRAE VC Standards (as defined in the 2015 handbook) (whichever is the higher) or manufacturers equipment levels (unless by agreement with occupier)</td></tr></table></td><td>Not applicable – this EPR is not triggered as blasting is not part of the construction methodology.</td></tr>
<tr><td>NV12</td><td>Minimise amenity impacts from blast overpressure
Implement management actions if the following overpressure values are not achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.
<table><tr><th>Category (as defined in AS 2187.2-2006)</th><th>Type of blasting operations</th><th>Peak Overpressure Value (dBL)</th></tr><tr><td>Sensitive Site</td><td>More than 20 blasts</td><td>115 dBL for 95% blasts
120 dBL maximum (unless by agreement with occupier)</td></tr><tr><td></td><td>Less than 20 blasts</td><td>120 dBL for 95% blasts
125 dBL maximum (unless by agreement with occupier)</td></tr><tr><td>Occupied non-sensitive sites such as factories and commercial premises</td><td>All blasting</td><td>125 dBL maximum (unless by agreement with occupier)
For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturers specification or levels that can be shown to adversely affect the equipment operation</td></tr></table></td><td>Not applicable – this EPR is not triggered as blasting is not part of the construction methodology.</td></tr>
</table>

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV13 C	**Noise mitigation – noise walls** Construction of permanent noise attenuation must, where feasible, be installed in advance of adjacent works. Where the ultimate wall cannot be constructed prior to demolition of the existing wall and noise sensitive premises will be exposed to significantly increased traffic noise for an extended period, install temporary noise walls where practicable.	**Construction** Construction of new noise walls will be managed to provide continuity of noise protection through the construction process, particularly to residential interfaces. Final details of construction staging, including where temporary noise walls may be required, will be planned and implemented in accordance with the requirements of the Construction Noise and Vibration Management Plan (CNVMP).
NV14 D C	**Reduce impacts from engine brake noise** Measures to encourage heavy vehicle drivers to reduce use of engine brakes must be considered and implemented, where practicable.	**Design** This UDLP shows the design of an upgraded park and ride at Doncaster, which will typically accommodate commuter vehicles and buses rather than heavy vehicles. As such, engine brake noise from heavy vehicles will mostly occur outside the Project area for this UDLP. **Construction** The Project will ensure heavy vehicles are fitted with a maintained Original Equipment Manufacturer exhaust silencer or a silencer that complies with the National Transport Commission's 'In-service test procedure' and standard.
NV15 D O	**Noise at public open space and school recreation grounds** Predicted noise levels at existing public open space and school grounds detailed in updated noise modelling for the final design and as-built construction of the Project must not exceed the predicted design year noise levels detailed in the EES -Technical Appendix C. Noise monitoring at appropriate locations must be performed post construction to verify that predicted levels have been achieved. Monitoring must be performed 10 years and 20 years after Project opening.	**Design** The park and ride does not have a direct interface with school recreation grounds. With regard to existing public open spaces, the site abuts Koonung Creek Corridor to the west and interfaces with a small vegetated open space to the south, which extends to Koonung Creek Corridor through the shared use path. Noise modelling has been undertaken during the development of the design to ensure that potential noise impacts from the upgraded park and ride are considered into the design; and noise emanating from the upgraded park and ride will not exceed the predicted design year noise levels detailed in the EES – Technical Appendix C. **Operation** Operational phase monitoring will be undertaken by MRPV.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
NV16 O	**Monitoring of Ongoing performance of operational traffic noise mitigation measures** Permanent noise monitoring stations must be established in representative locations based on a programme developed in consultation with the IEA and the EPA, to enable the ongoing real time monitoring of operational traffic noise. Where open graded asphalt is used and is relied on to achieve compliance with noise limits the acoustic performance of the OGA must be assessed at least once in each 12 months to ensure that it continues to reduce operational traffic noise to the project traffic noise objectives in EPR NV1. The NELP interactive noise tool The following information is to be made freely available on a publicly accessible website as interactive layers: – Existing (pre-Project) noise levels – Final operational road traffic noise contours for the Project – Operational noise criteria for the Project – Operational noise monitoring data for the Project. The maps are to be interactive so as to enable the public to locate their location on a map, identify the operational noise criteria and data relevant to their location and submit a query or complaint to NELP online.	**Operation** Permanent noise monitoring stations will be established by MRPV at representative locations based on a program developed in consultation with the IEA and EPA Victoria to enable the ongoing real time monitoring of operational traffic noise.
