



**SUBURBAN
RAIL LOOP**

PLANNING AND ENVIRONMENT ACT 1987

WHITEHORSE PLANNING SCHEME

**CONDITION 4.7 OF THE SUBURBAN RAIL LOOP EAST
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Box Hill Tram Terminus Urban Design and Landscape Plan – Compliance Assessment

7 July 2023 (amended 2/08/2023) / SRL East



**SUBURBAN
RAIL LOOP
AUTHORITY**



Acknowledgement of Country

Suburban Rail Loop (SRL) is located on the traditional lands of Wurundjeri, Bunurong and Boonwurrung People, who form part of the East Kulin Nation.

We proudly acknowledge and respect Victoria's Traditional Owners as the original custodians of the state's land and waters, their unique ability to care for Country and deep spiritual connection to it. We pay our respect to their Elders past and present, whose knowledge and wisdom has and continues to ensure the continuation of culture and traditional practices.

We are committed to partner and meaningfully engage with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and the creation of enhanced opportunities for Aboriginal people in SRL Precincts.

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1. Compliance with the Surface and Tunnel Plans

1.1 Overview

The design, construction and subsequent operation of the Box Hill Tram terminus are required to be generally in accordance with the approved SRL East Surface and Tunnels Plan.

The Surface and Tunnels Plan identify, at a high level, the location of key infrastructure to be delivered through the SRL East project. Specifically, they identify the Project Boundary, land associated with the tunnel alignments, SRL stations, Stabling Facility and Emergency Support Facility, as well as the location and high level configuration of specific rail, transport and public realm elements, including underground station boxes, above ground station facilities and transport interchanges.

Pursuant to Clause 4.7.4 (d) of the Suburban Rail Loop East Incorporated Document August 2022, a UDLP must be accompanied by an explanation of how the UDLP is generally in accordance with the approved Surface and Tunnel Plans.

The location of the Tram terminus as set out in the UDLP is directed by and consistent with the Surface and Tunnel Plans., and the pedestrian connections are consistent with the overarching planning pedestrian and cyclist movement network.

1.2 Key Directions and Requirements

The Tram terminus site is shown on Map 31 of the Surface and Tunnel Plans, which covers the SRL station at Box Hill and the immediately surrounding area.

The key aspects of the Surface and Tunnel Plan as it relates to the Box Hill Tram terminus can be summarised as follows:

- The Tram terminus is located south-west of the future SRL station at Box Hill within the Whitehorse Road central median, extending between Clisby Court to just east of Bruce Street. A dedicated taxi/commercial vehicle zone is to be located directly opposite the Tram terminus on the northern side of Whitehorse Road.
- The existing pedestrian crossing within the Whitehorse Road central median is to be retained, to form part of a primary pedestrian route from Market Street to the south, through to the northern SRL station entrance and ultimately to Box Hill Gardens via a new linear open space/dedicated reserve.
- Whitehorse Road will be reconfigured and realigned north of the existing median and tram terminus, with what is currently the southern (westbound) carriageway developed as a linear open space reserve containing off road pedestrian and cycle paths.

1.3 Accordance with the Surface and Tunnel Plans

The design and siting of the tram terminus, as described through this UDLP, is consistent with the overall layout of Project infrastructure as detailed on the Surface and Tunnel Plan (see Figure 1). The Tram terminus has been sited west of the existing pedestrian crossing/ path within the Whitehorse Road median in accordance with the Plan.

The design also incorporates a direct shared connection between the tram platform and the median path/crossing, in line with the overarching planned pedestrian and cyclist movement network linking the existing Box Hill railway station with the future SRL station and Box Hill Gardens.

Whilst not required to be delivered as part of the development of the tram terminus, the design has also considered the future spatial requirements of the ultimate alignment of Whitehorse Road to the north, with all tram infrastructure sited in its ultimate location to allow for future delivery of these surrounding elements with minimal disruption to services. The design has also provided space for path connections future linear open space to the south, with the HV kiosks on the future interface with this open space sited so as to minimise potential conflicts with path alignments.



Figure 1: SRL East Surface and Tunnel Plans, Map 31 of 31

2. Compliance with the Urban Design Strategy

2.1 Overview

The Suburban Rail Loop East Urban Design Strategy (UDS) has a three-tier structure as follows:

2.1.1 Urban Design Principles and Objectives

These includes principles, objectives and key directions to inform the design process to ensure good design outcomes.

2.1.2 Project-Wide Requirements and Benchmarks

These relate to specific project elements and inform the minimum standard of the design quality expected for the Project. They encompass all aspects of the project including station buildings, ancillary structure, public realm works, landscaping and signage.

Those element-based requirements which apply to the Box Hill Tram terminus are:

- 5.2 Substations and ancillary structures
- 5.3 Public spaces

- 5.4 Green Infrastructure
- 5.5 Creative Works
- 5.6 Lighting
- 5.7 Walking and Cycling
- 5.10 Materials and finishes
- 5.12 Construction Phase

2.1.3 Key Urban Design Outcomes and Place Specific Requirements

These set out contextually responsive requirements to communicate the key design outcomes to be achieved within specific precincts and local places. The Box Hill Tram terminus site is located within the Box Hill precinct, the requirements for which are set out at Section 6.6 of the UDS.

2.2 Accordance with the UDS

Pursuant to Clause 4.7.4 (a) of the Suburban Rail Loop East Incorporated Document August 2022, a UDLP must be accompanied by an explanation demonstrating how the UDLP is in accordance with the approved UDS.

The compliance registers at Appendix A set out the list of the requirements of the UDS, including the Place-specific requirements for Box Hill, along with an explanation of how the UDLP is in accordance with each.

3. Compliance with Environmental Performance Requirements

3.1 Overview

The design, construction and subsequent operation of the Box Hill tram terminus are required to comply with the Environmental Performance Requirements (EPRs) included in the approved SRL East Environmental Management Framework (EMF), as and where relevant. The role of the EPRs is to ensure potential environmental, amenity and land use impacts are addressed and satisfactorily managed at all stages of the Project.

Pursuant to Clause 4.7.4 (b) of the Suburban Rail Loop East Incorporated Document August 2022, a UDLP must be accompanied by an explanation demonstrating how the UDLP with the relevant EPRs as identified in the approved EMF.

The compliance register at Appendix B lists all Project EPRs and assesses how the Box Hill tram terminus design and construction complies with each.

Appendix A – UDS Compliance

Table 1: Assessment against Urban Design Strategy Principles and Objectives

4.0 Urban Design Principles and Objectives		
Reference	Objective	Response
UD1	Enduring (Places that are functional now and for generations to come)	
UD1.1	Legacy - Create a design that is enduring and functional for generations to come, is easy to maintain and manage, is adaptable to changing uses with minimal reconstruction, and will age gracefully in concept and detail.	The tram terminus design, and specifically the platform and shelters, incorporates simple, durable forms and material finishes so as to minimise overall maintenance requirements whilst maximising functionality. The installation of the tram mosaic from its location on the existing tram platform to the east provides visual continuity with this previous infrastructure, connecting the development into the broader story and evolution of tram services within Box Hill.
UD1.2	Future ready - Ensure the design catalyses urban renewal, encouraging the evolution of the precincts and changing uses over time.	<p>The design and layout of the tram terminus has carefully considered the impacts of staged development of the broader SRL project within the Box Hill precinct and has sought to provide a positive and flexible design outcome at all stages of this process, through:</p> <ul style="list-style-type: none"> Retaining existing canopy trees and propose landscaping to the south, on the interface with the future linear open space, with quick growing low shrubs and ground cover to the northern batter to provide an attractive interim treatment prior to its removal following the ultimate realignment of Whitehorse Road "Future proofing" the potential for additional design treatments and/or embellishment to be applied the tram shelter through reinforced footings, preserving the opportunity for implementation of a "whole of precinct" urban design treatment once broader planning processes have advanced. Siting the platform, track alignment and associated infrastructure to allow for the future extension of the tram line to Box Hill Town Hall. Providing adequately engineered footing details to support a future extended tram canopy at a later stage.
UD1.3	Resilient - Ensure the infrastructure, buildings and places can survive, adapt and thrive when subjected to stresses and acute shocks such as changes in climate and technology, and extreme events.	The tram tracks and overhead wiring have been designed to accommodate future technological/ operational upgrades within the network. Landscaping and site drainage has been designed to respond to predicted changes in rainfall as a result of climate change.

UD1.4	Environmentally sustainable - Optimise environmental performance and embed sustainability initiatives into the design response of the infrastructure project and surrounding precinct.	The tram terminus has been designed to maximise the use of recycled materials in its construction. LED lighting will be incorporated into the tram shelters and on the platform to increase energy efficiency.
UD2	Diverse (Places that are inclusive and offer a diverse range of experiences)	
UD2.1	Strategic alignment - Facilitate integrated land use and transport solutions that respond to the precinct ambition and strategic transport and land use planning.	The relocated tram terminus has been sited to form part of a broader consolidated public transport "hub" extending between the SRL station to the north and the existing railway station and bus interchange to the south, within Box Hill Central. The location is in accordance with the approved Surface and Tunnel Plans.
UD2.2	Functional urban structure - Create an urban structure that ensures the adequate provision of public spaces that support a complementary mix of activities.	The tram terminus will support implementation of an enhanced pedestrian promenade and associated public spaces within the Whitehorse Road central median, as identified within the UDS, as a key destination for pedestrians and consequently providing activation of the adjoining space through passive surveillance, lighting and activity.
UD2.3	Integration with context - Ensure new works accommodate travel routes and activities that connect to, integrate with and complement those in the wider precinct.	The tram terminus has been sited to directly connect with the existing pedestrian crossing through the Whitehorse Road central median. This is a critical link between retail/commercial uses on the north and south sides of Whitehorse Road, and has been identified for further enhancement as part of a pedestrian promenade to be delivered as part of the wider development of the project.
UD2.4	Welcoming - Design places and movement networks that are welcoming, inclusive and pleasant for the whole community and encourage diverse social and cultural interaction within public spaces.	The tram terminus has been designed and sited to maximise accessibility and preserve clear sightlines and physical links through to the existing public realm to the north, encouraging activation and interaction between these spaces.
UD3	Connected (Places that are connected physically and spatially)	
UD3.1	Linkages - Improve people's ability to walk, cycle and access public transport within a permeable urban structure that offers safe and efficient links and reduces barriers to movement.	The relocation of the tram terminus to the west of the existing pedestrian crossing will improve walking and cycling movements between the north and south sides of Whitehorse Road by removing the existing tram tracks, which currently pose a barrier to continuous movement through the crossing due to the need to wait for trams to pass.
UD3.2	Transport integration - Facilitate seamless intermodal transfers prioritising public transport, walking and cycling networks, and design movement networks for safe interactions between transport modes.	The tram terminus has been specifically designed to prioritise walking and cycling transfers between transport modes. The location of the tram terminus is in accordance with the Surface and Tunnel Plans, which considered the broader pedestrian and cycling opportunities for Box Hill as part of SRL East.

UD3.3	Legible - Reflect walking and cycling desire lines, promote intuitive wayfinding, reduce reliance on signage and minimise visual clutter and obstructions to key views.	The tram terminus is directly connected to the existing signalised pedestrian/cyclist crossing at Whitehorse Road via a short path and will be clearly visible within the wider landscape/streetscape through careful siting of new structures and landscaping to maintain clear sightlines.
UD3.4	Green network - Facilitate green networks that link public and private open space and support urban ecology, biodiversity and cooling.	The proposed landscaping design will provide biodiversity and potential habitat in the immediately surrounding area through the incorporation of native shrubs and ground covers. The retention of the mature exotic trees on the southern boundary will provide shade and contribute to urban cooling.
UD4	Accessible (Places that are socially connect, enjoyable and easy to walk and wheel around)	
UD4.1	Universally inclusive - Enable all people to access, understand, use and enjoy spaces across the project area and surrounding precincts regardless of their age, size, ability or disability. To the greatest extent possible, move beyond baseline accessibility compliance towards support for genuine dignity, equity, social inclusion and independent mobility in the use of public places.	Access to the tram platform and surrounding path networks have been designed in accordance with Universal Access principles to provide a safe and enjoyable experience for all users through gentle (max 2.5%) paving gradients, additional width in connecting paths, clear sightlines and visibility from the surrounding street network during both day and night.
UD4.2	Twenty-minute neighbourhoods - Support and enhance convenient and desirable access to everyday services, facilities and key destinations within a 20-minute walking distance from home	The relocation of the tram terminus to the western side of the Whitehorse Road median strip will contribute to the enhancement of the broader Box Hill precinct, which already provides high quality access between multiple transport nodes and commercial, residential, community and retail services.
UD4.3	Active transport - Encourage walking and cycling for transport and recreation with integrated active transport infrastructure that can accommodate future growth and connects seamlessly with surrounding networks and with existing and proposed infrastructure.	The tram terminus has been sited and designed to allow seamless connections to existing and future walking and cycling infrastructure.
UD4.4	Safer design - Design places that feel safe for the community using them. Increase passive surveillance and decrease barriers to participation in public space by acknowledging and accommodating the specific needs and experiences of all population groups within the community.	<p>The design has adopted a comprehensive approach to safety and patron comfort within the tram platform itself, the surrounding landscaping and ancillary structures, and its interfaces and connections with the broader public realm through:</p> <ul style="list-style-type: none"> • Providing universal DDA compliant access; • Minimising contact between pedestrian/cyclist access and road traffic, to the existing signalised crossings at Whitehorse Road; • Ensuring that access to the tram platform from the broader public realm is free of visual clutter and obstructions with clear sight lines; • Providing consistent, 24 hour lighting; and • Use of light, open and/or low scale structures to avoid “dead corners” or blind spots.

UD5		
Enhancing (Places that enhance the local environment and community)		
UD5.1	Heritage - Celebrate, respect and respond to Indigenous and non-Indigenous cultural heritage, values and local history.	The tram terminus design incorporates elements from the existing tram platform and surrounding plaza from the east, including the tram mosaic.
UD5.2	Responsive - Design to respond, connect and build on the unique and valued social, cultural, physical and economic aspects of the precinct.	The design of the relocated facility is similar in form, scale and appearance of the existing tram terminus to the east, maintaining the overall "feel" of the immediate area. The design has incorporated materials and elements common to the broader palette used within the central Box Hill area.
UD5.3	Sensitive - Sensitively enhance landscape and urban realm outcomes; and minimise negative physical and visual impacts associated with the new infrastructure.	The relocated tram terminus has reduced its overall footprint and level of hard surfacing compared with the existing facility to the east. Visual bulk has been minimised through the use of open, lightweight structures (tram shelter), with ancillary infrastructure being modest in scale and treated with ameliorative landscaping.
UD5.4	Healthy - Design infrastructure and green networks, spaces and places that support active lifestyles, and encourage social interaction to improve physical and mental health.	The tram terminus has been sited and designed to integrate with the future enhanced linear open space along Whitehorse Road, with space provided for potential future cycling and pedestrian connections from the east-west trails to be delivered in this open space.
UD5.5	Quality design - Create a high-quality design that makes a positive contribution to the local built and natural environment.	See responses to UD1.1, UD1.2 and UD5.3.
UD6		
Liveable (Places that are comfortable and welcoming)		
UD6.1	Amenity - Improve urban amenity by realising site specific opportunities to enhance environmental comfort and create pleasant and attractive places that feel safe and are safe for people to move through and spend time in.	The tram terminus design will improve urban amenity, particularly through the broader Project construction period, through providing attractive landscaping to key interfaces and activation of the abutting public realm and pedestrian crossing within the Whitehorse Road median.
UD6.2	Landscape values - Create a coherent and engaging landscape response that embraces natural qualities, community and cultural values.	The proposed landscape design and planting palette incorporates a mix of species to reflect both the existing garden character of the central Box Hill area and enhance opportunities for greater biodiversity and habitat.
UD6.3	User experience - Enhance the journey and precinct experience for local communities, visitors and transport users.	The relocation of the tram terminus will, in the long term, contribute to enhancement of the public realm and improved connections between different modes of transport through facilitating broader improvements to the Whitehorse Road central median and north-south pedestrian movements, all of which will deliver an improved experience for people using and moving within central Box Hill.

UD6.4 Places for peoples - Create inviting, people-friendly streets, open spaces and public places, and maximise the opportunities to create green places.

See responses to UD2.2, 2.4 and 3.4.

UD6.5 Activation - Create activated, memorable and diverse places in the short and long term; manage interfaces and encourage a range of activities to deliver vibrant mixed-use neighbourhoods.

The tram terminus directly connects to the existing pedestrian crossing within the Whitehorse Road median, which currently acts as a default plaza/open space. Following commencement of works to realign Whitehorse Road to its interim configuration over the station box excavation, the tram terminus will play a critical role in maintaining activation and perceived amenity within this space, through presenting an open, welcoming interface during construction.

In the long term, the tram terminus will seamlessly integrate into the broader public realm through clear and logical pedestrian/cyclist connections and continuation of boundary landscaping to the linear open space to the south, to be set out in a future UDLP.

While the ultimate design for the public realm within this UDLP will be further resolved through future UDLP processes, the relocation of the tram terminus does consider and address relevant requirements in the Urban Design Strategy as outlined below.

Table 2: Assessment against Urban Design Strategy Project-wide requirements and benchmarks

5.0 Project-wide requirements and benchmarks		
Section	Requirements	Response
5.2	Substations and ancillary structures	
5.2.1	<p>A hierarchy of considerations has been applied to minimise the negative impact of substations and ancillary structures, and maximise their potential to make a positive contribution to places. In order of importance, those considerations are:</p> <ol style="list-style-type: none"> Siting — optimising location with respect to public realm and open space, trees and other vegetation, significant buildings and monuments, view lines, nearby uses, existing and future land use and critical interfaces Building mass — minimising the footprint and bulk of above ground service buildings and rail infrastructure to minimise their visual impact Design — improving place outcomes 	<p>Ancillary structures to the tram terminus platform, shelters and furniture are limited to the driver toilets located on the south side of the platform, overhead wiring/lighting and supporting masts, and the electrical kiosks located at the southern boundary of the tram terminus site.</p> <p>The toilets and overhead masts have been located on or directly adjacent to the tram platform and tracks, consolidating built form and minimising overall visual bulk. The kiosks have been sited to the western end of the tram terminus site to minimise visual impact when viewed from the Market Street pedestrian mall and signalised crossing at Whitehorse Road, which forms the primary access to the Tram terminus. Sufficient space has been provided around each kiosk for establishment of landscape screening soften their overall appearance.</p>

- 5.2.3 The number and size of 'smaller scale' ancillary structures including skylights and access stairs located within the public realm is minimised, and where not avoidable
- Are well-integrated to minimise visual clutter within the public realm
 - Are non-intrusive and do not impede circulation or limit maintenance or other access
 - Do not limit the comfort or enjoyment of public space
 - Contribute to the delivery of an integrated public realm with a well-considered palette of materials and finishes.

The two electrical kiosks have been sited to minimise impacts on views from the Market Street pedestrian mall and signalised crossing at Whitehorse Road, the structures are as far west as is practicable. These structures will be modest in scale and landscape screening will soften their overall appearance.

- 5.2.8 Walls, fences or other barriers are well-designed and:
- Use robust and durable materials
 - Are well-integrated with the surrounding structures, landscape and urban elements
 - Minimise the potential for vandalism and graffiti through material selection, detailing and positioning
 - Eliminate potential concealment places and entrapment spaces, and maximise perceptions of safety and security
 - Have consistently high levels of presentation to all elevations visible from the public realm
 - Ensure that any noise mitigation or security aspects are well integrated
- Manage negative impacts on privacy and amenity for adjacent uses when located on boundaries shared with the Project

Yarra Trams standard balustrades and fencing has been selected, are all stainless steel, robust and suitable for a public environment.

- 5.2.9 Where screen planting or green walls are proposed to manage impacts of service buildings or other structures including construction hoardings, adequate space and conditions are allowed for the healthy growth and maintenance of vegetation to achieve effective screening.

Sufficient space has been provided around each kiosk for establishment of landscape screening to soften their overall appearance.

- 5.2.10 New infrastructure is designed and implemented to support SRLA's sustainability strategy and associated targets.

The tram terminus has been designed in accordance with SRLA's sustainability strategy.

5.3 Public spaces

- 5.3.4 The design of public spaces:
- Reflects local council service requirements

The tram terminus has been designed in accordance with Yarra Trams' and Council's service requirements, standards and guidelines including approved furniture and fixtures, material palettes.

	<p>b. Is coordinated with and complements local council and other asset managers' approved furniture and fixtures, material palettes, standards and guidelines</p> <p>Is in line with community aspirations.</p>	
5.3.5	<p>Designs for public spaces affected by the Project are resolved and coordinated in a holistic way, reducing clutter and addressing all new and existing elements as part of a coordinated design. These elements include light and traffic signal poles, safety elements, meter boxes, statutory and wayfinding signage, street furniture and other infrastructure elements within the space.</p>	<p>The tram terminus has been designed with a view to reduce clutter, coordinate elements and operate within Yarra Trams standard branding requirements and existing treatments in the immediately surrounding area, as informed by Whitehorse City Council's Urban Design Guidelines and Yarra Tram's requirements.</p>
5.3.6	<p>The Design supports management of public spaces to a high standard to:</p> <p>a. Ensure the spaces are able to be accessed, maintained and operated in line with community expectations and the requirements of the ultimate asset owner</p> <p>b. Reflect ownership areas and extents of maintenance responsibilities</p> <p>c. Avoid abrupt changes in materials and quality of finishes at maintenance boundaries.</p>	<p>The proposed tram terminus design has used robust materials and the design has considered vehicle maintenance access requirements. Changes in materials have been managed to not be abrupt or require repeated maintenance upgrades over time.</p>
5.4	Green infrastructure	
5.4.1	<p>The Design adopts a holistic and integrated approach to green infrastructure outcomes to support resilient and adaptable places</p>	<p>The proposed landscaping design and response has sought to balance operational, safety and maintenance needs with a robust, attractive landscape treatment which enhances the visual appearance of the Tram terminus and surrounding public realm through the staged delivery of broader precinct works. This has been achieved through:</p> <ul style="list-style-type: none"> • Prioritising retention of existing trees on the southern boundary of the site where possible, maintain existing shade and landscape amenity; and • Providing layered planting treatments incorporating lower scale shrubs and ground cover as an interim treatment. Specifying robust, drought tolerant and biodiverse plant species within garden beds adjacent to the tram platform and the site perimeter.
5.4.2	<p>The design of new infrastructure and the siting of elements:</p> <p>a. Minimises removal of mature trees, planted and remnant native trees, particularly large amenity trees</p>	<p>The tram terminus site is located within an existing road median with limited biodiversity values, native vegetation or known fauna habitat. However existing trees have been prioritised for retention noting the character values the trees</p>

- and those within or connected to public reserves and parks
- b. Manages negative impacts on native vegetation from removal or disturbance
 - c. Minimises loss of significant landscapes and parkland
 - d. Minimises potential for impacts on waterways, identified biodiversity and fauna habitat corridors and sites
 - e. Maximises natural gravity potential of water flows in drainage for water quality treatment, re-use potential and irrigation of parkland and vegetation.

provide. Design has sought to maximise space for new and retained landscaping as much as is practicable, noting the constrained nature of the site and extent of construction required to occur on interfacing land as part of delivery of the wider SRL station area and public realm works. In particular, Yarra Tram's maintenance access has been revised from a connecting driveway, which would have resulted in the loss of all of the existing exotic trees on the southern boundary of the site.

5.4.3

The Design optimises the number of trees and extent of tree canopy and landscaping

Opportunities for new canopy tree planting as part of the landscaping design are limited due to the spatial constraints on the site and extent of encroachment required by future works associated with delivery of the wider SRL East project. Notwithstanding this, the design has sought to maximise the location and extent of landscaping, including canopy cover, by incorporating additional planting and retention of existing trees where possible.

5.4.4

Planting design and execution:

- a. Ensures plantings in and around the station environs are of high quality
- b. Provides sufficient space and conditions, soil depth and volume for new and existing trees and vegetation to maintain plant health and growth; and employs innovative design and technical approaches to support this
- c. Supports biodiversity
- d. Incorporates permeable surfaces to allow infiltration of air and water into the soil
- e. Is responsive to the local context, climate and soil conditions and will achieve a low maintenance, thriving and enduring outcome
- f. Integrates opportunities for the interpretation of themes, places and stories of cultural heritage significance including Indigenous and non-Indigenous
- g. Takes into account predicted future changes in climate
- h. Is consistent with state and local government standards
- i. Uses species appropriate to the scale of their location and are able to be accessed for maintenance.

The proposed planting palette includes a mix of native and exotic species which have been chosen for overall robustness, drought tolerance and maintenance considerations, noting the harshness of the immediately surrounding environment and level of overall disturbance resulting from foot and vehicular traffic in close proximity.

