SUBURBAN RAIL LOOP EAST

Burwood Network Support Facility

Urban Design and Landscape Plan

10 October 2024

SUBURBAN RAIL LOOP AUTHORITY

VICTORIA'S BIG BUILD

VICTORIA State Government

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Acknowledgement of Country

Suburban Rail Loop is located on the traditional lands of the Wurundjeri Woi Wurrung People to the north and the Bunurong People to the south. We proudly acknowledge all First Peoples as the Traditional Owners and custodians of the land on which we live and work, and we pay our respect to Elders, past and present.

Suburban Rail Loop Authority celebrates the world's oldest living cultures, and we acknowledge that Traditional Owners have lived sustainably in the region for tens of thousands of years. We respect their connection to Country as ongoing custodians, and their spiritual connection to the land, waterways and stories of this Country.

As we work to transform our public transport network, better connect our suburbs, and reshape how our city grows for future generations, we recognise the rich history and cultural significance of these communities. We acknowledge the traditional trade routes and ceremonial paths that First Peoples have used for millennia to connect and journey across the land we now call Victoria.

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Executive Summary

Victoria's population is expected to grow to around 11.2 million by 2056, with Melbourne to be home to around 9 million people – a global city the same size as London today.

Suburban Rail Loop (SRL) will deliver a 90km rail line linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport, providing a "turn-up-and-go" service with quick and convenient inerchanges with existing lines, improving how we move around Melbourne and helping it grow in a planned and sustainable way.

Delivered in stages over several decades, SRL will open up a host of new social and economic opportunities for hundreds of thousands of Victorians by creating greater access and connections to jobs, health services, education and affordable housing.

Construction of SRL East, from Cheltenham to Box Hill, is underway and trains will be running by 2035.

Under the overarching planning approval issued for SRL East, Urban Design and Landscape Plans (UDLPs) are required to be prepared for the development of all permanent and above ground buildings and structures. This UDLP relates to the development of the Burwood network support facility, located at the corner of Highbury Road and Sinnott Street in Burwood.

The network support facility is located approximately 400m south of the future SRL station at Burwood and is required to provide power supply for construction of the underground rail tunnels. Following completion of construction works, the network support facility will be reconfigured to service operational power supply requirements for the SRL network.

It is noted that given the extent of modifications which will be required to convert the network support facility to providing operational power, the only permanent structure to be delivered through this UDLP is the building housing the 66kV electrical equipment. All other elements are temporary and will be replaced with the final built form as part of this conversion. These temporary elements are discussed in this UDLP as they inform the design context, however, they are not directly subject to its requirements. The design response for the permanent operational power network support facility will be detailed in and subject to a future UDLP process.

A key component of this UDLP involves appropriately screening the network support facility infrastructure with a 2.6m high steel fence (with additional internal angled barbed wire topper) to ensure safety and security risks are mitigated for the efficient and safe operation of the facility. As a design solution, the UDLP proposes to deliver an improved public realm outcome that includes a high-quality vinyl wrap attached to the fence which includes art/graphic items as a temporary (5+ years) public interface prior to the operational power fence treatment being provided. In addition, planted verges along Sinnott Street and Highbury Road as well as landscaping at the corner splay support a landscaped environment that sets the scene for the future high amenity pedestrian space that will be delivered as part of the ultimate future station precinct.

This document was on public exhibition from 30 January 2024 to 15 March 2024, and an additional consultation period between 27 August and 26 September 2024. Feedback gathered through this process has been considered and responded to as part of finalising the UDLP prior to consideration by the Minister for Planning.

1. Introduction

1.1 Project Overview

This report accompanies and forms part of the UDLP detailing the urban design and landscape response for the proposed network support facility being delivered through the Suburban Rail Loop (SRL) East project.

The full set of UDLP plans and drawings are provided at Appendix A of this document.

The network support facility forms part of a broader package of preparatory works ('Initial and Early Works') required to facilitate construction of the SRL station at Burwood and the section of underground tunnels between Burwood and Box Hill.

This UDLP has been prepared by Laing O'Rourke (LOR), which is the Managing Contractor responsible for design and delivery of the broader SRL East Early Works construction package.

1.1.1 Suburban Rail Loop

SRL will deliver a 90km rail line linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport, better connecting Victorians to jobs, retail, education, health services and each other. SRL will be delivered in stages over several decades. SRL East involves the construction of 26km of rail line from Cheltenham to Box Hill. Six new underground stations will be delivered as part of SRL East together with new and upgraded public spaces, transport infrastructure and pedestrian and cycling connections.

Figure 1 shows the location and extent of SRL East in the context of the broader SRL network

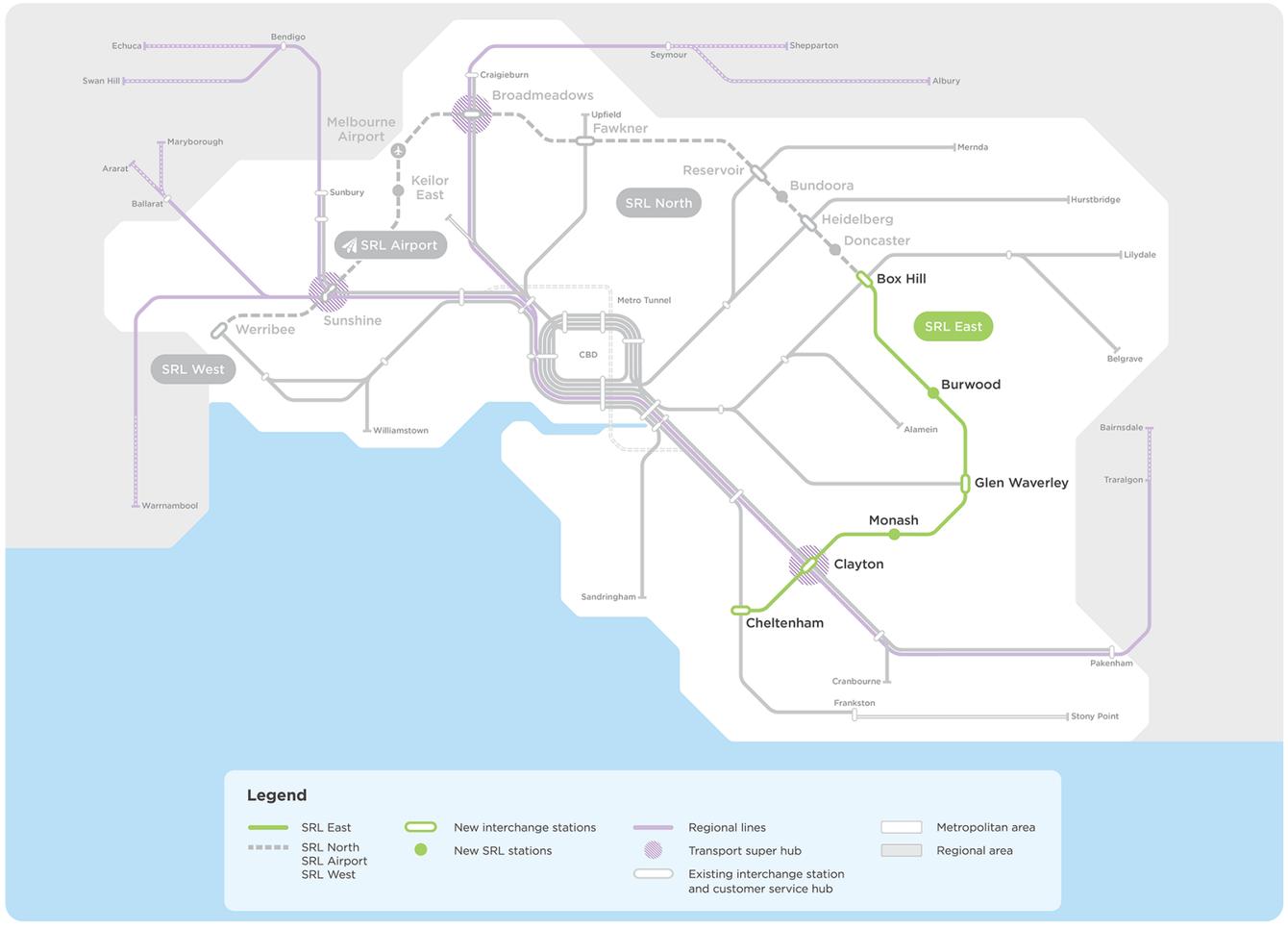

Figure 1. SRL Network map - UDLP location identified in red

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1.1.2 Burwood Network Support Facility

The network support facility is located within the Burwood SRL precinct and forms part of a broader package of infrastructure, transport and public realm upgrades to be provided enabling the delivery of the future SRL station, located approximately 400m to the north.

The location of the network support facility in relation to the future SRL station and associated precinct works is shown in Figure 2.

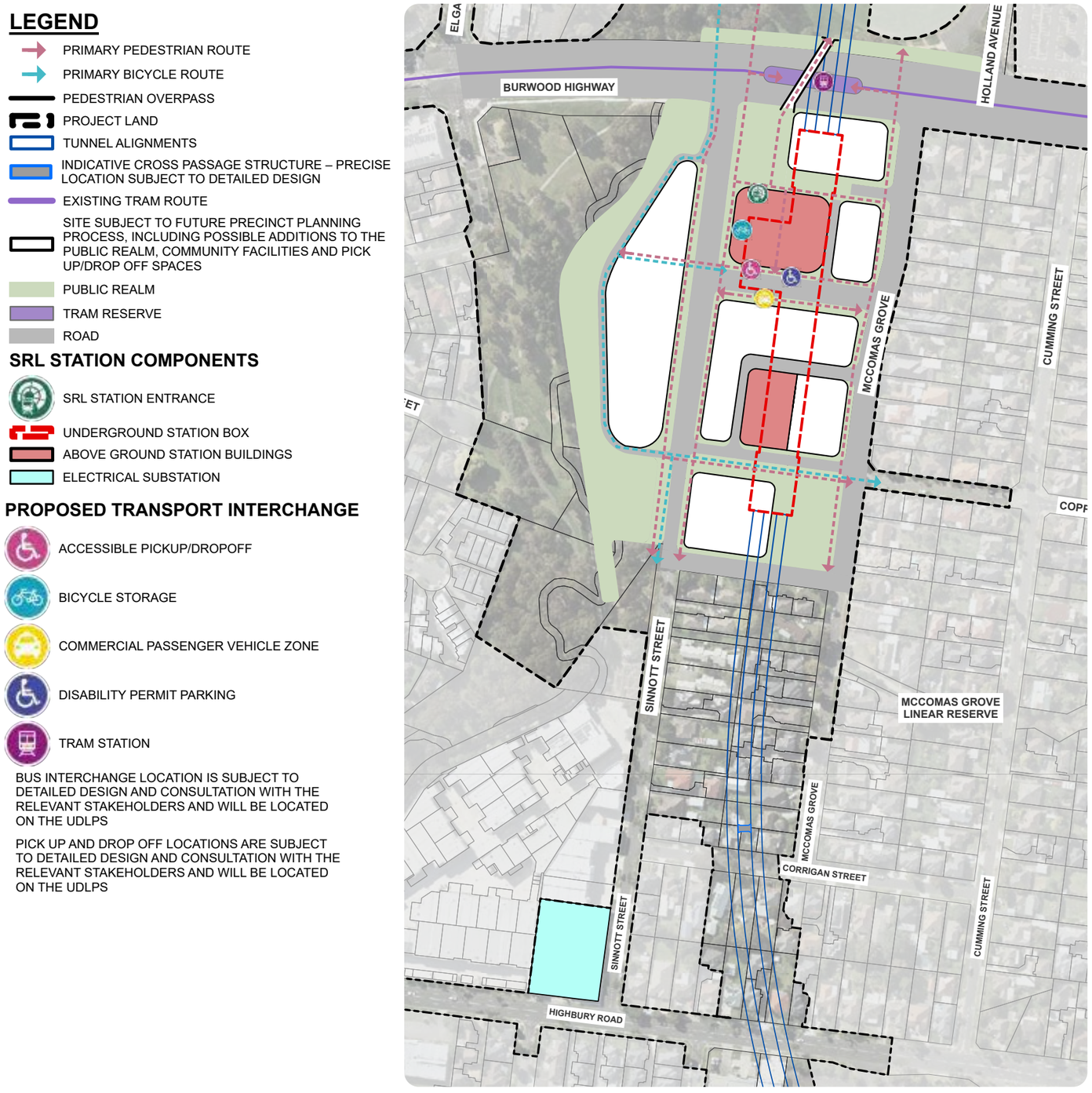

Figure 2. Excerpt from approved SRL Surface and Tunnel Plan

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1.2 Scope and Purpose of this UDLP

As part of the overarching planning approval for SRL East, UDLPs are required to be prepared and approved for all development involving permanent above ground works.

This UDLP has been prepared for the delivery of the network support facility, and applies to land located at 133-135 Highbury Road, 137 Highbury Road and 1-3 Sinnott Street, Burwood (the site). The network support facility is required to power the Tunnel Boring Machine (TBM) which will construct the underground rail tunnels. Once construction is complete, the network support facility will be reconfigured to supply operational power for the SRL network.

The purpose of this UDLP is to provide the overarching urban design and landscape concept for the final built form of all permanent above ground buildings and structures to be delivered as part of construction of the network support facility. This is limited to the building required to house the 66kV electrical equipment, with all other buildings and structures being removed and replaced as part of the reconfiguration of the network support facility for operational supply.