14. Social and Community (SC) – *Planning and Environment Act 1987* – Australian Standard AS/NSZ 10002:2014 Guidelines for Complaint Management in Organisations		
SC1 D C	**Reduce community disruption and adverse amenity impacts** Design and construct the project to reduce disruption to residences, community infrastructure facilities and open space from direct acquisition or temporary occupation to the maximum extent reasonably possible to preserve acceptable levels of amenity.	**Design** With consideration of the abutting interfaces, the Project is designed with minimal disruption to residences and no direct acquisition or temporary occupation of community infrastructure and open space to ensure acceptable levels of amenity. While the Drop and Go zone is located on Hender Street and may result in changes to traffic movement, it is integrated into the landscape design and will continue to provide an adequate level of amenity for residents and commuters as required by this EPR. **Construction** The location and footprint of temporary site facilities (a construction compound) will be carefully considered to provide acceptable levels of amenity and impact. As occupation of the existing Doncaster Park and Ride site will be required to construct the upgraded park and ride, the Project will work closely with the Department of Transport and Planning (Transport) and bus operators to ensure impacts to existing bus services are minimised during the occupation. Users of the park and ride and the community will be provided with appropriate notifications with regard to the occupation and associated changes to car parking arrangements and bus services. Pedestrian and cyclist access around the existing park and ride will be maintained during this period.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
SC2 D	**Minimise and manage impacts of land acquisition and occupation** Where private land is to be permanently acquired or temporarily occupied, the project must: – minimise the extent of the acquisition or the extent or duration of the occupation – use a case-management approach for project interactions with affected land owners and occupants, including appointing a social worker, buyers' advocate or equivalent to assist households with special needs to manage the transition, except where a land owner or occupier has requested not to be part of such assistance – endeavour to reach agreement on the terms for possession of the land including purchasing properties early when identified for permanent acquisition and agreed by the landowner – consider the relative vulnerability and special needs of land owners and occupants – communicate likely timing and steps to be taken including updates as relevant – return private land not required for permanent project infrastructure to its pre-existing use post-construction as soon as practicable, unless otherwise agreed with the land owner. Where public land is to be permanently acquired or temporarily occupied, the project will: – minimise the extent of the acquisition or the extent or duration of the occupation – stage works to the greatest extent reasonably possible to maintain functionality of the land for all users either within the site or on proximate land, subject to the Public Open Space Relocation and Replacement Plan required by EPR LP5 – endeavour to reach agreement with the land manager on the terms for possession of the land – return public land not required for permanent project infrastructure to its pre-existing use post-construction as soon as practicable, including with all relevant reinstatement works, unless otherwise agreed with the land manager – in the case of public land used for formal active recreation, ensure that impacts are minimised in accordance with SC5.	**Design** Not applicable - there is no compulsory acquisition or temporary occupation of private land required as part of this UDLP.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response

SC3
D C O
	Implement a Communications and Community Engagement Plan
	Prior to construction, prepare and implement a Communications and Community Engagement Plan to engage the community and potentially affected stakeholders and communicate progress of construction activities and operation. The plan must include:
	– a process for identifying community issues and the recording, management, and resolution of complaints from affected stakeholders including business owners, community service providers, education providers, public and active transport key user groups and residents, consistent with Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organisations
	– approach to stakeholder identification
	– enquiry management and record keeping approach and procedures including making available an attended 24-hour telephone number, postal address, and an email address and publishing these on the project website
	– approach to communicating and engaging with the community and potentially affected stakeholders in relation to:
	  – construction activities including temporary facilities and impacts that may affect the community, businesses, or individual stakeholders (e.g., dust, noise, vibration, and light) and relevant mitigation (e.g., relocations policy)
	  – changes to transport conditions and relevant mitigation (e.g., road closures, detours)
	– timelines and an outline of works that will affect particular local areas, to be updated to reflect current and anticipated conditions
	– identifying how stakeholders can access information on environmental performance that is to be made publicly available
	– incident and emergency communications, including notification methods and timeframes in the event of a major incident or overrun
	– Approach and processes to ensure that the workforce has appropriate community awareness and sensitivity including to prevent the workforce from parking in local roads and in public parking in the vicinity of local shopping areas except when frequenting those areas for private purposes
	– innovative communications tools and methods to enhance the project's ability to effectively communicate and engage with the community and stakeholders including best available technology in addition to conventional means
	– approach to engaging with local schools to ascertain safety requirements (including evacuation procedures) and to provide education opportunities on project activities
	– approach to making relevant project information available to the community, including updates on project works, with specific consideration to vulnerable groups (including culturally and linguistically diverse groups) and a responsive process for resolving complaints by vulnerable groups or individuals
	– how it will evaluate the effectiveness of the communication and engagement under the Communications and Community Engagement Plan.
	The Communications and Community Engagement Plan must consider and where appropriate address matters of interest or concern to the following stakeholders, and provide for the appointment of a dedicated liaison officer (as appropriate):
	– Municipal councils
	– Recreation, sporting clubs and community groups
	– Schools and other educational institutions
	– Potentially affected residents and property owners
	– Potentially affected business
	– Other public facilities in proximity
	– Religious and worship groups
	– Vulnerable groups
	– Traditional owners
	– Public transport users.
		Design
		This UDLP is informed by significant consultation with key stakeholders such as councils, agencies and the community, as per the requirements of the NEL Project Incorporated Document (December 2019, amended September 2023) including compliance with the NEL Project UDS and EPRs and public exhibition of the UDLP for written submissions.
		An overarching Communications and Community Engagement Plan (CCEP) has been prepared to guide community engagement and communications through design, construction and operation of the NEP. The CCEP aligns with the requirements of EPR SC3, including a process for identifying community issues and recording, managing, and resolving these issues; and has been verified by the IEA in compliance with the requirements of the EMF.
		A CCE Sub-Plan has also been prepared for the Doncaster Park and Ride Project to ensure that consultation for this UDLP complies with relevant requirements as stipulated in the Incorporated Document.