5.4.5	<p>The Design places a high priority on tree planting to achieve positive above-ground amenity and place outcomes, demonstrating consideration of criteria that may affect the tree planting design including:</p> <ul style="list-style-type: none"> a. Requirements for clear paths of travel, sight lines at intersections and driveways b. Any setbacks for safety as relating to traffic speed limits, emergency access, underground services c. The depths and locations of any underground structures d. The location and extent of canopies for weather protection, building overhangs or other overhead structures 	<p>In addition to the general constraints to establishment of canopy trees within the proposed landscape design outlined at Section 5.4.3 above, the location and species of canopy trees proposed has been guided by Yarra Trams requirements regarding planting in and around their assets.</p>
5.4.6	<p>Opportunities to create fauna habitat and links and enhance biodiversity are maximised.</p>	<p>Due to the site's location within the median strip of a major road, opportunities for new biodiversity links are limited.</p> <p>Notwithstanding, the landscape design incorporates a diverse mix of plantings within the garden beds, to contribute to urban biodiversity.</p>
5.4.7	<p>Habitat is created and biodiversity enhanced to complement connected and adjoining sites:</p> <ul style="list-style-type: none"> a. Extending the range of native species existing in the broader area b. Establishing new, or reinforcing existing, habitat corridors for native fauna to move more easily through the urban landscape. 	<p>See response to 5.4.6.</p>
5.4.8	<p>Use of potentially invasive environmental weed species is avoided throughout the Project.</p>	<p>The proposed planting schedule does not include listed noxious weeds or plants identified by the City of Whitehorse as local weeds.</p>
5.4.9	<p>Canopy tree planting and vegetation</p> <ul style="list-style-type: none"> a. Is prioritised within the Project to provide natural shade, support the urban forest and help counteract the urban heat island effect including in areas accessed by workers b. Is maximised around seating areas and pause points, along pedestrian and cycle routes and within paved areas to improve amenity and user comfort. 	<p>See response to 5.4.3, noting spatial limitations on placement of canopy trees.</p>
5.4.10	<p>The use of potable water for irrigation is minimised and designs</p>	<p>The proposed landscape design has maximised passive irrigation opportunities.</p>

supporting passive irrigation are maximised. Where active irrigation is included, it is used strategically to support:

- a. Trees and other vegetation for the achievement of urban cooling outcomes
- b. Feature planting beds in high profile locations
- c. Raised planting beds or other locations to which passive irrigation cannot be provided

5.4.11	<p>Landscape buffers:</p> <ol style="list-style-type: none"> a. Are a suitable width to support healthy plant growth with low maintenance requirements b. Include low planting in combination with tall plants and trees to mitigate visual impacts, filter and enhance views 	<p>Landscaping within and around the tram terminus has been sited and designed to enhance, as opposed to screen/soften, the visual appearance and appeal of tram infrastructure and deliver a coherent and unified design response.</p>
5.4.12	<p>The Design considers incorporation of innovative green infrastructure solutions. Where green walls or green roofs are proposed, appropriate locations are selected, and adequate conditions are allowed for the healthy growth and maintenance of plants</p>	<p>Due to engineering and operational requirements, there were no meaningful opportunities for integration of green infrastructure, nor green walls/structures, as part of the tram terminus design.</p>
5.4.13	<p>Landscaped areas minimise the steepness of the grade to support long-term plant establishment and growth, and to minimise mulch and soil loss</p>	<p>Grading within landscape beds are minimised by use of terracing/retaining walls, where required, to maximise overall soil and water retention. Where steeper grades are required (eg the northern batter), the planting palette has specifically been designed to include plants which can establish quickly under these conditions and stabilise the soil.</p>
5.4.14	<p>Planting is selected, located and able to be maintained to achieve clear sight lines for safety and wayfinding.</p>	<p>Planting in and around the path connection between the tram platform and pedestrian crossing has been designed to incorporate low, compact shrubs and succulents to enable clear sightlines for pedestrians and cyclists entering/exiting the tram.</p>
5.4.15	<p>Landscape areas are clearly defined and are not left-over and undesirable spaces.</p>	<p>The landscape design incorporates defined garden beds around the perimeter of the tram platform, tracks and associated hard surfacing, the footprint of which has been minimised to increase overall landscape coverage.</p>
5.4.16	<p>A 'water-sensitive urban design' (WSUD) approach is used to support water management objectives and achieve a broad range of community and environmental benefits.</p>	<p>The tram terminus design and footprint has sought to minimise potential run off through the siting and design of tram infrastructure, resulting in a decrease in overall hard surface cover from existing conditions.</p>
5.4.17	<p>Integrated water management (IWM) is considered in collaboration with relevant stakeholders to ensure a holistic approach to the water cycle is inherent within the Design.</p>	<p>The future UDLP prepared for the broader Box Hill SRL East works will incorporate considerations of the IWM, to ensure a holistic approach.</p>

5.4.18	WSUD infrastructure is prioritised where there are opportunities for water harvesting, treatment and reuse that support community facilities.	See response to 5.4.16
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5.5 Creative works

5.5.1	<p>Any creative works and initiatives:</p> <ol style="list-style-type: none"> Are well-integrated into built outcomes and surrounding context Are appropriately located and do not impede pedestrian circulation, lines of sight, maintenance, service or emergency vehicle access Are located and designed to support interchange user information cognition and experience Are responsive to the local environment, culture and sense of place Embrace opportunities for the contemporary interpretation and celebration of Indigenous and non-Indigenous history and cultural heritage Are responsive to the architectural and public realm design Are of appropriate scale. 	<p>The proposed design will incorporate the existing tram mosaic, currently located on the platform east of the pedestrian crossing. Opportunities for inclusion of additional creative works, embellishment or similar may be developed in a future broader Box Hill creative strategy to inform the delivery of the SRL station and associated public realm improvements.</p>
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5.5.3	<p>Lighting and other media are:</p> <ol style="list-style-type: none"> Well-integrated into creative works or the adjacent buildings, infrastructure and public realm Coordinated with area lighting and other services to minimise clutter in the public realm Energy efficient and low maintenance 	<p>The tram terminus design does not include creative works incorporating feature lighting or other media elements, primarily due to safety and operational requirements.</p> <p>Further assessment of the proposed lighting design is detailed at Section 5.6 below.</p>
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5.6 Lighting

5.6.1	<p>Lighting enhances the user experience, increases safety, and makes the station environs and access routes easy and enjoyable to walk and cycle around</p>	<p>Appropriate lighting will be provided to both the tram platform and path that connects the existing pedestrian crossing at Whitehorse Road (currently illuminated 24-hours per day) through a combination of LED lights installed within the tram shelter and overhead lighting attached to the tram wiring poles.</p>
5.6.2	<p>Appropriate levels of consistent and layered lighting is used to maximise safety and perceived safety for all members of the community.</p>	<p>See response to 5.6.1.</p>

5.6.3	Lighting is used to create a cohesive nightscape with smooth transitions between areas of different illumination levels	See response to 5.6.1
5.6.4	Lighting supports way finding, orientation and legibility to: <ul style="list-style-type: none"> a. Convey a hierarchy of routes and public spaces b. Define pedestrian and cycle connections to public transport and other destinations c. Contribute to a sense of arrival at destinations. 	Lighting within the tram platform and connecting path will provide a clear visual signal to pedestrians and cyclists as to the connection from the existing pedestrian crossing to public transport services
5.6.5	Lighting is well-designed and integrated to minimise: <ul style="list-style-type: none"> a. Clutter in the public realm b. Conflicts with trees (locations and mature size) c. Adverse impacts from glare, light spill and sky glow 	Proposed overhead lighting within the Tram terminus area is to be attached to existing tram wiring poles, minimising overall visual clutter. All overhead wiring poles and lighting brackets are painted Dulux "Brunswick Green" and utilise the same architectural treatment as the lighting poles within the broader Box Hill precinct.
5.6.6	Lighting is used in interior, accessible spaces below structures, or undercroft spaces to increase safety, comfort and amenity where natural light is limited.	<p>Natural light to the tram platform and other publicly accessible areas has been maximised through the use of open, lightweight structures and furniture which minimise shadowing and/ or "hidden spaces."</p> <p>The tram shelter incorporates built in LED lighting within the roof to provide direct lighting within the immediately surrounds, avoiding any potential shadowing from the structure at night.</p>
5.6.7	Pedestrianised streets and thoroughfares are well-lit and inviting for use at night.	The path connection to the tram terminus will be separately lit but to the same levels as the adjoining pedestrian crossing/path, which provides high levels of day/night illumination.
5.6.8	Lighting is used to support and enhance the diverse uses and activities in the public realm.	See response to 5.6.1.
5.6.10	Light fixtures are energy efficient, vandal resistant, easily maintained and easily managed to optimise lighting outcomes and energy use.	All proposed lighting has been designed to be easily accessible for maintenance purposes and utilises durable fittings and equipment. The use of LEDs within the tram shelter and on the platform will minimise overall energy consumption and need for replacement.
5.7	Walking and cycling	
5.7.1	Walking and cycling routes are attractive and desirable to use, comfortable and convenient, safe, and perceived to be safe.	Pedestrian and cyclist access to the tram terminus platform will be via connection to the existing signalised crossing/walkway within the Whitehorse Road median. This provides a direct route to Box Hill Central Station and Shopping Centre via the Market Street mall, and heavily used by commuters

		<p>and shoppers.</p> <p>The connection between the tram terminus and this crossing is relatively short, allowing for clear views between the platform and the pedestrian crossing and minimising potential 'blind spots' through open, low level landscaping in and around the path.</p>
5.7.2	The design of walking and cycling routes reflect appropriate transport modes, hierarchies and space allocation requirements to encourage the safe use of all public and active transport modes	The path connection between the pedestrian crossing and tram platform is generous in proportion and provides sufficient space to avoid potential conflicts between cyclists and pedestrians.
5.7.3	<p>Site planning and the design of pedestrian and cycling networks:</p> <ol style="list-style-type: none"> Demonstrate positive user outcomes for safety, directness, coherence, comfort and attractiveness Maintain and enhance the walking and cycling network within station environs, particularly Strategic Cycling Corridors (SCC), municipal routes, the Principal Pedestrian Network (PPN) and pedestrian priority areas Maximise opportunities for new walking and cycling routes that extend local connectivity for all users including linking to existing or new community facilities, open spaces, urban renewal areas or National Employment Innovation Clusters Ensure good integration with broader movement networks to support high-quality public realm outcomes 	The 2007 Box Hill Transit City Structure Plan identifies the existing pedestrian crossing at Whitehorse Road as a priority pedestrian route within the broader Box Hill Major Activity Centre, and a critical link between retail/commercial uses on the north and south sides of Whitehorse Road. The tram terminus has been sited to directly connect to this crossing. The location of the tram terminus is directly informed by the approved Surface and Tunnel Plans, which considered future pedestrian and cycling networks.
5.7.4	A holistic design approach is adopted that is inclusive of all groups and members of the community	<p>Access to and from the tram platform and through to the wider path/street network has been designed to be inclusive of a broad range of accessibility and/or mobility needs in order to avoid specific treatments and/or interventions, such as TGSIs, alternative access routes, signage, etc as much as possible. Specifically:</p> <ul style="list-style-type: none"> Access to the tram platform from the existing pedestrian crossing in the median is wide enough to accommodate wheelchairs and other mobility devices in addition to two-way pedestrian traffic; The access to the tram platform is almost at grade and relatively short; Access to the existing pedestrian crossing within the Whitehorse Road median is at a 90 degree angle with clear sight lines through to the tram platform, minimising the need for formal wayfinding signage. Balustrades along the path edge will provide a physical cue as to the route to the tram

platform to minimise the need for TGSIs or similar treatments.

5.7.5	Links are provided through long street blocks to achieve a fine-grained pedestrian network, especially near station entrances.	The tram terminus has been sited close to the existing pedestrian crossing to maintain existing pedestrian movement networks and links across Whitehorse Road.
5.7.6	<p>Issues and barriers for walking and cycling connections are addressed with well-designed routes that minimise:</p> <ol style="list-style-type: none"> Walking and cycling route intersections with motorised vehicle traffic The exposure of walking and cycling route users, and other public open space users, to motorised vehicle traffic. 	Due to the location of the tram terminus within the Whitehorse Road median, pedestrians and cyclists accessing the tram will unavoidably be exposed to vehicular traffic due to the need to cross Whitehorse Road. However, the extent and duration of this exposure is minimised through existing signals at this crossing point. The new location of the tram terminus also eliminates the current need for pedestrians/cyclists to cross the tram tracks.
5.7.7	Separated walking and cycling paths and crossings are used as appropriate to their location and hierarchy, to provide more inclusive, functional and comfortable conditions for pedestrians and cyclists.	The path connection between the tram terminus and pedestrian crossing provides for shared pedestrian/cycling movements due to the limited space available. The future UDLP prepared for the SRL East Box Hill works will consider the pedestrian and cycling paths as part of the future linear reserve to be delivered. UDLP.
5.7.8	Connectivity, continuity and directness of on-road and off-road walking and cycling routes are maintained and enhanced.	The tram terminus has been sited and designed to directly connect into the existing pedestrian/cyclist crossing at Whitehorse Road, which provides an off road link between the northern and southern halves of the broader Box Hill precinct.
5.7.10	Walking routes follow logical and direct alignments that enable people with visual impairments to navigate areas without relying on extensive use of Tactile Ground Surface Indicators (TGSIs).	Walking routes to the tram terminus from the broader street network (including the existing pedestrian crossing at Whitehorse Road) have been designed to utilise traditional cues such as ramps and railings for ease of navigation.
5.7.11	Pedestrian and cycling crossings are provided at strategic points and at regular intervals to support highly accessible places.	The tram terminus has been sited to allow direct connection to the existing signalised pedestrian/cyclist crossing at Whitehorse Road, which provides a critical link between the existing commercial/retail strip to the north and the activity centre "core" to the south, including Box Hill Central shopping centre and railway station.
5.7.12	<p>Pedestrian and cycling crossings are designed to:</p> <ol style="list-style-type: none"> Minimise kerb to kerb distances Maximise safety and priority of pedestrian and cyclists 	Pedestrian and cyclist access to the tram terminus from the surrounding street network will remain unchanged, with the existing pedestrian signals at Whitehorse Road and median crossing remaining the primary access point.
5.7.14	Pedestrian walkways are free from obstructions and have a smooth surface	The design seeks to prioritise pedestrians within the site and to ensure safety for all users. All walkways are free from obstructions and have been designed with smooth surfacing with abutting planting chosen to be fully contained within landscaping beds to minimise tripping hazards.

5.7.15	<p>Risk of movement conflicts around vertical transport elements and path intersections are managed through:</p> <ol style="list-style-type: none"> Adequate waiting space and width provision The cycling path being located to avoid or minimise potentially conflicting user movements. 	<p>The path connection between the tram platform and existing pedestrian crossing is essentially flat (2.5% grade) and has been sized to provide sufficient space for passengers to enter/exit the platform. The platform itself extends past the path connection point, minimising potential congestion at the entrance to the platform by people waiting to board.</p>
5.7.16	<p>The design and dimension of the public realm is generous and provides capacity for more than what is required to accommodate for future pedestrian movements</p>	<p>The tram platform and associated structures have been sited so as to allow space for provision of future pedestrian and cyclist path connections from the south, to be considered as part of the design of the future linear open space and associated cycling/pedestrian trails, as part of the future UDLP.</p>
<p>5.10 Materials and finishes</p>		
5.10.1	<p>Built form and public realm materials are of high quality and are used to:</p> <ol style="list-style-type: none"> Create atmosphere and contribute to amenity Establish or enhance a sense of identity that responds to local context, expresses local history and character Make the place memorable and contribute to a positive user experience 	<p>The overall material and colour palette for the tram terminus, including associated public realm elements such as paving, footpaths, lighting and ancillary structures (e.g. the toilets, hand rails and electrical kiosks) has been chosen to correspond with both Yarra Trams standard branding requirements and existing treatments in the immediately surrounding area, as informed by Whitehorse City Council's Urban Design Guidelines.</p> <p>In the absence of further detail as to the ultimate urban design treatment to be delivered within the wider Box Hill precinct through the design of the SRL station and associated public realm areas, the tram terminus design has focused on durability and simplicity in the selection of materials.</p>
5.10.2	<p>A simple and cohesive public realm material palette assists intuitive wayfinding for pedestrians and cyclists, and contributes to enhancing local identity</p>	<p>The proposed material palette has been selected to correspond to existing treatments, particularly paving, lighting and tactile surfaces, within the adjoining pedestrian crossing and existing Tram terminus. All structures, including furniture, shelters will incorporate Yarra Trams' standard branding and colour palettes where necessary, providing a clear visual signal to public transport users to the location and role of these structures.</p>
5.10.3	<p>The construction methodology, materials, finishes, furniture and other elements used in the Project are fit for purpose and support a durable, safe and robust public realm that:</p> <ol style="list-style-type: none"> Is easy to maintain, and replace with minimal impact on the integrity of finishes Will weather and age well over time 	<p>The tram platform, shelter and associated furniture utilise simple, robust materials in accordance with Yarra Trams' maintenance requirements which have been specifically chosen for durability and are easy to replace/repair.</p>

5.10.4	Selection and application of materials and finishes discourages and minimises the potential for vandalism including graffiti.	The proposed materials palette for the tram shelter and platform has been selected in consultation with Yarra Trams' asset maintenance team and their standard requirements, which are designed to discourage and/or minimise graffiti. Specifically, the shelter and associated furniture primarily comprise galvanised steel and reinforced glass, both of which are relatively robust and facilitate the easy removal of graffiti.
5.10.5	Opportunities are maximised to use materials that are recycled, recovered, have lower embodied energy and are ethically sourced.	As guided by the relevant Sustainability Management Plan, reused/recycled content is to be used where possible to construct all pavements, concrete elements and fill associated with delivery of the tram terminus.
5.10.6	New materials and finishes minimise: a. Light pollution in the surrounding areas from reflectivity b. Contribution to the urban heat island effect.	Notwithstanding constraints posed by operational and engineering requirements associated with the efficient design and operation of tram infrastructure, the design of the tram terminus has sought to minimise the overall potential for reflectivity and ground level temperature rises through the following: <ul style="list-style-type: none"> • Utilisation of pavers which are lighter in colour, in place of asphalt (black) on the tram platform • The tram shelter roof to be flat (or close to flat) to minimise potential glare/reflectivity to road users or surrounding streets.
5.10.7	Construction methodology supports well-designed detailing and durable finishes	See above responses to 5.10.3.
5.10.8	The palette of hard and soft landscape elements is coordinated with any local government strategy, guideline or palette where relevant.	The proposed landscaping and streetscape elements (e.g. paving, lighting, etc.) have been informed by the City of Whitehorse Urban Design Guidelines.
5.11	Parking	
5.11.2	The Design: a. Enables intuitive wayfinding and provides legible signage for easy navigation to cycle parking, drop-off, pick-up, ride share and car parking locations and existing parking structures and facilities b. Considers delivery vehicle parking.	No new or replacement commuter parking is proposed to be delivered as part of the relocation of the Tram Terminus, in line with the directions of the UDS and as shown on the endorsed Surface and Tunnel plans. Permanent pick up/drop off spaces and accessible parking will be provided once the SRL station works are complete and Whitehorse Road has been realigned to its ultimate location, to be detailed through a future UDLP. Bicycle hoops have been provided directly north of the pedestrian ramp to the tram platform. These will be readily visible from the public realm and are located on the main cycling route to and from the platform, avoiding the need for specific signage or wayfinding treatments.

		Whilst designated delivery parking has not been provided in this UDLP, the Tram Terminus design includes dedicated parking bays for maintenance and emergency vehicles which can be used as required.
5.11.5	Cycle parking within the public realm is located to have natural surveillance, to minimise impact on the public realm, and avoid clutter and conflict with pedestrian movement and other activities	Bicycle hoops have been provided adjacent to the pedestrian ramp to the tram platform, within the adjacent landscaping bed. These have been located to be clearly visible and accessible from the public realm and key cycling routes, specifically the median pedestrian path. Surrounding landscaping has been designed to maintain clear sightlines between the tram platform and public realm, enhancing safety and passive surveillance of the bicycle parking area. Sufficient space is available for cyclists to access and park bicycles without interfering with pedestrian movements on the adjoining paths.
5.11.6	Station cycle parking is primarily provided through well-designed consolidated cycle hubs that: <ul style="list-style-type: none"> a. Are prominently located and easily accessible to maximise convenience for all ages and abilities b. Are visible from public areas to maximise opportunities for passive surveillance c. Support and encourage the use of this mode for interchange access. 	This requirement relates to the future SRL Station at Box Hill and not relevant to this scope.
5.12	Construction phase	
5.12.1	The quality of enclosures, hoardings, screens and temporary barriers increase in proportion to the time they will be present on site and their proximity to residences.	Hoardings will be placed around the site during construction for safety reasons. The design of hoardings will be in accordance with the UDS but are not detailed in this UDLP.
5.12.2	Enclosures, hoardings, screens and temporary barriers: <ul style="list-style-type: none"> a. Are neat, respect the character of their setting, mitigate visual impacts on the surrounds and contribute to positive public realm presentation b. Are designed to assist in minimising graffiti, billposting and unauthorised material c. Are designed to address the type of activity and the distance from which they will be viewed (for example, whether seen at close range by pedestrians and residents or at high speed from a road) d. Consider opportunities to incorporate signage that showcase business events and nearby or adjacent businesses affected by construction activities 	Hoardings will be placed around the site during construction for safety reasons. The design of hoardings will be in accordance with the UDS but are not detailed in this UDLP.

- e. Consider opportunities to communicate aspects of the Project and its progress with the community
- f. Consider opportunities for the community to safely view the construction process
- g. Consider opportunities to communicate community events, aspects of place and local cultural heritage, and provide activation to the station environs.

5.12.3	Early landscape buffer and tree planting is used to optimise growth and for its ability to enhance amenity and provide visual screening (where practical and appropriate).	<p>The design provides for the establishment of temporary/interim low-medium scale landscape treatments around the perimeter of the site and where able to be accommodated adjacent to tram and associated infrastructure.</p> <p>Noting that these areas will be required for delivery of other project works, including the permanent realignment of Whitehorse Road to the north, in the medium term (approximately 5-7 years), the landscape design has deliberately focused on fast growing understorey and ground cover species. Inclusion of temporary/interim canopy tree planting has been precluded due to the limited time available for establishment, and potential for negative stakeholder and community perceptions of the removal of these trees, and the Project in general, based on an expectation that they represent the ultimate landscape outcome on the site.</p>
5.12.4	<p>Wayfinding during the construction phase:</p> <ul style="list-style-type: none"> a. Is addressed as part of the overall wayfinding approach for the Project b. Ensures that alternative pedestrian and cycling routes are redirected and clearly signed Provides temporary signage and directional signs to give information and directions to businesses and community facilities affected by construction activities 	The need for temporary wayfinding signage during construction of the tram terminus has largely been minimised through retention of the existing pedestrian crossing at Whitehorse Road, which provides the primary north-south active transport route. Notwithstanding, any short term disruptions to access outside this link will be acceptably addressed through the Traffic Management Plan to be prepared as required by the relevant EPRs.
5.12.5	Accessible, relatively direct and safe connections are provided around construction activities with particular care taken that pedestrian access and user experience is considered.	There will be minimal disruption to pedestrian and vehicular movements during construction works, as the tram terminus site is physically separated from existing access routes. Importantly, the pedestrian connection across Whitehorse Road will remain open during the works period.
5.12.6	Temporary landscape treatments, features or screening are reused across the Project, where appropriate.	Future opportunities for reuse will be considered as part of the relevant Recycle First and Sustainability Management Plans

5.12.7	Opportunities to recycle and reuse excavated materials, site materials, site elements (including demolition materials), and any trees removed as part of the Project, are maximised to create new valued design outcomes	Future opportunities for reuse will be considered as part of the relevant Recycle First and Sustainability Management Plans.
5.12.8	Trees and other vegetation to be retained are protected from damage, and are able to be maintained and thrive during the construction phase.	The mature canopy trees that are to be retained on the southern boundary of the tram terminus site will be protected during construction, with fencing to be established and works in proximity to be supervised by the Project Arborist.
5.12.9	Heritage places to be retained are protected from construction activities and restored as appropriate and in consultation with relevant stakeholders.	<p>Two heritage items are located within the Tram terminus works site, namely the Whitehorse Hotel Statue and Portico and Cr. Ellingworth Commemorative Drinking Fountain.</p> <p>These items will be dismantled, stored and restored (as needed) in line with the processes outlined in the SRL Heritage Interpretation Strategy, in order to preserve the opportunity to incorporate them into future public realm design and embellishment delivered as part of future SRL works.</p>
5.12.10	Memorials, plaques, monuments and artworks are protected in-situ if possible and, if required to be moved, are temporarily dismantled, removed, restored and reinstated or relocated as appropriate and in consultation with relevant stakeholders	<p>The Journey's Seed public sculpture, located west of the existing terminus, and in-ground tram mosaic on the platform will both be removed and stored to facilitate construction of the relocated Tram terminus.</p> <p>Whilst the spatial constraints of the tram site mean that Journey's Seed has not been able to be incorporated into the final design, it will remain in storage so as to preserve the opportunity for it to be integrated into the future linear open space to the south or public realm improvements east of the terminus, land for which will become available following completion of station construction and the realignment of Whitehorse Road.</p> <p>The tram mosaic will be incorporated into the final platform design, with the final location to be determined in consultation with Yarra Trams and Whitehorse City Council and subject to compliance with operational and safety/DDA requirements.</p>

Table 3: Assessment against Urban Design Strategy Place-specific requirements –



6.6 Place-specific requirements – Box Hill		
Reference	Requirement	Response
Outcome BOX 1		
Whitehorse Road recast as a high amenity boulevard and enhanced linear public space for people in the heart of Box Hill.		
1a	<p>Create a revitalised Whitehorse Road to provide a significant new public green space that offers respite and creates a community place and destination in its own right that:</p> <ol style="list-style-type: none"> Has a civic character and a design that relates to and interprets aspects of earlier forms and landscape character of the Whitehorse Road medians, as well as the current culture of Box Hill. Acts as a complementary and/or enhanced events and activation space linking to Market Street and Main Street. Provides a cohesive overall design with interconnected spaces that accommodate a variety of experiences complementing adjacent uses. Considers integrated public art and/or creative works in accordance with the SRL Creative Strategy and as part of an overarching and engaging sensory journey experience that supports Box Hill’s contemporary identity as a multicultural hub while also reflecting on its history and heritage. Avoids encumbrance of the space that detracts from use as public open space. 	<p>The tram terminus works have been designed and sited to respond to the future context and compliment the broader vision to create an enhance linear public space within Whitehorse Red through the following:</p> <ul style="list-style-type: none"> Minimising the overall footprint of tram infrastructure and hard surfacing to maximise landscaping space, including retention of mature canopy trees, so as to enhance the overall landscape amenity of this section of Whitehorse Road. Providing clear, legible and open connections between the Tram terminus and abutting public realm, maximising opportunities for activation and passive surveillance as a key destination within the space. Incorporation of existing public art (namely the tram mural currently located in front of the exiting shelters) within the platform design.
Outcome BOX 2		
2b	<p>Provide a design for Whitehorse Road Boulevard that supports ease of pedestrian movement between public transport access points, extending Market Street and providing space for community events.</p>	<p>The proposed tram stop will be in close proximity to the existing Market Street pedestrian crossing and is located within 200m of the future SRL station entrance.</p>
Outcome BOX 3		
Station environs that support Box Hill as an established hub of metropolitan significance, provide a well-designed setting for a vibrant public life and enhance engagement with the place.		

3a	<p>Provide a cohesive public realm design that:</p> <ul style="list-style-type: none"> i. Uses consistent materials to create a distinctive visual identity for the station environs. ii. Supports well-integrated connections and complementary public realm treatments between the station environs and broader precinct. 	<p>A detailed colour, material and design palette may be further developed as part of the design of the SRL station and surrounding public realm. These considerations will form part of the future UDLP prepared for Box Hill SRL East.</p> <p>As the tram terminus relocation precedes this work, the design has deliberately sought to minimise specific treatments and finishes in favour of a simple, robust palette that can be embellished if needed in response to future precinct design guidelines.</p> <p>The selection of colour and material finishes in the public realm for this UDLP have primarily been informed by the City of Whitehorse's Box Hill Urban Realm Treatment Guidelines Update to provide visual continuity and consistency with the existing public realm.</p> <p>Stainless-steel furniture and Yarra Trams standards shelter design, with the footings designed to allow for future detailing and/or changes to the roof form.</p> <p>The lighting on the overhead poles has adopted the typical architectural lighting arm used across central Box Hill and to match the existing lighting within the abutting pedestrian crossing. All overhead wiring poles and lighting brackets are painted Dulux "Brunswick Green" to match the existing area's colour for lighting structures.</p>
3b	<p>Provide a Design that supports the integration of site interpretation initiatives exploring and celebrating the area's heritage, particularly its history as the commercial and civic centre of Box Hill, as part of a heritage interpretation strategy developed for the Project that enriches people's experience of the station environs.</p>	<p>As part of the relocation of the tram terminus two heritage assets within the Whitehorse Road median will be impacted, namely the Whitehorse Hotel statue and Cr Ellingsworth drinking fountain. These will be removed, stored and restored so as to be integrated into the design of future public realm improvements to be delivered as part of the construction of the SRL station.</p>
3c	<p>Provide streets and spaces that create welcoming day-time and night-time places throughout the station environs.</p>	<p>The tram terminus has been designed so as to provide open, clear sightlines through to the existing pedestrian crossing/path to the east, with incorporation of new landscaping along this interface and wide connecting paths. It will be well lit throughout the day and night, enhancing perceptions of safety.</p>
3f	<p>Ensure the Design makes provision for service and delivery vehicles while maintaining amenity and access for pedestrians</p>	<p>Access for maintenance and service vehicles has been provided via separate driveways on the north and south sides of Whitehorse Road respectively. These access points have been sited to be physically separated from pedestrian paths and desire lines.</p>
3g	<p>Provide for and contribute to the creation of active edges to Whitehorse Road, Market Street and Main Street through the upgrade and enhancement of public spaces. Where active edges</p>	<p>The tram platform is aligned east-west within the Whitehorse Road median, presenting an open, active edge north of the Whitehorse Road public space.</p>

cannot be provided at the completion of the Project, provide a high standard of presentation and appropriate treatment of interfaces and allowance for future active edges.

Outcome BOX 4

4	Enhanced urban greening and tree canopy within the heart of Box Hill, prioritising the creation of shady, cool connections to key destinations.	<p>The mature exotic canopy trees on the south side of the tram terminus site are to be retained, subject to further arboriculture impact assessments.</p> <p>Opportunities to retain existing, or provide new, canopy trees within the balance of the Tram Terminus site were significantly constrained by the spatial requirements associated with critical tram infrastructure, including clearance requirements to tracks, electrical services and other operational structures, as well as the timing and footprint of future Project works. In particular, land to the north of the tram tracks will be required for the permanent realignment of Whitehorse Road in approximately 5-7 years. This does not provide sufficient time for canopy trees to establish in this area, noting that from a stakeholder and community perspective planting and removing trees in this timeframe may negatively impact perceptions of the Project.</p>
4a	Integrate retained trees into the Whitehorse Road boulevard design. Supplement retained trees with new canopy and other planting, to maximise comfort and amenity for pedestrians and cyclists, and to provide separation from vehicle traffic.	Future UDLPs will continue to consider opportunities to integrate the retained trees along Whitehorse Road, including those retained as part of the tram terminus works.