Figure 3 outlines the UDLP boundary and proposed location of the new network support facility and associated infrastructure involved in the Burwood SRL Precinct. Full details of all proposed works included in this UDLP are provided in Section 3 of this report.

This UDLP also provides a detailed assessment of how the design is in accordance with the relevant requirements of the approved SRL East Surface and Tunnel Plan, the Urban Design Strategy (UDS), and Environmental Management Framework (EMF). These three documents form the framework and parameters for how SRL East is to be designed, sited, and managed. This assessment is included in Appendix B - Compliance Assessments.

This UDLP does not include the final design and layout of the network support facility once converted to operational power, or the future SRL station at Burwood and surrounding precinct. These are subject to future UDLPs to be prepared by others.

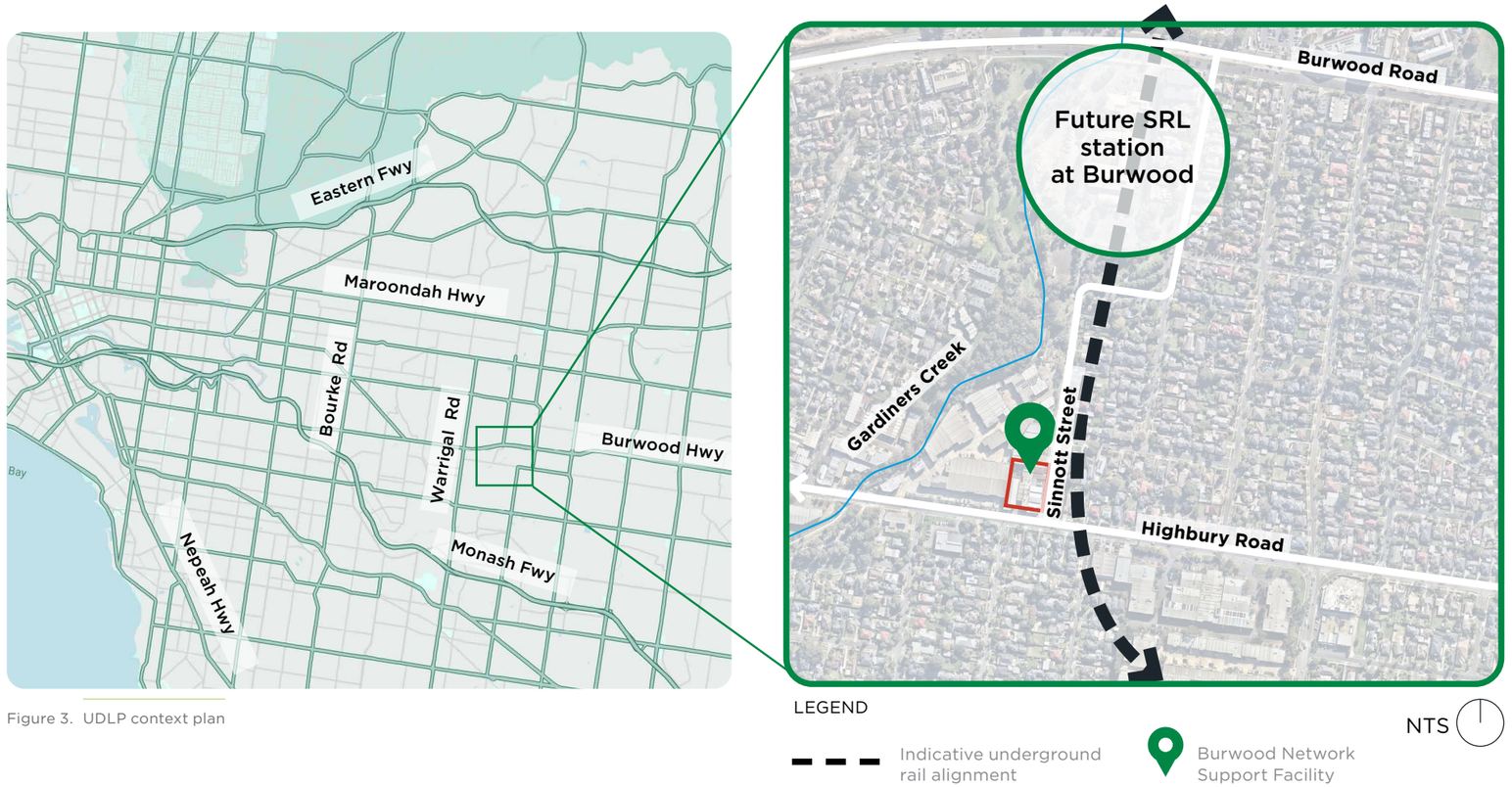

Figure 3. UDLP context plan

1.2.1 Other Approved SRL East UDLPs

The Box Hill Tram Terminus UDLP was approved by the Minister for Planning on 21 August, 2023. This UDLP details the design, siting and treatment of the relocation and redevelopment of the Route 109 Tram Terminus at Box Hill, required to facilitate excavation for the future station box for the SRL station at Box Hill.

The approved UDLP and supporting documentation can be accessed at *https://engage.vic.gov.au/box-hill-tram-terminus-urban-design-landscape-plan*.

The location of this UDLP in relation to the approved Box Hill Tram Terminus UDLP is shown in Figure 4.

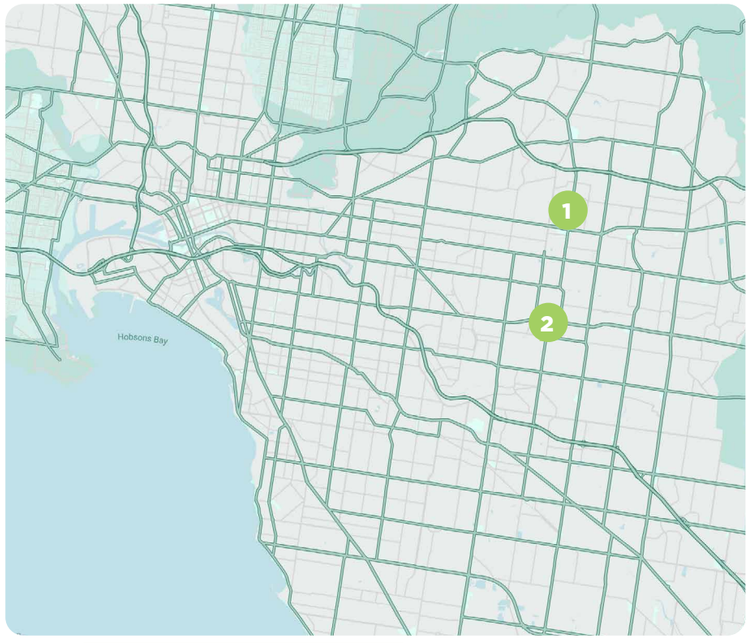

Figure 4. Approved and proposed SRL East UDLPs

1 **Box Hill Tram Terminus UDLP (approved)**

2 **Burwood Network Support Facility UDLP**

1.2.2 Statutory Requirements

The Suburban Rail Loop East Incorporated Document (August 2022) provides the primary planning approval for the SRL East project, and forms part of the Kingston, Monash and Whitehorse Planning Schemes.

Under Clause 4.7.1 of the Incorporated Document, a UDLP must be prepared and approved prior to construction commencing on any permanent above ground buildings or structures, unless they are defined to the satisfaction of the Minister for Planning as "preparatory buildings and works" under Clause 4.13.2.

The requirement to prepare a UDLP is only triggered for the network support facility by the building housing the 66kV equipment as this is a permanent above ground structure. All other buildings, works and structures within the network support facility are either temporary or considered preparatory buildings and works, and consequently are exempt.

The requirements for what a UDLP must include and address are identified at Clause 4.7.4 of the Incorporated Document. In addition to detailing the overall design and landscape concept for the development, it must also include an assessment of how the design is in accordance with the relevant requirements of the approved SRL East Station and Tunnel Plan, the UDS, and Environmental Performance Requirements (EPRs) contained within the EMF.

A summary of how the UDLP complies with the relevant requirements of the Incorporated Document is outlined in Table 1 on the following page.

Table 1. Response to Incorporated Document - Clause 4.7 requirements

	Incorporated Document Requirement	Response	UDLP Section
4.7.1	Prior to the development of the permanent above ground components of buildings (excluding preparatory buildings and works under Clause 4.13.2), Urban Design and Landscape Plans (UDLPs) must be prepared to the satisfaction of the Minister for Planning.	This UDLP details the design for the building housing the 66kV Substation, which is a permanent above ground structure. All other buildings and works associated with the development of the network support facility are temporary or meet the definition of preparatory buildings and works under Clause 4.13.2. Approval of this UDLP by the Minister for Planning is required prior to commencement of development for the building housing the 66kV electrical equipment.	Whole document
4.7.3	The UDLPs must show the final built form design of the permanent above ground components of buildings, permanent roads, permanent public realm, permanent primary pedestrian and bicycle routes, permanent bus and tram interchanges and include, where relevant:	-	-
	a) A site layout plan that shows the location of permanent above ground buildings (including but not limited to stations, ventilation structures, ancillary infrastructure and public realm improvements).	A site layout plan has been prepared showing the location of all works pertaining to this UDLP and forms part of this report.	3.2 Design Response and Key Elements Appendix A - Architectural and Landscape Plans
	b) Architectural plans, including sections and elevations, with an approach to materials and finishes.	Architectural plans and a schedule of colours and materials have been prepared for the building housing the 66kV electrical equipment and perimeter security fencing.	3.2 Design Response and Key Elements Appendix A - Architectural and Landscape Plans
	c) Landscape plans, including sections and elevations, with an approach to plantings.	Landscape drawings and a planting schedule have been prepared and are described within this report.	3.2 Design Response and Key Elements Appendix A - Architectural and Landscape Plans
4.7.4	A UDLP must be accompanied by the following, where relevant:	-	-
	a) An explanation demonstrating how the UDLP is in accordance with the approved UDS.	An assessment of how this UDLP is in accordance with the relevant principles, objectives and requirements of the approved SRL East UDS forms part of this report.	Appendix B - Compliance Assessments
	b) An explanation demonstrating how the UDLP would comply with the relevant EPRs as identified in the approved EMF.	An assessment demonstrating compliance with the relevant EPRs as identified in the approved SRL East EMF has been undertaken as part of the development of this UDLP.	Appendix B - Compliance Assessments
	c) A plan which shows the extent of the UDLP area in relation to any publicly available or approved UDLP/s for the Project.	A plan showing the location and extent of this UDLP in relation to the approved Box Hill Tram Terminus UDLP has been included in this report. There are currently no other approved or publicly available UDLPs for the SRL East project.	1.2.1 Approved SRL East UDLPs
	d) An explanation of how the UDLP is generally in accordance with the approved Surface and Tunnel Plans.	An assessment demonstrating that the siting and treatment of the network support facility is compliant with the Surface and Tunnel Plans has been undertaken as part of this UDLP.	1.2.2 Statutory Requirements Appendix B - Compliance Assessments
	e) An explanation demonstrating why the location of the bus interchange and pick up and drop off locations in the UDLP are appropriate and including the detailed design transport and traffic justification following consultation with the relevant stakeholders.	Not applicable to this UDLP. No bus interchanges or pick up/drop off facilities are proposed or required to be delivered as part of development of the land subject to this UDLP.	-
	f) An explanation, only in the relevant UDLP, demonstrating the retention or closure of Carinish Road, Clayton or Coleman Parade, Glen Waverley is appropriate and including the detailed design transport and traffic justification following consultation with the relevant stakeholders.	Not applicable to this UDLP - this requirement applies to UDLPs within the Glen Waverley and Clayton SRL precincts only.	-

Table 2. Incorporated documents requirement response continued.

Incorporated Document Requirement		Response
4.7.5	Prior to the submission of a UDLP to the Minister for Planning for approval, a UDLP must be:	
	a) Provided to the UDAP and relevant council/s for consultation. The minimum period for council consultation must be 28 days.	A copy of this UDLP has been provided to the Urban Design Advisory Panel (UDAP)and Whitehorse City Council, with both bodies formally invited to make a submission. Council and UDAP have also been consulted on the design response through the development of the UDLP.
	b) Provided to the Department of Transport, Melbourne Water, Heritage Victoria, the Department of Environment, Land, Water and Planning (DELWP), Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation, Bunurong Land Council Aboriginal Corporation, the Head, Transport for Victoria and other stakeholders for consultation where relevant.	All stakeholders listed at Section 4.7.5 b) have been provided a copy of this UDLP and invited to make a submission. Records of comments received, consultation undertaken, and how issues have been addressed will be detailed in the Consultation Summary Report following completion of the public exhibition period.
	c) Made available for public inspection and comment on a clearly identifiable Project website. The website must set out details about the entity and contact details to which written comments can be directed during that time and specify the time and manner for the making of written comments. The minimum period for public comment must be 28 days.	The UDLP has been made available for public review and comment via the Engage Victoria website. Records of comments received, consultation undertaken, and how issues have been addressed will be detailed in the Consultation Summary Report following completion of the public exhibition period.
	d) For the avoidance of doubt, consultation in accordance with (a) and (b) can occur prior to, during and after the public inspection and comment period in (c)	This has been noted and included within the consultation program for this UDLP. Consultation with stakeholders under Clause 4.7.5 a) and b) will occur during the public exhibition period.
4.7.6	Before, or on the same day as a UDLP is made available in accordance with Clause 4.7.5(c), a notice must be:	
	a) Published in a newspaper generally circulating in the area to which a UDLP applies informing the community of the matters set out in Clause 4.7.5(c)	A newspaper notice has been circulated in accordance with this requirement. A copy of this notice will be included in the Consultation Summary Report.
	b) Provided to owners and occupiers, of land adjacent to the area/s to which a UDLP applies, informing them of the matters set out in Clause 4.7.5(c). The minimum period for comment must be 28 days	Direct notice has been undertaken to surrounding land owners and occupiers in accordance with this requirement. Copies of this notice will be included in the Consultation Summary Report.
4.7.7	A UDLP submitted to the Minister for Planning for approval under Clause 4.7.1 must be accompanied by:	
	a) A summary of the consultation carried out under Clause 4.7.5 and Clause 4.7.6, all written comments received and a response to issues raised.	A Consultation Summary Report addressing the requirements of this clause will be prepared following completion of the public exhibition period and provided as part of the final submission of the UDLP for approval.
	b) Written advice from the UDAP addressing the extent to which the UDLP is consistent with all relevant matters set out in the Minister's Assessment 5 August 2022 made pursuant to the EE Act and the approved UDS	Written advice from UDAP will be finalised following completion of the public exhibition period and resolution of any issues raised through public and stakeholder consultation. A copy of this advice will be included in the Consultation Summary Report.
4.7.8	A UDLP may be prepared and approved in stages but a UDLP for any stage must be approved before commencement of development (excluding preparatory buildings and works under Clause 4.13.2) for that stage	Not applicable to this UDLP - this is not a staged UDLP.