		Construction and operation
		In line with the CCEP, regular engagement and timely communications will be maintained through letterbox drops, newsletters, community meetings and information sessions (as required), the Project website and social media channels, to maintain awareness of the Project and communicate overall Project benefits, and to ensure stakeholders are kept informed of construction progress and acknowledge and work through community and stakeholder matters of interest or concern.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
SC4 D C	**Participate in the Community Liaison Group** Contractors must participate in the Community Liaison Group (CLG) that has been established and managed by North East Link Project, to facilitate community and stakeholder involvement for the design and construction phases of the project. Participation must include: – attendance at meetings – regular reporting of design and construction activities – timely provision of relevant information, including responses to issues raised by the Group – regular reporting and monitoring of community feedback, impacts and discussion of mitigation measures and their effectiveness.	**Design and construction** The Project will participate in the Southern Community Liaison Group (SCLG) established by MRPV, as required, which will include feedback and responses to project issues, as required by the EPR. Engagement with the SCLG as part of the public exhibition process supported community and stakeholder participation in the development of the UDLP. Ongoing participation in the SCLG, will be undertaken to provide updates on design development activities, as relevant.

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6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
SC5	**Minimise impacts of displacement of formal active recreation facilities** The project must be designed and delivered to minimise displacement of formal active recreation facilities including facilities on private land such as schools. Where formal active recreation facilities are displaced by the construction or operation of the project, the project must facilitate the reasonable relocation of all such facilities to enable their continued functionality at a reasonable level of service for those activities (except where otherwise agreed with the relevant facility owner or where other compensation is provided by agreement or under relevant legislation). The Proponent must work in collaboration with facility operators, local Councils, public land managers and relevant State authorities, to prepare and implement a Formal Active Recreation Facilities Relocation Plan. The Plan must: – seek to relocate all formal active recreation facilities to reasonable relocation sites to the extent possible before existing facilities are discontinued – document measures to be provided by the Proponent to provide reasonable replacement facilities at all relocation sites – where facilities are not permanently displaced, document measures to be provided by the Proponent to restore facilities that have been vacated to at least the same standard than when the use was discontinued, accounting for identified growth of clubs (where applicable) and for any decline in condition of the facility during the time of disuse – consider and provide a suite of reasonable measures to enable the ongoing viability of relevant sporting and recreation clubs affected by displacement and to reduce material disadvantage.	Not applicable – there are no formal active recreational facilities on private land that will be affected by this Project.
SC6	**Minimise impacts on formal active recreation and other facilities** Where construction or operation activities directly impact formal active recreation facilities or community infrastructure facilities not on public land such as schools, child care centres, and aged care centres, consultation must occur with facility operators, owners and user groups of the facilities to understand and implement any practical measures that can be taken to avoid or minimise impacts. Such measures must provide for the continued operation of each facility (except where the facility is permanently displaced), with suitable access, provision of generally proximate parking comparable to pre-development conditions (where possible), reasonable protection of amenity, and maintenance of the current level and nature of activity, except where otherwise agreed with relevant facility owners.	Not applicable – no formal active recreational facilities on public land will be directly or indirectly impacted unreasonably by construction or operation activities associated with this UDLP.
SC7 C O	**Implement a Community Involvement and Participation Plan (CIPP)** Develop and implement a CIPP in consultation with local councils for communities within those council areas affected by the impacts of the Project to improve community connectedness and cohesiveness, enhance the local area and create a positive project legacy. The plan must include: – identification of affected communities relevant to the CIPP – approach and processes for funding allocation with funding to be proportionate to the level of impact on each community – identification of types of initiatives that the CIPP may facilitate including community led, community partnership programs; community support grants; community events; sponsorships of local sporting clubs; small capital works projects targeting community, sporting, and recreation facilities.	**Construction and operation** MRPV will develop and implement a Community Involvement and Participation Plan (CIPP) in consultation with Manningham City Council in accordance with this EPR.
SC8 C O	**Implement a voluntary purchase scheme for residential properties** Develop and implement a voluntary purchase scheme for residential properties that satisfies defined criteria relating to significant amenity impacts. The voluntary purchase scheme must include principles and criteria for eligibility of residential properties for inclusion in the voluntary purchase scheme. The principles and criteria must be developed having regard to: – construction impacts including proximity of the residential property to major works and likely extent and duration of proximate works; and – built form impacts on the residential property including visual intrusion and overshadowing. In applying the principles and criteria of the voluntary purchase scheme, consideration must also be given to the presence of vulnerable occupants of residential properties.	**Construction and operation** A Voluntary Purchase Scheme (VPS) for residential properties has been developed by MRPV and will be available to residents affected by construction impacts and/or the built form impacts, where defined criteria are met.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
15. Surface Water (SW)	– *Water Act 1989* – *Conservation, Forests and Lands Act 1987* – Water Industry Regulations 2006 (Vic) – State Environment Protection Policy (Waters) 2018 (Vic) – Environment Reference Standard (Land, Water) – Victorian WorkCover Authority and Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquid – DELWP Integrated Water Management Framework for Victoria (September 2017) – VicRoads Integrated Water Management Guidelines (June 2013) EPA Publications: – 275 (1991) Construction techniques for sediment pollution control – 1834, Civil construction, building and demolition guide (EPA Victoria November 2020) – 596 (1998) Point Source discharge to streams: protocol for in-stream monitoring and assessment – Victorian Stormwater Committee's Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others) – Industrial waste resource guidelines IWRG701 Sampling and analysis of waters, wastewaters, soils and waste	
SW1 D C	**Discharges and runoff to meet State Environment Protection Policy (Waters)** Meet the State Environment Protection Policy (Waters) requirements for discharge and run-off from the project, including by complying with the Victorian Stormwater Committee's Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others).	**Design and construction** The proposed drainage design and water sensitive urban design (WSUD) will meet the State Environment Protection Policy (Waters) (also referred to as Environmental Reference Standard (ERS)) for discharge and runoff from the Project, including compliance with the Victorian Stormwater Committee's Best Practice Environmental Management Guidelines (BPEMG) for urban stormwater.