Appendix B – EPR Compliance

Table 4: Assessment against Environmental Performance Requirements

Discipline	EPR Ref Code	Environmental Performance Requirement	Response
Environmental Management Framework			
Environmental Management Framework	EMF1	Deliver the Project in general accordance with an Environmental Management System	An EMS has been developed in accordance with ISO 14001:2015, which

1. Develop, implement and maintain an Environmental Management System (EMS) for use through the design, construction and operation of the Project that conforms with AS/NZS ISO 14001:2016 Environmental Management Systems – requirements with guidance for use.

will be implemented and maintained by the Managing Contractor

Environmental Management Framework	EMF2	<p>Develop and deliver the Project in accordance with Management Plans</p> <ol style="list-style-type: none"> 1. Prepare and implement an Environmental Strategy, Construction Environmental Management Plan (CEMP), Worksite Environmental Management Plans (WEMPs), Operation Environmental Management Plan (OEMP) and other plans as required by the Environmental Performance Requirements (EPRs) and in accordance with the Environmental Management Framework (EMF). 2. Develop the CEMP, WEMPs and OEMP in consultation with relevant stakeholders as required by relevant EPRs. 3. Ensure performance against each CEMP, WEMP and OEMP and other plans complies with the EPRs and relevant environmental legislation must be reported to SRLA and relevant government agencies as appropriate. Reporting and notification requirements may include, but not be limited to, monthly environmental performance reports. 4. Address the requirements for the CEMP and OEMP as outlined in the EMF and include the management of chemicals, fuels and hazardous substances. The plans must include but not be limited to: <ol style="list-style-type: none"> a) Requirements to minimise storage of chemicals and fuels on site and to store hazardous substances in accordance with relevant guidelines and EPA requirements b) Measures to be implemented for the management, storage (including bunding) and disposal of hazardous substances c) Description of the approach to comply with the Victorian WorkCover Authority and the Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids with reference to EPA Victoria Publications: Civil construction, building and demolition guide (EPA Publication 1834), Liquid Storage and Handling Guidelines (EPA Publication 1698), and Construction – guide to preventing harm to people and the environment (EPA Publication 1820.1) (as amended or replaced from time to time). d) Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits. 	<p>The Managing Contractor have prepared and are required to implement an Environmental Strategy and all relevant Management Plans</p>
Environmental Management Framework	EMF3	<p>Audit and report on environmental compliance</p> <ol style="list-style-type: none"> 1. Appoint an Independent Environmental Auditor (IEA) to: <ol style="list-style-type: none"> a) Review the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs for compliance with the EMF and the EPRs. 	<p>An IEA has been appointed who will be responsible for review and verification of environmental compliance documentation</p>

- b) 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.
 - c) Audit the Project's compliance with environmental duties under the EP Act, including frequency of evaluation, monitoring of compliance, reporting of compliance and non-compliances and further actions taken.
 - d) Verify there are processes in place to identify opportunities for continual improvement in environmental management, performance, legislative and policy compliance.
2. Ensure the IEA comprises of a body of professionals with expertise, based on qualifications and experience, appropriate to allow the roles specified for the IEA in the EMF to be properly carried out. This would include professionals:
- a) appointed pursuant to section 208 of the EP Act as an environmental auditor for contaminated land with experience in contaminated land, groundwater and landfill gas
 - b) with expertise in addressing noise and vibration so the IEA can audit and approve matters relating to noise and vibration impacts and have the relevant competencies² to assess 'unavoidable work'.
 - c) with expertise in air quality.
 - d) with expertise in stakeholder and communications engagement.
 - e) with expertise in arboriculture.
 - f) with expertise in human health risk assessment.
3. Ensure audits occur during construction and for two years after commencement of operation of the Project, or until the Minister for Planning is satisfied the audits by the IEA are no longer required.

Make public the 6 monthly summary reports of the audits within one month of being provided to the Minister for Planning.

Environmental Management Framework	EMF4	<p>Develop and implement a complaints management system</p> <p>1. Develop and implement a system for recording, managing, and resolving complaints received from affected stakeholders. The complaints management arrangements must:</p> <ul style="list-style-type: none"> a) be consistent with Australian Standard AS/NZS 10002: 2014 Guidelines for Complaints Management in Organisations. b) include response performance measures including but not limited to, set time frames in which to respond to complaints, instant acknowledgement and assessment of complaints and provision of summary of outcome to complainant as required. 	The SRL East Authority (SRLA) has established a complaints management system
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Ensure the complaints management system is consistent with the communications and stakeholder engagement framework required under SC1.

Aboriginal Cultural Heritage

Aboriginal Cultural Heritage	ACH1	<p>Comply with the Cultural Heritage Management Plan</p> <p>1. Implement and comply with Cultural Heritage Management Plans (CHMPs) approved under the Aboriginal Heritage Act 2006.</p>	<p>The tram terminus site is located within the activity area of CHMP 18257 (Box Hill to Monash). No sites of Aboriginal cultural heritage significance were identified within the works area as part of the assessments undertaken for this CHMP, and there are no specific management conditions which are required to be implemented.</p>
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Air Quality

Air Quality	AQ1	<p>Develop and implement an Environmental Air Quality and Dust Management Plan (EAQDMP)</p> <p>1. Develop and implement an Environmental Air Quality and Dust Management Plan (EAQDMP) for each site in consultation with the EPA.</p> <p>2. The plans must:</p> <ul style="list-style-type: none"> a) Identify the main sources of dust, odour, construction vehicle emissions and airborne pollutants, and the location of sensitive receptors. b) Set out how the Project will control the emission of dust, odour, vehicle emissions and other pollution into the atmosphere during construction (including during any breaks in construction) so far as reasonably practicable in accordance with EPA Victoria Publication 1856 and with reference to EPA Victoria Publication 1834. c) Include a Risk Management and Monitoring Program (RMMP) that outlines monitoring methods that will be employed for the duration of the works, and actions that arise from the results of analysing that information to enable responsive and timely intervention and mitigation in accordance with EPA Victoria Publication 1961. The RMMP should: <ul style="list-style-type: none"> i. Detail the visual observation and instrumental monitoring methods to be adopted including monitoring specified in AQ2, routine visual checks of site activities, CCTV monitoring of major dust sources, and observations of odour and dust soiling beyond the construction site boundary. ii. Define trigger levels or conditions for each monitoring method that inform the need for additional control actions. The averaging period associated with the trigger levels for data records from the instrumental monitoring in AQ2 should be no longer than one hour, or 	<p>An Environmental Air Quality and Dust Management Plan (EAQDMP) has been prepared by the Managing Contractor and includes measures for dust and air quality management at this site.</p>
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- shorter if found to be necessary to manage potential impacts in real time.
- iii. Outline how monitoring and recording of wind speed and direction will be undertaken and documented.
 - iv. Describe methods for transmitting the data to the relevant site manager(s) in real time to inform the implementation of adaptive management of dust or odour sources.
 - v. Detail a Trigger-Action-Response Protocol (TARP) that defines the methods of reviewing and adapting activities in response to the monitoring data if any triggers are exceeded.
 - vi. Outline the approach for reviewing the monitoring data on a monthly basis at each site, or more often, for the purpose of assessing the effectiveness of the RMMP for each site and making adjustments to the monitoring methodology as necessary to improve the ability to implement the RMMP.
 - vii. Document a process for daily and weekly review of planned activities and forecasted environmental conditions to identify whether any particular construction activities planned need to be rescheduled or monitored more closely than usual, or whether additional mitigation controls are required to proactively address potential risks of impacts from air pollution.
 - iii. In accordance with the requirements of the approved EMF, document a process to make publicly available on a project website:
 - real-time air quality monitoring results (with explanation of the limitations of unverified data); and
 - verified monthly air quality monitoring results, to be published within one month after the end of the relevant month.
- d) Describe processes for identifying opportunities for continual improvement in management of air quality impacts from construction.
 - e) Document how any processes and measures to be implemented as part of the Communications and Stakeholder Engagement Plan would be considered in implementation of the EAQPDMP including:
 - managing matters of interest raised by key stakeholders through development and implementation of the CSEP;
 - sharing information regarding how implementation of the RMMP has adapted work practices on site; and
 - measures concerning complaints management (see SC2).
 - f) Detail of the complaints management system, consistent with the requirements of EMF4.
3. Following a 12 month trial period, provide relevant information to enable the IEA to verify the utility to the affected community of making the real time air quality monitoring data publicly available. If the

trial is extended, provide relevant information to the IEA to enable annual verification by the IEA of the utility to the affected community of making the real time air quality monitoring data publicly available.

Air Quality

AQ2

Monitor air quality prior to and during construction

1. As part of the implementation of the Risk Management and Monitoring Plan required by AQ1:
 - a) Conduct instrumental monitoring of PM10 concentrations in accordance with or calibrated to AS/NZS 3580.9.8- 2022, or another method selected in consultation with the EPA. Any data collected using AS/NZS 3580.9.8- 2022 must be adjusted using a temperature factor in accordance with the National Environment Protection (Ambient Air Quality) Measure Technical Paper No. 10 as required by EPA Publication 440.1. Monitors should be positioned at a location representative of the likely highest impacts at or outside the boundaries in the direction of sensitive receptors in accordance with AS/NZS 3580.1.1- 2016 for each of the following locations:
 - i. SRL station at Cheltenham
 - ii. SRL station at Clayton
 - iii. SRL station at Monash
 - iv. SRL station at Glen Waverley
 - v. SRL station at Burwood
 - vi. SRL station at Box Hill
 - vii. Stabling Facility

as well as at a representative control site or sites.
2. Measure wind speed and direction at each monitoring site in accordance with AS/NZS 3580.14:2014, noting measuring of wind speed and direction is not required at the representative control site(s).
3. Publicly report real time air quality monitoring and provide verified monthly air quality reports as set out in the RMMP, as per AQ1.

Monitoring will be undertaken in accordance with this standard in line with the procedures outlined in the EAQDMP.

Arboriculture

Arboriculture

AR1

Develop and Implement a Spatial Tree Inventory Database

1. Develop and implement a spatial tree inventory database for all trees in proximity to works. Trees to be assessed must include all trees within the project boundaries and any trees outside of the project boundaries where their TPZ would encroach on the project boundary by more than 10%.
2. Assess each tree individually to provide for each tree having its own record.
3. Measure trunk DBH and DAB for accurate calculation of TPZs and SRZs in accordance with AS4970-2009 Protection of Trees on Development Sites.

Pre-construction arboricultural assessments have been undertaken for all trees within and adjacent to the Tram terminus works area, with this data having informed the UDLP and preparation of the Tree Protection and Removal Plans under AR2 and AR3 below.

4. Ensure tree assessment criteria should as a minimum include botanical name, common name, height, canopy width, DBH, DAB, health, structure, useful life expectancy and arboricultural retention value (including social value).
5. Complete the tree inventory database in stages as works progress. Tree assessments should not be more than 2 years old when the project works begin in any particular area.
6. Update and record new features in the database as required, as well as retaining historical records.
7. Record each tree location in the database and utilise its surveyed location as recorded when the feature survey is completed.
8. Include native trees in the tree inventory database to ensure consistent numbering for native vegetation requirements in accordance with EC1 and EC2.

Arboriculture	AR2	<p>Develop and implement Tree Removal Plans</p> <ol style="list-style-type: none"> 1. Develop and implement Tree Removal Plans, as part of the CEMP, in consultation with affected land managers, that identifies all trees within the Project Land and includes: <ol style="list-style-type: none"> a) Trees to be removed or retained as part of the works b) The condition and arboricultural value of the amenity trees to be removed c) The canopy area of all trees to be removed. 2. Maximise tree retention so far as reasonably practicable through detailed design and selection of construction methods to minimise canopy loss and in accordance with EC1. 3. Ensure arboricultural assessments verify existing details and inform the detailed design, Tree Removal Plans and Tree Canopy Replacement Plan (required by AR4) 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. 4. Inform the Tree Removal Plans by a pre-construction site assessment in consultation with the relevant land manager and/or local council 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 AR3. 5. Ensure tree and vegetation removal occurs in a staged manner with removal only occurring once necessary for the current stage of works. 6. Describe the reuse opportunities for trees sought to be removed for the Project in the Tree Removal Plans in consultation with local Council and affected land managers. 7. Confirm the area and number of trees and other vegetation actually removed through a postconstruction assessment and published on the Project website. 	<p>Refer to Section 4.2.5 of the UDLP that sets out the retention of trees and required removed.</p> <p>Decision making regarding tree retention was largely set by operational, infrastructure requirements and constructability.</p> <p>Consequently, development of the Box Hill tram terminus and associated works will result in the removal of all trees within the site, with the exception of the large mature Peppercorn and Elm species located on the southern UDLP boundary. Trees proposed for removal comprise a group of small – medium canopy trees species located within the garden bed west of the existing carpark. These trees are required to be removed as they are located within the alignment of the southernmost tram track, and cannot be avoided without compromising track geometry or the location/functionality of the scissors crossover west of the platform</p> <p>The requirements for the Tree Removal Plan as outlined in this EPR will be incorporated into the Tree Protection and</p>
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			Removal Management Plan.
Arboriculture	AR3	<p>Develop and implement Tree Protection Plans</p> <ol style="list-style-type: none"> 1. Develop and implement Tree Protection Plans, as part of the CEMP, in consultation with affected land managers, in accordance with Australian Standard AS4970- 2009 <i>Protection of Trees on Development Sites</i>. 2. Provide details of any tree protection actions for the Tree Protection Plans to avoid and minimise impacts of construction or related activities on trees proposed to be retained, so far as reasonably practicable, prior to those works being undertaken. 3. Prepare Tree Protection Plans based on detailed construction drawings and surveyed tree locations and in accordance with EC2. 4. Include protection of the following trees in the Tree Protection Plans: <ol style="list-style-type: none"> a) River Red Gum (<i>Eucalyptus camaldulensis</i>) (CH-8113) at 66 Mattheison Street, Cheltenham b) Peppercorn Tree (<i>Shinus molle</i>) (CL-4056) at the existing Clayton Station c) Lone Pine (<i>Pinus halepensis</i>) (CL-2189) at the Clayton Remembrance Gardens 5. Monitor trees subject to protection for a 3-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 in accordance with AR4. 	<p>Development of the Box Hill tram terminus and associated works will result in the removal of all existing trees within the UDLP boundaries, with the exception of three mature canopy trees located on the southern UDLP boundary. These comprise two Peppercorn (<i>Schinus molle</i>) and one Elm (<i>Ulnus x hollandica</i>) trees located on the edge of the existing carpark within small bays.</p> <p>These trees will be protected and retained as part of the relocation of the Tram Terminus, as discussed in Section 4.2.5 of the UDLP report. An additional Peppercorn may also be able to be retained, subject to detailed design and location of services.</p> <p>Protection measures for these trees in accordance with the requirements of this EPR will be detailed and confirmed within the Tree Protection and Removal Management Plan currently being prepared by the Managing Contractor for the Tram terminus works.</p>
Arboriculture	AR4	<p>Develop and implement a Tree Canopy Replacement Plan</p> <ol style="list-style-type: none"> 1. Develop and implement a Tree Canopy Replacement Plan to replace double the amount of tree canopy cover (m²) removed as a result of the Project in each local government area by 2050. 2. Ensure the Tree Canopy Replacement Plan: <ol style="list-style-type: none"> 1. Is developed in consultation with councils and other relevant land managers, in accordance with best practice, and in line with the UDS, relevant UDLPs, and relevant local government masterplans 	<p>SRLA has prepared a Tree Canopy Replacement Plan. Tree replacement is a project-wide requirement</p> <p>Given the spatial constraints posed by the realignment of Whitehorse Road and provision of maintenance access south of the platform, opportunities for additional canopy tree planting within natural soil as part of the development of</p>

2. Shows the location, size (including canopy spread modelled to 2050) and species of replacement trees, including locally indigenous species as required by EC1. Replanting of trees must be compliant with AS2303:2018 (Tree Stock for Landscape Use).
 3. Demonstrates how each station, the Stabling Facility and the Emergency Support Facility will contribute towards their doubling of tree canopy removed.
 4. Specifies requirements to support the long-term viability and growth of all replacement trees including appropriate deep soil requirements, 3-year establishment works, water sensitive urban design where practicable, and ongoing maintenance and protection.
 5. Adopts the following replacement tree planting hierarchy:
 - i. Within the Project Land at each station site and at the Stabling Facility and Emergency Support Facility – as first priority, in locations as close as feasible to where trees were removed, prioritising canopy in high pedestrian foot traffic and hard paved areas
 - ii. Outside the Project Land and within a 400 m walking catchment from where trees were removed, having regard to:
 - Areas with low tree canopy cover coupled with high heat impacts
 - Areas that are socially vulnerable to heat impacts
 - Areas where shade is needed to promote pedestrian and cycling activity
 - Areas within open space, waterways and along streets where biodiversity corridors or habitat links can be established.
 - iii. Within Victorian Government and local Council land within the local government area that the trees were removed.
 6. Includes understorey plantings within the Project Land in addition to the tree canopy replacement plantings where feasible in consultation with councils and/or affected land manager
 7. Specifies that any planting in accordance with the Tree Canopy Replacement Plan is in addition to any other (non-SRL) planting program.
 8. Specifies the responsibility for planting and ongoing maintenance and monitoring of trees and understorey planted under the Tree Canopy Replacement Plan in consultation with relevant stakeholders for the 3-year establishment period or timeframe agreed with the landowner, after which time the land owner will maintain the trees.
3. Detail how the Tree Canopy Replacement Plan interim progress towards the doubling of tree canopy cover target is to be monitored, modelled and reported against annually during Project construction, taking into account early plantings outside the Project Land. The Plan must also detail the contingency measures to be implemented if interim reporting shows the targets will not be met.
 4. Develop a draft Tree Canopy Replacement Plan prior to the commencement of works and finalised on completion of relevant approved UDLPs.
 5. Commence the replacement planting of trees as soon as possible and in stages once the tree removal extent is confirmed and suitable replacement sites have been determined in consultation with relevant local governments and authorities.
 6. Conduct modelling and reporting at the completion of the Project to confirm extent of tree removal and that the Tree Canopy Replacement Plan will achieve a doubling of tree canopy cover removed for the Project target. Any shortfall in tree canopy replacement will need to be addressed through additional planting before the EPR can be achieved.

the tram terminus are limited to the western end of the southern site boundary. Planting within the northern batter has been limited to low level shrubs and groundcovers, as it will be once Whitehorse Road is realigned to its ultimate configuration, in 7-10 years.

7. Provide replacement tree canopy in accordance with the Tree Canopy Replacement Plan.

Business

Business	B1	<p>Minimise disruption to businesses, including from acquisition</p> <p>1. Minimise disruption to businesses, including from land acquisition by working with affected businesses to endeavour to reach agreement on terms of possession in accordance with relevant legislation.</p>	No acquisition of private land is required to facilitate the construction or operation of the Tram terminus, with all works being located within the Whitehorse Road reserve.
Business	B2	<p>Provide support to businesses that are relocating due to acquisition</p> <p>1. Implement the measures set out in the SRL Business and Residential Relocation Support Guidelines for all eligible businesses, (unless a business has elected to not seek additional assistance beyond what is provided under the relevant legislation), to provide as a minimum:</p> <ul style="list-style-type: none"> a) Consultation with owners and tenants of commercial properties: <ul style="list-style-type: none"> i. to enable the implications and options for relocation to be fully understood by all parties; and ii. providing appropriate time to allow the businesses to relocate. b) Individualised assistance to displaced businesses with their relocation which may include the engagement of professional advisory services including marketing, language, financial planning, accounting and management as appropriate. c) Regular consultation with the relevant Councils at all stages of the process. <p>2. Implement measures that support businesses with specific relocation needs such as, but not limited to, medical services, businesses that are part of a supply chain, businesses with regulatory requirements, and businesses where the customer base is location specific.</p>	Not applicable to these works - no land acquisition required as all works are located within the road reserve on public land.
Business	B3	<p>Prepare and implement a Business Disruption Mitigation Plan</p> <p>1. Prepare an overarching Business Disruption Mitigation Framework (BDMF) in accordance with the Victorian Small Business Engagement Guidelines (produced by the Victorian Small Business Commission) to outline the approach to manage and mitigate business disruption from the Project to the extent reasonably practicable. The BDMF must address disruption to business access for customers, visitors, suppliers or waste collection and management of amenity impacts on businesses.</p> <p>2. Develop and implement localised Business Disruption Mitigation Plans (BDMP) that comply with the BDMF and the SRL Business Support Guidelines. SRLA will work with the contractors to oversee the implementation of the BDMP and ensure the implementation of business support as outlined in the SRL Business Support Guidelines, with particular emphasis on:</p> <ul style="list-style-type: none"> a) Promotion and marketing to encourage patronage of businesses in proximity of construction sites. 	<p>A Business Disruption Mitigation Plan has been prepared by the Managing Contractor addressing the tram terminus works in the context of the broader Early Works package to be delivered within the Box Hill precinct.</p> <p>Those mitigation measures outlined in the BDMP relevant to the Tram terminus works are:</p> <ul style="list-style-type: none"> · Use of signage and other materials to identify and promote local

		<ul style="list-style-type: none"> b) Targeted or 'bespoke' support to highly impacted and disrupted businesses to enable businesses to overcome detrimental effects on business health. c) Ensuring businesses receive adequate notice of construction works and phases, including estimated timeframes/programs. d) Making financial planning services and/or assistance available to highly impacted and disrupted businesses. <p>3. Include the following in the BDMPs:</p> <ul style="list-style-type: none"> a) Measures as far as practicable to ensure construction traffic avoids sensitive commercial areas. b) Details of any changes to traffic and parking conditions and durations of change. c) A Project construction schedule developed in consultation with transport authorities, local councils and affected businesses to minimise cumulative impacts of this and other independent projects. d) A process for notifying customers of proposed changes to business operations such as access, operating hours and amenity, including the settling of suitable timeframes for notification prior to commencement of works that cause the change in business operations. e) Specific measures for supporting affected businesses during construction. f) Consideration of potential requirements for cleaning of streets, public areas, street furniture, commercial premises and shopfronts to mitigate any impacts of construction activities directly caused by the Project. <p>4. Ensure SRLA and the appointed contractor work with businesses to minimise impacts to business operations from utility relocation or disruptions and to mitigate the impact or any business disruption.</p> <p>5. NOTE: The measures set out in the overarching BDMF and location-specific BDMP are in addition to the implementation of noise, vibration, EMI, air quality, urban design, traffic and social impact related EPRs.</p>	<p>businesses.</p> <ul style="list-style-type: none"> • Promotion of local events, particularly those led by the Asian Business Association of Whitehorse (ABAW), e.g. Dragon Boat Festival, Lunar New Year Festival, etc. • Functional signage, e.g. wayfinding, parking (particularly where relocated/displaced due to construction activities), detour maps. <p>These will be implemented through the proposed design treatments to temporary construction fencing to the perimeter of the work site along the Whitehorse Road given their location within a highly trafficked and exposed part of Box Hill's commercial centre and consequent opportunities to both improve the visual appearance of this fencing whilst also maximising exposure to residents, shoppers, and workers within the centre.</p>
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Business

B4

Undertake proactive business engagement

1. Develop and implement a tailored and proactive approach to engaging with trader associations and businesses affected by construction, as part of the communications and stakeholder engagement plan developed for SC2. This approach must include:
 - a. Regular and timely reporting of design and construction activities and key projects timelines
 - b. Provision of adequate and advance notice about changes to traffic and parking conditions and duration of impact.
 - c. Timely provision of relevant information, including responses to issues raised by the group.
 - d. Regular reporting and monitoring of business community feedback, impacts and discussion of mitigation measures and their effectiveness.
 - e. Measures to effectively engage with Culturally and Linguistically Diverse (CALD) business operators and owners.
 - f. Annual surveys to assess visitation impacts on businesses, including surveying stakeholders such as customers and visitors to Clayton, Glen Waverley and Box Hill.

Early engagement with affected businesses and landowners will be undertaken in accordance with the requirements of this EPR, through the procedures outlined in the Communications and Stakeholder Engagement Plan (CSEMP) prepared under EPR SC2.

Given the separation of the Tram terminus works from existing businesses on the north and south sides of Whitehorse Road and lack of direct encroachment of the works or associated traffic management into existing on-street carparking, it is expected that potential impacts from construction will be limited.



Ensure each of the Clayton, Glen Waverley and Box Hill centres has a dedicated Business Liaison Manager (or similar) to enable continuity and access to advice as appropriate.

Business	B5	<p>Provide effective replacement of car parking spaces in Glen Waverley</p> <ol style="list-style-type: none"> 1. Replace the car parking spaces lost due to the Project in the Glendale Street carparks and nearby on-street parking in consultation with the City of Monash to provide continued support to traders and visitors within the Glen Waverley Activity Centre. <p>Provide the replacement car parking within the Glen Waverley Activity Centre in a location that minimises traffic impacts on Kingsway between Coleman Parade and Bogong Avenue and has convenient access to Kingsway south of Coleman Parade.</p>	<p>Not applicable to these works.</p> <p>This relates to the Glen Waverley precinct only</p>
Business	B6	<p>Develop and implement a strategy to support businesses displaced due to acquisition in Box Hill</p> <ol style="list-style-type: none"> 1. Develop and implement a strategy to support the businesses that are displaced from Box Hill due to acquisition and assess options for how they can be retained in the Box Hill Metropolitan Activity Centre. The strategy is to be informed by consultation with the business to be displaced by the Project, and Whitehorse City Council. 2. Ensure the strategy includes consideration of major redevelopment proposals in proximity to the SRL Station at Box Hill. <p>Ensure the strategy has regard to the established cultural attributes of the Box Hill MAC and the maintenance of the cultural life of the centre during the construction period of the Project.</p>	<p>Not applicable to these works.</p> <p>No businesses are required to be acquired or will be directly displaced as a result of the works</p>
Business	B7	<p>Support businesses with sensitive equipment in operation</p> <ol style="list-style-type: none"> 1. Support continuity of existing businesses with sensitive equipment potentially affected during operation of the Project. 	<p>Not applicable to these works as this EPR specifically relates to electromagnetic interference and/or vibration resulting from construction of the rail tunnels and operation of underground services.</p>
Business	B8	<p>Develop a business and commercial property purchase scheme</p> <ol style="list-style-type: none"> 1. Prepare and implement a scheme that provides the opportunity for voluntary purchase of business or commercial properties that satisfy defined criteria relating to the duration of construction impacts and the significance of those impacts on business viability. The scheme must include principles and criteria for eligibility for business or commercial properties which are developed having regard to: <ol style="list-style-type: none"> a. Proximity of the business or commercial property to major construction works, and likely or actual extent and duration of proximate works; b. access constraints, including visibility of the business property to passing pedestrian or vehicular traffic; c. cumulative effects of construction concurrent with other major developments in close proximity 	<p>Not applicable, due to the scope of works.</p>

- d. cumulative impacts on the viability of the business at the business or commercial property.
- e. special needs or circumstances of the owner of the business or commercial property.

Business	B9	<p>Develop an Employee Assistance Strategy</p> <ol style="list-style-type: none"> 1. 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. 2. Ensure the strategy includes, but is not limited to: <ol style="list-style-type: none"> a. The identification of affected businesses and employees b. Provision of co-ordinated information on support services for affected employees (for example, access to a range of services such as training advice, careers advice, resume workshopping, information about government entitlements, referral to other job support services, and skills assessments). Information and access to services should ensure appropriate support for and engagement with employees of culturally and linguistically diverse backgrounds. c. The identification of relevant government agencies and support services d. Procedures to disseminate information 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. 3. Prepare and implement, in parallel with the Employee Assistance Strategy, and with appropriate expert advice, a package of individual employee assistance plans prepared with and for each employee who requests it, in consultation with the employer, that: <ol style="list-style-type: none"> a. Understands their future employment plans or intentions b. Provides for training and development, including access to language training services for culturally and linguistically diverse employees who seek this assistance c. Identifies factors that would influence their desire to remain employed with a business in the relevant activity centre or local government area d. Provides practical and reasonable assistance to implement their assistance plan. 	<p>SRLA has developed an Employee Assistance Strategy, however no acquisition of businesses is required due to the scope of these works.</p>
Contaminated Land			
Contaminated Land	C1	<p>Environmental investigation, monitoring and reporting</p> <ol style="list-style-type: none"> 1. Undertake additional investigations to ensure that all baseline conditions are identified and recorded to address the specific data gaps identified in Section 10 of Technical Appendix F.2 to the exhibited SRL East EES and to inform the detailed design or for environmental monitoring during the construction phase. The additional investigations must include the preparation of the following documents: <ol style="list-style-type: none"> a) Sampling workplans (including sample analysis quality plans (SAQP) as set out in the NEPC 2013 National Environmental Protection (Assessment of Site Contamination) Measure 1999 	<p>The Managing Contractor have prepared a Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP) addressing the requirements of EPRs C1, C2, C3 and C6.</p>

- (amended 2013) and subordinate legislation and standards for each project component
- b) Investigation reports (including soil, groundwater and acid sulfate/rocks) in accordance with applicable Commonwealth and Victorian legislation detailing the assessment of specific data gaps to demonstrate that the extent of contamination for each study area has been adequately characterised
- c) A report which establishes and documents baseline contamination levels for stockpile areas to inform the Spoil Management Plan under C3
- d) Routine monitoring reports.

Contaminated
Land

C2

Develop and implement a Contaminated Land Management Plan

1. Develop and implement a Contaminated Land Management Plan (CLMP) in consultation with the EPA and other key stakeholders (where appropriate) in accordance with the EP Act and subordinate legislation, as set out in EPA Victoria guidance documents on assessing and managing contaminated land (Assessing and controlling contaminated land risks (EPA Publication 1977), Proposed methodology for deriving background level concentration when assessing potentially contaminated land (EPA Publication 1936), Civil construction, building and demolition guide (EPA Publication 1834) and Construction – guide to preventing harm to people and the environment (EPA Publication 1820.1), the Environmental Reference Standards (as amended or replaced from time to time)) and best practice guidance National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013).
2. Include (but not be limited to) the following in the CLMP:
 - a) Summary of applicable regulatory requirements
 - b) Description of roles, responsibilities and record keeping requirements
 - c) A program for the updating of the CLMP for different stages of construction through to completion
 - d) Measures and work methods for excavation and piling works for the management of odorous soils (AQ1) and groundwater to prevent contaminant plume movement towards sensitive receptors (refer to GW1 and GW3) so far as reasonably practicable
 - e) Measures for the management of contaminated land so far as reasonably practicable
 - f) Details of any further characterisation of the land (including groundwater) to be disturbed or impacted by the works including the development of a SAQP, conceptual site models and risk-based interpretation of the data (as required by C1)
 - g) Identification of issues and appropriate management measures for residual risks of construction spoil that will become a waste and require management through construction (EPA Publication 1834)
 - h) If unacceptable residual risks are identified or as required for re-use of spoil (C3), prepare a remedial options assessment (ROA) and further, if required, prepare and implement a Remedial Action Plan (RAP) and remedial designs
 - i) Measures to prevent contamination of areas used for temporary construction works and to remediate any contamination caused by temporary construction activities in consultation with the relevant land manager
 - j) Contingency and Unexpected Finds Plan (CUFP) in relation to contaminated land including the identification of responsibilities, training, staff induction, typical unexpected finds and responses, notification(s), and reporting requirements

Addressed through the Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP) as described in the response to C1 above.