1.3 Stakeholder Engagement

1.3.1 Consultation Undertaken to Date

Urban Design Advisory Panel (UDAP)

SRL East UDAP includes a representative from the Office of Victorian Government Architect (OVGA), the Suburban Rail Loop Authority (SRLA), the Department of Transport and Planning (DTP – Transport), at least two independent design experts, and a representative from the relevant council in relation to matters in their land area. The purpose of UDAP is to provide ongoing advice and guidance to assist in achieving high quality urban design, architecture, landscape architecture, and transport and land use planning outcomes.

UDAP has provided detailed urban design advice and feedback throughout the development of this UDLP through presentations, workshops and issue of detailed written comments.

Key feedback received from UDAP which has been incorporated in the current design includes the following:

- Preference for a high quality fence interface to Sinnott Street and Highbury Road, incorporating graphic and/or creative elements
- Preference for permanent and temporary structures to be presented through a range of complementary colour tones to be read as a collective series of built form elements
- Preference for inclusion of landscaping on and adjacent to the site, through both verge planting and planting along the corner splay.

Utility Service Provider

A significant number of compliance requirements apply to the design of electrical substations to ensure their safe and effective operation. These compliance requirements must be considered, and in some cases determine, design solutions for public realm and landscape interfaces with critical electrical equipment and infrastructure.

Extensive consultation has been undertaken with the relevant utility service provider and future asset owners with respect to the functional, operational, and legislative requirements to be incorporated into the urban design response for the network support facility. These requirements are discussed further at Section 3.1.

Local Councils

Whitehorse City Council (WCC) has been regularly consulted and kept informed throughout the network support facility design process and preparation of this UDLP. A targeted briefing outlining the key components of the UDLP and design response was provided to WCC prior to the commencement of the public exhibition period, providing an opportunity for preliminary feedback to be provided ahead of Council's formal response.

Engagement was also undertaken with WCC with respect to the appropriate application of the Naturestrip Planting Guidelines to the project as this will require a permit separate to this UDLP process.

Engagement has also taken place with Monash City Council (MCC) whose area of responsibility borders Highbury Road.

Public Authorities

Consultation has been undertaken with the DTP, Department of Environment, Energy and Climate Action (DEECA - formerly DELWP), Melbourne Water and Heritage Victoria, including provision of pre-exhibition briefings, through the development of this UDLP.

1.3.2 Public Exhibition

The UDLP was on public exhibition from 30 January 2024 to 15 March 2024, and an additional consultation period between 27 August and 26 September 2024. During the public exhibition period the UDLP was hosted on Engage Victoria along with supporting information to assist stakeholders with understanding the Burwood Network Support Facility and its relationship with the broader SRL East project.

The website specified the time frames and format in which written comments on the UDLP were required to be submitted, as well as phone and email contact details for the SRLA.

A total of 41 submissions were received during the public exhibition period from members of the broader community, including a submission from Whitehorse City Council. The key issues raised in these submissions can be summarised as follows, noting some are outside of the scope of this UDLP (not listed in order of priority):

- Landscaping treatment of the perimeter of the network support facility. This includes a high number of comments regarding the selection of vegetation.
- The design of the structure, the network support facility and its integration with the surrounding environment.

These submissions have been considered and updates made to the UDLP where appropriate. A detailed summary of all written comments received and the Project responses forms part of the UDLP submission to the Minister for Planning for approval.

2. Site Context

2.1 Location and Tenure

The land subject to this UDLP ('the Site') is located on the north-west corner of the Highbury Road and Sinnott Street intersection, and comprises the following properties (Figure 5):

- 133-135 Highbury Road (Lot 17 LP8464), Burwood
- 137 Highbury Road (Lot 15 LP8464), Burwood
- 1-3 Sinnott Street (Lot 1 PS709382), Burwood

These properties are expected to have been acquired prior to commencement of the works for the network support facility.

The Site has a total area of 2,802.63m^2, with frontages to Highbury Road (45m) and Sinnott Street (61m).

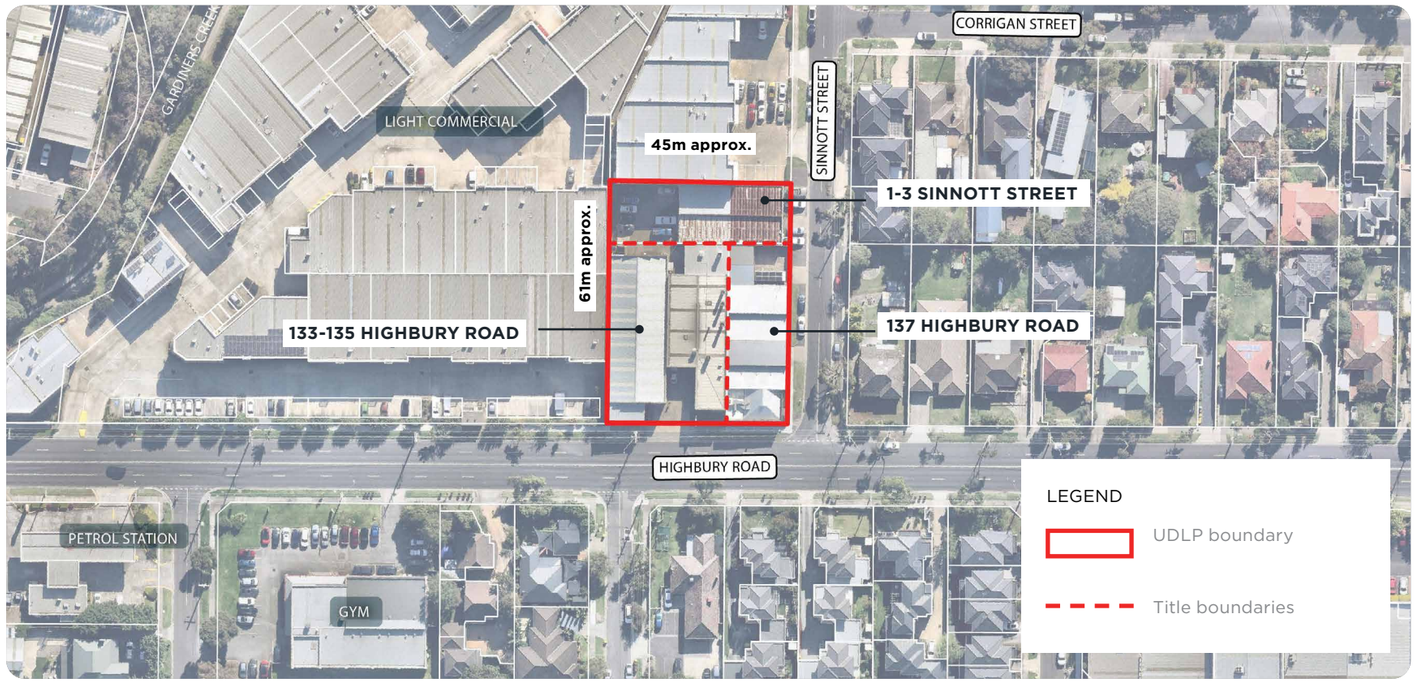

Figure 5. Site location

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2.2 Existing Conditions

Existing development within the Site is described as follows.

133-135 Highbury Road - Double storey 'factoryette' style building in a 'U' shape configuration with undercroft car parking, accommodating multiple businesses, including panel beating, car repairs, and office/administration. Vehicular access is via a double width crossover to Highbury Road (Figure 6).

137 Highbury Road - Single storey brick building incorporating a decorative metal facade at the corner of Sinnott Street and Highbury Road. The northern section of this building is set to the title boundary and retains the 'sawtooth' facade of the original factory. Low scale landscape planting extends along the Highbury Road frontage and wraps around to Sinnott Street, in addition to areas of creepers and vines to the feature metal cladding. Vehicular access is from Sinnott Street (Figure 7).

1-3 Sinnott Street - Single storey warehouse-style building set to the street boundary, with the building frontage largely dominated by roller doors. The verge has been fully paved and developed with indented parking spaces for the full length of the site frontage (Figure 8).

Figure 6. 133-135 Highbury Road

Figure 7. 137 Highbury Road (view from Sinnott Street)

Figure 8. 1-3 Sinnott Street

2.3 Surrounding Context

The Site is located on the edge of a light industrial pocket on Highbury Road, extending between Sinnott Street to the east and Gardiners Creek to the west. This area has largely been developed with two to three storey commercial/light industrial buildings arranged in business park formats, set behind car parking and access driveways within site frontages. Landscaping within these developments are limited to small garden bed strips. Highbury Road is a four lane arterial road subject to heavy levels of traffic.

In contrast, land on the east side of Sinnott Street primarily comprises single and double storey detached brick and/or weatherboard dwellings set within established gardens, forming part of a larger area of conventional suburban residential development dating from the 1950s-60s. Whilst this area is subject to incremental infill redevelopment, including small scale unit developments, the existing garden setting and character has largely been retained.

Mature trees are a particular character feature within this residential area, being consistently present within front and/or rear yards. Vegetation within the Gardiners Creek and Sinnott Street reserves to the north are also partially visible from the street in proximity to the Site, providing a "green backdrop" to development.

Figures 9-11 illustrate the surrounding context described above.

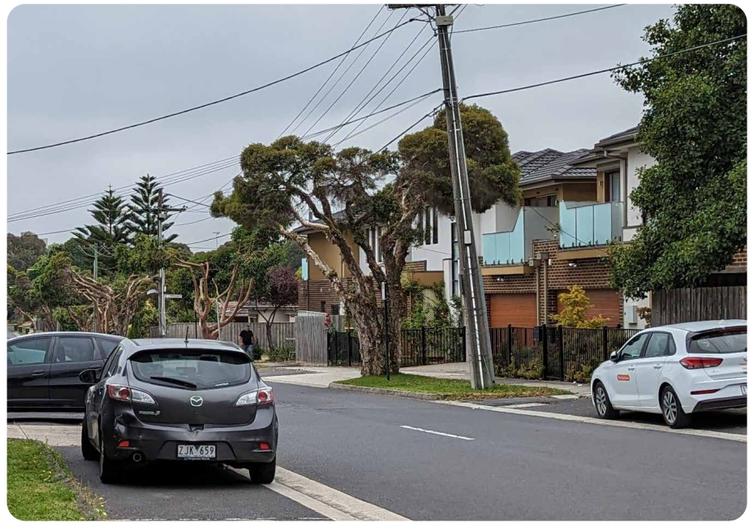


Figure 9. Existing residential context and streetscape along Sinnott Street, east of the network support facility site.

Figure 10. Existing residential and commercial context and streetscape along Highbury Road, west of the network support facility site.

Figure 11. Northern end of Sinnott Street, showing open space (Gardiners Creek reserve) to the left and views to mature trees in the Sinnott Street reserve.

3. Proposal

3.1 Scope of Works

The scope of works subject to this UDLP is limited to the building housing the 66kV electrical equipment, as this is the only permanent above ground building/structure to be delivered as part of the broader Burwood network support facility.

Notwithstanding, the following temporary structures, which will be removed once the network support facility is reconfigured for operational power, have also been detailed within the UDLP as they form part of the design context for the 66kV building:

- 22kV electrical equipment and housing
- Auxiliary transformer and neutral earthing resistor (NER)
- Construction Power (CP) transformer, to be enclosed by fire walls on all sides.

The design response for the network support facility presented through this UDLP can be summarised as follows:

- Construction of 2.6m high steel security fencing (with additional internal angled barbed wire topper) around the network support facility perimeter (excluding where there are existing building abuttals to site boundaries), to be treated with a 2.5m tall printed vinyl wrap to provide screening of views and enhanced visual amenity to the abutting streetscape
- Establishment of landscape treatments within the naturestrips on Sinnott Street and Highbury Road directly abutting the Site boundaries.

Both the fencing and landscaping treatments will be reassessed as part of the future UDLP prepared for the ultimate operational power network support facility, and may be replaced or further modified where required to provide an appropriate design response for the permanent built form outcome for the network support facility, based on the directions provided in the SRL East UDS.