SW2 D C O	**Design and implement spill containment** Design and construct the spill containment capacity of the stormwater drainage system for all freeway pavements (including ramps) to manage the risk of hazardous spills from traffic accidents at or prior to every stormwater outlet, to meet AustRoads requirements (Part 5 Drainage – General & Hydrology Considerations). The design and location of spill containment must consider the risk and potential impact of a spill, as well as the effectiveness in reducing the risks associated with a spill on the environment. Develop procedures for freeway roads and ramps to be implemented in response to a hazardous spill. The OEMP must include requirements to maintain spill containment infrastructure and implement associated procedures.	Not applicable - this EPR relates specifically to the freeway and ramps.
SW3 C	**Wastewater discharges to be minimised and approved** The Surface Water Management Plan (refer EPR SW5) and OEMP must include requirements and methods for minimising, handling, classifying, treating, disposing and otherwise managing wastewater. Any proposed discharge of wastewater from the site must be approved by the relevant authority prior to discharges occurring and meet the State Environment Protection Policy (SEPP) (Waters) requirements.	**Construction** The Project has developed a Surface Water Management Plan (SWMP) for construction in consultation with the EPA. The SWMP includes requirements and methods for minimising, handling, classifying, treating, disposing and/or otherwise managing wastewater. All proposed discharge of wastewater from the site will be approved by the relevant authority prior to discharges occurring and will meet Victorian Government requirements. The SWMP has been verified by the IEA in compliance with the requirements of the EMF.
SW4 D C	**Monitor water quality** Develop and implement a surface water monitoring program prior to commencement of, and during construction, to assess surface water quality in multiple locations at suitable distances upstream and downstream of works to establish baseline conditions and enable assessment of construction impacts on receiving waters. The surface water quality monitoring program must be implemented for a period up to three years after commencement of North East Link operation, or a lesser period agreed with the EPA, to assess the discharges and runoff from the project against SEPP (Waters) requirements and confirm the effectiveness of environmental controls. The monitoring program must be developed in consultation with EPA Victoria and the asset owner/manager and as appropriate with reference to applicable policies and guidelines, including SEPP (Waters), Victorian Stormwater Committee's Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others), EPA Victoria Publication 596 Point source discharges to streams: protocol for in-stream monitoring and assessment and Industrial Waste Resource Guideline 701 Sampling and analysis of waters, wastewaters, soils and wastes. The surface water monitoring program is to be used to inform the development and refinement of the Surface Water Management Plan (EPR SW5).	**Design** The surface water monitoring program has been developed and incorporates relevant requirements relating to the Project design, ensuring that monitoring locations are suitable based on the extent of work and proposed activities. **Construction** The Project is implementing the surface water monitoring program in consultation with EPA Victoria and the asset owner/manager as appropriate, with reference to applicable policies and guidelines. A Surface Water Management Plan (SWMP) for construction has been prepared in consultation with EPA Victoria. The SWMP has been verified by the IEA in compliance with the requirements of the EMF.

D **Design** C **Construction** O **Operation**

6. Compliance with Environmental Performance Requirements

EPR Code	Environmental Performance Requirement	Project Response
SW5 C	**Implement a Surface Water Management Plan during construction** Develop and implement a Surface Water Management Plan, in consultation with EPA Victoria, for construction that sets out requirements and methods for: – best practice sediment and erosion control and monitoring, in general accordance with EPA Victoria publications 275 Construction techniques for sediment pollution control, 1834 Civil construction, building and demolition guide, and Industrial Waste Resource Guideline 701 Sampling and analysis of waters, wastewaters, soils and wastes – maintaining the key hydrologic and hydraulic functionality and reliability of existing flow paths, drainage lines and floodplain storage – retaining existing flow characteristics to maintain waterway stability downstream of construction – locating and bunding of any contaminated material (including tunnel spoil and stockpiled soil) to the 1% AEP flood level and to the requirements of EPA Victoria and the relevant drainage authority – works scheduling to reduce flood related risks – bunding of significant excavations including tunnel portals and interchanges to an appropriate level during the construction phase – protecting against the risk of contaminated discharge to waterways when working in close proximity to potential pollutant sources (e.g., landfill or sewer infrastructure) – documenting the existing condition of all drainage assets potentially affected by the works (including their immediate surrounds) to enable baseline conditions to be established and potential construction impacts on these assets to be assessed and managed.	**Construction** The Project is implementing the Surface Water Management Plan (SWMP) which was prepared in consultation with EPA Victoria. The SWMP has been verified by the IEA in compliance with the requirements of the EMF.