- k) Establishment of a process for two-way communication between the contractor and stakeholders who are in management of contaminated land to facilitate sharing of information and data about contaminated land, groundwater or ground gas related issues which may arise. The process should include a clear point of contact through which third parties can raise issues and concerns, or request information and data
- l) Establishment of a process to mediate disputes or disagreements.

Contaminated Land	C3	<p>Develop and implement Spoil Management Plans</p> <ol style="list-style-type: none"> 1. Develop and implement Spoil Management Plans (SMPs) in consultation with the EPA Victoria and other key stakeholders (where appropriate) in accordance with SRLA's Spoil Management Strategy (Appendix C of the Contamination Assessment Technical Report or as amended and verified by the IEA), the EP Act and subordinate legislation, and EPA Publications Civil construction, building, and demolition guide (EPA Publication 1834) and Construction – guide to preventing harm to people and the environment (EPA Publication 1820.1) (as amended or replaced from time to time), subject to: <ol style="list-style-type: none"> a) The updated Spoil Management Strategy (SMS) needs to be reviewed by EPA and must adequately address any comments provided by EPA. Once satisfied that any comments from EPA have been adequately addressed, the IEA will verify the SMS. b) Each Spoil Management Plan (SMPs) needs to be reviewed by EPA and must adequately address any comments provided by EPA. Once satisfied that any comments from EPA have been adequately addressed, the IEA will verify each SMP. 2. Transport offsite for treatment, reuse or disposal any spoil generated by the project that cannot be reused on site. If temporary storage is proposed for more than 30 days, an environmental risk assessment must be undertaken to determine if storage is safe, or the spoil needs to be transported offsite. <p>Do not consider temporary spoil storage for gasworks-derived waste fill, classed as Prescribed Waste, excavated from the SRL Cheltenham Station site, nor shall such Prescribed Waste (gasworks-derived waste fill) be placed at other project sites.</p> 3. Address the management of all spoil to maximise reuse so far as reasonably practicable in the SMP and include processes and measures to manage spoil generated through construction and transportation offsite to a lawful place. The SMP must include but is not limited to: <ol style="list-style-type: none"> a) Summary of applicable regulatory requirements b) Description of roles and responsibilities c) A program for the updating of the SMP for different stages of construction through to completion with the updates relating to construction activities still to be completed d) Description of the approach to site investigation to characterise the spoil (such as Fill Material, industrial waste, reportable priority waste and waste acid sulfate soil) if required, including the development of a SAQP as per C1 e) Develop conceptual site models and waste categorisation to meet EPA Victoria requirements to classify spoil for disposal or re-use as required f) Details of reuse options for all categories of spoil expected to be generated through construction 	Addressed through the Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP), as described in the response to C1 above.
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- g) Details of management measures to be implemented for sustainable handling and transport of spoil for the protection of human health and the environment
- h) Details of design and specific environmental management plans (EMPs) for temporary stockpile areas and stockpile activities including but not limited to containment of stockpiled materials to prevent any impact to human health or the environment. The EMPs for temporary stockpile areas should also include a project closure report indicating the site has been appropriately managed and restored to its pre-existing contamination baseline, so far as reasonably practicable.
- i) Details of appropriate lawful places (including offsite reuse and disposal facilities) for the receipt of waste and identify any permissions required in accordance with the Environment Protection Regulations 2021
- j) Description of sampling approach in accordance with Soil sampling (EPA Publication IWRG702)
- k) Description of the approach to determine the waste categories in accordance with Waste disposal categories – characteristics and thresholds (EPA publication 1828.2) (as amended or replaced from time to time)
- l) Details of monitoring and reporting requirements
- m) Consideration of cumulative effects of waste spoil disposal from other Major Transport Infrastructure Projects
- n) CUEP in relation to spoil, including the identification of responsibilities, training, staff induction, typical unexpected finds and responses, notification(s), and reporting requirements.

Contaminated
Land

C4

Develop and implement a Hazardous Ground Gases Management Plan

1. Develop and implement a Hazardous Ground Gases Management Plan (HGGMP) in consultation with the EPA and other key stakeholders (where appropriate) and in accordance with the EP Act and subordinate legislation, EPA Publication 1684: Landfill Gas Fugitive Emissions Monitoring Guideline and best practice guidance.
2. Ensure the HGGMP addresses the potential impacts so far as reasonably practicable at the Stabling Facility and other components of the Project where ground gas impacts could be realised, including but not limited to:
 - a) Summary of applicable regulatory requirements
 - b) Description of roles and responsibilities
 - c) A program for the updating of the HGGMP for different stages of construction through to completion
 - d) Description of the approach to investigate ground gas emissions at the Stabling Facility on the footprint of planned occupied buildings or, if a surcharging ground improvement option is a planned, across the impacted area including near sensitive receptors in order to assess risks from ground gas emissions
 - e) The design and installation (if required) of appropriate gas mitigation measures including relevant construction quality assurance requirements to manage potential impacts so far as reasonably practicable and with reference to Landfill gas fugitive emissions monitoring guideline (EPA Publication 1684) and the British Standard BS 8485: 2015+ A1:2019: Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings. This work must be prepared by a suitable technically qualified person and verified

Not relevant to the tram terminus works as this applies to Stabling Facility precinct only.

by the IEA by an Auditor with expertise in landfill gas migration and mitigation measures.

For any produced emissions from future LFG control/mitigation systems, final point sources from such gas capture and treatment systems must treat air emissions in accordance with EPA Publication 788.3 'Siting, design, operation and rehabilitation of landfills' (i.e., the Landfill 'BPEM'), August 2015 (or other versions as updated).

- f) CUF in relation to hazardous gases, including the identification of responsibilities, training, staff induction, typical unexpected finds and responses, notification(s), and reporting requirements. The plan will include, as a minimum, site-specific landfill gas risk assessments for unexpected landfills on or in the vicinity of the alignment in accordance with BS8485:2015+A1:2019 Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings.
- g) Description of the approach to investigate landfill gas emissions at any other landfill along or within the vicinity of the alignment which may become apparent prior to construction

Contaminated Land	C5	<p>Manage contamination risks during operation</p> <ol style="list-style-type: none"> 1. Develop and implement measures for the monitoring and management of contaminated land and constructed or installed hazardous ground gas management systems as part of the Operational Environmental Management Plan (OEMP) under EMF2. 	Not relevant to the tram terminus construction works. Responsibility for operational matters will be defined through development of a future OEMP as part of the broader SRL station works by others.
Contaminated Land	C6	<p>Develop and implement a Potential Acid Sulfate Soil and Rock Management Plan</p> <ol style="list-style-type: none"> 1. Develop and implement a Potential Acid Sulfate Soil and Rock (ASS/ASR) Management Plan in consultation with EPA and other key stakeholders, in accordance with the Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils (VIC BPMG), National Acid Sulfate Soils Guidance, the EP Act and subordinate legislation. This plan should also consider and be consistent with requirements outlined in Section 7.3.1 Table 7.1 GW3. This plan should include the following: <ul style="list-style-type: none"> a) Identify locations and extent of any potential ASS/ASR that could be disturbed or otherwise affected by works, including site specific information for areas at risk b) Details of monitoring and reporting requirements c) Characterise ASS/ASR spoil prior to excavation d) Identify and implement measures to prevent oxidation of ASS/ASR wherever possible e) Identify suitable sites for re-use, management, or disposal of any ASS/ASR with regards to sensitive receptors (wetlands, waterways, and residential areas) 	<p>Addressed through the Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP) as described in the response to C1 above.</p> <p>Based on preliminary soil investigations there are no potential Acid Sulfate Soils or Rock which would be disturbed as part of the tram terminus works, due to the minimal extent of excavation required.</p>
Contaminated Land	C7	<p>Develop and Implement Suitable Air Cover and Treatment Controls for excavation works at SRL Cheltenham station</p> <ol style="list-style-type: none"> 1. Conduct excavation and removal under suitable air cover controls with associated treatment as 	Not relevant to the tram terminus works as this applies to Cheltenham precinct only.

		<p>required, for station box bulk excavation of former gasworks waste fill, expected within the top 4 to 5 metres to actively intercept released odours or dust, to ensure that risk of harm to human health and the environment is minimised so far as reasonably practicable. IEA to verify appropriate assessments to inform and then determine the suitability of cover options and treatment controls</p> <p>2. For placement of deep diaphragm support walls for the station box, such excavation through the waste fill may occur, prior to any air cover controls being required (provided the exposed excavation is restricted to the active diaphragm wall construction work area).</p>	
Contaminated Land	C8	<p>Human Health Risk Assessment – Stabling Facility</p> <p>1. Complete a quantitative Human Health Risk Assessment (HHRA), prior the construction of the Stabling Facility, in consultation with the EPA, and the final selection of risk mitigation measures, including:</p> <ul style="list-style-type: none"> a) inputs from all the site contamination and spoil investigations as available for the Stabling Facility b) revised dust exposure modelling for the construction period (including allowance for any proposed soil surcharge piles) c) dust exposure measurement (baselining) appraisal for the local area, with inputs from this into dust modelling d) having regard to specific local health baselines for the residential population where consultation with City of Kingston confirms this data exists <p>2. The HHRA must be prepared in accordance with Environmental Health Risk Assessment – Guidelines for assessing human health risks from environmental hazards (enHealth 2012); or a comparable guideline that is shown to be of equal or better rigor.</p>	Not relevant to the tram terminus works as this applies to Stabling Yard precinct only.

Ecology

Ecology	EC1	<p>Minimise vegetation and habitat removal and disturbance</p> <p>1. Develop and implement measures to avoid and otherwise minimise to the extent practicable impacts on native vegetation and fauna habitat (including trees) through detailed design and construction, including:</p> <ul style="list-style-type: none"> a) Ensure all trees are retained and protected within the Henry Street Reserve and Kingston Walk Linear Reserve, with the exception of select tree removals (if required) as part of the enhancement and landscaping activities. b) Minimise footprint and surface disturbance to areas of revegetation along Gardiners Creek. c) Ensure that at the Monash SRL site, the impact of the Project on trees along the south side of Normanby Road and Scenic Boulevard is minimised. d) Maximise retention of mature trees, planted and remnant native trees and remnant vegetation, particularly large amenity trees (greater than 30 cm DBH) that contribute to faunal habitat in accordance with AR2 and AR3. 	<p>There is no remnant native vegetation within the tram terminus works area and no native fauna has been identified during site assessments. Existing vegetation within the site comprises lawns, garden beds and planted exotic trees around the perimeter or the existing car park and south of the tram lines at the western end of the road reserve. See response to AR2 and 3 regarding trees to be retained</p> <p>An ecology sub-plan has been prepared by the Managing Contractor which outlines the processes and requirements for management and</p>
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- e) Maximise retention of fauna habitat including standing dead hollow trees and understorey vegetation.
- 2. Carry out a pre-construction site assessment in consultation with the relevant land manager and/or Council to inform detailed design and to confirm the area and number of trees and other vegetation proposed to be impacted. The area and number of trees and other vegetation actually removed is to be confirmed through a post-construction assessment.
- 3. Ensure that where appropriate for the landscape and Project location, tree replacement (as required by AR4–Arboriculture) and landscaping uses locally indigenous species, suited to the landscape profile and the setting being revegetated, to maximise habitat value and connectivity for native fauna. This would include requirements to support the long- term viability and growth of all plantings of indigenous species including appropriate soil conditions, establishment works and ongoing maintenance and protection in consultation with Councils.

protection of ecological values during works. This includes pre-construction inspections to confirm the results of previous assessment and inform final design.

Ecology	EC2	<p>Implement vegetation protection measures</p> <ol style="list-style-type: none"> 1. Include sub-management plan(s) in the Construction Environmental Management Plan (CEMP) that sets out the requirements and methods for: <ol style="list-style-type: none"> a) Identification of areas of important flora and fauna habitat to be protected during construction. b) Fencing protected areas and no-go zones to prevent access during construction – fencing should be to a standard agreed with the relevant land manager. c) Pre-construction site assessment to confirm that vegetation and trees to be retained have been adequately protected from impact. d) Vegetation clearing controls and protection measures. e) Development and implementation of a Tree Protection Plan as per AR3. f) Implementation of appropriate measures to manage the risk of the spread and introduction of pest animals, weeds and pathogens during construction. g) Procedures if unexpected threatened species are identified. 	<p>An ecology sub plan has been which outlines the controls and procedures to be implemented during construction activities in accordance with the relevant EPRs.</p> <p>Measures to protect those trees retained within the tram terminus design during the works period are detailed in the Tree Protection and Removal Plan prepared under EPRs AR2 and AR3 above.</p>
Ecology	EC3	<p>Obtain native vegetation offsets</p> <ol style="list-style-type: none"> 1. Provide offsets for unavoidable removal of native vegetation in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017) prior to removal, except as otherwise agreed by the DELWP Secretary. 	<p>No native vegetation was identified within the tram terminus works site</p>
Ecology	EC4	<p>Implement fauna management measures to minimise impacts to fauna</p> <ol style="list-style-type: none"> 1. Include requirements and methods in the CEMP, including any sub-management plans: <ol style="list-style-type: none"> a) for undertaking pre-clearing inspections to confirm the on-site location of fauna immediately prior to habitat removal; b) for managing native fauna that may be displaced due to habitat removal, in compliance with 	<p>The Managing Contractor will complete a pre-construction assessment to be undertaken prior to commencement of works.</p>

		<p>the Wildlife Act 1975 and in consultation with public land managers where relevant.</p> <ol style="list-style-type: none"> 2. Design and install construction and operational lighting with regard to Appendix A of the National Light Pollution Guidelines for Wildlife, (DAWE, 2020) to manage and minimise off-site amenity effects, including lighting location details and demonstrated minimisation of light spill to areas of fauna habitat including: <ol style="list-style-type: none"> a) Gardiners Creek b) Kingston Walk Linear Reserve c) Henry Street Linear Reserve d) Jock Marshall Reserve e) Northern and western section of Sir William Fry Reserve. 3. Design, install and manage revegetation surrounding waterbodies at the Stabling Facility (having regard to Appendix A of the National Light Pollution Guidelines for Wildlife) to provide habitat for a diversity of indigenous birds and discourage large flocks of Silver Gulls (<i>Chroicocephalus novaehollandiae</i>) from congregating. 	<p>Should any fauna be identified through this assessment and a licensed wildlife handler engaged to relocate fauna away from the works site, in accordance with the relevant legislation and internal permit requirements</p>
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Ecology

EC5

Gardiners Creek naturalisation is to be undertaken to improve habitat values

1. Develop and implement a plan in consultation with Melbourne Water, the local council and other relevant authorities to naturalise the section of Gardiners Creek adjacent to SRL station at Burwood to improve habitat values within and surrounding the Gardiners Creek for indigenous fauna species. This will consider appropriate revegetation with both aquatic and terrestrial indigenous flora species, installation of appropriate instream habitat and waterway design to promote appropriate flow conditions.
2. Incorporate the Plan into the management plan required by SW8 for the naturalisation of Gardiners Creek. The management plan must contain requirements and methods to minimise, to the extent practicable, short and long-term impacts on riparian, riverbed and aquatic habitat to Gardiners Creek downstream of the construction activity required to naturalise the creek.

Not applicable to the tram terminus works as this is applicable to the Burwood precinct only

Electromagnetic Interference

Electromagnetic Interference

EMI1A

Process Statements

1. Apply EMI1-EMI3 to any sensitive receivers including Building 220 (Monash Biomedical Imaging Building) and Building 23 (Senior Chemistry Building) at Monash University Clayton Campus. EMI1-EMI3 do not apply where a process statement:
 - a) Already exists with the owner or occupier of land on which sensitive receivers are located, in which case the terms of the Process Statement prevail, or
 - b) has been prepared in accordance with this paragraph (b), after the Minister for Planning's approval of this EMF, in which case the terms of the Process Statement prevail. Prior to commencing negotiations on a Process Statement, a written statement justifying the unique and

Not applicable to these works. There are no existing process statements in place for land/facilities within the Box Hill SRL station precinct.



specific circumstances requiring the Process Statement must be prepared by SRLA and verified by the IEA. This written statement must include an explanation of the type of sensitive receiver or receivers and its use, and the special circumstances that justifies the need for a Process Statement and be co-signed by the owner or occupier of the land on which the sensitive receiver is located.

2. NOTE: For the purposes of this EPR, a "Process Statement" means an agreement between SRLA and the owner and occupier of land on which sensitive receiver or receivers with unique and specific requirements that necessitate a more tailored approach to addressing specific EMI requirements is located. This may include but not be limited to sensitive research, medical or recording equipment/spaces and sensitive performance spaces.

Electromagnetic Interference	EMI1	<p>Develop an Electromagnetic Compatibility (EMC) Management Plan</p> <ol style="list-style-type: none"> 1. Develop an Electromagnetic Compatibility (EMC) Management Plan in accordance with AS/RISSB7722:2016 <i>EMC Management</i> to inform the design and construction of SRL East (EMC Management Plan), that includes (but is not necessarily limited to) the following: <ol style="list-style-type: none"> a) A preliminary assessment of electromagnetic emissions or disturbances likely to be caused by the construction and operation of SRL East and the Ultimate Configuration, having regard to: <ol style="list-style-type: none"> i. Relevant design requirements of SRL East and the Ultimate Configuration; ii. Any matters relevant to electromagnetic emissions or disturbances which SRLA reasonably expects will be implemented in the design, construction and operation of SRL East and the Ultimate Configuration. b) Identification of existing and known and committed future equipment or infrastructure which may be affected by electromagnetic interference (EMI) as a result of the construction or operation of SRL East and the Ultimate Configuration ("sensitive receivers"), having regard to the preliminary assessment carried out pursuant to paragraph (a) above. c) Determination of operational EMI immunity limits for sensitive receivers identified pursuant to paragraph (b) above, having regard to: <ol style="list-style-type: none"> i. equipment environmental specifications; ii. stakeholder requirements; iii. background EMI levels; and iv. where existing shielding or mitigations are installed. <p>For the purposes of sub-paragraph (i), equipment environmental specifications are either:</p> <ol style="list-style-type: none"> (1) the equipment manufacturer environmental specifications; or (2) other environmental specifications substantiated by appropriate data and evidence provided by the owner of the equipment, collected by SRLA where it considers appropriate, or a combination of both. 	<p>A project-wide assessment of electromagnetic emissions and associated management plan is currently under preparation. No EMI sensitive receptors have been identified in proximity to the tram terminus works.</p>
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- (3) Note: Any dispute regarding the appropriateness of the environmental specifications must be determined by an appropriately qualified independent expert, engaged by SRLA, on the basis of all data, evidence and information held or collected by SRLA regarding the relevant sensitive receiver.
- d) A process for baseline monitoring to identify background EMI levels at sensitive receivers identified pursuant to paragraph (b) above, undertaken in accordance with any relevant manufacturer environmental test requirements where available and in consultation with the equipment owner, or, where reasonable and timely access is not provided for the purpose of monitoring, in accordance with an alternative procedure suitable to determine background EMI levels at the relevant sensitive receiver.
 - e) Targeted modelling to confirm whether electromagnetic emissions or disturbances caused by the construction and operation of SRL East and the Ultimate Configuration comply with the operational EMI immunity limits determined in accordance with paragraph (d) above. If the targeted modelling identifies any exceedance as a result of the construction or operation of SRL East or the Ultimate Configuration, design additional or optimised management measures and/or at-source mitigation measures to be implemented in the design, construction and operation of SRL East:
 - i. to avoid the exceedance where reasonably practicable; or
 - ii. if it is not reasonably practicable to avoid exceedance, to reduce the exceedance so far as reasonably practicable.
 - f) Targeted modelling to confirm whether, with the additional management measures and/or at source mitigation measures designed pursuant to paragraph (e) above in place, electromagnetic emissions or disturbances caused by the construction and operation of SRL East comply with the relevant operational EMI immunity limits. If the targeted modelling identifies any exceedance as a result of the construction or operation of SRL East, design at-receiver mitigation measures in consultation with the owner and manufacturer of the sensitive receiver to avoid exceedance of the operational EMI immunity limit, to be implemented subject to the agreement of the owner of the sensitive receiver.
 - g) A program for regular monitoring of EMI levels at sensitive receivers identified pursuant to paragraph (b) during the construction, testing, and commissioning of SRL East.
 - h) A procedure for the review and updating of the EMC Management Plan having regard to the outcomes of monitoring and, where relevant, any data or evidence provided by stakeholders in respect of electromagnetic emissions or disturbances caused by the construction and operation of SRL East, including to provide for the design of additional or optimised management measures, at-source mitigation measures, and/or at-receiver measures in accordance with paragraphs (e) and (f) above if operational EMI immunity limits determined in accordance with paragraph (d) are not met during the construction, testing and commissioning of SRL East.
2. NOTE: For the purposes of this EPR, 'known and committed future developments or infrastructure' is any future development or infrastructure for which it can be demonstrated that the stakeholder had a formal commitment or plan as at 5 August 2022.



Electromagnetic Interference	EMI2	Design and construct SRL East in accordance with the Electromagnetic Compatibility Management Plan	Not applicable to the tram terminus works - see response to EMI1 above.
<ol style="list-style-type: none"> 1. Design and construct SRL East in accordance with the EMC Management Plan, including through: <ol style="list-style-type: none"> a) Incorporating the at-source mitigation measures identified in the EMC Management Plan, or other reasonably practicable measures of equal or better performance having regard to the operational EMI immunity limits identified in the EMC Management Plan, into the design of SRL East; b) Implementing the at-receiver mitigation measures identified in the EMC Management Plan, or other measures of equal or better performance having regard to the relevant operational EMI immunity limit identified in the EMC Management Plan, subject to the agreement of the owner of the sensitive receiver; c) Conducting monitoring in accordance with the EMC Management Plan. 			

Electromagnetic Interference	EMI3	Manage and monitor EMI levels during operation	See response to EMI1 above.
<ol style="list-style-type: none"> 1. Develop and implement an EMI Operational Plan for operational activities that addresses the following: <ol style="list-style-type: none"> a) Maintaining SRL-wide EMI control based on the EMC Management Plan prepared in response to EMI1, considering the operational EMI immunity limits and management and mitigation measures identified in the EMC Management Plan; b) A testing and monitoring strategy, with testing and monitoring to be undertaken during operation to monitor performance of the management and mitigation measures identified in the EMC Management Plan; c) Remedial action to be undertaken if operational EMI immunity limits identified in the EMC Management Plan are not met during the operation of SRL East; d) Providing EMI and electromagnetic field (EMF) data from SRL East to stakeholders who are in the process of planning new sensitive receivers and had no formal commitment prior to the 5 August 2022, to inform the design and required mitigation of new sensitive receivers and associated facilities, if required. 			

Ground Movement			
Ground Movement	GM1	Develop, maintain and update geological and groundwater models, predict ground movements, and determine acceptability criteria.	Not applicable to the tram terminus works due to the limited extent of excavation required and separation between construction works and nearby buildings.
<ol style="list-style-type: none"> 1. To inform the design of tunnels, cross passages, shafts, stations, and portals: <ol style="list-style-type: none"> a) Develop and maintain Ground Movement Models that are informed by geological and groundwater models (as per GW2) which: <ol style="list-style-type: none"> i. Inform tunnel design and the construction techniques to be applied for the various 			

		<p>geological and groundwater conditions</p> <ul style="list-style-type: none"> ii. Inform assessment of potential ground movement from excavation iii. Inform assessment of potential ground movement from changes in the groundwater levels iv. Are reviewed as the ground conditions are further exposed by investigations, excavation works or assessment of the monitoring results, and revised if needed <p>b) Identify the structures (including residences and other buildings), rail tracks for trains and trams, road pavement, landfills (including landfill liners), utilities and public infrastructure assets (referred to collectively as 'assets' in GM1- GM4) that might be affected by ground movement predicted from the models, and establish their structural forms</p> <p>c) Predict ground movements during construction and when post-construction effects would stabilise to determine potential impacts on affected assets</p> <ul style="list-style-type: none"> 2. Determine appropriate acceptability criteria in consultation with relevant stakeholders, local councils, and land managers, and which build upon the assumptions for criteria presented in the EES. 3. Develop impact assessment processes and acceptability criteria generally consistent with the Tunnel Design Guideline (Australian Tunnelling Society / Engineers Australia, September 2020). 4. Undertake stakeholder engagement activities in accordance with the Community and Stakeholder Engagement Plan required by SC2. 	
Ground Movement	GM2	<p>Measure seasonal ground movements and conduct condition surveys</p> <ul style="list-style-type: none"> 1. Conduct ground movement measurements or obtain records of ground movement over a sufficient period of at least four seasons (one year) before construction to establish any background level changes, including seasonal effects. 2. Develop and maintain a database of all assets within the Project Land which are predicted to be affected by ground movement based on the results of GM1. 3. Undertake, subject to receiving asset owner consent to undertake the survey, on reasonable terms, pre- construction and post-construction condition survey(s) for the assets predicted to be affected by ground movement based on the results of GM1, or where an asset owner reasonably expects to be potentially affected and has requested a pre-excavation condition survey. 4. Update the database with condition information for each surveyed asset. 5. Share pre-excavation and post-construction condition assessments and records of consultation with the asset owners. 	Not applicable to the tram terminus works - see response to GM1 above.
Ground Movement	GM3	<p>Develop, implement and maintain Ground Movement Plans</p> <ul style="list-style-type: none"> 1. Design and construct permanent structures and temporary ground support measures to limit ground movements to within the acceptability criteria during and after the construction phase. 2. Develop and implement a Ground Movement Plan(s) that: <ul style="list-style-type: none"> a) Addresses the location of assets which may be susceptible to damage by ground movement resulting from Project works, having particular regard to heritage places (HH4) 	Not applicable to the tram terminus works - see response to GM1 above. The proposed tram terminus design has been informed by investigations to confirm the risk of potential ground movement resulting from the works, both during and post construction. The scale of excavation for the

		<ul style="list-style-type: none"> b) Identifies appropriate ground movement impact acceptability criteria for assets, including for buildings, utilities, rail tracks for trains and trams, road pavement and landfills (including landfill liners), after consultation with the various stakeholders (GM1) c) Identifies mitigation measures to ensure acceptability criteria can be met (this GM3) d) Identifies techniques for limiting settlement of buildings and protecting buildings from damage. Where these may apply to heritage places, they should be developed in consultation with Heritage Victoria and the relevant local council (as applicable) (GM1) e) Addresses additional measures to be adopted if acceptability criteria are not met, such as repair of any damage (GM4) f) Establishes ground movement monitoring requirements and duration for the area surrounding proposed Project works and at the location of affected assets to measure consistency with the predicted model, including criteria related to predicted movements and acceptable movements g) Includes planned mitigation measures where monitoring results indicate that predetermined ground movement trigger levels could be breached 	<p>development is minimal and it is expected that potential ground movements will be small and able to be contained within the site boundary without adversely impacting nearby buildings or infrastructure.</p>
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Ground Movement	GM4	<p>Undertake repair works to assets impacted by ground movement</p> <ol style="list-style-type: none"> 1. Undertake any required repair works or other actions as agreed with the landowner, land manager or asset manager for assets (including natural landscapes and parklands) impacted by ground movement as a result of the Project. For places on the VHR, consultation with Heritage Victoria and the relevant local council must occur (as applicable). For places with a Heritage Overlay, consultation with the relevant Council must occur. 2. Undertake any required repair works as soon as reasonably practicable after the completion of Project construction work that could affect the assets and once monitoring shows any ground movement has stabilised. 3. Establish an independent mediation process for the assessment of claims relating to damage from ground movement to operate up to three years after tunneling and the construction of the permanent linings of SRL structures that potentially affect the relevant asset. 	<p>Not applicable to tram terminus works - see response to GM1 and GM3 above.</p>
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Groundwater

Groundwater	GW1	<p>Design underground structures to minimise groundwater changes</p> <ol style="list-style-type: none"> 1. Design underground structures to minimise changes to groundwater levels during construction and operation, in order to avoid and minimise impacts on receptors (existing bores and ecosystems), ground movement, potential acid sulfate soils (PASS) activation, and contamination plume migration and vapour intrusion. The design should be informed by the Groundwater Model as required by GW2 and have regard to all available monitoring results (including of monitoring under the Groundwater Monitoring Plan (GMP) required by GW5, if available) and an assessment of material durability 	<p>Underground structures associated with the tram terminus are limited to drainage and other utility services. These have been sited above the water table and will not impact on groundwater levels in this area.</p>
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(including the potential for acid to be generated by oxidation of acid sulfate soils).