3.1.1 Functional and Operational Considerations

Consultation with the utility service provider and SRLA, as the future asset owners, has resulted in incorporation of the following functional and operational requirements into the urban design and landscape response presented through this UDLP.

Security

Provision of security fencing to the full perimeter of the site is required to restrict public access, prevent both theft and the risk of electrocution. Fencing must be to a minimum height of 3.0m inclusive of an internally angled barbed wire topper.

This UDLP provides for 2.6m high steel fencing, with additional internal angled barbed wire topper. This ensures that the barbed wire can be seen from the public realm, which is an operational requirement, whilst being angled enough to reduce its prominence from the streetscape.

Clearance and Servicing Requirements

Minimum clearances between planting, buildings, electrical equipment and the perimeter fencing must be provided in the design to comply with regulatory requirements around safety and risk management (particularly fire), as well as minimum access requirements for workers. In addition, much of the Sinnott Street frontage is encumbered by drainage assets and electrical conduits required to connect with existing services in the road reserve. This essentially precludes the establishment of landscape planting within the site boundaries on this interface without compromising operational functionality.

Drainage

Whilst the development footprint for the electrical equipment and other structures to be delivered for the network support facility is limited to the northern part of the site, land south of the internal access driveway is largely encumbered by a temporary flood basin required to manage stormwater flows prior to delivery of the permanent underground drainage infrastructure as part of the operational power supply network support facility (Phase Two). The overall footprint and location of this basin is set by the location and level (invert) of the legal point of discharge to the Council drainage system, and results in grades unsuitable for planting adjacent to the Highbury Road frontage.

3.1.2 Staging and Integration with Future Works

The network support facility will provide electricity for the SRL East project in two separate phases:

Phase One - Construction Power

This network support facility is required to power the Tunnel Boring Machine (TBM) and other construction equipment necessary to build the underground rail tunnel between the future Burwood and Box Hill SRL stations. All buildings delivered during this phase are temporary and will be removed during Phase Two, except the 66kV building (Figure 12, as shown on the next page).

This UDLP provides the design response for Phase One.

Phase Two - Operational Power

Once construction works are complete, the network support facility will be significantly modified to supply operational power for the SRL network (powering trains and other essential systems).

As all built form elements and above ground structures delivered during this phase will be permanent, a separate UDLP will be prepared which will guide the design and interface treatments for the ultimate network support facility configuration.

3.2 Design Response and Key Elements

The design response presented through this UDLP has been shaped by and responds to a number of competing considerations, specifically:

- Electrical security and safety requirements for the network support facility during the construction power phase of the SRL project.
- Requirements for the operational power phase of the SRL project, including siting of buildings and other infrastructure.
- Timeframes for delivery of specific elements within the Site, and how these impact on options for design treatments.
- Ongoing maintenance and access requirements.
- Streetscape and visual amenity for pedestrians on Sinnott Street and Highbury Road.
- Managing and mitigating the change in outlook from residential properties on the east side of Highbury Road resulting from the redevelopment of the site as a network support facility.

In preparing a design response which successfully addresses these considerations, the design principles of the UDS, project-wide benchmarks and place specific requirements for the network support facility have been used as a framework to ensure that the network support facility design contributes to realising the overarching outcomes of the broader SRL East project within the Burwood precinct.

In particular, where interim or temporary design treatments have been included, these have been selected to ensure that a high quality, integrated design response which makes a positive contribution to surrounding landscape and visual amenity from 'day one' of construction works.

This includes the delivery of an adequate public realm outcome through a high-quality vinyl wrap attached to the fence which includes art/graphic items as a temporary (5+ years) public interface prior to the operational power fence treatment being provided. In addition, planted verges along Sinnott Street and Highbury Road as well as a deep landscaped garden bed at the intersection of Sinnott Street and Highbury Road supports a landscaped outcome.

The following sections provide an overview of the design approach and rationale for the treatment of specific design elements to be delivered through this UDLP. Further detail is provided in the detailed assessment against the relevant requirements of the UDS at Appendix B.

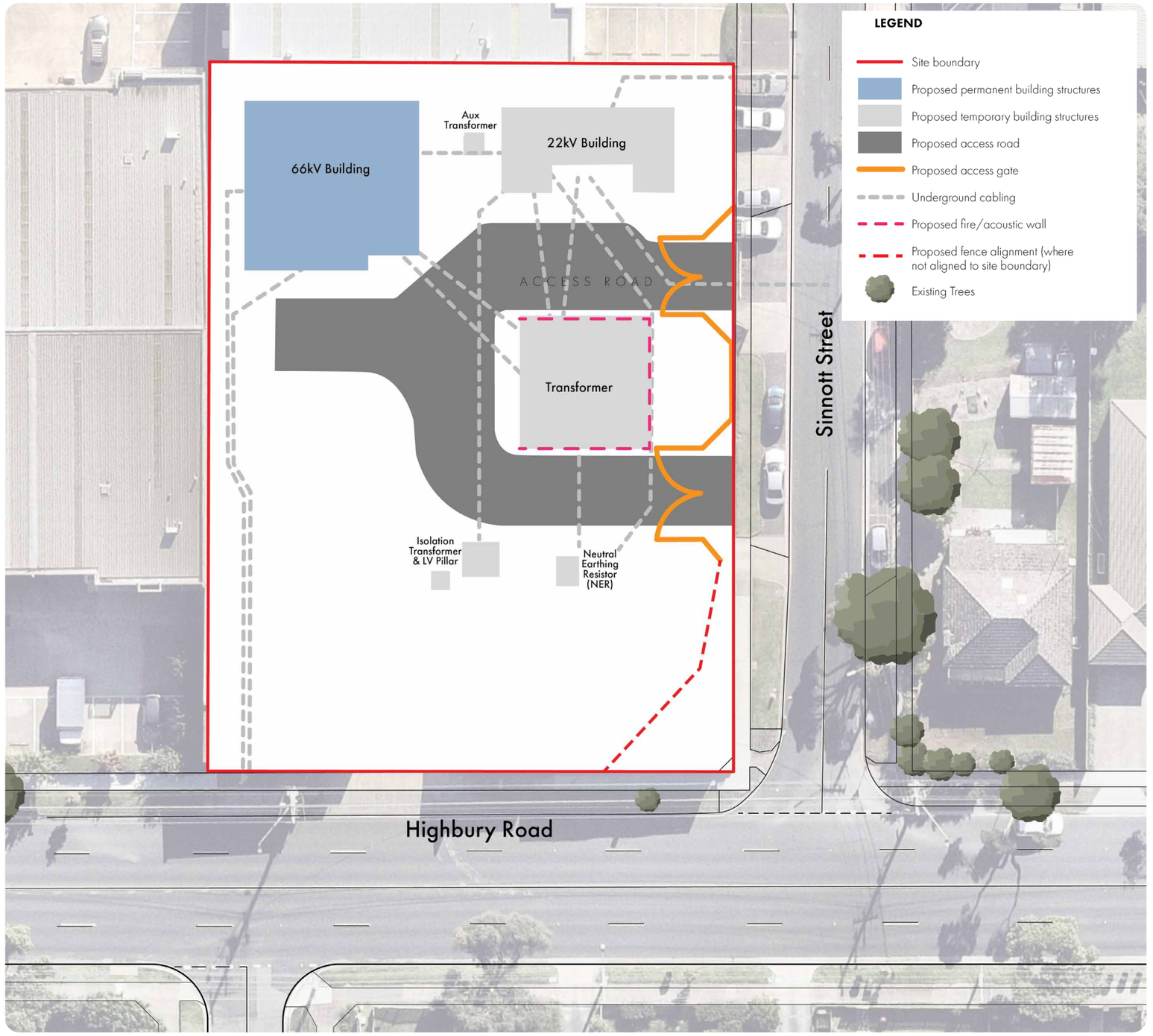


Figure 12. Site plan showing location of key elements

NTS

3.2.1 Interface Treatments

As the network support facility is required to be fully fenced and secured from public access, a key component and driver of the design response developed through this UDLP was to manage the visual and functional impact of this fencing when viewed from the public realm, as this will be the most visible element of the development. It also provides the primary mechanism for screening of views to electrical equipment and infrastructure from both public and private land, and consequently plays a significant role in maintaining and enhancing visual amenity.

Strategies have been developed based on the context and conditions at specific sections of the Site interface to guide the design and landscape response for the fencing, as detailed in Figure 13 and summarised below.

Private land - existing built form interface

- External views to network support facility fully screened by abutting buildings constructed to the Site boundary
- No design treatments apart from technical solutions required to address safety and security requirements.

Private land - site boundary interface

- Views/access to network support facility available from adjoining private land (existing car parks/retaining walls)
- A 2.6m high steel security fencing (with additional internal angled barbed wire topper) with localised retaining walls to manage grade (where required) to be established to full length of interface
- Vinyl wrap incorporating creative design treatments applied to external face fencing.

Streetscape - Highbury Road

- A 2.6m high steel security fencing (with additional internal angled barbed wire topper) to be established along full length of frontage
- Vinyl wrap incorporating creative design and/or project branding treatments to be applied to external face of fencing - Refer to Section 3.2.5 for further details.
- Landscape planting within the abutting verge - Refer to Section 3.2.4 for further details.
- Retention of existing street tree.

Streetscape - Corner splay

- A 2.6m high steel security fencing (with additional internal angled barbed wire topper) to be established along full length of frontage
- Deep landscaped garden bed located between the fence and the existing footpath at the intersection of Highbury Road and Sinnott Street
- Species selection and location of planting provides greater visibility and sightlines around the corner for pedestrian and cyclists - Refer to Section 3.2.4 for further details.

Streetscape - Sinnott Street

- A 2.6m high steel security fencing (with additional internal angled barbed wire topper) to be established along frontage (excluding vehicular access gates)
- Vinyl wrap incorporating creative design treatments to be applied to external face of fencing (excluding vehicular access gates). Limited branding/project information, except where relating to safety and/or operational requirements for workers, to be included due to higher visual sensitivity (residential abuttal). Refer to Section 3.2.5 for further details
- Landscape planting within the abutting verge - Refer to Section 3.2.4 for further details.

LEGEND

- Site boundary
- Proposed permanent building structures
- Proposed temporary building structures
- Proposed access road
- Proposed fire/acoustic wall
- Existing built form interface
- Side boundary interface
- Street interface
- Vehicle access gate
- Landscape planting
- Existing bluestone pitchers
- Existing grass verge
- Existing Trees

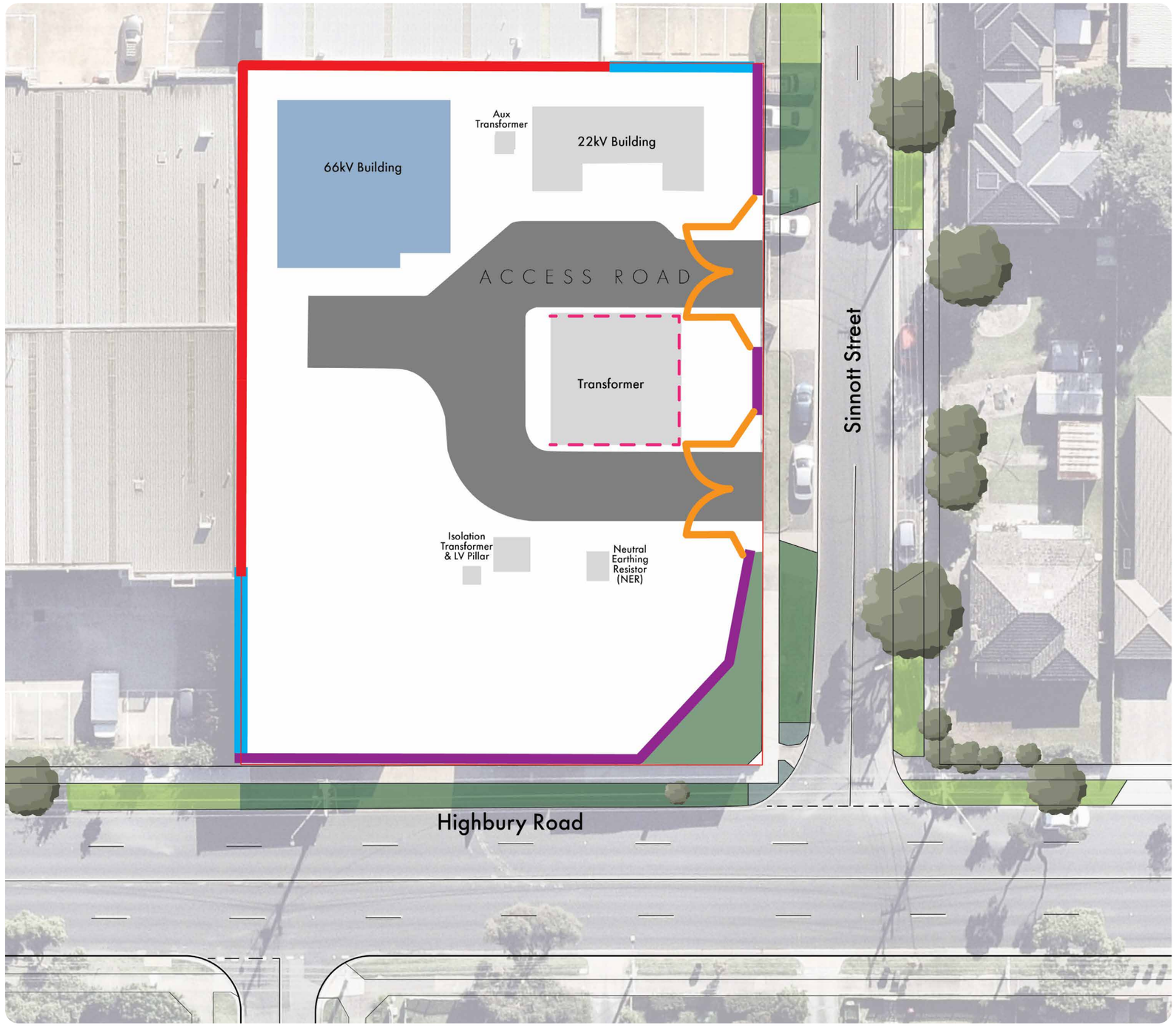


Figure 13. Interface response plan

NTS

3.2.2 Internal Built Form and Structures

Due to the overall height and solid nature of the perimeter security fencing, only three specific built form elements within the network support facility will be visible from the public realm. These are outlined in Table 2 below.