SW6 D	**Minimise risk from changes to flood levels, flows and velocities** Permanent works and associated temporary construction works must not increase overall flood risk at relevant locations or modify the flow regime of waterways without the acceptance of the relevant flood plain manager, drainage authority or asset owner (typically Melbourne Water) and in consultation with other relevant authorities (e.g., Council, Department of Transport, Parks Victoria, SES, emergency services). Prior to commencement of relevant works, flood risk should be appropriately assessed using modelling of the design of permanent and temporary works to demonstrate the resultant flood levels and risk profile in accordance with Melbourne Water Standards for Infrastructure Projects in Flood-Prone Areas (2019). This modelling analysis is to include sufficient events (at least up to and including the 1% AEP event) and scenarios (e.g., with and without blockage) to support the estimation of tangible (e.g., average annual damages) and intangible flood damages. If significant increases in flood risk are predicted for any events analysed, an assessment of overall flood risk considering tangible and intangible flood damages must be prepared and presented with appropriate mitigation measures for the acceptance of the relevant drainage authority or asset owner prior to commencement of construction for the relevant section of the works. If there are significant design changes during construction, the model must continue to be updated, as appropriate to represent those changes.	**Design** The Project has carefully reviewed and considered the Incorporated Document (December 2019, amended September 2023) and all background materials in the EES process including the EES Report, EES Technical Report, IAC Final Report and the Minister's Assessment (all publicly available on the Victoria Big Build's website); and is committed to appropriately mitigating potential surface water impacts as required by relevant EPRs. The response to SW6 is outlined below: – During the Detailed Design phase, relevant acceptances will be obtained through consultation with relevant authorities (particularly having regard to floodplain management authority, in this case, Melbourne Water), thereby minimising risk from changes to flood levels, flows and velocities – The UDLP shows the final built form for the Project design as required by the Incorporated Document. Design details such as flood levels or exact flow paths and velocities are not required to be shown; however, they have been considered in development of this UDLP. The UDLP plans have incorporated annotations confirming that all amenities and facilities will be placed and maintained in consultation with ultimate future owners (which does not preclude floodplain management authority) – The design of permanent structures, buildings and landscaping is informed by flood modelling, which demonstrates any change to overall flood risk and includes an analysis of sufficient events up to and including the 1% Annual Exceedance Probability (AEP), and scenarios to support tangible and intangible flood damages and proposed mitigations. This will be detailed through the design development process – During the Design Packages review period, the Project will actively carry out consultation with relevant authorities as required, which may include coordination meetings and workshops where reviews of design packages are undertaken to obtain relevant acceptances prior to commencement of relevant works in accordance with this EPR – Prior to the commencement of development of permanent above-ground buildings or structures (excluding preparatory buildings and works), the acceptance of the relevant floodplain manager (Melbourne Water) will be obtained, where permanent or associated temporary constructions will increase overall flood risk or modify the flow regime of waterways.

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EPR Code	Environmental Performance Requirement	Project Response
SW7 D C O	**Develop flood emergency management plans** Develop and implement flood emergency management plans for each of construction and operation. Flood emergency management plans are to include but not be limited to measures to manage flood risk to construction sites (including consideration of scheduling works), the tunnels and tunnel portals including interchanges and substations, and operation, maintenance and emergency management procedures for flood protection works.	**Construction and operation** The Project has developed and is implementing a Flood Emergency Management Plan (FEMP) for the construction phase. Operational plans will be developed by MRPV. The FEMP has been verified by the IEA in compliance with the requirements of the EMF.
SW8	**Minimise impacts from waterway modifications** Where waterway or flow regime modification is necessary, modifications will be designed and undertaken in a way that mitigates to the extent practicable the effects of changes to flow and minimises, to the extent practicable, the potential for erosion, sediment plumes, impacts on bed or bank stability and exposure or mobilisation of contaminated material during construction and operation to the requirements of Melbourne Water or the relevant drainage authority. Waterway modifications are to be designed and undertaken in a way that supports the visual and aesthetic amenity and environmental conditions (including habitat, connectivity, refuge, and hydraulic conditions) to support aquatic ecosystems of the waterways having regard to relevant strategies, policies and plans for that waterway and in consultation with Melbourne Water or the relevant drainage authority.	Not applicable – no waterway modifications are required for this Project.
SW9	**Maintain bank stability** Develop and implement appropriate measures to minimise erosion and protect bank stability of waterways affected by construction or operation activities both directly or indirectly (for example as a result of site access), to the requirements of Melbourne Water or the relevant drainage authority.	Not applicable – no waterway modifications are required for this Project.
SW10 D C	**Provide for access to Melbourne Water and other drainage assets** Provide adequate clearances and access for ongoing maintenance of Melbourne Water and other drainage authority assets to the requirements of the relevant drainage authority.	**Design and construction** An Asset Allocation Strategy has been developed and implemented to manage access to stakeholder assets, including drainage authority assets. The permanent design will include adequate access for asset owners post construction. Adequate clearances and access will be provided for the ongoing maintenance of Melbourne Water and other drainage authority assets within the Project.
SW11 D	**Adopt Water Sensitive Urban and Road Design** Adopt and implement water sensitive urban design and integrated water management principles in the stormwater treatment design in consultation with the relevant flood plain manager, drainage authority, asset owner or land manager and in general accordance with the Urban Design Strategy, the specifications of the relevant local council as applicable, and VicRoads Integrated Water Management Guidelines (June 2013), the Victorian Stormwater Committee's Victoria Best Practice Environmental Management Guidelines for Urban Stormwater (as published by CSIRO in 1999 with assistance from EPA Victoria and others) and the DELWP Integrated Water Management Framework for Victoria (September 2017).	**Design** Water Sensitive Urban Design (WSUD) principles are being implemented on the Project in consultation with relevant authorities and land managers in accordance with this EPR and the Urban Design Strategy. Targeted consultation continues to occur with the ultimate asset owner and land manager as part of detailed design and is part of the consultation process for this UDLP. The stormwater treatment design has considered the principles of WSUD and integrated water management.
SW12	**Minimise impacts on irrigation of sporting fields** Maintain existing storage and available water supply of a quality that is suitable for the irrigation of sporting fields impacted by the project as necessary in consultation with the impacted stakeholders.	Not applicable – the Project is not located within proximity to any existing sporting fields and there is no known usage of water from the site for irrigation of sporting fields.