Groundwater	GW2	<p>Design and construction to be informed by groundwater modelling</p> <ol style="list-style-type: none"> 1. Develop groundwater models through a process that is consistent with the Australian Groundwater Modelling Guidelines (Barnett et al. 2012) and verified by the IEA. Where fate and transport models are required, these should include all input values to enable replication/verification of the fate and transport modelling undertaken. Apply models in the detailed design phase to predict impacts associated with any construction techniques or operational design features proposed during detailed design, and reconfirm that EPRs and mitigation measures are sufficient to mitigate impacts from changes in groundwater levels, flow and quality. 2. Conduct groundwater scenario modelling of current climate conditions as well as projected future climate change conditions over the Project design life, for changes to key processes including sea levels and coastal inundation, evapotranspiration and recharge, to inform the detailed design consistent with GW1. Assessments must be 'based on a comprehensive analysis of the best practicably available information at the time modelling is undertaken to assess the potential impacts of climate change' over the Project's design life, to be consistent with the guiding principles of the Climate Change Act 2017 (Vic). 3. Regularly update numerical models to achieve transient calibration where suitable data are available, to confirm prediction of cumulative impacts during construction and inform uncertainty assessments, having regard to the results of monitoring carried out pursuant to the GMP prepared per GW5. 4. Utilise results from monitoring carried out pursuant to the Groundwater Monitoring Plan prepared per GW5 during construction to ensure that predictions are accurate both temporally and spatially and mitigation measures are appropriate, and adjust models if required. 	See response to GW1 above.
Groundwater	GW3	<p>Develop, implement, and maintain a Groundwater Management Plan</p> <ol style="list-style-type: none"> 1. Develop, implement and maintain a Groundwater Management Plan (GWMP) that details the groundwater management approaches required to identify, avoid and minimise impacts to groundwater levels, flow and quality so far as reasonably practicable and includes relevant aspects from GW5. 2. Base the GWMP on the detailed design Groundwater Model, and include the following: <ol style="list-style-type: none"> a) Mitigation measures to be implemented if drawdown at existing active groundwater wells used for consumptive purposes exceeds acceptable levels (greater than a 10% reduction in available drawdown in the well). A consistent methodology must be developed to assess these impacts. b) Mitigation measures to be implemented if drawdown at existing active investigation/observation wells are such that bores can no longer be used for observation or sampling c) Mitigation measures to manage oxidation of potentially acid sulfate soils or manage acidic groundwater consistent with the Potential Acid Sulfate Soil and Rock Management Plan required by C6 	<p>A Groundwater Monitoring and Management Plan is under preparation to meet the requirements of EPR GW3, GW4, GW5 and GW6.</p> <p>Based on the limited extent of earthworks required for construction of the tram terminus and that groundwater levels will not be intersected in this location, it is unlikely that any specific mitigation measures or other actions specified under this Plan will need to be implemented during construction.</p>

- d) Mitigation measures for maintaining quantity and quality of groundwater contribution to groundwater dependent ecosystems where there is predicted to be an unacceptable change in groundwater levels, flow or quality
 - e) An approach developed in consultation with EPA Victoria to minimise risk of harm so far as reasonably practicable from contaminant migration (including vapour intrusion into underground structures such as Project structures and third-party deep basements)
 - f) Measures to address groundwater contamination if found to be present in any areas of potential groundwater drawdown, to minimise risk of harm so far as reasonably practicable from contaminant migration
 - g) Identification of groundwater drawdown trigger levels at which mitigation must be implemented to protect receptors and sensitive sites
 - h) A GMP in accordance with GW5, appropriate to identify changes early so that mitigation can be implemented to avoid impact to the environment and human health
 - i) Contingency measures to be implemented where unexpected groundwater conditions are encountered.
3. Develop the GWMP in consultation with the EPA Victoria, relevant water authorities and stakeholders, including major groundwater users, and reference the Contaminated Land Management Plan (see C2). It must also be undertaken in accordance with the Groundwater Disposal Strategy where relevant (see GW4).
 4. Review the GWMP annually or at frequency as determined with the IEA to confirm the plan is adequately addressing impacts of works as they progress to different stages and as sections are completed, and to review the need to commission additional monitoring bores or to decommission monitoring bores, subject to approval from Southern Rural Water.

Groundwater	GW4	Develop and implement a Groundwater Disposal Strategy <ol style="list-style-type: none"> 1. Develop and implement a Groundwater Disposal Strategy for the construction phase of the Project, in consultation with relevant water authorities and other relevant stakeholders. 2. Apply the waste management hierarchy to the disposal strategy to be consistent with the EPA waste management regulations, and include: <ol style="list-style-type: none"> a. Identification of primary discharge location, daily discharge volumes and treatment requirements b. Monitoring plan to ensure that groundwater quality meets disposal criteria c. Contingency measures if capacity of primary discharge location is exceeded, particularly during extended wet periods d. Measures for collection, treatment and disposal of groundwater seepage during construction in accordance with the EP Act waste management hierarchy. 3. Obtain a trade waste agreement from the relevant water authority where disposal to sewer is required or approval from EPA Victoria and the relevant water authority (as required) if discharge to waterways or groundwater recharge is determined to be appropriate. 	See response to GW3 above.
Groundwater	GW5	Develop, implement and maintain a Groundwater Monitoring Plan	See response to GW3 above.

1. Prior to commencement of construction works that may impact groundwater, develop, maintain and implement a groundwater monitoring plan as part of the GWMP and in accordance with C1. The monitoring plan should establish baseline water level, flow, and quality for an area at least equal to the modelled drawdown extent around the construction works. Groundwater monitoring data should be used to inform the development and update of the groundwater model(s) prepared in accordance with GW2.
2. Detail sufficient monitoring of groundwater levels, flow and quality in the plan to assess impacts including:
 - a) Reduction in access to groundwater for consumptive well owners
 - b) Impacts which affect the ability to observe and sample groundwater in existing third-party investigation wells
 - c) Reduction in groundwater contribution to groundwater dependent ecosystems
 - d) Contaminant migration or vapour (including landfill gas) intrusion to underground structures caused by drawdown or induced groundwater flow
 - e) Activation of PASS and groundwater acidification
 - f) Disposal of groundwater inflows.
3. Ensure the plan:
 - a) enables calibration and verification of the predictive model, and to inform changes to the model, prepared pursuant to GW2
 - b) enables early identification of changes so that mitigation can be investigated and if necessary implemented to avoid impact receptors or sensitive sites
 - c) details sufficient monitoring of groundwater to verify that groundwater levels, flow and quality are recovering (or have recovered) as predicted post-construction
 - d) Require relevant key stakeholders to be alerted in the event that triggers are exceeded or unexpected changes in groundwater level, flow or quality are detected during monitoring
4. Align the GMP with the Surface Water Management Plan and the water quality monitoring program (SW1 and SW7) where the GMP (GW3) identifies a potential impact on a Groundwater Dependent Ecosystem,
5. Implement and maintain the plan during construction and for a minimum of five years following the completion of tanking (once watertightness is achieved), or until an independent Statutory Environmental Auditor, appointed pursuant to section 208 of the EP Act, verifies that groundwater is recovering (or has recovered) to a satisfactory level. Assessment of recovery must take into account prevailing climatic conditions and natural variability flow.
6. Provide the data collected under the GMP to DELWP (as the manager of the at State-wide database Water Measurement Information System) at least annually, to be made accessible to the public via the State-wide database Water Measurement Information System, including provision of water quality and contamination testing results from sampled water bores.

Groundwater	GW6	Manage groundwater during operation	See response to GW3 above.
		1. As part of the OEMP, develop and implement a strategy for management, monitoring (informed by	

- the monitoring program developed in GW5), reuse where possible and disposal of groundwater inflows during operation. The strategy must apply the waste management hierarchy, be consistent with the waste management regulations and guidance provided by EPA, and include:
- a) Identification of primary discharge location, daily discharge volumes and treatment requirements
 - b) Monitoring plan to ensure that groundwater quality meets disposal criteria and does not pose unacceptable impacts to water quality in local waterways and water bodies
 - c) Consistency with the wastewater management controls in SW6
 - d) Contingency measures and emergency response plans if unexpected groundwater volume or contamination is encountered and requires disposal.
2. A trade waste agreement should be obtained 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 or groundwater recharge is determined to be appropriate.

Historical Heritage

Historical Heritage	HH1	<p>Design and construct to avoid and minimise impacts on heritage</p> <ol style="list-style-type: none"> 1. Undertake detailed design and construction planning of the temporary and permanent works to avoid and/or minimise impacts so far as reasonably practicable on the historical cultural heritage values of heritage places in consultation with Heritage Victoria and/or local governments (as applicable). 	<p>There are no sites of local/state heritage significance subject to formal protection under the Whitehorse Planning Scheme or the Heritage Act 2004 within the tram terminus works area.</p> <p>There are two sites of potential local heritage significance located within the Whitehorse Road median within the works footprint:</p> <ul style="list-style-type: none"> • The Whitehorse Hotel statue and portico, located west of the carpark adjacent to the southern (westbound) carriageway of Whitehorse Road. • The Councillor Ellingworth Drinking Fountain. <p>These sites cannot be retained in their current location as part of the tram terminus relocation, and will be dismantled and stored by a suitably qualified heritage specialist in accordance with the Burra Charter prior to commencement of works, in consultation with the City of Whitehorse.</p>
Historical Heritage	HH2	<p>Undertake works to protect and manage heritage places and fabric</p>	<p>See response to HH1 above. Dismantling methodology has been</p>

1. Develop and implement
 - a) Physical protection measures for potentially affected heritage places, structures or features as appropriate
 - b) Where required, a methodology for any required dismantling, storage, relocation or reinstatement of heritage fabric (with reference to the ICOMOS Burra Charter 2013 and in consultation with the asset owner), prior to commencement of works with the potential to affect heritage places, structures or features, directly or indirectly, in consultation with the relevant heritage authority.

prepared in consultation with the relevant heritage authority (Whitehorse City Council). This has included a Council briefing, provision of condition reports and proposed dismantling methodology.

Whitehorse City Council has also been provided a copy of the methodology statement and drawings which is issued to the contractor undertaking the works under supervision of the heritage specialist who prepared the dismantling methodology, to satisfy EPR HH2.

Historical Heritage	HH3	<p>Undertake archival photographic recording</p> <ol style="list-style-type: none"> 1. Undertake archival photographic recording of heritage places (including trees) and their settings, in accordance with Heritage Victoria's specification or guidelines for the archival photographic recording of heritage places, to the satisfaction of the relevant Responsible Authority, prior to commencement of works where heritage places are demolished or modified by the works. 	<p>Archival photographic recording will be undertaken for the heritage assets located within the tram terminus works site as well as their surrounding curtilage/setting in the median strip, in accordance with Heritage Victoria's specifications and the processes outlined in the Heritage sub-plan.</p>
Historical Heritage	HH4	<p>Monitor and manage condition of heritage sites</p> <ol style="list-style-type: none"> 1. Undertake pre-construction and post-construction condition survey(s) in accordance with GM2 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 and settlement impacts on heritage places during construction to be implemented in accordance with the Construction Noise and Vibration Management Plan required by NV3 and the Ground Movement Plan(s) required by GM3. 2. Report the results of monitoring for heritage places to the landowner and the relevant Responsible Authority and take remedial action, if required, to the satisfaction of the Responsible Authority. 3. NOTE: The EPR applies across the Project and to all heritage places at risk of impact. 	<p>Condition surveys will be undertaken of the heritage assets within the Tram terminus works area prior to commencement of works, as well as two nearby buildings formally protected under the Heritage Overlay:</p> <ul style="list-style-type: none"> · HO90 Uniting Church Box Hill (909-911 Whitehorse Road) · HO244 Box Hill Commercial Area (922 Whitehorse Road only) <p>Ongoing monitoring of these buildings will be undertaken in accordance with the processes outlined in the CNVMP, including implementation of mitigation measures as and where required.</p>

Historical Heritage	HH5	<p>Develop and implement an Archaeological Management Plan</p> <ol style="list-style-type: none"> 1. Develop and implement an Archaeological Management Plan in consultation with Heritage Victoria for all sites in the Victorian Heritage Inventory, detailing measures to avoid, minimise, mitigate and manage disturbance of archaeological sites and values affected by the Project. 2. Undertake these 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. 3. Ensure the Archaeological Management Plan includes: <ol style="list-style-type: none"> a) Requirements for background historical research, excavation methodology, research design, reporting and artefact management, artefact conservation, and analysis b) Protocols for managing previously unidentified historical archaeological sites discovered during the works 	<p>There are three sites within the Box Hill precinct which are listed on the VHI:</p> <ul style="list-style-type: none"> • Former Market Street Structures – H7922-0519 • Commercial Properties, 925-939 Whitehorse Road – H7922-0521 • Former Residences, Box Hill Gardens, Box Hill – H7922-0517 <p>Archaeological Management Plans are under preparation for these sites in accordance with this EPR.</p> <p>None of the above sites are located within or adjacent to the Tram terminus works, and consequently the outcomes and requirements of the Archaeological Management Plans are not relevant to this UDLP.</p>
Historical Heritage	HH6	<p>Develop and implement an unexpected discovery protocol</p> <ol style="list-style-type: none"> 1. Develop and implement protocols for managing previously unidentified historical archaeological sites discovered during the works in consultation with Heritage Victoria. 	<p>An Unexpected Discovery Protocol has been developed as part of the Heritage Sub-Plan, subject to consultation with Heritage Victoria. Training in this protocol will form part of site induction for all construction staff and be included within the tram terminus WEMP.</p>
Historical Heritage	HH7	<p>Minimise impact and undertake reinstatement of Box Hill Gardens</p> <ol style="list-style-type: none"> 1. Minimise the temporary and permanent footprint of the Project at Box Hill Gardens as required by LUP1. 2. Minimise tree removal and implement tree protection measures as required by AR2 and AR3. 3. Develop and implement a plan to guide the reinstatement of landscape character to the impacted areas of Box Hill Gardens in consultation with the local council and park manager. Recognising the extent of change that has occurred in the eastern half of the Gardens, the plan must reflect and incorporate aspects of the design and character of the gardens as established in the interwar period, including path layout, open lawns and a mix of characteristic exotic and native specimen trees. The timing for implementation of the plan following completion of construction within Box Hill Gardens for SRL East should consider the timing for the commencement of the next stage of SRL, subject to approvals. 4. The plan is to be developed by an appropriately qualified landscape architect including heritage landscape input on the basis of historical research and analysis and with reference to the 2010 Box Hill Gardens Master Plan, or any other plan for Box Hill Gardens adopted and approved by Council. 	<p>Not relevant to the tram terminus development as no works are proposed or required in Box Hill Gardens.</p>

Historical
Heritage

HH8

Develop a heritage interpretation strategy

1. Develop and implement a heritage interpretation strategy for heritage places which explores historical and Aboriginal cultural heritage themes and values, in consultation with Heritage Victoria, the relevant local government, Traditional Owners (as applicable) and First Peoples – State Relations.
2. Include site interpretation initiatives for temporary (during construction works) and permanent works in the heritage interpretation strategy.
3. Ensure the heritage interpretation strategy considers the whole of Project, but particularly:
 - a) SRL station at Cheltenham (former Highett Gasworks)
 - b) SRL station at Burwood (Burwood Skyline Drive-In)
 - c) SRL station at Box Hill (multiple potential locations)
 - d) UDS.

A Heritage Interpretation Strategy has been prepared by SRLA covering all works within the Early Works scope, including the tram terminus relocation. This specifically identifies the existing heritage elements within the Whitehorse Road median (as described in the response to EPR-HH1 above) to be dismantled, stored and subject to archival recording.

The Strategy requires for temporary and/or permanent interpretation initiatives associated with the two heritage assets located within the tram terminus works area, including the potential for their relocation and integration into the future SRL station and/or other public realm works to be delivered through future scope of works.

Historical
Heritage

HH9

Develop and implement external conservation works

1. Develop and implement a scope of external conservation works for the former Railway Hotel (950-956 Whitehorse Road Box Hill) to the satisfaction of Whitehorse Council.
2. Develop and implement a scope of external conservation works for the following heritage structures which are directly affected by works in consultation with Whitehorse Council:
 - a) South Africa and China Memorial – Whitehorse Road & Watts Street, Median Strip, Box Hill
 - b) Whitehorse Hotel Statue and Portico – Whitehorse Road, Median Strip, Box Hill
 - c) Cr. Ellingworth Commemorative Drinking Fountain – Whitehorse Road, Median Strip, Box Hill
 - d) Three lamp post standards (if affected by works) – Whitehorse Road, Median Strip, Box Hill
3. Review whether it is feasible to safely retain all or parts of the Colonial Gas Association Building and 948 Whitehorse Road in consultation with Whitehorse Council. In the event it is feasible to safely retain all or a portion of the Colonial Gas Association Building and/or 948 Whitehorse Road, conservation works would be undertaken. The priority for retention is the Colonial Gas Association Building.

A scope for external conservation works to the two heritage assets located within the tram terminus worksite is being prepared by SRLA, and will be delivered as part of the relocation and integration of these assets in the future SRL East station. The scope of external conservation works is subject to future consultation with the relevant government stakeholders and heritage legislation.

Land Use Planning

Land Use
Planning

LUP1

Minimise design and construction impact on existing land uses

A Land Use Interface Plan has been prepared for the Box Hill SRL precinct in

		<ol style="list-style-type: none"> 1. Develop and implement a plan that specifies how the design and construction of the Project minimises impacts on existing land uses as follows: <ol style="list-style-type: none"> a) Maintains an overall positive balance between negative impacts arising from the temporary and permanent footprint of the Project and benefits arising from the Project's planning and design outcomes on the following land uses: <ol style="list-style-type: none"> i. retail and commercial activity centres ii. public transport hubs iii. public open space, including pathways iv. industrial precincts v. residential properties vi. community, sporting and recreational facilities vii. other sensitive uses including educational precincts, student accommodation, aged care facilities and boarding / rooming houses. b) Avoid or, where avoidance is not feasible, minimise to the greatest extent practicable, the impacts to existing residential areas by locating new above ground infrastructure, such as electrical substations, in appropriate locations with consideration of the adjoining properties and the possibility for co-location of rail infrastructure facilities where practicable. 2. Avoid construction laydown and permanent infrastructure at or in the Kingston Walk Linear Reserve and the Henry Street Reserve in Heatherton, with the exception of minor landscaping works, including installation of a shared user path. Retain and protect trees in accordance with EC1. 	<p>response to this requirement covering all Early Works activities, including the construction of the tram terminus. It is noted that the siting of the tram terminus has been endorsed through the Surface and Tunnel Plans.</p>
<p>Land Use Planning</p>	<p>LUP2</p>	<p>Develop and implement an Interim Land Use Guideline</p> <ol style="list-style-type: none"> 1. Develop and implement an Interim Land Use Guideline for the management of land acquired to facilitate construction, but not required for permanent SRL East infrastructure, prior to the completion of works at relevant sites. 2. Develop Interim Land Use Plans prior to the completion of works at relevant sites where required by the Interim Land Use Guideline, consistent with the requirements of the Interim Land Use Guideline, UDS and the EMF. 3. Prepare the Interim Land Use Plans in consultation with the relevant local council, any relevant Government agencies and any Universities (in relation to the interface between the University campus and the nearest SRL station). 	<p>An Interim Land Use Guideline has been prepared for the SRL East project. This EPR is not relevant to the tram terminus as the tram design and works are permanent infrastructure, not an interim land use.</p>
<p>Land Use Planning</p>	<p>LUP3</p>	<p>Minimise impacts from the location of services and utilities</p> <ol style="list-style-type: none"> 1. Locate services and utility infrastructure in such a way that minimises impacts to existing residential areas, public open space and educational land uses so far as reasonably practicable and which meets the requirements of the utility service providers. This must include consideration of options to co-locate infrastructure where practicable. 	<p>All utility services, including drainage, associated with the tram terminus relocation have been designed to be located entirely within the existing Whitehorse Road road reserve, with the electrical kiosk and other key utility infrastructure located near the southern boundary sited so as not to</p>

conflict with/preclude delivery of future active transport and recreational infrastructure within the abutting future linear open space, as outlined in the Project UDS.

Land Use
Planning

LUP4

Develop and implement a Public Open Space Framework

1. Manage effects to public open space from rail and infrastructure works in accordance with the Public Open Space Framework – Rail and Infrastructure prepared for the Project and approved by the Minister for Planning after receiving the advice of the Public Open Space Advisory Panel.
2. Set out principles and actions in the Public Open Space Framework to mitigate impacts on passive, active and planned open space from operation and construction, including replacement of existing public open space permanently lost or occupied for an extended period with new open space of a similar size and quality.
3. Prepare Public Open Space Management Plans in consultation with the landowner, and relevant councils having regard to the advice of the Public Open Space Advisory Panel and engagement with relevant community and user groups, to address specific areas of public open space in accordance with the Incorporated Document and Public Open Space Framework (POSF). The Public Open Space Management Plans must be prepared and approved prior to the commencement of works impacting existing open space, and must:
 - a) Set out the mitigation measures to manage impacts on public open space.
 - b) Set out the timing for the implementation of each of the mitigation measures.
 - c) Where relevant, set out a process for the identification of public open space to replace existing public open space permanently lost or occupied for an extended period, including suitable replacement land in key strategic locations with reference to:
 - i. the location and characteristics of the land
 - ii. relevant approved strategic land use plans and policies, including those within planning schemes
 - iii. existing and proposed public purpose reservations
 - d) Consider the UDS and any existing strategic or master planning affecting the public open space, including any open space policies.
 - e) Consider any relocation of existing infrastructure including recreational facilities and the requirement to maintain access for existing user groups.
 - f) Be informed by engagement with relevant community and user groups.
4. Prepare the Public Open Space Management Plan for Heatherton (Stabling Facility), to the satisfaction of the Minister for Planning. In addition to being prepared in accordance with LUP4(3) the plan must also:
 - a) Identify alternate land to be included in the Chain of Parks concept and set out a process for the acquisition of the replacement land; and
 - b) be prepared in consultation with the Kingston City Council and DELWP.
5. Implement mitigation measures set out in the Public Open Space Management Plans unless otherwise agreed with the landowner of the relevant public open space.

The SRL East Public Open Space Framework Plan identifies the Whitehorse Road central median as a linear open space reserve.

Impacts to this open space from the tram terminus construction and development will be limited to the area west of the existing pedestrian crossing, which does not contain any open space infrastructure or publicly accessible spaces outside of the existing car park servicing the tram stop.

A future UDLP will be prepared in relation to returned public open space as part of the delivery of the SRL East station.

Land Use Planning	LUP5	<p>Prepare a guide for planning permit applications under the SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document</p> <ol style="list-style-type: none"> 1. Develop a guide for planning permit applications under the SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document that: <ol style="list-style-type: none"> a) Explains the purposes of the control, building on the work already found in the SRL East – Infrastructure Protection Report. b) Provides guidance on what information is required for specific applications and where detailed information can be obtained on matters such as load factors, tunnel depth etc. c) Provides examples of development and works that are exempt from the requirement for a permit (for locations outside Area A) and examples of where a permit will be required. d) Provides contact information for the referral authority to assist in the application process. e) Includes guidance about standard permit conditions that might be applied to specific applications. 	Not applicable to the tram terminus works as this requirement applies to development of private land in proximity to future rail infrastructure, not the SRL East project itself.
Landscape and Visual			
Landscape and Visual	LV1	<p>Designs to be in accordance with the Urban Design Strategy</p> <ol style="list-style-type: none"> 1. Develop and implement UDLPs for permanent above-ground works in accordance with the Incorporated Document. The design responses must be in accordance with the UDS and, to the extent practicable: <ol style="list-style-type: none"> a) Maximise opportunities for enhancement of and creation of new public and private receptors including public amenity, streets, open space and facilities, and heritage places that are affected in relation to functionality and/or amenity as a result of permanent above ground works. b) Identify areas of potential high visual impact and provide appropriate and high quality visual mitigation together with physical mitigation and landscape integration (where appropriate). c) Ensure sufficient soil coverage above underground infrastructure in locations where the Urban Design and Landscape Plans require trees and other design elements that require soil coverage. d) Minimise overshadowing and wind impacts on existing and future public spaces. 	A separate assessment against the UDS has been completed.
Landscape and Visual	LV2	<p>Plant trees early to re-establish amenity</p> <ol style="list-style-type: none"> 1. Achieve visual amenity and environmental outcomes as part of any new public realm and open space areas to assist with early establishment of station precinct amenity by: <ol style="list-style-type: none"> a) Planting shrubs and understory vegetation b) Planting appropriate trees in accordance with AR4 and the UDS 	The proposed landscaping treatments include provision of landscaping beds incorporating shrubs and groundcovers to the northern and southern batters adjacent to the tram tracks and

2. NOTE: All advanced and semi-advanced tree stock is to be in accordance with AS2303-2018 Tree Stock for Landscape Use.
3. Take into account future garden bed design in the locations for trees, including consideration of water sensitive urban design such as passive irrigation

platform.

See Section 5 - Design Response for further detail and discussion.

Landscape and Visual	LV3	<p>Minimising operational lighting impacts</p> <ol style="list-style-type: none"> 1. Design and install Project lighting for permanent structures in accordance with relevant standards, including but not limited to Australian Standard 4282 – Control of the obtrusive effects of outdoor lighting (AS 4282 – 2019) and the relevant ecology requirements in EC1 and EC4. 	<p>Permanent lighting associated with the tram terminus will be designed and delivered in accordance with the relevant Standards, noting that there is no nearby habitat which could be impacted by associated light spill.</p>
Landscape and Visual	LV4	<p>Minimising construction lighting impacts</p> <ol style="list-style-type: none"> 1. Develop and implement measures to minimise the impact of light spill during construction to sensitive off- site receptors including residential dwellings, open space, and community facilities in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting (AS4282-1997). 	<p>The nearest sensitive receptors are the apartment buildings in Bruce Street, approximately 60m to the north of the tram terminus. Any potential light spill and consequent amenity impact to residents of these buildings from night-time construction lighting would be offset by the relatively high existing background light levels in the immediate area.</p>
Landscape and Visual	LV5	<p>Minimise visual impacts during construction</p> <ol style="list-style-type: none"> 1. Design and carry out temporary and construction works in accordance with the guidance in the UDS to help manage construction impacts. Areas disturbed by temporary and construction works are to be reinstated in consultation with the relevant land manager. 2. Develop and implement measures to use temporary landscaping, features or structures 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. 3. Implement landscaping enhancement (with reference to AR4, LV2 and as part of permanent works) prior to construction works commencing, where practicable. 	<p>The construction layout and activities within the tram terminus site have been designed to satisfy the relevant requirements at section 5.12 of the UDS, as follows:</p> <ul style="list-style-type: none"> • Due to its proximity to active traffic lanes on Whitehorse Road, construction fencing around the perimeter of the site is required to use concrete. The visual appearance of this fencing will be improved by the application of printed mesh screen or banners to both limit the visual impact of construction activities and also potentially incorporate business identification and/or promotional signage for local events. • Timber hoarding is to be erected on both sides of the pedestrian crossing located directly east of the

			tram terminus works site, to provide a higher level of visual and amenity protection to this area given its increased sensitivity and high level of pedestrian traffic.
Landscape and Visual	LV6	Minimise visual impacts from changed interface with residential dwellings <ol style="list-style-type: none"> 1. Minimise the impacts to adjacent properties where the adjoining land-use changes from residential to public or a Project- related use which results in changed views, visual privacy and screening. 2. Design and implement boundary treatments with consideration of the change from a private to a public interface at the following locations: <ol style="list-style-type: none"> a) SRL station at Clayton shared northern boundary b) Emergency Support Facility northern boundary c) SRL station at Glen Waverley – west of Myrtle Street realignment d) SRL station at Box Hill pedestrian spine north of Whitehorse Road e) SRL station at Monash – interface with Monash University. f) SRL station at Burwood – McComas Grove and Sinnott Street. 	Not applicable to the tram terminus works, as there are no residential interfaces to the work site boundaries.
Landscape and Visual	LV7	Enhance visual screening for the Stabling Facility <ol style="list-style-type: none"> 1. Retain and seek to enhance screening provided by existing mounds and plantings along the site boundaries to mitigate visual impacts to adjacent linear reserves, open space and residential dwellings through construction and operation of the Stabling Facility. If the existing mounds and screening require removal to facilitate the final design, visual screen would be reinstated to the extent practicable with reference to the landscape buffer as outlined in the UDS. 2. Consider the inclusion of green roof structures for discrete elements of the site and infrastructure. 	Not relevant to the tram terminus works as this applies to the Stabling Facility site only.
Noise (airborne and ground borne) and Vibration			
Noise and Vibration	NV1A	Process Statements <ol style="list-style-type: none"> 1. Apply EPRs NV1-NV18 to any sensitive receiver except where a Process Statement: <ol style="list-style-type: none"> a) Already exists with the owner or occupier of land on which sensitive receivers are located, in which case the terms of the Process Statement prevail, or 	Not relevant to the tram terminus works as there are no existing process statements in place for land adjacent to or in proximity to the works site.