Table 2. Visible built form and structures.

Element	Height	Materials
66kV building (permanent)	approx 10.3m	Pre-cast concrete panel walls, steel roof, roller doors, and other ancillary elements
22kV building (temporary)	approx 5.5m	Steel (all)
Transformer firewall (temporary)	approx 5.8m	Pre-cast concrete panel

Streetscape elevation plans detailing how the above buildings will present when viewed from Highbury Road and Sinnott Street are included at Appendix A (plan 323-0434-00-U-DR05, and DR06).

Whilst the scale and external materials of these buildings are largely dictated by safety, maintenance and operational requirements, the potential visual impact to the street and level of change to existing outlook (particularly from residential development to the east) is largely minimised through their similarity in appearance to existing buildings abutting the site boundary. In particular, the 22kV building and transformer firewalls sit below and will be read against this existing built form as a complementary, rather than intrusive, visual element.

Whilst the 66kV building, being higher than adjacent built form, will represent a greater level of visual change, this has been sited in the north-west corner of the site to maximise its setback from the street and consequently minimise the overall dominance of this structure when viewed from outside the site.

Elevations provided at Figure 15 and Figure 16 show the site as it would be viewed from Sinnott Street and Highbury Road.

Figure 14. As-built example - Colorbond steel housing for 22kV equipment

3.2.3 Colour Finishes

A range of muted taupes, greens and grey colour finishes will be applied to the 66kV and 22kV buildings, as well as the firewall. These shades have been specifically chosen to form a coherent ‘colour story’ across both permanent and temporary elements within the network support facility, visually linking and connecting built form whilst providing sufficient differentiation to maintain visual interest and articulation. See colour swatches at Appendix A (plan 323-0434-00-U-DR07) for further detail.

The colour finishes coordinate with those used on immediately adjoining buildings, assisting them to “blend in” with background conditions and remain a recessive, non-obtrusive element when viewed from the public realm. This also ensures that despite their overall scale, the buildings will not detract from the creative and landscape treatments to be applied to the perimeter fencing and verges, which are intended to actively draw the eye and form the primary design response experienced by passing pedestrians, cyclists and drivers.

Final selection of colours and finishes to the proposed buildings, particularly with respect to the concrete oxides/tints, will be confirmed through the detailed engineering design process in accordance with the colour palette provided in this UDLP. The finishes will be subject to sampling prior to finalisation, with oxide ratios selected to ensure longevity of finish and colour intent.

Security fence

Whilst the perimeter steel fencing will largely be obscured by the vinyl wrap (see Section 3.2.5 below), a small (approximately 50mm) section at the bottom will remain uncovered for maintenance purposes. This section of the fence and associated structural elements will be powder coated, with the final colour selected to coordinate with the final design for the creative treatments to the fence. This will both ensure a consistent and coherent visual outcome for the entirety of this structure and minimise the potential visual intrusiveness of this element, noting that this is already largely addressed through its location at ground level and limited proportion of the overall fence height already.

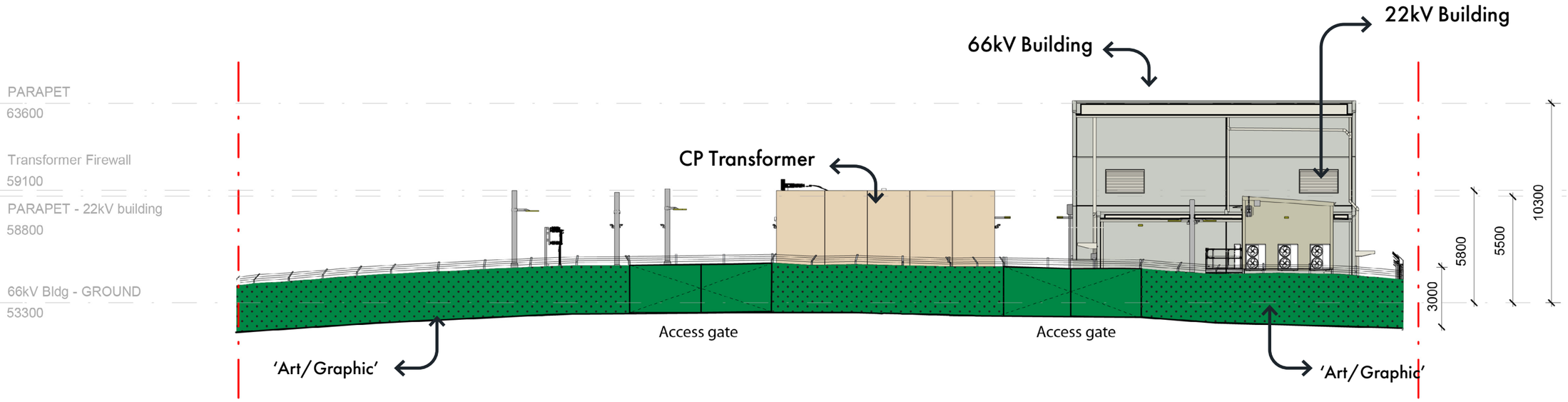


Figure 15. Eastern elevation - Sinnott Street

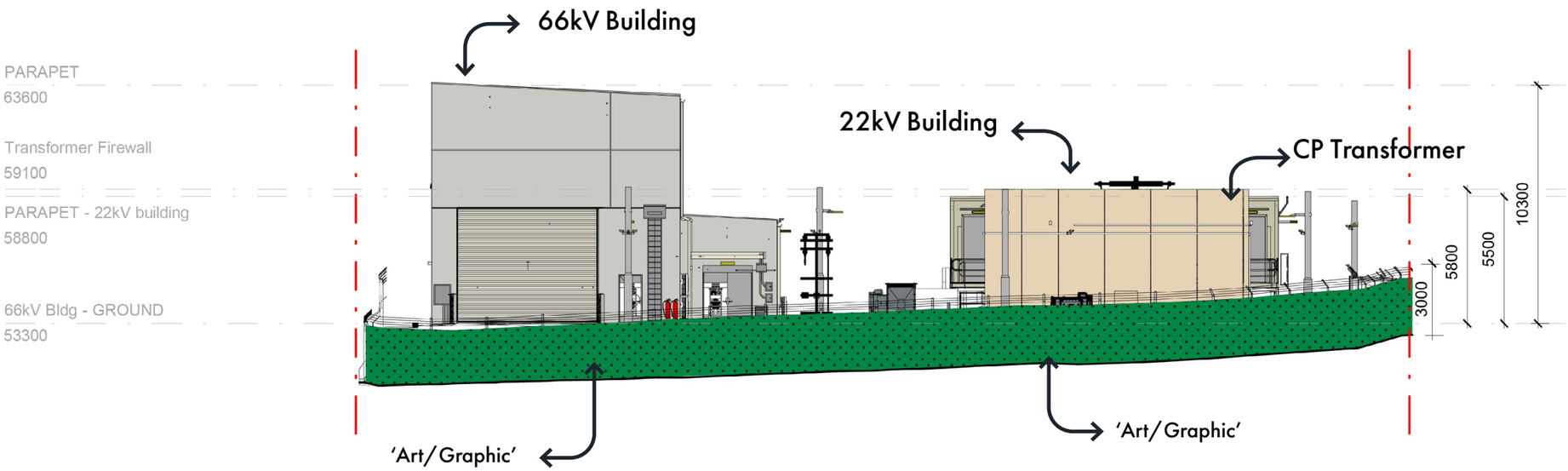


Figure 16. Southern elevation - Highbury Road

3.2.4 Landscaping

As detailed at Section 3.1.1, opportunities to include landscaping treatments within the network support facility site are effectively precluded by the impact of regulatory and operational requirements for minimum clearances between buildings (including fencing), planting and electrical equipment for safety and access purposes, as well as the spatial constraints posed by the need to accommodate temporary drainage infrastructure in the southern part of the site and future utility connections.

This UDLP has taken advantage of the existing verges on Highbury Road and Sinnott Street to provide landscape planting which will complement and enhance the overall visual presentation of the network support facility development.

Existing driveway crossovers along Highbury Road will be removed and replaced with planted verges, improving amenity to pedestrians using the footpaths on Highbury Road.

The proposed planted verges on Sinnott Street have been located away from the vehicle access locations into the network support facility, to limit potential damage from service vehicles due to turning circle radii.

Existing bluestone pitchers embedded in the verge at the intersection of Highbury Road and Sinnott Street are proposed to be retained, along the existing concrete pathway (subject to review of existing condition). Where a footpath is not provided along Sinnott Street directly adjacent to the site, a new one is proposed to be installed (approx. 40m).

The landscape design incorporates robust, drought tolerant species to maximise ongoing viability and visual appeal whilst minimising ongoing maintenance. Flowering plants have been included to support bees and other pollinators, as well as provide form, colour and textural variety. Generous planting densities are proposed to ensure a full, layered appearance, using compact ground covers and low/medium scale shrubs to avoid tripping hazards and maintain clear sightlines for pedestrian, cyclist, and vehicle safety.

A landscape concept plan (Figure 17) and planting palette is provided in Appendix A (plan refs 323-0434-00-U-DR08, DR09, DR010 and DR011). Table 3 provides a summary of the plant species and their characteristics.

Table 3. Landscape planting palette

Latin Name	Common Name	Size at Maturity (H x W)	Container Size	Indigenous
SMALL SHRUBS				
Correa glabra	Rock Correa	1 x 1m	TBC	yes
Chrysocephalum semipapposum	Clustered Everlasting	0.3-1 x 1m	TBC	yes
Westringia fruticosa ‘Flat n Fruity’	Prostrate Coastal Rosemary	0.3 x 0.5-1m	TBC	no

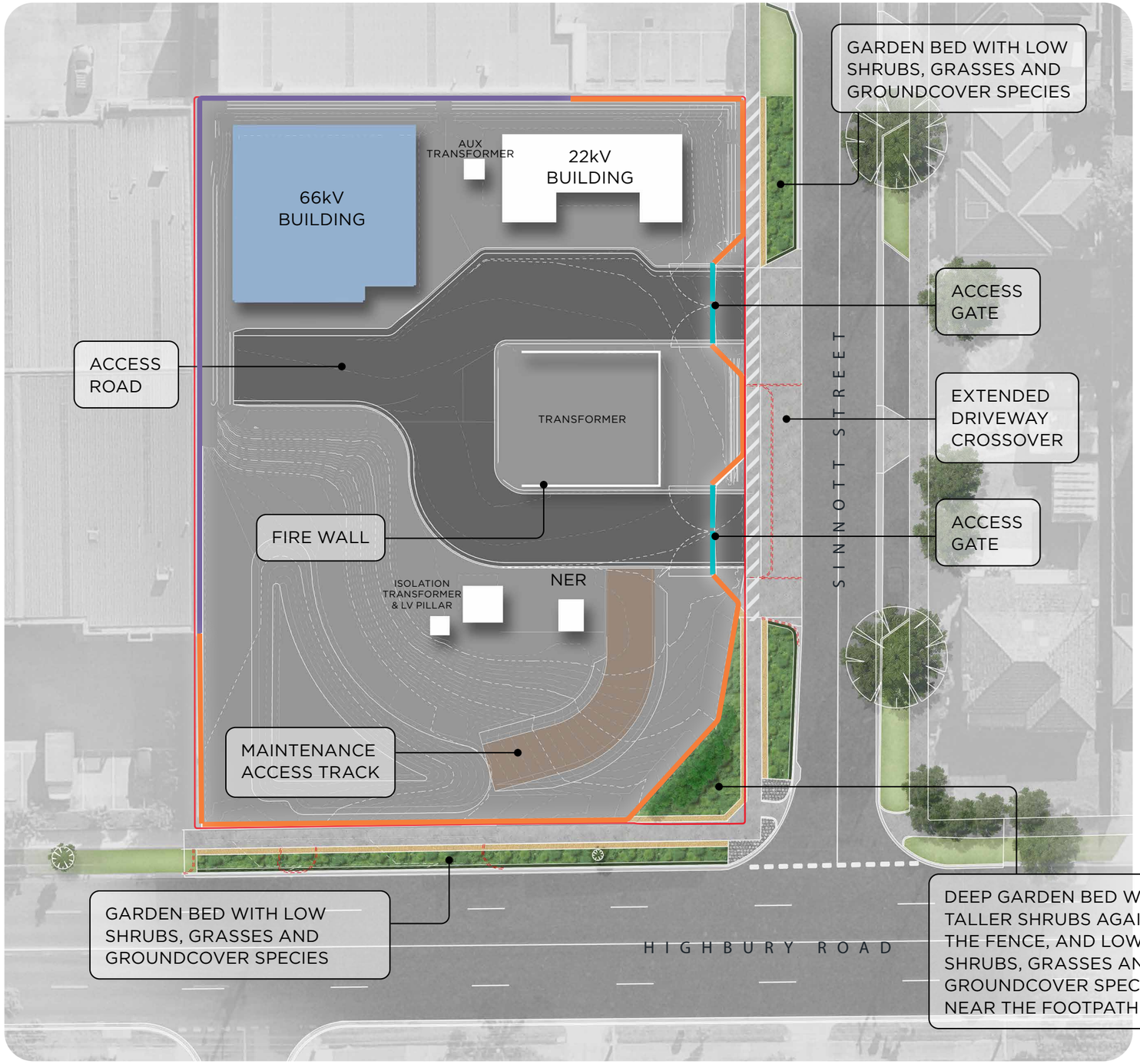
Latin Name	Common Name	Size at Maturity (H x W)	Container Size	Indigenous
LILIES & TUFTED GRASSES				
Dianella revoluta	Black Anther Flax-lily	0.5-0.7 X 1m	TBC	yes
Lomandra Filiformis	Wattle Mat-Rush	0.5 x 0.5m	TBC	yes
Lomandra Tanika	Mat Rush	0.5 x 0.6	TBC	no