SW13 D	**Consider climate change effects** The flood risk assessment (as required by EPR SW6) must consider current climate conditions as well as the potential effects of climate change on pre and post work scenarios for future climate conditions (i.e., increased rainfall intensity and sea-level rise) as predicted at the end of the asset's design life using RCP8.5 projections from CSIRO to the requirements of Melbourne Water or the relevant drainage authority.	**Design** The flood risk assessment (as required by EPR SW6) considers current climate conditions as well as the potential effects of climate change on pre- and post-work scenarios for future climate conditions in accordance with this EPR requirement, which informs the Project design. It is also noted that drainage design will be appropriately considered and incorporated within this UDLP.

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SW14 D C	**Meet existing water quality treatment performance** Retain or replace existing water quality treatment assets to meet or exceed water quality treatment performance as originally designed for that asset. In consultation with relevant asset owner or land manager, consider climate change effects and the potential for improved treatment outcomes where practicable.	**Design and construction** The Project is implementing the Surface Water Management Plan (SWMP) and Water Sensitive Urban Design (WSUD) to meet baseline as a minimum. In the SWMP, existing water quality treatment assets will be clearly outlined and where improvements through the WSUD strategy can be made, are specified. This process also involves consultation with relevant asset owners and/or land managers to consider climate change effects and the potential for improved treatment outcomes where practicable. The existing water quality treatment assets that may be affected by the Project will be assessed and managed to ensure baseline conditions are met or improved.
SW15 D C	**Water Sensitive Urban Design asset transfer strategy** Prepare a strategy identifying Water Sensitive Urban Design assets constructed as part of the Project to be transferred to public authorities. The strategy must include a process to consult with relevant asset managers to confirm the relevant delivery and maintenance standards to be met.	**Design and construction** The Project will develop and implement an Asset Transfer Strategy, which includes the Water Sensitive Urban Design assets and identifies ultimate asset owners.
16. Sustainability and Climate Change (SCC) – Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry) – Infrastructure Sustainability Council of Australia rating tool		
SCC1 D C O	**Implement a Sustainability Management Plan** North East Link Project must set sustainability targets and specify ratings to be achieved under the Infrastructure Sustainability Council's Infrastructure Sustainability Rating Tool. Contractors must develop and implement a Sustainability Management Plan that contains measures to meet, as a minimum, the sustainability targets and specified ratings.	**Design and construction** The Project is targeting a minimum 50 points (Silver rating) under the Infrastructure Sustainability (IS) v2.1 Design and As-Built Rating Tool. The IS Rating sub-plan outlines the levels targeted for each credit, and the project pathway to achieving them. The IS sub-plan outlines how the Project intends to achieve an IS Rating v2.1 score of 50 points for Design and As-Built. A Sustainability Management Plan (SuMP) has been developed and implemented on the Project to support achievement of the Project's sustainability objectives and targets, including the Infrastructure Sustainability rating. The SuMP details the measures in place to meet the sustainability targets and specified ratings for the Project. The SuMP has been verified by the IEA in compliance with the requirements of the EMF. **Operation** The verified SuMP will be implemented including all measures to meet the sustainability targets and specified ratings for the Project.

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SCC2 D C O	**Minimise greenhouse gas emissions** Integrate sustainable design practices which are best practice for major road and tunnel infrastructure projects into the design process and implement these to minimise, to the extent practicable, greenhouse gas emissions arising from construction, operation and maintenance of North East Link. In detailed design, select materials and consider energy and carbon during construction, to target: – at least a 30% reduction in carbon emissions from the construction of North East Link against an Infrastructure Sustainability Council of Australia (ISCA) verified base case calculated in accordance with their independent standards (IS v1.2 Ene-1 Level 3 or v2.0 equivalent) – use of a minimum of 50% of renewable energy for electricity used to construct North East Link (IS v1.2 Ene-2 Level 1.5 or v2.0 equivalent) – net zero emissions in the operation and maintenance of North East Link (excluding emissions from traffic) with reference to the IS v2.0 energy and carbon guideline. Reduction of the amount of Portland Cement content in concrete across the project by a minimum of 30% against Green Building Council of Australia reference mix design levels subject to durability and strength requirements.	**Design and construction** The Project incorporates initiatives to meet greenhouse gas emissions minimisation targets and will continue to investigate opportunities in the selection and procurement of materials and the construction methodology and practices to minimise greenhouse gas emissions. Key examples include: – An energy and greenhouse gas emissions model has been incorporated into the design of this Project to meet the requirements of Ene-1 Level 3 in the IS v2.1 Rating. The model also includes emissions associated with the construction and operational phases. Relevant initiatives incorporated at the park and ride to reduce energy consumption and greenhouse gas emissions include thermally efficient façade systems and building fabric, energy efficient lighting and HVAC systems, and a rooftop solar PV array – Provision of conduits for future EV charging bays and electric bus charging has been considered in the design process, with specifications to be confirmed in the detailed design phase – A materials model has also been considered in the design of this Project, to meet the requirements of Rso-6 Material Life Cycle Impact Measurement and Management in the IS v2.1 Rating. The materials model calculates the carbon footprint of the asset in the design and as-built phases, including carbon embodied in materials. Carbon reductions achieved for materials relate to reduced Portland cement content in concrete mixes, use of recycled content such as reclaimed asphalt pavement in asphalt and recycled plastic drainage pipes, and reduced material quantities through design optimisation. **Operation** Operational energy at the park and ride will be provided by solar PV (installed on the roof of the passenger services building) and by GreenPower. This will result in 100% of the operational energy of the park and ride being supplied by renewables.