		<p>b) has been prepared in accordance with this paragraph (b), after the Minister for Planning’s approval of this EMF, in which case the terms of the Process Statement prevail. A written statement justifying the unique and specific circumstances requiring the Process Statement must be prepared by SRLA and verified by the IEA. The written statement must include an explanation of the type of sensitive receiver or receivers and its use, and the special circumstances that justifies the need for a Process Statement and be co-signed by the owner or occupier of the land on which the sensitive receiver is located. It must also demonstrate that the levels or targets proposed are no less stringent than the reference levels (including any table notes) in NV1-16.</p> <p>2. NOTE: For the purposes of this EPR, a “Process Statement” means an agreement between SRLA and the owner and occupier of land on which a sensitive receiver or receivers with unique and specific requirements that necessitate a more tailored approach to address specific noise and vibration requirements is located. This may include but not be limited to sensitive research, medical or recording equipment/spaces and performance spaces.</p>	
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Noise and
Vibration

NV1

Minimise noise and vibration impacts to sensitive receivers during construction

A Construction Noise and Vibration Management Plan (CNVMP) has been prepared by the Managing Contractor.

1. Manage and minimise so far as reasonably practicable construction noise and vibration impacts to sensitive receivers at all times consistent with EPA Victoria publications *Civil Construction, Building and Demolition Guide* (EPA Publication 1834 (2020)), *Construction – guide to preventing harm to people and the environment* (EPA Publication 1820.1) (as amended or replaced from time to time), and in accordance with the SRLA *Residential Support Guidelines*, *SRLA Business Support Guidelines* and as specified in the Construction Noise and Vibration Management Plan (CNVMP).
2. Prescribe reference levels in the CNVMP that represent levels at which harm to human health and the environment is more likely to occur, and which comply with NV1(3) and (4). Where an EPR prescribes a noise reference level that is more rigorous than those set out in NV1(3) and (4), the more rigorous level applies.

Reference levels are not compliance levels that if met will discharge the requirements of the general environmental duty. At all times however, the contractor must first eliminate risks of harm so far as reasonably practicable, then reduce risks of harm so far as reasonably practicable. If exceedance of reference levels occurs after all reasonably practicable measures have been implemented, implement further management actions in accordance with the EPRs, CNVMP and the SRLA Residential Support Guidelines (as appropriate).

3. Do not prescribe airborne noise reference levels in the CNVMP, as required by NV3, that are less stringent than those set out below.

Time period	Applicable hours	Reference levels <small>L_{AeqT} 15 mins</small>
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Normal working hours	7am to 6pm Monday to Friday; 7am to 1pm Saturday	Pre-existing background noise (L_{A90}) plus 10dB.
Weekend/ evening work	6pm to 10pm Monday to Friday; 1pm to 10pm Saturday; 7am to 10pm Sunday and public holidays	For the first 18 months after the commencement of continuous project works at a location. <ul style="list-style-type: none"> Pre-existing background noise level (L_{A90}) plus 10 dB After 18 months from the commencement of continuous project works at a location: <ul style="list-style-type: none"> Pre-existing background noise level (L_{A90}) plus 5 dB
Night	10pm to 7am Monday to Sunday	Noise inaudible within a habitable room of any residential premises.

4. NOTES:

- a) Base all construction noise reference levels on background for those time periods that represent the background at the time of impact.
- b) For the purposes of predictive assessment of night time construction noise, the risk assessment regarding scheduling of works may be informed by using a reference level set to the pre-existing background noise level + 0 dB at the time of impact.
- c) When assessing predicted or measured construction noise levels against the reference levels, adjustments should be made to the measured level to account for any noise character, including tonal noise and impulsive noise. Reference should be made to section 3.2.5 of EPA Victoria Publication 1997 *Technical guide: measuring and analysing industry noise and music noise* for the purposes of determining appropriate character adjustments.

5. Do not prescribe vibration reference levels that are less rigorous than those recommended by British Standard BS6472-1:2008 in the CNVMP as required by NV3.

Noise and Vibration	NV2	Minimise out of hours construction works and their impacts <ol style="list-style-type: none"> 1. Schedule works during Normal Working Hours between the hours of 7 am - 6 pm Monday to Friday, and 7 am – 1 pm Saturdays, unless the works meet the following requirements: 	The works program for the tram terminus will involve out of hours works in order to minimise disruption to Whitehorse Road and the 109 tram line, both of which are key transport routes,
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- a) Construction noise levels are predicted to comply with the noise requirements (specified in Table 4.3 of the *Civil construction, building and demolition guide* (EPA Publication 1834)¹ and are undertaken in accordance with management measures set out in the CNVMP developed under NV3; or
 - b) Construction vibration levels are predicted to comply with the relevant night period vibration reference level specified in BS6472-1:2008 (NV6) and are undertaken in accordance with management measures set out in the CNVMP developed under NV3; or
 - c) The works are verified by the Independent Environmental Auditor (IEA) to be Unavoidable Works or Managed-Impact Works as outlined in the *Civil construction, building and demolition guide* (EPA Publication 1834), and noise and vibration emissions (and their impacts) are managed so far as reasonably practicable.
2. Ensure that during Weekend / Evening periods as defined in EPA Publication 1834, noise levels from Managed-Impact Works ($L_{Aeq,15min}$) do not exceed a reference level set to the pre-existing background (L_{A90}) noise level at the time of impact by more than 10 dB for up to 18 months after the works commence at that location and by more than 5 dB after 18 months, unless offers are made to affected sensitive land uses to avoid the impacts of the exceedance.
 3. Allow Managed Impact Works to be conducted during Night periods as defined in EPA Publication 1834, providing noise (including vibration) and its impacts are effectively managed to ensure that:
 - a) the noise does not have intrusive characteristics such as impulsiveness, tonality, intermittency or high energy in the low frequency range
 - b) the construction noise level ($L_{Aeq,15min}$) is not predicted or measured to exceed a reference level set to the pre-existing background (L_{A90}) noise level at the time of impact unless offers are made to the affected sensitive land uses to avoid the impacts of the exceedance
 4. Verify that proposed works outside of Normal Working Hours meet the definitions of Unavoidable or Managed Impact Works outlined in EPA Publication 1834 for each instance they are undertaken, and that adequate management measures are in place to manage potential impacts. The IEA must verify and the IEA's verification of management measures should consider prediction and modelling carried out under NV11 and community expectation and history of complaints.
 5. Notify landowners of any works outside of Normal Working Hours and make available all notifications on the Project website where the Weekend/Evening or Night reference levels specified in EPA Publication 1834 are predicted to be exceeded.
 6. Monitor noise and vibration at the commencement of and during relevant works to confirm predicted levels and that appropriate management measures are implemented in accordance with the CNVMP developed under NV3 as verified by the IEA.
 7. Satisfy the IEA that any Managed-Impact works are expected to have a net benefit to the amenity of the affected community. The IEA must consider the following when determining the net amenity benefit of proposed Managed-Impact Works, as outlined in the CNVMP as required by NV3:
 - a) the degree of and duration of disturbance from the work

through limiting the overall duration of works.

All out of hours works will be undertaken in accordance with the requirements of this EPR and subject to approval of the IEA. It noted that the worksite's location within a commercial centre with no direct sensitive interfaces and away from residential properties reduces the overall risk of negative amenity impacts.

¹ The background levels for Weekend/Evening or Night periods are to represent the background at the time of impact

		<ul style="list-style-type: none"> b) whether measures have been put in place to avoid noise with intrusive characteristics at noise-sensitive land uses, including but not limited to impulsive noise, tonal noise, intermittent noise, and noise with high energy in the low frequency range c) whether measures to avoid the impacts (respite or alternative accommodation) relating to exceedance of the reference levels set in this EPR for Managed Impact Works have been offered to occupants of sensitive uses where these reference levels are predicted or measured to be exceeded during the proposed Managed Impact works d) whether the proposed management measures are consistent with the requirements of the SRLA <i>Residential Support Guidelines</i> e) the need for the works and the approach to managing the impact of the proposed works f) community expectations and history of complaints about noise from Managed-Impact Works g) whether undertaking the works outside of Normal Working Hours materially reduces the duration and/or impact of the works, and if so whether this provides a benefit to the affected community h) cumulative impacts of construction noise and noise from other major construction sites impacting the same sensitive receivers (including works occurring in recent past or programmed sites for near future) <p>8. Develop a process for emergency works as the above requirements do not apply to emergency works to avoid the loss of life, damage to property, or to prevent environmental harm. The CNVMP must set out a process for responding to emergency works and informing EPA and relevant regulators about these works.</p>	
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Noise and
Vibration

NV3

Develop and implement a Construction Noise and Vibration Management Plan (CNVMP)

See response to NV1 above.

1. Prepare, implement and maintain a Construction Noise and Vibration Management Plan (CNVMP) that minimises noise and vibration impacts so far as reasonably practicable in accordance with the EPRs. The CNVMP must be reviewed (including consultation with external stakeholders as required) and updated as appropriate at least every six months. The Independent Environmental Auditor must provide written verification that the review of the original CNVMP and each subsequent review of the CNVMP meets the requirements of the Noise and Vibration EPRs.
2. **Modelling:** Use modelling results to develop the CNVMP. The CNVMP must be informed by noise and vibration modelling of the intended construction locations, durations of works, construction techniques, and preliminary tests undertaken to validate the model. The modelling should be updated at least every six months or when a phase of work changes and predictions remodelled as necessary to confirm the mitigation and remediation measures.
3. **Contents of CNVMP:** Ensure the CNVMP complies with and addresses the Noise (airborne and ground-borne noise) and Vibration EPRs, is informed by noise and vibration modelling described above, and includes (but is not limited to):
 - a) Construction noise and vibration criteria and reference levels as set out in NV1, NV4 to NV10 and NV15
 - b) Measures to manage and monitor potential vibration impacts on heritage places during construction where required, as set out in HH4

- c) 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 noise and/or vibration impacts on surrounding sensitive receivers.
- d) A clear rationale for Unavoidable Works and Managed Impact Works that are planned to be undertaken, and response strategies with mitigation measures to reduce the impacts of these works, so far as reasonably practicable and consistent with EPA publications *Civil construction, building and demolition guide* (EPA Publication 1834) and *Construction – Guide to preventing harm to people and the environment* (EPA Publication 1820.1) (as amended or replaced from time to time), the reference level for Managed Impact Works set in NV2 and the SRLA Residential Support Guidelines. These measures would inform the specific Out of Hours CNVMP.
- e) How the impacts and risks of harm to human health and the environment from construction noise and vibration will be minimised, including but not limited to:
 - i. where noise and vibration modelling of the intended construction methods and techniques demonstrates a potential exceedance of reference levels
 - ii. where noise and vibration from Project works (including Initial Works if occurring at the same time) and from other developments occurring during construction could, based on noise and vibration modelling, exceed reference levels.
 - iii. Where the environmental values for ambient sound defined in the ERS are at risk.
- f) Management actions, notification requirements and mitigation measures that will be implemented to reduce noise and vibration impacts so far as reasonably practicable, including (but not limited to) consideration of the following where reasonably practicable:
 - i. Best practice construction technologies to minimise impacts
 - ii. Scheduling works during less sensitive periods
 - iii. Enclosures
 - iv. Adaptive measures to provide periods of respite including scheduling noise intensive works at residential land uses after 9am, introducing one hour breaks from noise intensive works after three hours duration and alternating locations of noise intensive works to provide respite to sensitive receivers over the course of a day
 - v. Measures to reduce noise impacts associated with truck haulage
 - vi. Measures to avoid, minimise or mitigate noise and vibration associated with the use of hydraulic hammers
 - vii. Site hoarding
 - viii. Temporary structures to attenuate noise impacts
 - ix. Measures to manage night works, including avoiding truck movements by storing spoil on-site at night and the use of non-tonal reversing alarms during night works
 - x. Selecting the quietest available equipment/process for the job
- g) Roles and responsibilities of persons in control of or managing the site with respect to monitoring, reporting and follow up actions to be taken if not compliant with noise criteria and construction noise and vibration reference levels
- h) Any processes and measures to be implemented as part of the Communications and Stakeholder Engagement Plan (CSEP) including managing matters of interest raised by key

stakeholders through CSMP processes, and measures concerning complaints management (see SC2).

- i) Detail of the complaints management system for noise and vibration complaints, consistent with the requirements under EMF4.
- 4. Out of Hours Works CNVMP**
- a) Prepare and implement a specific CNVMP for all Unavoidable Works (excluding emergency works as described in NV2) or Managed-Impact Works considering the specific requirements of the relevant locations and sensitive receptors.
 - b) Ensure the Out of Hours Works CNVMP is consistent with the requirements of EPA Publication 1834 and SRLA *Residential Support Guidelines*, and verified by the IEA.
- 5. Monitoring protocols**
- a) Ensure the CNVMP identifies noise and vibration-sensitive receivers in the vicinity of the Project alignment, including identification of high-risk locations where modelled noise and/or vibration levels are predicted to present a risk of exceedance of the reference levels and where the environmental values for ambient sound of the ERS may be at risk for:
 - i. a period of at least twelve months for Normal Working Hours; or
 - ii. a period of at least three months for Out of Hours Works; or
 - iii. a period of at least two months for sensitive equipment.
 - b) Develop and implement monitoring protocols that are documented in the CNVMP to establish baseline conditions.
 - c) Develop and implement measures to ensure effective monitoring of noise and vibration associated with construction (see NV1 and NV4 to NV10, NV15) including:
 - i. Monitoring procedures to validate construction predictions on a minimum monthly basis for works predicted to exceed construction noise and vibration criteria and reference levels set out in NV1, NV4 to NV10 and NV15
 - ii. Attended and/or unattended monitoring procedures to respond to complaints.
 - iii. Prompt response to complaints
 - iv. Prompt implementation of management actions, notification requirements and mitigation measures in response to complaints
 - d) Develop and implement a monitoring program for the duration of noise and vibration generating works at representative and high risk locations and a requirement for automated alerts of exceedance of reference levels to personnel with control over construction activities in areas identified to be high risk in the CNVMP. In accordance with the requirements of the approved EMF, the monitoring program will include a 12 month trial to make publicly available on a project website real time airborne noise monitoring results from high risk locations (with an explanation of the limitations of unverified data).
 - e) Following the 12 month trial period, provide relevant information to enable the IEA to verify the utility to the affected community of making the real time airborne noise monitoring data publicly available. If the trial is extended, provide relevant information to the IEA to enable annual verification by the IEA of the utility to the affected community of making the real time airborne noise monitoring data publicly available.

Noise and
Vibration

NV4

Minimise construction airborne and ground-borne noise impacts at non-residential noise sensitive receivers

See response to NV1 above.

1. Develop and implement management actions for non-residential noise sensitive areas (based on AS/NZS 2107:2016 and the NSW Interim Construction Noise Guideline 2009) in accordance with the CNVMP (developed under NV3) if construction airborne or ground-borne noise is predicted or measured to exceed the noise reference levels below, and a noise sensitive receiver is expected to be adversely impacted.
2. Determine whether a noise sensitive receiver is, or predicted to be, adversely impacted having regard to:
 - a) The level of construction noise
 - b) The duration of construction noise
 - c) The presence of any intrusive characteristics as part of the construction noise
 - d) The existing ambient noise levels
 - e) Consultation with the owner or operator of the noise sensitive receiver
 - f) The sensitivity of the receiver to airborne noise (e.g. the environmental values for ambient sound defined in the ERS) that need protection from airborne noise
 - g) Any proposed actions provided for in the CNVMP developed under NV3
 - h) The necessity of construction activities where the levels in the table below are exceeded.

Land use	Construction noise management level, $L_{Aeq,15min}$ (applies when properties are in use)
Classrooms in schools and other education centres including kindergartens	Internal noise level 45 dB
Places of worship	Internal noise level 45 dB
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 (free-field)
Passive recreation areas characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example reading, meditation	External noise level 60 dB (free-field)
Community centres	Depends on the intended use of the centre. Refer to the recommended maximum internal noise levels in AS/NZS 2107:2016

Performing arts facilities and studios	Depends on the intended use of the facility or studio. Refer to the recommended maximum internal noise levels in AS/NZS 2107:2016
Industrial premises	External noise level 75 dB (free-field)
Offices, retail outlets	External noise level 70 dB (free-field)
CSIRO anechoic and reverberation chambers	Internal noise level 5 dB above the internal ambient noise level in any octave band from 63 Hz to 4 kHz

Noise and
Vibration

NV5

Establish guidelines to protect utility assets

1. **For construction:** Develop and implement management actions if the relevant reference level, as determined under the hierarchy of methods set out in paragraphs (a), (b) or (c) and verified by the IEA, is predicted or measured to be exceeded.

- a) The vibration level substantiated in writing by the asset owner to maintain utility asset integrity and which is accepted by the contractor(s);
- b) If the vibration level in 1(a) cannot be substantiated by the asset owner or is not accepted by the contractor(s) (acting reasonably), the vibration level substantiated in writing by the contractor(s) in consultation with the asset owner based on an assessment of the condition of the asset;
- c) If the contractor(s) is unable to substantiate a vibration level on the basis of its assessment of the condition of the asset in consultation with the asset owner in NV5(1)(b), and the IEA has verified that (a) and (b) have been completed, the reference levels for buried pipework/underground infrastructure set out in Table 3 of the German Standard DIN 4150-3:2016 (Table 3 reproduced below) will apply.

Vibration modelling will be undertaken in accordance with the CNVMP prior to and during the works period to ensure the construction methodology, including type and/or location of equipment to be used, does not result in the reference levels being exceeded for underground services retained within the works area.

Pipe material	Reference Peak Component Particle Velocity, $v_{i,max}$ (mm/s) measured on the pipe
Steel (including welded pipes)	100
Clay, concrete, reinforced concrete, pre stressed concrete, metal (with or without flange)	80
Masonry, plastic	50

2. **For operation:** Design and implement mitigation measures to reduce vibration levels to the relevant reference levels, so far as reasonably practicable. Reference levels must be determined by applying the hierarchy of methods set out in NV(1)(a), (b) and (c).

3. NOTES:

- a) The reference levels in the Table must be reduced by 50% when evaluating the effects of long-term vibration on buried pipework. Long-term vibration relates to events that may result in fatigue of materials or a significant resonant structural response (refer to DIN4150 for guidance on what is considered short-term and long-term).
- b) It is assumed pipes have been manufactured and laid using contemporary methods and technology. Where consultation with the asset owner reveals that this is not the case, alternative reference levels will be established under either NV5(1)(b) or (1)(c) for construction and operation.
- c) Consultation is required with the relevant asset owner if blasting is proposed within 60 m of one of their assets.
- d) Representative monitoring of vibration levels during construction is to be undertaken to demonstrate compliance with the relevant reference level.
- e) The reference levels are to be established as set out in NV5(1)(a), (b) and (c) for construction and operation and should be sought to be achieved through the application of reasonably practicable mitigation measures. If exceedance occurs, the risk of harm or damage to the utility asset must be investigated; and where this risk is confirmed, additional mitigation measures would be required in consultation with the utility asset owner.
- f) Where necessary, rectify any defects that are attributable to the Project.
- g) Where a standard, guideline or asset owner's procedures are applied, the measurement locations must reflect those stipulated in the relevant document from which the vibration criteria are adopted.

Noise and Vibration	NV6	Minimise construction vibration impacts on amenity 1. Develop and implement management actions if the following reference levels for vibration from construction activity to protect human comfort of occupied buildings (including heritage buildings) are predicted or measured to be exceeded (levels are calculated from the British Standard BS6472-1:2008).	Reference levels – Vibration Dose Values (m/s^{1.75})			
			Day (7 am to 10 pm)		Night (10 pm to 7 am)	
		Type of space occupancy	Preferred	Maximum	Preferred	Maximum

Modelling and monitoring of vibration impacts during construction will be undertaken prior to commencement of works and through the works period in accordance with the requirements of the CNVMP, with changes to construction methodology and/or implementation of mitigation measures should reference levels be exceeded.

	value	value	value	value
Residential	0.2	0.4	0.1	0.2
Offices, schools, education centres, places of worship	0.4	0.8	0.4	0.8
Workshops	0.8	1.6	0.8	1.6

2. Notes:

- Whilst the levels in the table are from the British Standard the day time and night-time duration has been amended to align with the EPA Publication 1834.
- For the purposes of undertaking measurements, modelling and further assessment of construction impacts, which are generally undertaken in the velocity metric (mm/s), these VDV's have been converted to an equivalent PPV based upon a number of generic assumptions outlined in the SRL East Impact Assessment – Vibration and Ground-borne Noise].
- Where it can be shown that other PPVs are appropriate, and these are verified by the IEA, these can be applied.

Location	Reference levels – Peak Particle Velocity (mm/s)			
	Day – 7 am to 10 pm		Night – 10 pm – 7 am	
	Preferred value	Maximum value	Preferred value	Maximum value
Residential	0.75	1.5	0.5	0.75
Offices, schools, education centres, places of worship	1.5	3.0	1.5	3.0
Workshops	3.0	5.0	3.0	5.0

3. Notes:

- The reference levels 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 will be required.
- The Preferred Value is the vibration level or dose at which there is a low probability of adverse comment or disturbance to building occupants. Contractors should design activities to not

exceed the preferred values so far as reasonably practicable and where an area is not already exposed to vibration. Where all feasible and reasonable measures have been applied, values up to or beyond the Maximum Value may be used if they can be justified in accordance with the CNVMP as required by NV3.

- c) Measurement locations must be consistent with section 5.2.3 of British Standard BS6472-1:2008.

Either the reference VDV or the PPV values may be applied in the assessment.

Noise and
Vibration

NV7

Minimise construction and operational vibration impacts to structures

See response to NV6 above.

1. **For Construction:** Develop and implement management actions if the construction vibration reference levels for short-term vibration effects on structures presented in the table below (which adopts levels from the German Standard DIN 4150-3:2016) are predicted or measured to not be achieved.
2. **For Operation:** Design and implement practicable mitigation measures to reduce vibration levels to the relevant reference level so far as reasonably practicable for short-term vibration effects on structures presented in the table below (which adopts levels from the German Standard DIN 4150-3:2016).

Type of structure	Reference levels for Peak Component Particle Velocity, $v_{i,max}$ (mm/s)				
	Short-term vibration at the foundation at a frequency of:			Vibration at horizontal place of highest floor	Floor slabs, vertical direction
	1 to 10 Hz	10 to 50 Hz	50 to 100 Hz*	All frequencies	All frequencies
Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	20
Residential buildings and buildings of similar design and/or	5	5 to 15	15 to 20	15	20

occupancy					
Structures that, because of their particular sensitivity to vibration cannot be classified under lines 1 and 2 and are of intrinsic value (such as heritage buildings)	3	3 to 8	8 to 10	8	20

*At frequencies > 100 Hz, the reference levels in this column may be used as a minimum.

3. Notes:

- a) Vibration levels marginally exceeding the reference levels in the table would not necessarily mean that damage would occur and further investigation would be required to determine if higher vibration levels can be accommodated without risk of damage.
 - b) For civil engineering structures (e.g. with reinforced concrete constructions used as abutments or foundation pads) the values for Type 1 buildings may be increased by a factor of 2.
 - c) Short-term vibration is defined in German Standard DIN 4150-3:2016 as vibration that does not occur often enough to cause material fatigue and whose development over time and duration will not induce a significant increase in vibration due to resonance in the particular structure.
4. **For Construction:** Implement management actions if the construction vibration reference levels for long-term vibration effects on structures presented in the table below (which adopts levels from the German Standard DIN 4150- 3:2016) are expected not to be achieved or are not achieved.
 5. **For Operation:** Design and implement practicable mitigation measures to reduce vibration levels so far as reasonably practicable for long-term vibration effects on structures presented in the table below (which adopts levels from the German Standard DIN 4150-3:2016).

Type of structure	Reference levels for Peak Component Particle Velocity, $v_{i,max}$ (mm/s) Long-term vibration	
	Horizontal plane of highest floor – All frequencies	Floor slab, vertical direction – All frequencies
Buildings used for commercial purposes, industrial buildings and buildings of similar design	10	10

Residential buildings and buildings of similar design and/or occupancy	5	10
Structures that, because of their particular sensitivity to vibration cannot be classified under lines 1 and 2 and are of intrinsic value (such as heritage buildings)	2.5	10

6. Notes:

- a) Vibration levels marginally exceeding those in the table would not necessarily mean that damage would occur and further investigation would be required to determine if higher vibration levels can be accommodated without risk of damage.
- b) Levels in the above table may need to be adjusted following a pre-construction condition survey.

Long-term vibration is any vibration not covered by the definition of "short-term vibration" above and relates to events that may result in fatigue of materials or a significant resonant structural response.

Noise and Vibration	NV8	<p>Minimise construction ground-borne (internal) noise impacts on residential amenity</p> <p>1. Develop and implement management and contingency actions if:</p> <ol style="list-style-type: none"> a) the following ground-borne noise reference levels are predicted or measured to be exceeded during construction; and b) airborne noise levels are lower than these ground-borne noise levels in the table below (which adopts levels from the NSW Interim Construction Noise Guideline, 2009). 	See response to NV6 above.								
		<table border="1"> <thead> <tr> <th style="background-color: #333; color: #fff;">Time of Day</th> <th style="background-color: #333; color: #fff;">Ground-borne noise reference levels</th> </tr> <tr> <td></td> <td style="background-color: #333; color: #fff;">Internal noise level measured at the centre of the most affected habitable room</td> </tr> </thead> <tbody> <tr> <td style="background-color: #333; color: #fff;">Evening (6 pm to 10 pm)</td> <td style="background-color: #333; color: #fff;">LAeq(15 minute) = 40 dBA</td> </tr> <tr> <td style="background-color: #333; color: #fff;">Night (10 pm to 7 am)</td> <td style="background-color: #333; color: #fff;">LAeq(15 minute) = 35 dBA</td> </tr> </tbody> </table>	Time of Day	Ground-borne noise reference levels		Internal noise level measured at the centre of the most affected habitable room	Evening (6 pm to 10 pm)	LAeq(15 minute) = 40 dBA	Night (10 pm to 7 am)	LAeq(15 minute) = 35 dBA	
Time of Day	Ground-borne noise reference levels										
	Internal noise level measured at the centre of the most affected habitable room										
Evening (6 pm to 10 pm)	LAeq(15 minute) = 40 dBA										
Night (10 pm to 7 am)	LAeq(15 minute) = 35 dBA										
		<p>Include Management actions, such as community consultation and respite offer in accordance with the SRLA <i>Business Support Guidelines</i> and SRLA <i>Residential Support Guidelines</i>.</p>									

Minimise amenity impacts from blast vibration and blast overpressure

Not applicable to the works, as no blasting is proposed or required for development of the tram terminus.

1. **Blast vibration** – Develop and implement management actions if the following vibration reference levels are predicted or measured to be exceeded. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.

Category	Type of blasting operations	Reference levels Peak component particle velocity (mm/s)
Sensitive site	Operations lasting longer than 12 months or more than 20 blasts	5mm/s for 95% blasts per year 10 mm/s maximum unless agreement is reached with the occupier that a higher level may apply
Sensitive site	Operations lasting less than 12 months or less than 20 blasts	10 mm/s maximum unless agreement is reached with occupier that a higher level may apply
Occupied non-sensitive sites such as factories and commercial premises	All blasting	25 mm/s maximum value unless agreement is reached with occupier that a higher level may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specification or levels that can be shown to adversely affect the equipment operation

2. **Blast overpressure** – Develop and implement management actions if the following overpressure reference levels are predicted or measured to not be achieved. Blasting activities must comply with Australian Standard AS2187.2-2006, Explosives – Storage and use Part 2 – Use of explosives for all blasting.

Category	Type of blasting operations	Reference level Peak overpressure value (dBL)
Sensitive Site	Operations lasting longer than 12 months or more than	115 dBL for 95% blasts per year. 120 dBL maximum unless agreement with occupier that a

	20 blasts	higher level may apply
Sensitive site	Operations lasting less than 12 months or less than 20 blasts	120 dBL for 95% blasts per year. 125 dBL maximum unless agreement with occupier that a higher level may apply
Occupied non-sensitive sites such as factories and commercial premises	All blasting	125 dBL maximum value unless agreement is reached with occupier that a higher level may apply. 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

3. For the purposes of this EPR:

- a) A sensitive site includes houses and low rise residential buildings, theatres, schools, and other similar buildings occupied by people.

Reference levels to be established using the manufacturer's specification or in consultation with the equipment owners (where substantiated with data) for vibration-sensitive equipment.

Noise and Vibration	NV10	<p>Minimise impacts on bio-resources and sensitive research</p> <ol style="list-style-type: none"> 1. Develop and implement practicable mitigation measures and management actions to achieve the following reference levels for all known and committed (as at 5 August 2022) areas housing bio-resources: <ol style="list-style-type: none"> a) Background noise should be below 50 dBL1 (internal) and should be free of distinct tones, and b) Short noise exposure should be less than 85 dBL1 (internal), or c) Any alternative noise level agreed with the owner of the bio-resources including specific requirements for non-rodent bioresources 2. NOTES: <ol style="list-style-type: none"> a) Noise levels are to be predicted, measured and assessed for the specific frequency range the species and type of hearing of the bio-resources potentially affected. b) Determining an acceptable level for bio-resources potentially affected by construction or operation should also consider the existing background levels they are exposed to during normal activities and regular maintenance of the facility. 3. Limit vibrations for bio-resource facilities to a maximum one-third octave rms level of less than 100 µm/s for general animal holding facilities and less than 50 µm/s for rodent holding and behavioural studies facilities (levels based on the Code of Practice for the Housing and Care of Laboratory Mice and Rats – Department of Primary Industries, Victoria 2004 and the National Institutes of Health 	Not applicable to works - no bio resources or other sensitive research facilities were identified within the Box Hill precinct.
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Design Requirements Manual, 2008).