Latin Name	Common Name	Size at Maturity (H x W)	Container Size	Indigenous
GROUNDCOVERS				
Brachyscome multifida	Cut Leaf Daisy	<0.5 x 0.2-1m	TBC	yes

SMALL SHRUBS

LILIES & TUFTED GRASSES

GROUNDCOVERS



LEGEND

- Site boundary
- Existing grass verge
- Low planting
- Stabilised crushed rock strip
- Vehicular grade asphalt pavement
- Crushed rock pavement
- Vehicular grade crushed rock pavement
- Existing bluestone pitchers
- Concrete crossover/footpath
- New footpath
- Existing retained tree
- 2.6m security fence (with barbed wire topper) with vinyl wrap
- Security fencing to perimeter wall
- Access gates with no graphic/imagery
- Removed kerb alignment
- Proposed permanent building structures
- Proposed temporary building structures

Figure 17. Concept landscape plan

NTS

3.2.5 Vinyl Wrap and Creative Artwork/Graphics

A key element of the design response for the network support facility is the incorporation of creative artwork/graphics to the perimeter fencing. This will provide visual interest and maximise streetscape amenity for local residents, particularly on Sinnott Street, as well as pedestrians, cyclists and drivers passing the site.

The artwork/graphics will be applied via the vinyl wrap attached to the external faces of the fencing, along with specific areas identified for project branding and communications. The vinyl wrap and applied design will cover approximately 2.5m of the total height of the fencing (2.6m).

An overarching theme of Community and Nature reflective of the existing valued neighbourhood character, site specific and relevant to the local community has been selected to guide the development of this artwork/graphics, as shown in Figure 18. This process will be coordinated, with any commissioning of artwork to involve approval by the SRLA Creative Advisory Panel (CAP), through a separate consultation process with community and key stakeholders.

Figure 18. Concept imagery and guidance for development of creative treatment to fencing (courtesy of SRL)

3.2.6 Safety

The network support facility provides a secure environment for the operation of the electrical infrastructure required to construct the SRL East tunnel. The external interface provides a clear and attractive facade to Highbury Road and Sinnott Street.

Planting located in the verges along Sinnott Street and Highbury Road is designed to be in accordance with the Whitehorse City Council Naturestrip Planting Guidelines, which outlines the maximum height, location, and safety considerations for verge planting. A permit will be sought with the Council, whereby further detailed review of the proposal will be undertaken by Council.

The planting at the intersection of Highbury Road and Sinnott Street is located between the UDLP fence through to the existing footpath, and provides low scale plant species to maintain clear sightlines around the corner for pedestrians and cyclists.

No lighting is proposed within the network support facility, with the of some lighting on a timer for maintenance access. Existing street lighting on Highbury Road and Sinnott Street will maintain illumination to the footpath.

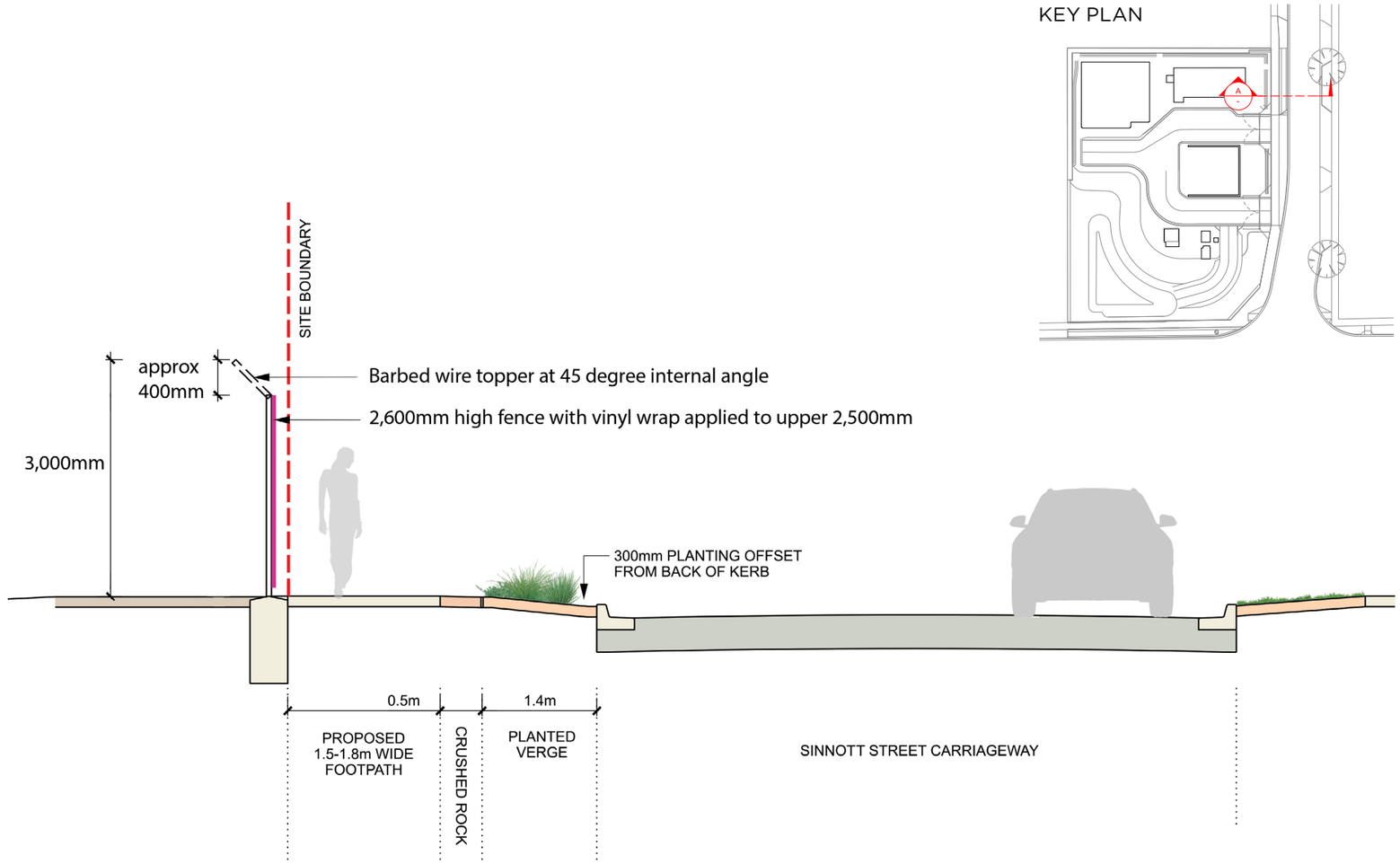


Figure 19. Section A - Indicative cross section showing the height of the steel fence and width of landscaped zone

Appendix A - Architectural and Landscape Plans

Appendix B - Compliance Assessments

SUBURBAN RAIL LOOP AUTHORITY

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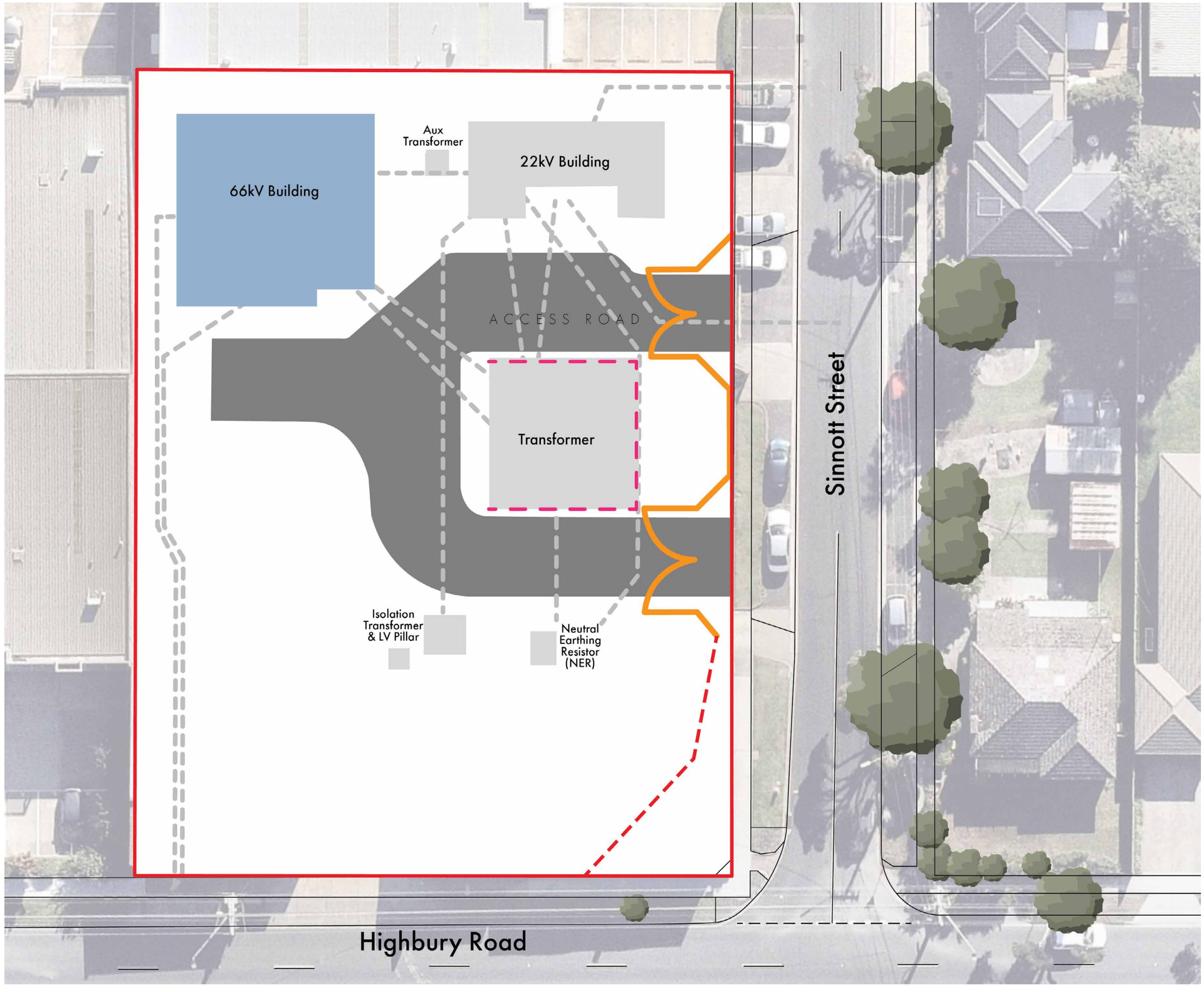
Appendix A - Architectural and Landscape Plans

Tract

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Site location map	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR01	A	12.06.2024	TS	NC	KM	NTS