SCC3	**Apply best practice measures for energy usage for tunnel ventilation and lighting systems** Best practice measures for energy usage are to be applied for the tunnel ventilation and lighting systems in accordance with the Protocol for Environmental Management (Greenhouse Gas Emissions and Energy Efficiency in Industry), the EPA Victoria Development Licence and the EPA Victoria Operating Licence.	Not applicable – the Project does not include any road tunnels; therefore, this requirement for tunnel ventilation is not relevant.
SCC4 C O	**Minimise and appropriately manage waste** Develop and implement management measures for waste (excluding soils) minimisation during construction and operation in accordance with the *Environment Protection Act 2017* waste management hierarchy and management options, to address: – litter management – construction and demolition wastes including, but not limited to, washing residues, slurries and contaminated water – organic wastes – inert solid wastes.	**Construction** Considerations incorporated in the Project contributing to the minimisation and appropriate management of waste during construction include: – Maximising opportunities to utilise or recycle demolished materials from the existing park and ride to repurpose construction waste such as steel and concrete – Identifying suitable recycling suppliers who may be able to repurpose construction waste such as steel and concrete to the extent reasonable and feasible – Segregating or separating waste into respective bins – Use of precast elements to reduce waste generated onsite. A waste management sub-plan has been developed as part of the Construction Environmental Management Plan (CEMP); the CEMP outlines actions to design for resource and waste efficiency through consideration of potential reuse of materials to minimise and appropriately manage waste to the extent reasonably practical. **Operation** Waste minimisation in operation will be supported by provision of waste separation bins for staff and park and ride users.
SCC5 C	**Minimise potable water consumption** Stormwater, recycled water, and groundwater inflow to tunnels or other water sources must be used in preference to portable water for construction activities, including concrete mixing and dust control, where this is available, practicable, of suitable quality, and meets health and safety requirements.	**Construction** Construction methodology will be developed by the Project and include minimising portable water consumption to satisfy this EPR requirement.

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EPR Code	Environmental Performance Requirement	Project Response
17. Traffic and Transport (TT) – *Planning and Environment Act 1987* – *Road Management Act 2004*		
T1 D	**Optimise design performance** Optimise the design of the works in consultation with appropriate road management authorities, public transport authorities, relevant land managers and local councils as part of the detailed design process to: – minimise adverse impact on travel times for all transport modes, including walking and cycling – maintain and where practicable, enhance the traffic movements at interchanges and adjacent intersections within the project boundary – design the road, walking and cycling and public transport elements to meet relevant road and transport authority requirements – design any truncation of local access roads in consultation with directly affected residents – maintain, and where practicable, enhance pedestrian movements, bicycle connectivity, and shared use paths, including access (both vehicular and pedestrian) to public open space and reserves – work with relevant public transport authorities and road authorities to minimise impacts on buses, trams and rail and, where practicable, enhance public transport facilities and services that cross or run parallel to the alignment of North East Link – replace and enhance commuter car parking, where affected by the Project, in consultation with the Department of Transport – minimise loss of other car parking in consultation with relevant local councils and other directly affected stakeholders.	**Design** The strategic and operational traffic requirements, and related design elements for Doncaster Park and Ride have been developed in consultation with the Department of Transport and Planning (Transport), which is the ultimate land and asset owner of Doncaster Road and the Doncaster Park and Ride). Traffic performance will continue to be optimised through design development through consultation with the appropriate road management authorities/public transport providers, relevant land managers, and the council through the detailed design process. The design meets or exceeds minimum authority requirements, has sought to integrate pedestrian and cycling connections and is an improvement on what was exhibited during the EES Reference Design. The design of the Doncaster Park and Ride considers the transport system as a whole and provides a balanced outcome. For example, a new shared use path will be provided around the perimeter of the park and ride with connections to Koonung Creek Trail in Koonung Creek Corridor to enhance connectivity and continuity. Pedestrian paths are also provided throughout the park and ride with connections to the bus platforms and local street network to ensure the provision of safe and convenient paths to key local destinations. Cars will enter the park and ride from the intersection of Doncaster Road and High Street to access the multi-level car park. Buses will be able to enter via the Eastern Busway and from the intersection of Doncaster Road and High Street. Cars will exit the multi-level car park to Doncaster Road and access the Drop and Go zone via new traffic signals at Hender Street. The northern section of Hender Street will have traffic movements limited to these car movements and southbound movements within the local residential catchment. To prevent an increase in traffic on surrounding local streets east of the park and ride and to enable safer and a more efficient operation for cars exiting the multi-level car park and the Drop and Go zone, traffic access at the corner of Hender Street and Finlayson Street will be altered to provide one-way southbound access only. This arrangement is incorporated as an effective traffic control method as the street itself (including the kerb, the footpath, and existing road furniture) remains unchanged. Traffic impacts associated with the changed access at the intersection of Hender Street and Finlayson Street are restricted to a local catchment bound by Hender Street, Doncaster Road, McLeod Street, Harcourt Street (the nearest local street allowing left turns onto Doncaster Road) and Pettys Lane (the nearest intersection with traffic lights allowing full movements on Doncaster Road). As the dominant existing flows turning onto Doncaster Road from Hender Street are left-out, only the properties west of Harcourt Street may be inconvenienced by the reconfigured access on Hender Street. Local traffic within this catchment wishing to travel westbound on Doncaster Road will need to navigate the local area to Harcourt Street, where existing access to Doncaster Road is provided. This results in an increased travel time of up to 80 seconds during peak periods compared with the existing local road configuration. The increase in travel time for traffic movements originating closer to Harcourt Street will be less than 80 seconds, noting the distance to the Doncaster Road access is less. For properties on Harcourt Street or to the east, it is unlikely that Hender Street would be used, as the ability to turn left onto Doncaster Road will remain at Harcourt Street and Pettys Lane (approximately 230 metres to the east of Harcourt Street). Within the local catchment as identified, the existing low volume of traffic turning right from Hender Street onto Doncaster Road indicates that any traffic originating from this area wishing to travel eastbound on Doncaster Road is already utilising the traffic signals at Pettys Lane to make this movement. Therefore, the changed access conditions on Hender Street will have limited impacts to this movement. Consultation has been undertaken with residents on Hender Street and in the surrounding local road catchment through the UDLP process to meet the requirements under this EPR. Directly affected residents will continue to be consulted during detailed design, as relevant and required under this EPR.