Noise and Vibration	NV11	<p>Undertake noise and vibration modelling and monitoring</p> <ol style="list-style-type: none"> 1. Construction phase <ol style="list-style-type: none"> a) Appoint suitably qualified acoustic and vibration consultants to predict and assess construction noise and vibration to inform the CNVMP and determine the practicable mitigation and management measures necessary to minimise vibration and noise impacts in accordance with NV2 and NV3. 2. Design phase <ol style="list-style-type: none"> a) Appoint suitably qualified acoustic and vibration consultants to predict and assess operational noise and vibration and determine the practicable mitigation measures necessary to achieve the vibration and noise reference levels in NV5, NV7, NV10 and NV12-NV17. b) Predict and assess operational vibration and ground-borne noise consistent with the methods and guidance given in ISO 14837.1:2005 <i>Mechanical vibration – Ground-borne noise and vibration arising from rails systems – Part 1: General guidance</i>. Assessments based on modelling must factor in uncertainty in the model methodology, inputs and assumptions. Modelling must demonstrate a 95% certainty of compliance with ground-borne noise and vibration reference levels at design stage for each receiver determined in accordance with ISO/IEC Guide 98-3 Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement. c) Require an Operation Noise and Vibration Report be prepared by suitably qualified acoustic and vibration consultants for review and verification by the IEA. The Operation Noise and Vibration Report must document the predictions and mitigation measures and the compliance of the design with the provisions of these EPRs. 3. Commissioning / Operation <ol style="list-style-type: none"> a) Appoint suitably qualified acoustic and vibration consultants to undertake commissioning noise and vibration measurements to assess levels and compliance with the provisions of these EPRs and to identify and implement contingency measures if the requirements in the EPRs are not met. This must be documented in a report reviewed and verified by the IEA and a copy of the report must be made available on request. 	See response to NV6 above. The relevant processes and requirements for modelling and monitoring of noise and vibration impacts are detailed within the CNVMP.
Noise and Vibration	NV12	<p>Minimise airborne rail noise levels for operation</p> <ol style="list-style-type: none"> 1. Avoid, minimise or mitigate rail noise at source, so far as reasonably practicable 2. If the Victorian Passenger Rail Infrastructure Noise Policy (PRINP) (April 2013) Investigation Thresholds, set out in the table below, are predicted or measured to be exceeded during operation 	Not applicable to tram terminus works as no rail infrastructure is proposed.

after implementation of all reasonably practicable mitigation measures on Project land, including consideration of urban design outcomes, offer at-receiver mitigation in accordance with NV12(4).

Time	Type of receiver	Investigation Thresholds
Day, 6 am to 10 pm	Residential dwellings and other buildings where people sleep including aged persons homes, hospitals, motels and caravan parks. Noise sensitive community buildings, including schools, kindergartens, libraries, performing arts facilities.	60 dB $L_{Aeq,16h}$ and/or 80 dB L_{Amax}
Night, 10 pm to 6 am	Residential dwellings and other buildings where people sleep including aged persons homes, hospitals, motels and caravan parks.	55 dB $L_{Aeq,8h}$ and/or 80 dB L_{Amax}

3. NOTES:

- a) Any commissioning measurements conducted under NV11 must be used to calibrate the predicted rail noise levels for when the Project is operating at ultimate configuration and verify that compliance with NV12 is predicted for that ultimate configuration scenario.
 - b) Noise levels are to be assessed at 1 m from the window of the most exposed habitable facade at a noise-sensitive land use.
 - c) L_{Amax} is defined as maximum A-weighted sound pressure level and is the 95th percentile of the highest value of the A-weighted sound pressure level reached within the day or night.
4. At-receiver treatment such as upgrades to residential building facades must be offered to affected landowners if the above investigation thresholds are predicted or measured to be exceeded during operation. Such treatments should be designed to meet the following internal noise levels where practicable to do so and subject to landowner consent:
- a) Noise levels of trains should not exceed 35 dB $L_{Aeq,16h}$ when measured within living areas and 30 dB $L_{Aeq,8h}$ when measured within bedrooms with windows and doors closed.
 - b) Maximum noise levels of trains should not exceed 45 dB L_{Amax} when measured within bedrooms with windows and doors closed.

Maximum noise level of trains should not exceed 55 dB L_{Amax} when measured within living areas with windows and doors closed.

Minimise ground-borne noise impacts for operation

Not relevant to tram terminus works as no rail infrastructure proposed

1. Design and implement mitigation measures, so far as reasonably practicable, to achieve the operational ground-borne noise reference levels for known and committed sensitive land uses (as at 5 August 2022) as shown in the table below. The reference levels in the table below are mandatory levels for operation that if exceeded would require implementation of NV18.

Sensitive land use	Time of day	Internal noise reference levels
Residential	Day 7am – 10pm	40 dB L _{ASmax} and an increase in existing rail noise level by 3 dB(A) or more
	Night 10pm – 7am	35 dB L _{ASmax} and an increase in existing rail noise level by 3 dB(A) or more
Schools, education centres, places of worship	When in use	40-45 dB L _{ASmax} and an increase in existing rail noise level by 3 dB(A) or more
Hospitals (bed wards and operating theatres)	24-hours	L _{ASmax} 35
Offices (including private offices and conference rooms)	When in use	L _{ASmax} 40
Retail spaces	When in use	L _{ASmax} 50
Cinemas and public halls	When in use	L _{ASmax} 30
Drama theatres	When in use	L _{ASmax} 25 or other level derived having regard to Note (g)
Concert halls, television and sound recording studios	When in use	L _{ASmax} 25 or other level derived having regard to Note (g)
Vibration-sensitive equipment	When in use	See Note (i)
Lecture theatres	When in use	L _{ASmax} 35

Other critical spaces	When in use	Refer AS/NZS 2107:2016 having regard to note (j).
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2. NOTES:

- a) The reference levels in the table above are based on the NSW Rail Infrastructure Noise Guideline, 2013 (RING)
- b) The reference levels refer to operational rail noise only and do not include noise from ambient sources
- c) Ground-borne noise levels for human amenity measured as L_{ASmax} are only relevant where they are audible and their value exceeds the value of operational rail airborne noise levels L_{ASmax} .
- d) Assessment locations are internal and ground-borne noise is to be assessed near to but not at the centre of the most affected noise sensitive room in accordance with ISO 14837-1.
- e) L_{ASmax} refers to the maximum noise level not exceeded by 95% of rail pass-by events
- f) For schools, education centres and places of worship the lower value of the range is applicable where low internal noise levels are expected
- g) The values for performing arts spaces may need to be reassessed to address the specific requirements of a venue. In the absence of specific reference levels for these performing art spaces, the L_{ASmax} operational ground-borne noise level shall be limited to no more than the pre-existing ambient noise level (equivalent continuous noise level, L_{Aeq}) determined for times when the venue is in use (including operation of building services). Any venue-specific reference levels must be substantiated by design and/or test data.
- h) The 'residential' category applies to any residential premises and includes long-term residential use such as aged care facilities
- i) Where vibration-sensitive equipment is demonstrated to be sensitive to ground-borne noise, reference levels are as follows:
 - i. where no stakeholder developed criteria exists, the equipment manufacturer/supplier ground-borne noise criteria unless existing ambient noise levels are higher than the manufacturer/supplier criteria, in which case the reference levels are the existing ambient noise levels (equivalent continuous noise level, L_{Aeq}) determined for times when the facility is in use; or
 - ii. stakeholder developed criteria (substantiated by appropriate data and evidence) unless existing ambient noise levels are higher than the stakeholder developed criteria, in which case the reference levels are the existing ambient noise levels (equivalent continuous noise level, L_{Aeq}) determined for times when the facility is in use.
- j) For 'other critical spaces', the L_{ASmax} , 95% shall be designed to achieve the lower end of the L_{Aeq} design sound level range stipulated in AS/NZS 2107:2016 for the relevant type of occupancy/activity, or the existing ambient noise level L_{Aeq} if it is higher.

Noise and
Vibration

NV14

Minimise vibration impacts for operation

1. Design, prepare and implement mitigation measures, so far as reasonably practicable, for operation to achieve the following 'preferred' reference vibration levels (subject to Note 2(c)) when accounting for the cumulative impacts of all operational rail vibration sources. The maximum value is a mandatory level for operation that if exceeded would require implementation of NV18.

Location	Reference level - VDV (m/s ^{1.75})			
	Day 7am to 10pm		Night 10pm to 7am	
	Preferred Value	Maximum Value	Preferred Value	Maximum Value
Residences	0.20	0.40	0.10	0.20
Offices, schools, education centres, places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

2. NOTES:

- a) The reference levels in the table above are based on BS6472-1:2008
- b) Whilst the levels in the table are from the British Standard the day time and night-time duration has been amended to align with the NSW Rail Infrastructure Noise Guideline, 2013 (RING)
- c) Where vibration due to existing rail operations exceeds or is at or close to the relevant 'preferred value' and it is not reasonably practicable to achieve the 'preferred value', implement all mitigation measures, so far as reasonably practicable, to reduce vibration levels.

Not relevant to tram terminus works as no rail infrastructure proposed.

Noise and
Vibration

NV15

Minimise impacts to vibration-sensitive equipment

1. **For Construction:** Develop management actions that must be implemented if the relevant reference level from the options listed below for vibration caused by construction works for the Project is expected to be exceeded or is exceeded for known or committed (as at 5 August 2022) vibration-sensitive equipment.

Not relevant to the tram terminus works, as this requirement specifically relates to impacts from tunnelling/underground rail services on premises utilising specialised and sensitive equipment.

2. **For Operation:** Design practicable mitigation measures that must be implemented to achieve the relevant reference level determined from the options listed below for vibration caused by operation of the Project at known or committed (as at 5 August 2022) vibration-sensitive equipment:
- Stakeholder-developed criteria (substantiated by appropriate data and evidence) unless existing vibration levels are higher than the stakeholder developed criteria, in which case the reference levels are the existing vibration levels; or
 - Where no stakeholder developed criteria exists, the equipment manufacturer/supplier vibration criteria unless existing vibration levels are higher than the manufacturer/supplier criteria, in which case the reference levels are the existing vibration levels; or
 - If NV15(a) and (b) do not apply, the relevant American Society of Heating Refrigerating and Air-conditioning Engineers (ASHRAE) equipment vibration reference curve described in the Table below.

Equipment requirements	Reference curve
Bench microscopes up to 100x magnification; laboratory robots.	Operating room
Bench microscopes up to 400x magnification; optical and other precision balances; coordinate measuring machines; metrology laboratories; optical comparators; microelectronics manufacturing equipment; proximity and projection aligners, etc.	VC-A
Microsurgery, eye surgery, neurosurgery; bench microscopes at magnification greater than 400x; optical equipment on isolation tables; micro electronic manufacturing equipment such as inspection and lithology equipment (including steppers) to 3 µm line widths.	VC-B
Electron microscopes up to 30,000x magnification; microtomes; magnetic resonance images; microelectronics manufacturing equipment such as lithography and inspection equipment to 1 µm detail size.	VC-C
Electron microscopes at magnification greater than 30,000x; mass spectrometers; cell implant equipment; microelectronics manufacturing equipment such as aligners, steppers and other critical equipment for photolithography with line widths of ½ µm; includes electron beam systems.	VC-D
Un-isolated laser and optical research systems; microelectronics manufacturing equipment such as aligners, steppers and other critical equipment for photolithography with line widths of ¼ µm; includes electron beam systems.	VC-E

Noise and Vibration	NV16	<p>Minimise noise from the Stabling Facility, SRL stations and fixed plant</p> <ol style="list-style-type: none"> 1. Design, construct and operate the Stabling Facility, SRL stations and relevant fixed infrastructure that is subject to Part 5.3, Division 3 (Unreasonable and aggravated noise from commercial, industrial and trade premises) of the <i>Environment Protection Regulations 2021</i> to: <ul style="list-style-type: none"> • minimise the risk of harm from noise associated with the Project so far as reasonably practicable, • prevent unreasonable noise by ensuring the risk of sporadic noise and low frequency noise is eliminated or managed, and • ensure that noise levels do not exceed the noise limits set by the <i>Environment Protection Regulations 2021</i> 2. Apply this EPR to noise from the substations at Burwood, Monash and the Stabling Facility when operating during the construction period. 3. Conduct noise monitoring, predictions and analysis for the purposes of this EPR in accordance with the Noise Protocol (EPA Publication 1826.4), <i>Measuring and analysing industry noise and music noise</i> (Technical Guide: EPA Publication 1997) and, where relevant, the <i>Noise guideline – assessing low frequency noise</i> (EPA Publication 1996). 4. Design and implement practicable measures for the Stabling Facility and relevant fixed infrastructure (for noise sensitive receivers where Part 5, Division 3 of the Environment Protection Regulations 2021 does not apply) to comply with the internal lower Recommended Design Sound Levels as defined in AS/NZS 2107:2016 or the existing internal background noise level, whichever is the higher, for the following areas: <ol style="list-style-type: none"> a) Teaching spaces b) Laboratories c) Conference rooms d) Libraries e) Music studios f) Operating theatres / surgeries g) Wards h) Performance spaces / galleries i) Places of worship. 5. NOTE: This EPR applies to train movements within the Stabling Facility boundary only and does not apply to noise generated by trains operating on the passenger rail infrastructure (NV12 applies to noise on the passenger rail infrastructure). 	Not relevant to scope of works as this applies to stations, Stabling Facility and electrical substations only.
Noise and Vibration	NV17	<p>Assess cumulative noise levels from the Stabling Facility</p> <ol style="list-style-type: none"> 1. Predict and assess the cumulative noise from the Stabling facility (considering all noise sources subject to NV16) and train movements on the main line (considering all noise sources subject to NV12) as an outdoor $L_{Aeq\ 16h}$ for the daytime (6am-10pm) and $L_{Aeq\ 8h}$ for the night (10pm-6am). 	Not relevant to the tram terminus works - applies to Stabling Facility precinct only.

2. Compare the predicted cumulative L_{Aeq16h} and $L_{Aeq 8h}$ to the Cumulative Reference Level [being the higher of the existing corresponding ambient level ($L_{Aeq 16h}$ and $L_{Aeq 8h}$ respectively) or the ERS Category 3 objective level].
3. Where the predicted cumulative noise level exceeds the Cumulative Reference Level at a noise sensitive area (as defined by the *Environment Protection Regulations 2021*), investigate mitigation measures to the Stabling Facility to further reduce the predicted cumulative noise level, so far as reasonably practicable. The investigation should be verified by the IEA.
4. Implement mitigation measures at the Stabling Facility that have been verified by the IEA in accordance with NV17(3), to reduce the predicated cumulative noise level to the Cumulative Reference Level, so far as reasonably practicable.
5. If, after all verified reasonably practicable measures to reduce the Stabling Facility's contribution have been applied in accordance with NV17(4) and the predicted cumulative noise level remains above the Cumulative Reference Level, offer at receiver mitigation to the owner of the noise sensitive area (as defined by the *Environment Protection Regulations 2021*) in accordance with NV12(4).

Noise and Vibration	NV18	<p>Non-compliance of operational ground borne noise and vibration</p> <ol style="list-style-type: none"> 1. Develop and implement the following management actions if measured operational ground-borne noise and/or vibration exceeds the mandatory levels for operation in NV13 or NV14: <ol style="list-style-type: none"> a) Engage with the affected party to understand the nature of the exceedance having regard to the existing environment, the level of exceedance and how often the exceedance is occurring. b) Investigate, assess and quantify the exceedance and the risk of harm to human health. The investigation, assessment and quantification must be verified by the IEA. c) If the investigation and assessment under paragraph (b) identifies a potential risk of harm to human health, implement all reasonably practicable at-source mitigation measures to avoid or further reduce the risk of harm to human health <p>If it is not reasonably practicable to avoid or reduce the risk of harm to human health at-source, offer compensation which may include voluntary purchase of a residential property undertaken in accordance with the Voluntary Residential Property Purchase Scheme required by SC7.</p>	Not relevant to tram terminus works as no rail infrastructure proposed.
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Social and Community

Social and Community	SC1	<p>Develop a Communication and Stakeholder Engagement Management Framework</p> <ol style="list-style-type: none"> 1. Develop a Communication and Stakeholder Engagement Management Framework (CSEMF) to govern the stakeholder engagement plans developed for all Project components as required by SC2. The framework must be consistent with IAP2 principles and guide the elements to be included in each engagement plan. The elements must include: <ol style="list-style-type: none"> a) Engagement principles and goals 	<p>SRLA has prepared a project wide Communication and Stakeholder Engagement Management Framework.</p> <p>The Managing Contractor will implement the key requirements of this framework through the Early Works Communication</p>
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		<ul style="list-style-type: none"> b) Governance c) Project stakeholders, including but not limited to communities, universities, and businesses d) Engagement approach including: <ul style="list-style-type: none"> i. Phases and objectives ii. Tools and techniques iii. Approaches for different project stakeholders iv. Precinct reference groups for each of the six stations for the design and construction phases v. An outline of the purpose of engagement for different stakeholders. e) Complaints management approach f) Responsiveness to complaints approach g) Issues management approach h) Communication and engagement roles and responsibilities i) Engagement guidelines and references j) Review and evaluation approach k) Measures to ensure the engagement plans allow for effective communication with Culturally and Linguistically Diverse communities, including allocation of appropriate persons to undertake interaction with these communities. 	and Stakeholder Engagement Management Plan (CSEMP) in accordance with EPR SC2.
Social and Community	SC2	<p>Develop and implement Communications and Stakeholder Engagement Plans to manage interactions with the community</p> <ol style="list-style-type: none"> 1. Develop and implement individual communications and stakeholder engagement plans for each of the Project components that comply with the CSEMF (SC1) to address construction activities and how engagement will be undertaken with the community. 2. Ensure public-facing documents developed in accordance with any Community and Stakeholder Engagement Plans are <ul style="list-style-type: none"> a) are written in plain English; and b) include contacts for interpreter services; and c) specific for each Station, the Stabling Facility and works area, as required. 3. Ensure these plans provide a consolidated location of information about the relevant EPRs and guidelines for each station and work area. 	The Managing Contractor have prepared an CSEMP for all construction activities within the Box Hill precinct, including relocation of the tram terminus.
Social and Community	SC3	<p>Minimise impacts on public open space and recreational infrastructure</p> <ol style="list-style-type: none"> 1. Implement the measures set out in the Public Open Space Management Plans developed to comply with the Public Open Space Framework – Rail and Infrastructure (LUP4). The Public Open Space Management Plans must consider as a minimum: <ul style="list-style-type: none"> a) Management of construction impacts on the users of public open space where these occur. 	<p>The SRL East Public Open Space Framework Plan identifies the Whitehorse Road central median as a linear open space reserve.</p> <p>Impacts to this open space from the tram terminus construction and development</p>

		<ul style="list-style-type: none"> b) Allowance for the continuity of use of active public open space facilities by sports clubs and other formal users at facilities equivalent to impacted facilities. c) Relocation of existing or provision of alternative infrastructure such as children's playgrounds, running tracks, skateparks and basketball courts, barbeques and associated furniture on, or in the closest proximity to, the existing sites prior to works commencing, including the need to maintain access for existing user groups. d) If SC31c) cannot be met, provide access to alternative recreational infrastructure and public open space within a 1.6 kilometre radius prior to the loss of the original facilities, unless otherwise specified in the Public Open Space Framework. <p>Locate alternative facilities within the same catchment of the displaced facilities unless otherwise agreed with the facility owner and informed by consultation with affected user groups, and local councils.</p>	<p>will be limited to the area west of the existing pedestrian crossing, which does not contain any open space infrastructure or publicly accessible spaces outside of the existing car park servicing the tram stop.</p> <p>A future UDLP will be prepared in relation to returned public open space as part of the delivery of the SRL East station at Box Hill.</p>
Social and Community	SC4	<p>Minimise disruption to public and private events</p> <ul style="list-style-type: none"> 1. Work with relevant local councils, the universities and other key stakeholders to plan for and coordinate with key events (public and private). This must include, but not be limited to: <ul style="list-style-type: none"> a) Identifying key events prior to construction and other works, and maintaining a register of key events during construction, in order to minimise disruption to those key events. b) Timely provision of construction schedules to allow for appropriate event planning. c) Timely notification of schedule changes that may impact upon major public events. d) Consideration of appropriate alternative sites and routes for events and parades and facilitation of relocation, if necessary. 	<p>Planned events which may disrupt or may be disrupted by construction of the tram terminus have been identified through the CSEMP.</p> <p>Potential impacts will be communicated and managed through implementation of the CSEMP.</p>
Social and Community	SC5	<p>Provide relocation support to community facilities</p> <ul style="list-style-type: none"> 1. Implement measures set out in the SRL Business and Residential Relocation Support Guidelines for community facilities including, but not limited to: <ul style="list-style-type: none"> a) Clayton Christadelphians b) Waverley RSL c) Monash City Church of Christ d) Monash Volunteer Centre e) Normanby House f) Monash Community Family Co-operative. 	<p>Not applicable to the tram terminus works as no community facilities are required to be relocated.</p>
Social and Community	SC6	<p>Minimise Disruption and Impacts on residents of Uniting AgeWell at Box Hill</p>	<p>Not relevant to the tram terminus works as this applies to works within Box Hill Gardens only.</p>

1. Appoint a senior stakeholder manager within SRLA to facilitate engagement and issue management between the contractor, SRLA and the operator of the Uniting AgeWell aged care facility (the Uniting AgeWell Facility) in accordance with SC1, with a focus on resident welfare and amenity.
2. Appoint an independent and suitably qualified aged care specialist to undertake an assessment in consultation with the operator of the Uniting AgeWell Facility to identify the specific sensitivities, needs and circumstances that should be taken into consideration in designing and implementing construction mitigation and management measures for the residents of the Uniting AgeWell Facility. This assessment should be informed by an understanding of the construction activities, mitigation measures and program proposed in SC6(3), as required.
3. Prepare and implement a site specific Uniting AgeWell construction management plan (UACMP) in consultation with the operator of the Uniting AgeWell Facility considering the assessment prepared by the independent aged care specialist. The IEA must verify the UACMP and seek advice from the independent aged care specialist, as required. The UACMP must include measures to address the particular needs of the Uniting AgeWell Facility during construction, which must include (but not necessarily be limited to):
 - a) Identification of amelioration measures to be implemented prior to the commencement of construction activities at the Uniting AgeWell Facility and/or within the Project land.
 - b) Identification of amelioration measures to be implemented during the different phases of construction at the Uniting AgeWell Facility and/or within the Project land considering, but not necessarily limited to, relevant measures identified in NV3 and as required by AQ1, LV1, LV4 and LV5.
 - c) Identification of measures to treat the interface with the Uniting AgeWell Facility in accordance with the UDS and POSF.
 - d) Layout of the construction site within the Project land at Box Hill Gardens taking into consideration the amenity of the residents of the Uniting AgeWell Facility, with the boundary of the construction site being at least 10 metres from the Uniting AgeWell southern fence line. Development associated with ancillary activities such as utility installations, fences, access paths, directional signs, landscaping, park furniture and lighting will be permitted within the setback from the Uniting AgeWell southern fence line to the construction site for the station.
 - e) Identification of all at-receiver mitigation measures which, subject to the consent of the operator of the Uniting AgeWell Facility, should be implemented at the Uniting AgeWell Facility. These measures may include glazing, air conditioning, landscaping, boundary treatments, and any other measures identified in the assessment conducted by the independent aged care specialist in accordance with SC6(2).
4. Review the UACMP on a six-monthly basis, in consultation with the operator of the Uniting AgeWell facility and, as required, advice from the independent aged care specialist. The reviews must respond to the different phases of construction to be undertaken at the Box Hill construction site.

Social and Community	SC7	Develop a voluntary residential property purchase scheme	Not relevant as the tram terminus works are fully located within publicly held land (road reserve).
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1. Prepare and implement a scheme that provides the opportunity for voluntary purchase of residential properties that satisfy defined criteria relating to the duration of construction impacts, the significance of those impacts on those residences and any operational impacts where NV18(1)(d) is required to be implemented. The scheme must include principles and criteria for eligibility for residential properties which are developed having regard to:
 - a) proximity of the residence to major construction works, and
 - b) likely or actual extent and duration of proximate works;
 - c) access constraints;
 - d) cumulative effects of construction concurrent with other major developments in close proximity to the residential property; and
 - e) cumulative impacts on the residential property
 - f) for operational impacts where NV18(1)(d) is required to be implemented, whether the management actions prior to offering compensation, including voluntary purchase, have been undertaken.
 - g) special needs or circumstances of the owner of the residential property.

Surface Water

Surface water	SW1	<p>Develop and implement a Surface Water Management Plan during construction</p> <ol style="list-style-type: none"> 1. Develop and implement a Surface Water Management Plan for construction (including during any breaks in construction), in consultation with EPA Victoria, Melbourne Water and other relevant authorities (e.g. councils), that sets out requirements and methods for: <ol style="list-style-type: none"> a) Sedimentation and erosion control and monitoring, in general accordance with EPA Victoria's publications: Construction techniques for sediment pollution controls (EPA Publication 275), Civil construction, building and demolition guide (EPA Publication 1834), Erosion, sediment and dust: treatment train (EPA Publication 1893), Managing soil disturbance (EPA Publication 1894), and Managing stockpiles (EPA Publication 1895) b) Liquid handling and storage techniques, in general accordance with EPA Victoria's publications: Liquid storage and handling guidelines (EPA Publication 1698) and Civil construction, building and demolition guide (EPA Publication 1834) c) Managing stormwater to meet objectives outlined in Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO 1999), the Victorian Environment Reference Standard, and to maximise opportunities for reuse on site so far as reasonably practicable, in accordance with the Urban stormwater management guidance (EPA Publication 1739.1) and the SRL East Integrated Water Management Strategy as required by SW9 d) Managing potentially contaminated surface water runoff, in general accordance with EPA Victoria's publications Civil construction, building and demolition guide (Publication 1834) and Civil construction, building and demolition guide (EPA Publication 1834). Contaminated surface 	A Surface Water Management Plan has been prepared for construction activities within Box Hill, including the tram terminus.
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		<p>water runoff must not enter the stormwater drainage network or receiving waterways, so far as reasonably practicable (see SW6)</p> <ul style="list-style-type: none"> e) Measures for working within or adjacent to waterways, in general accordance with EPA Victoria's publications: Working within or adjacent to waterways (EPA Publication 1896) and Civil construction, building and demolition guide (EPA Publication 1834) f) Contingency measures for responding to surface water incidents such as leaks and spills or unauthorised discharges g) Maintaining the key hydrologic and hydraulic functionality and reliability of existing flow paths, drainage lines and floodplain storage h) Retaining existing flow characteristics to maintain waterway stability downstream of construction i) Location and bunding of any contaminated material (including tunnel spoil and stockpiled soil) away from drainage lines and areas potentially impacted by flooding and to the requirements of EPA Victoria and the relevant drainage authority (also see C3) j) Program works to minimise or avoid flood-related risks k) Bunding of excavations including tunnel portals and interchanges to an appropriate level during the construction phase l) 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. 	
Surface water	SW2	<p>Develop and implement flood emergency management plans</p> <ol style="list-style-type: none"> 1. Develop and implement flood emergency management plans for 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 and links to flood warning systems), the tunnels and tunnel portals including interchanges and substations, and operation, maintenance and emergency management procedures for flood protection works. 2. Inform the flood emergency management plans by a flood immunity risk assessment that considers a range of events, and is developed in consultation with relevant statutory authorities. 	<p>Based on the flood modelling undertaken to inform the tram terminus design, land within the works site is not subject to flooding under existing conditions as all overland flows are fully contained within the road reserve.</p>
Surface water	SW3	<p>Minimise risks from changes to flood levels, depths, flows and velocities</p> <ol style="list-style-type: none"> 1. Undertake site inspections of existing conditions and modelling of the existing conditions and the design of permanent and temporary works to demonstrate the design of the permanent and temporary works is compliant with Melbourne Water <i>Standards for infrastructure projects in flood prone areas</i> (2019). The risk of blockage of key drainage infrastructure is to be included in this assessment. 	<p>Flood modelling of the tram terminus design has been undertaken in accordance with Melbourne Water Standards for Infrastructure Projects in Flood Prone Areas (2019). All associated drainage infrastructure has been designed to accommodate a 10% AEP event, consistent with Melbourne Water's</p>

		<ol style="list-style-type: none"> 2. Develop and implement measures for temporary and permanent works in consultation with the relevant statutory authority to: <ol style="list-style-type: none"> a) maintain existing flood plain storage capacity and flooding regime b) avoid increasing flood levels, depths, flows, velocities or flood hazards that result in adverse impacts to property, infrastructure or the environment, and/or c) avoid or minimise erosion due to overland flooding during construction or operation. 3. Confirm these measures by an assessment that includes site inspections and flood modelling of the existing conditions and the design of permanent and temporary works in consultation with the responsible authority, which demonstrates that adverse impacts are minimised or avoided. Consultation with the relevant drainage authority should identify and discuss the potential to assist in managing existing flood risks. 4. Ensure permanent or temporary works do not increase the overall flood risk unless the written acceptance of the relevant flood plain manager, drainage authority or asset owner is obtained. 5. Ensure that the final models (and any subsequent updated models) represent the "as constructed" information, demonstrate that the design objectives are being met, and are verified by the IEA. 	<p>requirements for drainage systems within major roads.</p>
Surface water	SW4	<p>Model climate change effects on surface water</p> <ol style="list-style-type: none"> 1. Consider current climate conditions as well as projected future climate change conditions over the Project design life in undertaking surface water (including flood and water quality) assessments for the purposes of these EPRs. 2. Base these assessments on Melbourne Water <i>Standards for infrastructure projects in flood-prone areas</i> (2019) and the Victorian Climate Projections (VCP) for 2050 and 2090 timeframes. Additionally, as the Project has a design life further into the future than these guidelines extend, assessments must also be 'based on a comprehensive analysis of the best practicably available information at the time modelling is undertaken to assess the potential impacts of climate change' over the Project's design life, in line with the guiding principles of the <i>Climate Change Act 2017 (Vic)</i>. 3. NOTE: Due to the Project's distance from Port Phillip Bay, sea level rise impacts do not need to be considered in the assessment of flood risk. 	<p>The flood modelling has been undertaken in accordance with the applicable Melbourne Water guidelines based on a reference year of 2035 and applying a climate change factor of 4.73% to cover potential changes to rainfall patterns across the design life of the project.</p>
Surface water	SW5	<p>Design and operate SRL East to manage stormwater runoff</p> <ol style="list-style-type: none"> 1. Prepare a Stormwater Management Plan, in consultation with relevant stakeholders (Melbourne Water, local councils, EPA Victoria) which identifies the stormwater treatments that will be used during operation to minimise risk of harm from stormwater runoff and to ensure the stormwater runoff meets, at minimum, the objectives outlined in EPA Publication 1739.1 Urban stormwater management guidance and the Victorian Environment Reference Standard. 2. Ensure the Stormwater Management Plan: 	<p>A Stormwater Water Management Plan has been prepared for construction activities within Box Hill.</p>

- a) details how runoff generated at each of the Project components during operation is to be managed in accordance with principles outlined in the Integrated Water Management Strategy (SW9) and UDS;
 - b) addresses the management and maintenance of operational treatment assets; and
 - c) considers the ultimate ownership of any operational treatment assets and any necessary arrangements to facilitate this.
3. Include modelling in the Stormwater Management Plan to demonstrate that stormwater runoff entering the stormwater system and receiving waterways can meet quality and quantity objectives outlined in EPA Publication 1739.1 during operation, or other guidance that supersedes this document. Modelling should be completed in general accordance with Healthy Waterways Strategy Stormwater Targets Practitioner's Note (Melbourne Water 2021). Ensure modelling of water quality treatment accounts for all site surface water flows (not just incremental flows, based solely on the change to impervious site area from the Project)
 4. Demonstrate in the Stormwater Management Plan that appropriate at-source controls have been considered to minimise the risk of harm from changes to stormwater run-off to existing or modified stormwater systems and receiving waterways so far as reasonably practicable.
 5. Ensure that the OEMP (EMF Table 5.2) is informed by, and that SRL East is operated in accordance with, the Stormwater Management Plan.