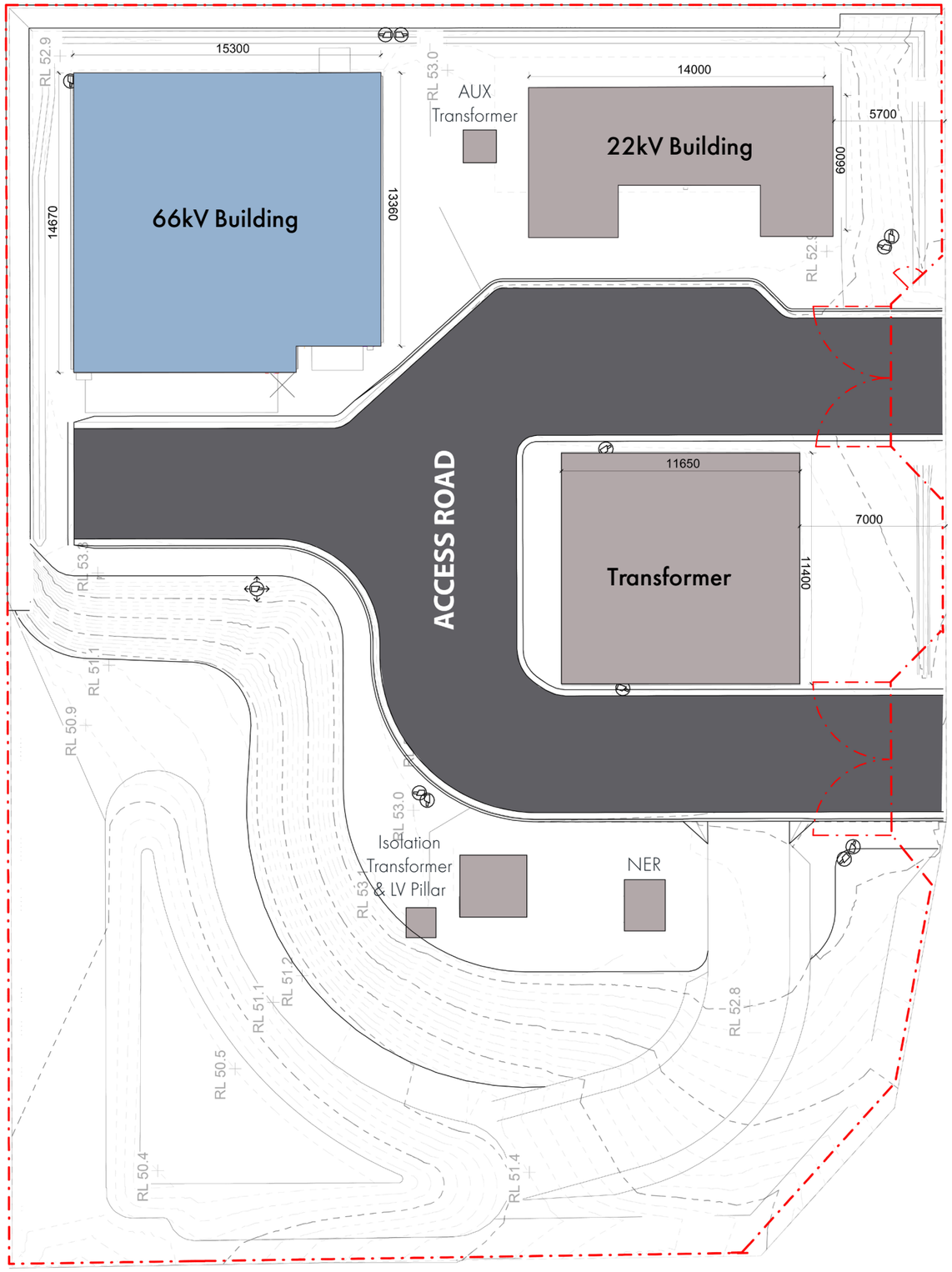


LEGEND

- Site boundary
- Proposed permanent building structures
- Proposed temporary building structures
- Proposed access road
- Proposed access gate
- Underground cabling
- Proposed fire/acoustic wall
- Proposed fence alignment (where not aligned to site boundary)
- Existing Trees

Tract

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Initial and Early Works configuration	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR02	B	12.06.2024	TS	NC	KM	0 2 4 6 8 10

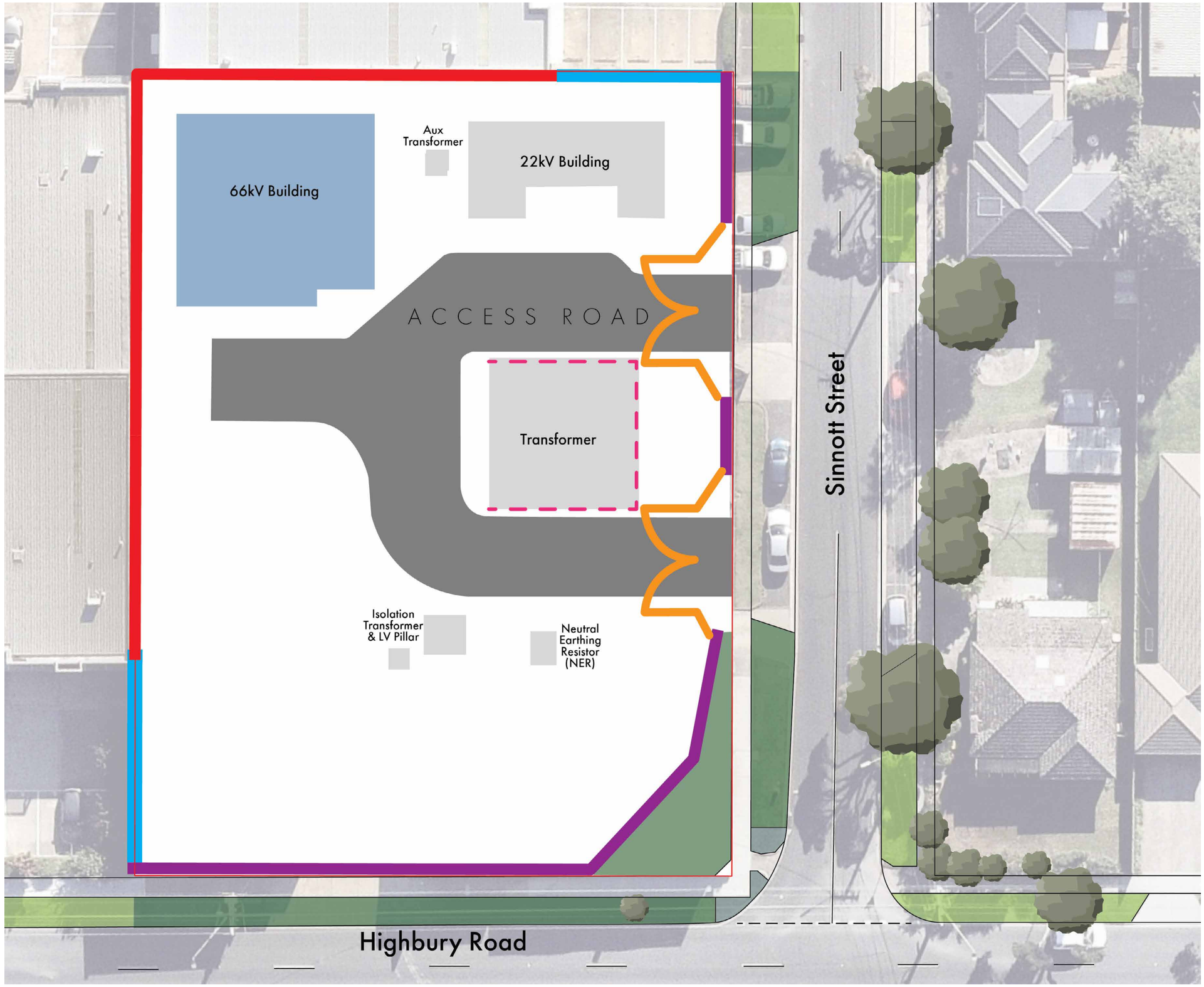


LEGEND

- Fence (temporary)
- Access Road
- Temporary buildings
- Permanent buildings
- Major contour (0.5m)
- Minor contour (0.1m)

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Technical Plan	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR03	B	12.06.2024	TS	NC	KM	0 1 2 3 4 5

Tract

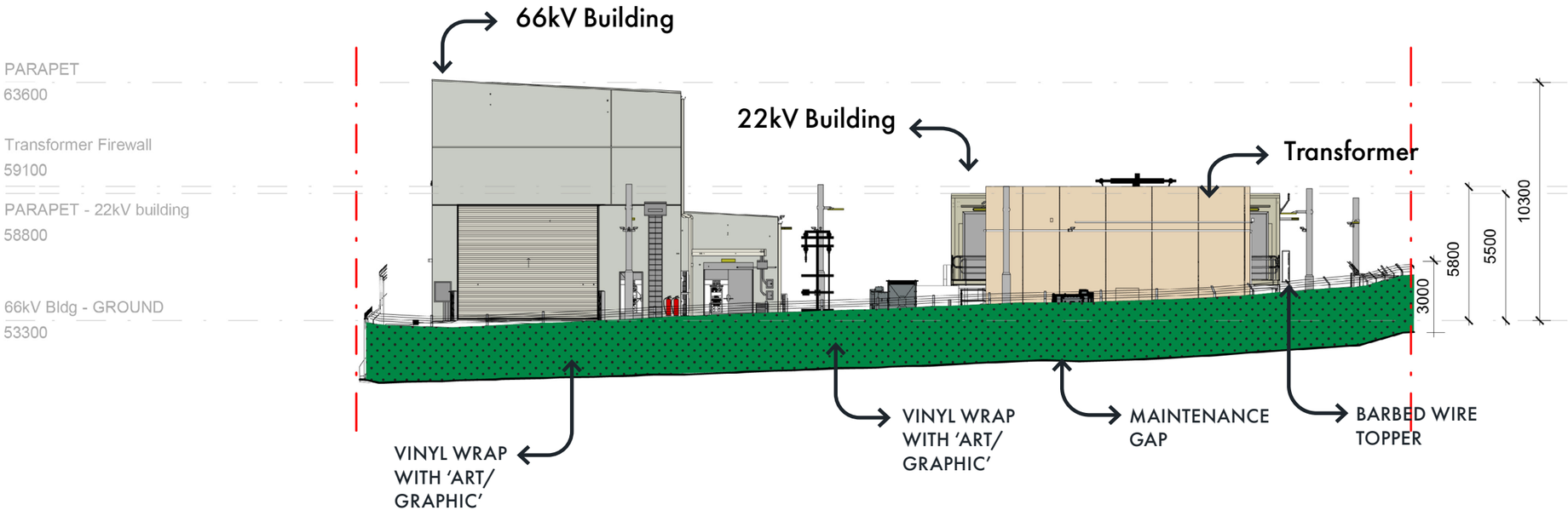


LEGEND

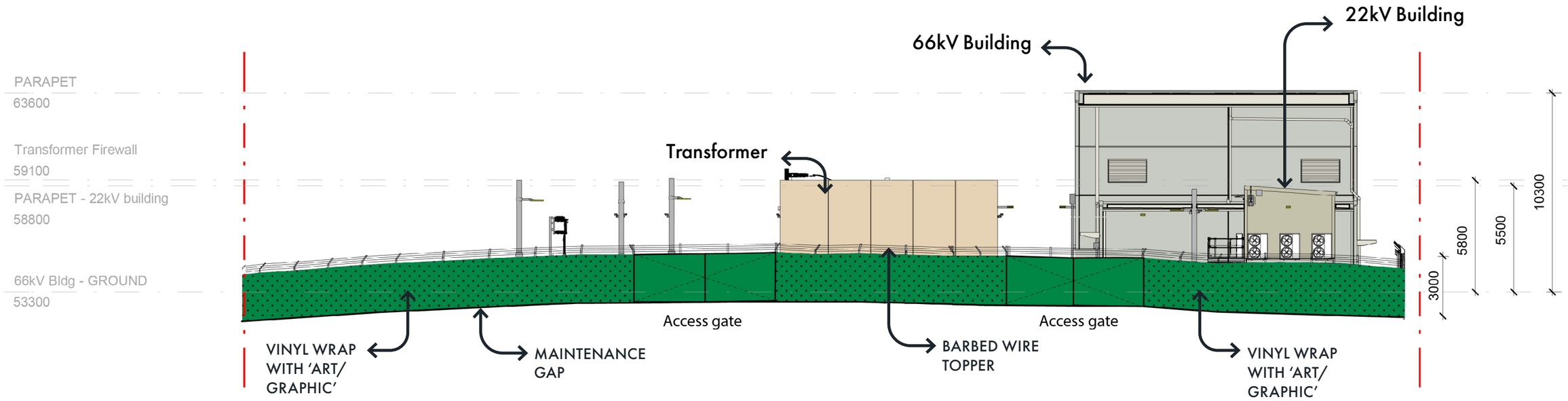
- Site boundary
- Proposed permanent building structure
- Proposed temporary building structures
- Proposed access road
- Proposed fire/acoustic wall
- Existing built form interface
- Side boundary interface
- Street interface
- Vehicle access gate
- Landscape planting
- Existing bluestone pitchers
- Existing grass verge
- Existing Trees

Tract

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Project interfaces plan	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR04	B	12.06.2024	TS	NC	KM	0 2 4 6 8 10