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T2 C	**Transport Management Plan(s) (TMP)** Prior to commencement of relevant works, develop and implement Transport Management Plan(s) (TMP) to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and bicycle movements and existing public facilities during all stages of construction. The TMP must be informed and supported by an appropriate level of transport modelling and must include: – Requirements for maintaining transport capacity for all travel modes in the peak demand periods – Requirements for limiting the amount of construction haulage during the peak demand periods – A monitoring program to assess the effectiveness of the TMPs on all modes of transport – Where monitoring identifies adverse impacts, implement practicable and appropriate mitigation measures – Consideration of construction activities for other relevant major projects occurring concurrently with construction activities for North East Link and potentially impacting modes of transport in the same area – Potential routes for construction haulage and construction vehicles travelling to and from the project construction site, recognising sensitive receptors and avoiding the use of local streets where practicable – Suitable measures, developed in consultation with emergency services, to ensure emergency service access is not inhibited as a result of project construction activities – Provision of alternative parking where practicable to replace public, private and commuter parking lost as a result of project construction activities – Requirements to minimise impacts on local streets, community and commercial facilities by providing parking for construction workers at construction compounds where practicable – Measures to ensure connectivity and safety for all transport network users during construction – Measures to limit the extent of road closures – Consultation with the Department of Transport, relevant transportation authorities and relevant local Councils – A TMP may be split into precincts where appropriate but must consider other precinct TMPs through the Transport Management Liaison Group as per EPR T3 – TMPs must be submitted to the relevant authority for approval.	**Construction** A Transport Management Plan (TMP) has been developed and is being implemented prior to commencement of relevant works to minimise disruption to all affected land uses and transport modes during construction of the Project. Worksite TMPs will be approved by the relevant road authority.
T3 D C	**Transport Management Liaison Group** A Transport Management Liaison Group (TMLG) must be established and convene prior to the commencement of any works that may impact on existing roads, paths, or public transport infrastructure. The TMLG must include representatives from the State, the Department of Transport, emergency services, the project, relevant transportation authorities and relevant local councils. The TMLG will be a forum for exchange of information and discussion of issues associated with Transport Management Plans. This must include review of proposed haulage routes for construction sites to minimise reliance on a single haulage route between Bell Street and the M80 Ring Road and facilitate different sites using different haulage routes. The TMLG must be provided with the Transport Management Plans, details as to timing of implementation, information about construction traffic monitoring conducted by the project, relevant sections of road safety audit reports and other reports, as relevant. Where construction activities have the potential to significantly impact on specific stakeholder or community group facilities, the TMLG should be satisfied that there has been adequate consultation to inform the Transport Management Plans and should consider inviting stakeholder representatives to relevant TMLG meetings. The TMLG must meet at least monthly until the completion of construction.	**Design and construction** MRPV has established the Transport Management Liaison Group (TMLG) as part of the Early Works Program. The Project team has prepared a Transport Management Plan (TMP), which has been verified by the IEA. Project representatives will attend the TMLG meetings and fulfil other obligations as specified in this EPR requirement.
T4 D C	**Road safety design** Undertake independent road safety audits after each stage of detailed design and during and after construction. The project design and operational activities must meet all relevant road and transport authority requirements with respect to transport network user safety.	**Design and construction** The Project will appoint an independent road safety auditor to undertake road safety audits, to ensure all relevant road and transport authority requirements have been met with respect to transport network user safety. The design will be prepared in accordance with Project-specific design requirements and relevant design standards and guidelines.

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EPR Code	Environmental Performance Requirement	Project Response
T5 D C O	**Traffic monitoring** Undertake traffic monitoring on selected roads (arterial and non-arterial) identified in consultation with the relevant transportation authorities and local council pre-construction, at six monthly intervals during construction, and up to two years after construction is complete. As part of the selection process, consideration must be given to roads that carry public transport services. Ensure any material adverse traffic impacts of the Project are mitigated by implementing local area traffic management strategies, including other works as required in consultation with the relevant road management authorities. Develop and implement traffic performance management to monitor conditions during construction. Real time traffic information must be provided to drivers.	The Project will develop and undertake a traffic monitoring program in accordance with EPR T5. **Construction and operation** Monitoring will also be undertaken in consultation with the relevant transportation authorities and local councils prior to commencement of construction, at six monthly intervals during construction, and up to two years after construction is complete. Operational phase monitoring is the responsibility of MRPV.

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