Surface water SW6

Manage wastewater

1. Manage wastewater in accordance with the Integrated Water Management Strategy (SW9) and the waste management hierarchy – in order of decreasing preference: avoidance, reuse, containment, and disposal. Wastewater includes, but is not limited to, contaminated surface water runoff, surface water within the existing pond on the Stabling Facility Project Land and any other wastewater generated by construction activities (excluding uncontaminated stormwater) and internal drainage water collected during operation. Disposal of groundwater is considered under GW4.
2. Discharge wastewater to sewer in accordance with a trade waste agreement.
3. If discharge to sewer is not possible due to insufficient capacity within the sewer network, discharge to the stormwater drainage network or waterways must occur in accordance with a wastewater discharge management plan that has been prepared in consultation with EPA Victoria and other relevant authorities (e.g. owners of drainage assets, Melbourne Water as the waterway manager).
4. Prepare a wastewater discharge management plan to discharge to the stormwater network or a waterway if required. The plan must include:
 - a) Scenarios under which discharge to the stormwater network, or a waterway may be required
 - b) Methods for characterising baseline ambient conditions of receiving waterways
 - c) Methods for characterising quality of wastewater to be discharged in general accordance with *Sampling and analysis of waters, wastewaters, soils and wastes* (EPA Publication IWRG701)
 - d) Methods for wastewater treatment prior to discharge
 - e) Controls that will be used to minimise risks of harm

Wastewater and stormwater generated by construction of the tram terminus will be managed in accordance with controls outlined in the Stormwater Management Plan and Wastewater Discharge Management Plan.

5. Ensure wastewater to be discharged to the stormwater drainage network or waterways is of sufficient quality to minimise the risk of harm to human health and the environment from the discharge. This will require consideration of baseline ambient conditions and the Environment Reference Standard of the EP Act.

Surface water	SW7	<p>Develop and implement a Water Quality Monitoring Program</p> <ol style="list-style-type: none"> 1. Develop and implement a Water Quality Monitoring Program which can: <ol style="list-style-type: none"> a) Prior to construction: characterise the baseline condition of receiving waters and existing water quality infrastructure potentially impacted due to Project construction activities b) During construction: monitor water quality changes in receiving waters due to Project activities c) Post construction: confirm water quality conditions are maintained. 2. Ensure the monitoring program: <ol style="list-style-type: none"> a) Is developed in consultation with EPA Victoria, Melbourne Water (as the waterway manager) and asset owners (where applicable) b) Specifies locations, parameters, and frequency of monitoring (refer to C1) c) Includes a plan to check the effectiveness of controls that are implemented to mitigate potential risks to surface waters, and detail additional and/or improved measures that would be implemented should those controls fail or are not effective to eliminate or minimise risks of harm to surface waters. d) Is tailored to address data gaps (for example, lack of water quality data for Clayton South Drain, lack of baseline flow and water quality data to characterise the interaction between groundwater and Dampers Creek) and potential for impact (for example, Gardiners Creek is adjacent to the SRL station at Burwood). e) Outlines reporting documentation and distribution requirements for surface water monitoring, performance of controls and water quality data f) Continues for a minimum period of three years post construction g) Requires relevant stakeholders to be alerted in the event significant or unexpected changes in surface water levels, flow or quality, are detected during monitoring. 3. Outline conditions in the monitoring program under which changes to water quality parameters need to be investigated, when works on-site need to be stopped in response to changes in parameters and what action is required to rectify changes in water quality if they are attributable to the site construction. 4. NOTE: General guidance for sampling of surface water is provided in EPA Victoria Publication IWRG701: sampling and analysis of waters, wastewaters, soils and wastes and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality. 	<p>Water quality monitoring during construction is included within the general suite of monitoring activities to be undertaken under the Stormwater Management Plan and will be informed baseline monitoring.</p>
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Surface water	SW8	Develop and implement a management plan for naturalisation of Gardiners Creek	Not relevant to the tram terminus works as this applies to works within the Burwood precinct only.
		<ol style="list-style-type: none"> 1. Develop and implement a plan for naturalisation of Gardiners Creek in consultation with key stakeholders, including Melbourne Water (as the waterway manager) and Whitehorse Council. This plan must contain requirements and methods for minimising impacts to water quality or flooding regime within the reach subject to naturalisation works and areas potentially affected by change in water quality or flows. The plan must also contain requirements as outlined in EC5. 2. Align the plan with the approved UDLPs for the SRL station at Burwood. 	
Surface water	SW9	Develop and implement an Integrated Water Management Strategy	A whole of project Integrated Water Management Strategy has been prepared by SRLA. Additional WSUD/IWM treatments are not required to be implemented through the tram terminus design, as the overall works footprint will result in a net reduction in impervious areas and stormwater runoff when compared with the existing tram terminus and surrounding plaza to the east.
		<ol style="list-style-type: none"> 1. Develop and implement an Integrated Water Management Strategy in consultation with EPA Victoria, Melbourne Water, relevant local councils, relevant water corporations and Monash and Deakin Universities, in general accordance with the approach outlined in the Integrated Water Management Framework for Victoria (DELWP, 2017). The Integrated Water Management Strategy process, including engagement with these stakeholders, must be initiated as early as practically possible. 2. Ensure the Integrated Water Management Strategy outlines the principles for water management during both the construction and operational phases of the Project to maximise opportunities for reuse of water (including for irrigation), achieve flood mitigation, avoid flow and water quality impacts, enhance infiltration and provide broader environmental benefits (including assisting with urban heat island effect, improved human health and amenity outcomes). The Integrated Water Management Strategy must inform detailed design requirements to enable the realisation of these benefits. 3. Ensure the Integrated Water Management Strategy is informed-by the UDS and informs: <ol style="list-style-type: none"> a) Management of water within the Surface Water Management Plan for construction (SW1) b) Management of stormwater runoff during operation (SW5) and c) Management of wastewater (SW6). 4. Ensure the Integrated Water Management Strategy: <ol style="list-style-type: none"> a) as far as practicable, considers existing and proposed surface water assets, as well as approved future development as known by 5 August 2022 which may impact on SRL surface water assets b) guides how Project sustainability targets relating to surface water will be achieved c) outlines requirements for the use of best practice Integrated Water Management approaches to be used in design development and the preparation of the Surface Water Management Plan (SW5) d) outlines project wide and site-specific opportunities for Water Sensitive Urban Design and Integrated Water Management, and how these will be integrated into design solutions. 	
Surface water	SW10	Provide access to drainage authority assets	New drainage assets to be constructed to service the tram terminus have been

1. Provide adequate access for ongoing maintenance of drainage authority assets that are impacted by the Project to the requirements of the relevant drainage authority.

designed and sited to allow for ongoing access and maintenance in accordance with the requirements of the relevant drainage authority.

Sustainability and Greenhouse Gas

Sustainability and Greenhouse Gas	SGG1	<p>Develop Sustainability Targets and Performance indicators</p> <p>Develop sustainability targets for reducing greenhouse gas emissions, minimising and managing waste, minimising potable water consumption, maximising climate resilience, and achieving sustainable use of resources to the extent reasonably practicable throughout the design, construction, and operation of the Project.</p> <ol style="list-style-type: none"> 2. Ensure these targets are consistent with those documented in the report prepared for the Suburban Rail Loop, Sustainability Objectives and Targets (October 2021) or equivalent. Progress against these targets must be reported against publicly on an annual basis during construction and operation. 	SRLA has developed sustainability targets for the design, construction and operation of the Project.
Sustainability and Greenhouse Gas	SGG2	<p>Develop and implement a Sustainability Management Plan</p> <ol style="list-style-type: none"> 1. Develop and implement a Sustainability Management Plan that contains measures to meet, as a minimum, the sustainability targets required by SRLA, and the specified ratings under the relevant ISCA and Green Star rating tools. 2. Outline the approach for ongoing measurement, monitoring, reporting and mitigation to achieve sustainability targets and specified ratings in the Sustainability Management Plan. 	The Managing Contractor has prepared a Sustainability Management Plan detailing how the Project sustainability targets will be met through design and construction.
Sustainability and Greenhouse Gas	SGG3	<p>Achieve a Sustainability Rating for Infrastructure</p> <ol style="list-style-type: none"> 1. Ensure Main Works tunnel and relevant elements of the Stabling Facility achieve sustainability outcomes aligned to a minimum rating of “Gold”, under the Infrastructure Sustainability Council (ISC) Infrastructure Sustainability (IS) rating tool version v2.1 or a demonstrated equivalent rating level 	Not relevant to the tram terminus works.
Sustainability and Greenhouse Gas	SGG4	<p>Achieve a Sustainability Rating for Stations</p>	Not relevant to the tram terminus works.

		1. Ensure Stations achieve a Green Star rating of greater than or equal to 5-star, certified using the Green Building Council Australia (GBCA) rating tool Green Star Buildings, applying greater than or equal to version v1A.	
Sustainability and Greenhouse Gas	SGG5	Achieve a Sustainability Rating for the Operations Control Centre 1. Ensure the Stabling Facility Operational Control Centre achieves a certified National Australian Built Environment Rating System Energy rating of 6-star.	Not relevant to the tram terminus works as this applies to Stabling Facility only.
Sustainability and Greenhouse Gas	SGG6	Achieve a Sustainability Rating for construction of the Operations Control Centre (Green Star) 1. The Stabling Facility Operational Control Centre must achieve a Green Star rating of greater than or equal to 5-star, certified using the Green Building Council Australia (GBCA) rating tool Green Star Buildings, applying greater than or equal to version v1A.	Not relevant to the tram terminus works as this applies to Stabling Facility only.
Sustainability and Greenhouse Gas	SGG7	Achieve an Operational Offset 1. Ensure the Project achieves carbon neutral emissions in operations through offsetting residual emissions sources after implementing avoidance and reduction strategies.	Not relevant to tram terminus works as this applies to operation of rail infrastructure.
Sustainability and Greenhouse Gas	SGG8	Implement opportunities for electrification or lower carbon fuels 1. Investigate and implement opportunities for electrification of construction plant or the use of alternative lower carbon fuels such as hydrogen and biofuels to the extent reasonably practicable.	Electricity used by the Managing Contractor for all mains power is to be sourced from 100% renewable energy.
Sustainability and Greenhouse Gas	SGG9	Purchase electricity from renewable sources of energy in construction 1. Investigate and implement opportunities for the purchase of renewable electricity for fixed electric plant, including tunnel boring machines, to the extent reasonably practicable during construction.	Refer response to SGG9.
Sustainability and Greenhouse Gas	SGG10	Use lower carbon materials	Key opportunities identified for the tram terminus works include the use of reused content in pavements, concrete and fill materials.

1. Investigate and implement opportunities for the use of lower carbon materials supportive of Victoria's circular economy goals to the extent reasonably practicable.

Traffic and Transport

Traffic and
Transport

T1

Develop and implement Transport Management Plan(s) (TMP)

1. Develop and implement TMPs to minimise disruption to affected local land uses, traffic, car parking, public transport (rail, tram and bus), pedestrian and cycle movements and existing public facilities during all stages of construction prior to the commencement of relevant works. A TMP may be split into precincts where appropriate, but each must consider and be coordinated with other precinct TMPs in its development.
2. Ensure TMPs are developed in consultation with affected and responsible road authorities, universities, and the Transport Management Liaison Group (refer to T2).
3. Inform and support the TMPs by an appropriate level of transport modelling that maintains appropriate transport capacity and performance for all travel modes in the peak travel demand periods including pedestrians and cyclists.
4. TMPs must, as a minimum, include:
 - a) Management of any temporary or permanent full or partial traffic lane closures or impacts to lanes and property access
 - b) Requirements for limiting the amount of construction haulage during the peak demand periods
 - c) A monitoring program to assess the effectiveness of the TMPs on all modes of transport
 - d) Where monitoring identifies adverse impacts, implement practicable and appropriate mitigation measures
 - e) Parking measures and controls to minimise impacts on the precincts
 - f) Consideration of construction activities for other relevant private and public major projects occurring concurrently with construction activities for SRL East and potentially impacting modes of transport in the same area
Measures to minimise, so far as reasonably practicable, the time needed to temporarily fully or partially close roads and paths for construction.

A Transport Management Plan is being prepared by the Managing Contractor

Traffic and
Transport

T2

Establish and convene a Transport Management Liaison Group (TMLG)

1. Establish and convene a TMLG before the commencement of any works that may impact existing roads, paths or public transport infrastructure. The TMLG must include representatives of the Department of Transport (DoT), emergency services, the relevant contractors, relevant transport authorities and relevant local governments.

SRLA has established a Transport Management Liaison Group (TMLG).

2. Provide for the TMLG to be a forum for exchanging information and the discussion of issues associated with the development of TMPs. The TMLG will be responsible for reviewing and providing feedback on:
 - a) TMPs
 - b) Relevant designs and methodologies for monitoring implementation of TMPs and construction traffic monitoring
 - c) Transport modelling and proposed transport network upgrades to mitigate the transport effects of constructing the Project
 - d) Road safety audit reports
3. Provide for the TMLG to:
 - a) Where construction activities have the potential to significantly impact specific stakeholder or community group facilities, be satisfied that adequate consultation has occurred to inform the TMPs;
 - b) Consider inviting stakeholder representatives to relevant TMLG meetings;
 - c) Where construction activities have the potential to significantly impact specific stakeholder or community group facilities, be satisfied that the TMPs include measures that are consistent with the EPRs and minimise disruption to other transport users so far as reasonably practicable;
 - d) Meet at least monthly until construction works are complete, unless otherwise agreed by the TMLG;
 - e) Consider the implications for surface traffic and transport operations, network performance, parking and other transport management implications of the Project.

Traffic and Transport	T3	<p>Manage road transport impacts during Construction</p> <ol style="list-style-type: none"> 1. Ensure the TMP(s) address the following for road transport management: <ol style="list-style-type: none"> a) Road network management <ol style="list-style-type: none"> i. Develop and implement suitable measures in consultation with emergency services, so that emergency service access is not inhibited due to Project construction activities. ii. Maintain suitable access for deliveries and specialised user access where relevant in proximity to the works. Consultation with the relevant road authority and property owners must be undertaken should access be impacted or cannot be maintained. iii. Develop and implement waste collection plan(s) in consultation with local governments and private waste collection services before relevant construction works to manage any impacts on waste collection and waste storage. b) Construction trucks <ol style="list-style-type: none"> i. Identify potential routes for construction vehicles travelling to and from all SRL construction work sites, avoiding sensitive receptors and the use of local streets where practicable. ii. Provide construction vehicle staging areas and/or construction methodologies to minimise potential impacts of truck movements on residents and businesses. 	<p>Construction vehicle access and egress from the tram terminus work site is to the south (Whitehorse Road westbound carriageway). Whitehorse Road is an arterial road carrying high levels of through traffic and approved for heavy vehicles.</p> <p>No worksite or on-site staff parking is proposed within Box Hill as part of the broader Early Works scope. Based on the traffic and parking assessment there is sufficient capacity within existing paid and street parking to accommodate workers travelling to and from the relevant works sites.</p> <p>Any temporary impacts on access and parking arrangements in proximity to the</p>
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- iii. Provide special arrangements for the delivery or removal of oversize and over mass loads.
- 2. **Construction Parking Management Plan(s) (CPMPs)** Prepare CPMPs in consultation with the relevant road authority to manage parking in and around the construction sites. Each CPMP must be coordinated with the TMP and outline:
 - i. How impacts on existing users, particularly those with special needs, and the loss of public parking would be minimised through construction.
 - ii. The level of accessibility to loading zones that would be provided to enable the ongoing supply of goods to businesses.
 - iii. How suitable alternative parking would be provided where practicable to replace public, private and commuter parking lost or inaccessible as a result of construction activities and to prevent parking at undesignated locations on local roads.
 - iv. What parking will be provided for construction workers at construction compounds or designated locations where practicable, and include requirements to minimise impacts on local streets, community and commercial facilities. This must include:
 - 1) Measures to manage the use of off-street and private car parks by construction workers so that it is by prior agreement with the relevant land manager
 - 2) Measures to prevent, to the extent practicable, construction workers parking in on-street spaces, unless it can be demonstrated by car parking surveys there is adequate on-street supply
 - v. Measures to encourage construction workers to travel to / from worksites by means other than private vehicle and/or outside peak times. This should include:
 - 1) Provision for on-site tool storage where practicable
 - 2) Parking for construction workers must be on-site or nearby
 - 3) Consideration given to the use of shuttle buses to ferry workers to and from off-site car parks
 - vi. How and when parking would be re-instated (Refer to T7).
- 3. Undertake a traffic assessment to evaluate the need for upgrades to Kingston Road, or other mitigation measures, to improve road safety performance, access and connectivity on Kingston Road. The traffic assessment must address the feasibility of, timing and need for:
 - a) Widening Kingston Road to a four-lane road along the frontage of the Stabling Facility site between Old Dandenong Road and Nicholas Grove; and
 - b) The location of a permanent pedestrian crossing facility between Nicholas Grove and Pietro Road;
 - c) New, enhanced or relocated bus stops on Kingston Road between Old Dandenong Road and Nicholas Grove; and
 - d) Providing a permanent local alternative to accommodate the right turn demand from Old Dandenong Road north approach into Kingston Road-that minimises the increase in travel time for that movement.
- 4. The project must implement:

tram terminus works will be appropriately managed in accordance with the precinct Construction Parking Management Plan.

- a) a pedestrian crossing across Kingston Road between Nicholas Grove and Pietro Road prior to using access gates on Kingston Road; and
- b) a permanent local alternative to accommodate the right turn demand from Old Dandenong Road north approach into Kingston Road prior to the closure of Old Dandenong Road and the use of access gates on Kingston Road; and
- c) any other works determined in response to the traffic assessment.

Traffic and
Transport

T4

Manage public transport impacts during construction

1. Ensure the TMP(s) address the following for public transport management:
 - a) Before the commencement of relevant works, develop and implement a plan to manage construction work disruptions to railway land and services. The plan should be developed in consultation with DoT, VicTrack, and Metro Trains Melbourne (MTM), as relevant.
 - b) Provide suitable routes for pedestrians to maintain connectivity where access is altered by the Contractor for users of existing railway stations, of tram and bus stops that are relocated or are constructed during works, and around all construction sites including providing Disability Discrimination Act-compliant (DDA) access where practicable.
 - c) Develop and implement measures to minimise disruption to the tram and bus networks and services from the Project's construction in consultation with the relevant road management authorities, public transport operators and DoT, including but not limited to:
 - i. Options to divert bus services impacted by temporary or permanent road closures
 - ii. Tram routes on Burwood Highway and Whitehorse Road
 - iii. Options to prioritise bus services through or along bus routes impacted by construction activities or ground improvements, particularly associated with the Cheltenham, Clayton, Deakin University and Box Hill bus interchanges
 - iv. Bus replacement services for disrupted rail passengers.

The 109 tram line will be closed between Union Road (Surrey Hills) and the tram terminus during the works period, with buses replacing trams for this section.

The tram terminus works may also result in disruption to bus routes along Whitehorse Road and service delays due to temporary lane closures (fast lane only).

The overall level of disruption to public transport services will be minimised through undertaking out of hours and night works, limiting the overall duration of the works period.

Traffic and
Transport

T5

Manage active transport impacts during construction

1. Ensure the TMP(s) address the following for active transport:
 - a) Develop and implement transport management measures in consultation with relevant road management authorities for active transport modes having regard to any relevant guidelines published by relevant road management authorities.
 - b) Maintain connectivity and reasonable performance levels throughout construction for pedestrians and cycle riders in on-road and off-road environments.
 - c) Develop and implement active control and wayfinding information at construction worksite access points to maintain safety by avoiding potential conflicts between trucks and active transport modes including vulnerable users.

Public access to the signalised pedestrian crossing over Whitehorse Road linking Box Hill Central and Station (via Market Street), the tram terminus and the commercial strip on the north side of Whitehorse Road will be maintained during construction of the new platform and associated works.

There are no designated cycling routes or paths impacted by the tram terminus works.

- d) Manage closure or diversion of footpaths to maintain connectivity, connections and provide safe alternative routes for active transport modes in consultation with the relevant road authority.
- e) In consultation with councils, provide suitable routes for cyclists and pedestrians throughout construction to maintain connectivity for road and shared path users around the construction areas.
- f) Maintain appropriate pedestrian access to adjoining properties adjacent to or within construction areas.

Traffic and
Transport

T6

Road transport design and operation

1. Design all roadworks to relevant design standards to maintain safety of movement in consultation with the relevant road management authorities and TMLG, as required. Designs should be underpinned by appropriate transport analysis with the objective to maximise performance for all modes and the aspirational Movement and Place outcomes and be in accordance with the UDS.
2. Develop and implement street network designs for each affected street within the Project Land in consultation with the relevant road management authorities that includes:
 - a) The design of the road network should reflect the aspirational Movement and Place outcomes for each precinct as well as changed demands as a result of the Project
 - b) Maintaining safe operations through the precincts.
 - c) Assessment of the potential closure of Carinish Road, Clayton and Coleman Parade, Glen Waverley. The designs ultimately adopted at each location must consider pedestrian safety and traffic movements in the surrounding street network.
3. Develop and implement a plan for each precinct to manage reinstated parking within the Project Land, in consultation with relevant road management authorities, that:
 - a) Minimises the permanent loss of parking where possible and determine the optimal parking provision in the area, including prioritising meeting specialised parking needs within the precinct such as emergency services, loading and DDA compliant parking.
 - b) Reduces the risk of overflow parking in local streets
 - c) Provides alternative locations for station commuter parking impacted during construction identified in consultation with relevant stakeholders. If needed this may be provided outside the Project Land.
 - d) Includes recommended Pick Up / Drop Off (PuDo) locations following further assessment during the design phase.
4. Ensure that vehicle and pedestrian access is reinstated appropriately where vehicle and pedestrian access are altered during construction in accordance with relevant road design standards, and they reflect the aspirational Movement and Place outcomes for each precinct as well as changed demands as a result of the Project.
5. Collaborate with DoT and Councils to manage the operation of the road network in the vicinity of SRL precincts for all road users. This would encourage appropriate mode of access to the station precincts and to discourage through traffic. This should include reviewing the performance of the

The tram terminus works will result in the loss of 46 public paid car parking spaces (1hr) located within the Whitehorse Road median.

Based on the assessment outlined in the TMP, there is sufficient provision of alternative paid parking spaces within the immediate area to accommodate demand created by the permanent removal of the median car park and consequently no replacement parking has determined to be required.

wider network so that opportunities to re-distribute through traffic away from station precincts can be pursued and sensitivity testing of different precinct development scenarios.

<p>Traffic and Transport</p>	<p>T7</p>	<p>Public transport design and operation</p> <ol style="list-style-type: none"> 1. Design the SRL stations and new bus interchanges to ensure integration with existing and planned future uses so they provide connections to key destinations and existing railway stations and bus interchanges and be in accordance with the UDS. The design should also provide adequate wayfinding to facilitate passenger transfers. 2. Implement measures to address pedestrian congestion at and around station entrances where they interface with the precincts, to the extent practicable, in consultation with relevant road management authorities. 3. Develop designs having regard to the following reviews: <ol style="list-style-type: none"> a) Review of bus services in the areas around the SRL stations and the Stabling Facility to be led by DoT in consultation with SRLA. b) Review of tram services in the precincts (where relevant) to be led by DoT in consultation with Yarra Trams and SRLA to optimise the functionality and performance of SRL stations. 	<p>Not relevant to the tram terminus works as no impact on location of/connection to bus interchange is proposed.</p>
<p>Traffic and Transport</p>	<p>T8</p>	<p>Active transport design and operation</p> <ol style="list-style-type: none"> 1. Actively design for and connect designated cycling routes within the Project Land in consultation with the relevant road management authority, local Council and universities (in respect of University land). Reinstate on-road cycle lanes and cycle parking provisions removed during construction, except where agreed with the relevant road authority. This should reflect the aspirational Movement and Place outcomes for each precinct and be in accordance with the UDS. 2. Review the reinstatement and provision of safe and effective pedestrian access in and around SRL stations as well as bus and tram sites in consultation with the relevant road management authorities and the relevant local government. 3. Provide wayfinding information to enhance connectivity for pedestrians, cyclists and public transport users to move to, from, through and within the interchanges and precincts. 4. Consult with the TMLG on active transport, where required. 5. Undertake an assessment of cycle flows along Normanby Road and pedestrian flows into Monash University beyond Normanby Road to inform: <ol style="list-style-type: none"> a) the need for works within the campus b) the need for an alternative entry south of Normanby Road c) the design of Normanby Road/Scenic Boulevard/Howleys Road intersection. 	<p>The tram terminus works has been designed and sited so as to provide space for the future shared path within the linear reserve to the south.</p> <p>In particular, the electrical kiosk proposed on the southern boundary of the site has been sited so as to avoid impacts on sightlines for cyclists and pedestrians using the future shared path.</p> <p>The existing pedestrian access across the Whitehorse Road median between Market Street and the future SRL station at Box Hill has retained as part of the design of the tram terminus, with the platform, connecting paths and associated infrastructure (eg staff toilets, ticketing machines) sited so as to seamlessly "tie in" with this access and not compromise existing</p>



6. Undertake an assessment of the need for any upgrade works to the pedestrian route to the Box Hill Bus Interchange, within the Box Hill central shopping centre, or the need to relocate the bus interchange.

pedestrian desire lines or safety. This access will remain open through the works period.