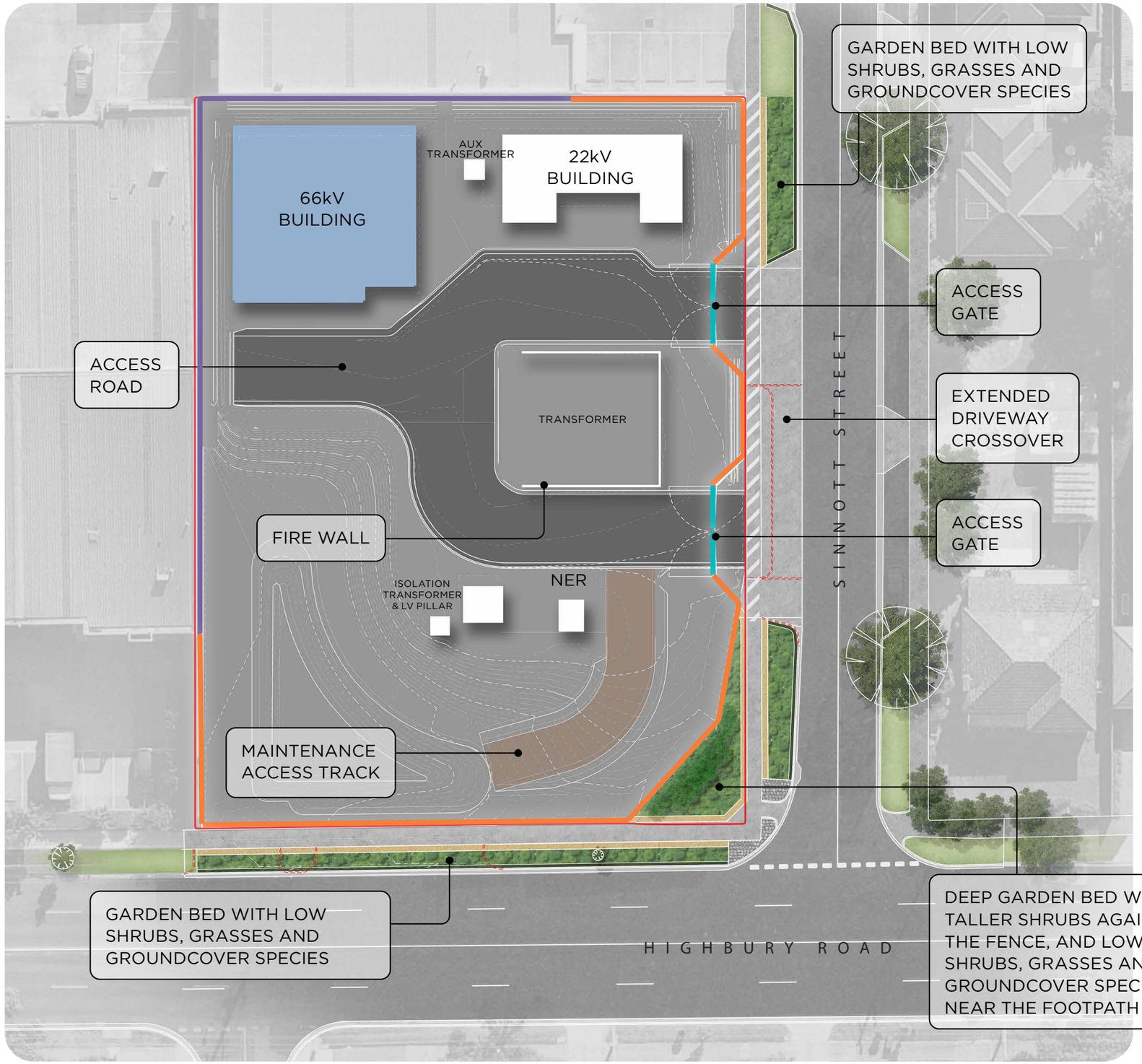


Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Highbury Road Elevation	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR05	C	12.06.2024	TS	NC	KM	0 2 4 6 8 10



Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Sinnott Street Elevation	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR06	C	12.06.2024	TS	NC	KM	0 2 4 6 8 10

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal
Proposed Colour Swatches	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR07	B	12.06.2024	TS	NC	KM



LEGEND

- Site boundary
- Existing grass verge
- Low planting
- Stabilised crushed rock strip
- Vehicular grade asphalt pavement
- Crushed rock pavement
- Vehicular grade crushed rock pavement
- Existing bluestone pitchers
- Concrete crossover/footpath
- New footpath
- Existing retained tree
- 2.6m security fence (with barbed wire topper) with vinyl wrap
- Security fencing to perimeter wall
- Access gates with no graphic/imagery
- Removed kerb alignment
- Proposed permanent building structures
- Proposed temporary building structures

Tract

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Proposed Landscape Plan	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR08	C	12.06.2024	NC	NC	KM	0 2 4 6 8 10

Table 1. Landscape planting palette

Latin Name	Common Name	Size at Maturity (H x W)	Container Size	Indigenous
SMALL SHRUBS				
Correa glabra	Rock Correa	1 x 1m	TBC	yes
Chrysocephalum semipapposum	Clustered Everlasting	0.3-1 x 1m	TBC	yes
Westringia fruticosa ‘Flat n Fruity’	Prostrate Coastal Rosemary	0.3 x 0.5-1m	TBC	no

Latin Name	Common Name	Size at Maturity (H x W)	Container Size	Indigenous
LILIES & TUFTED GRASSES				
Dianella revoluta	Black Anther Flax-lily	0.5-0.7 X 1m	TBC	yes
Lomandra Filiformis	Wattle Mat-Rush	0.5 x 0.5m	TBC	yes
Lomandra Tanika	Mat Rush	0.5 x 0.6	TBC	no

Latin Name	Common Name	Size at Maturity (H x W)	Container Size	Indigenous
GROUNDCOVERS				
Brachyscome multifida	Cut Leaf Daisy	<0.5 x 0.2-1m	TBC	yes

SMALL SHRUBS


Correa glabra
Rock Correa


Chrysocephalum semipapposum
Clustered Everlasting


Westringia fruticosa ‘Flat n Fruity’
Coastal Rosemary

LILIES & TUFTED GRASSES


Dianella revoluta
Black Anther Flax Lily


Lomandra filiformis
Wattle Mat-Rush


Lomandra ‘Tanika’
Mat Rush

GROUNDCOVERS


Brachyscome multifida
Cut-Leafed Daisy

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Proposed Planting Palette	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR09	00	12.06.2024	TS	NC	KM	

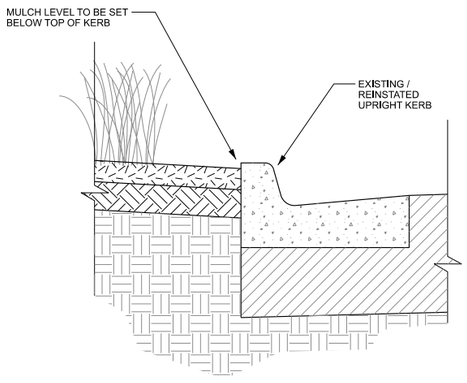
Tract

LEGEND

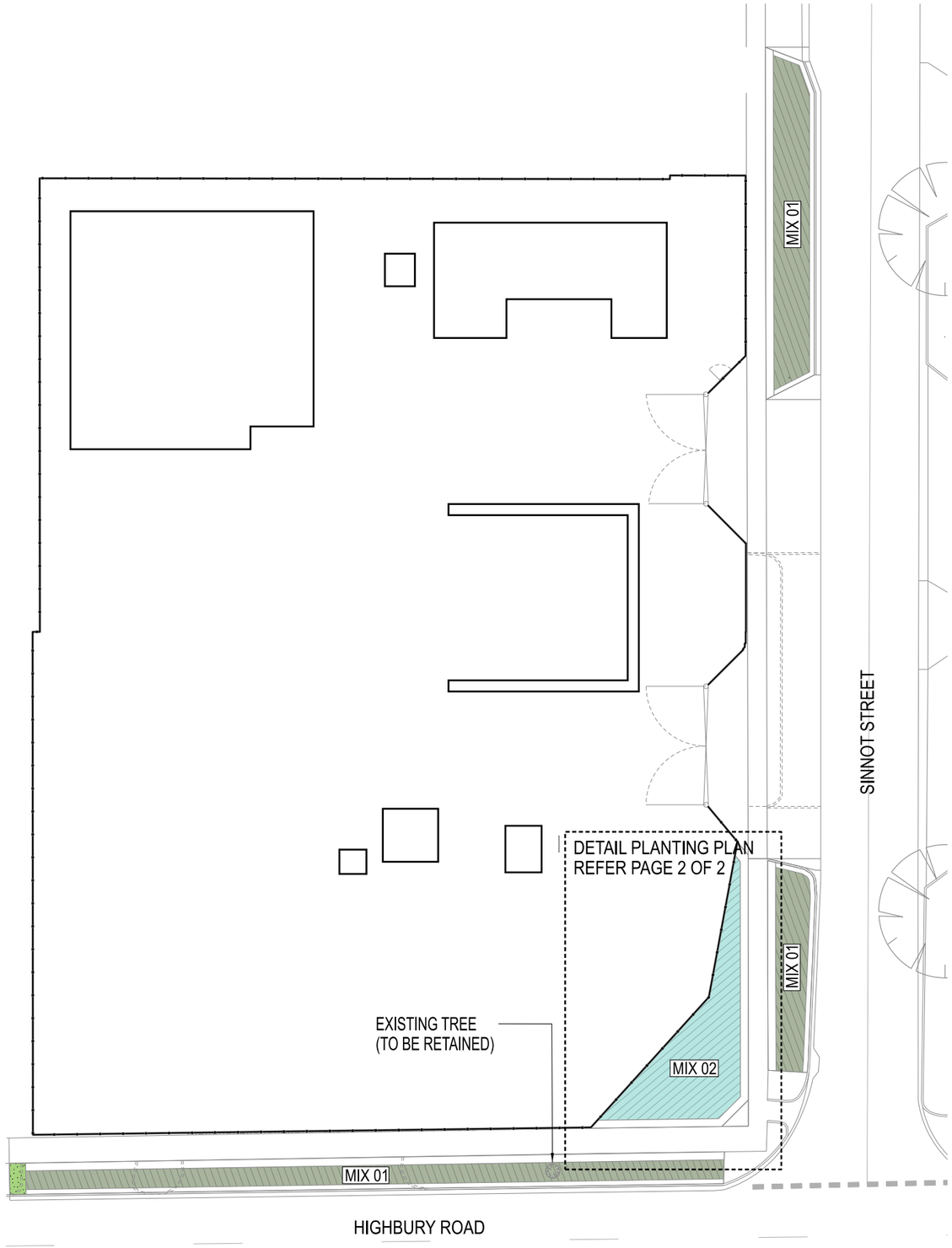
PLANTING MIX 01
DENSITY: 4-6/m2
CS - CHRYSOCEPHALUM SEMIPAPPOSUM
DR - DIANELLA REVOLUTA
LF - LOMANDRA FILIFORMIS
WF - WESTRINGIA FRUITICOSA

PLANTING MIX 02
DENSITY: 4-6/m2
BM - BRACHYSCOME MULTIFIDA
CG - CORREA GLABRA
CS - CHRYSOCEPHALUM SEMIPAPPOSUM
DR - DIANELLA REVOLUTA
LT - LOMANDRA TANIKA

GRASS
DROUGHT TOLERANT
GRASS SEED MIX



1 VERGE GARDEN BED KERB INTERFACE TYPICAL DETAIL 1:10



PLANTING PLAN - NTS

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Detail Planting Plans	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR010	E	12.06.2024	BE	NC	KM	0 1 2 3 4 5

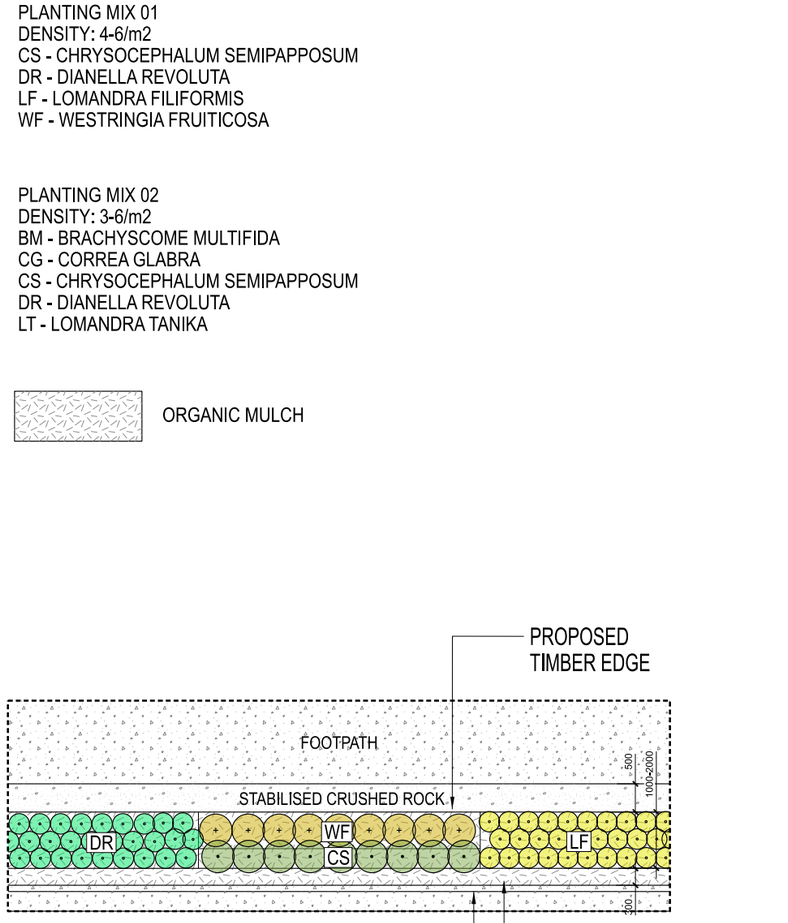
Tract

LEGEND

PLANTING MIX 01
DENSITY: 4-6/m2
CS - CHRYSOCEPHALUM SEMIPAPPOSUM
DR - DIANELLA REVOLUTA
LF - LOMANDRA FILIFORMIS
WF - WESTRINGIA FRUITICOSA

PLANTING MIX 02
DENSITY: 3-6/m2
BM - BRACHYSCOME MULTIFIDA
CG - CORREA GLABRA
CS - CHRYSOCEPHALUM SEMIPAPPOSUM
DR - DIANELLA REVOLUTA
LT - LOMANDRA TANIKA

ORGANIC MULCH



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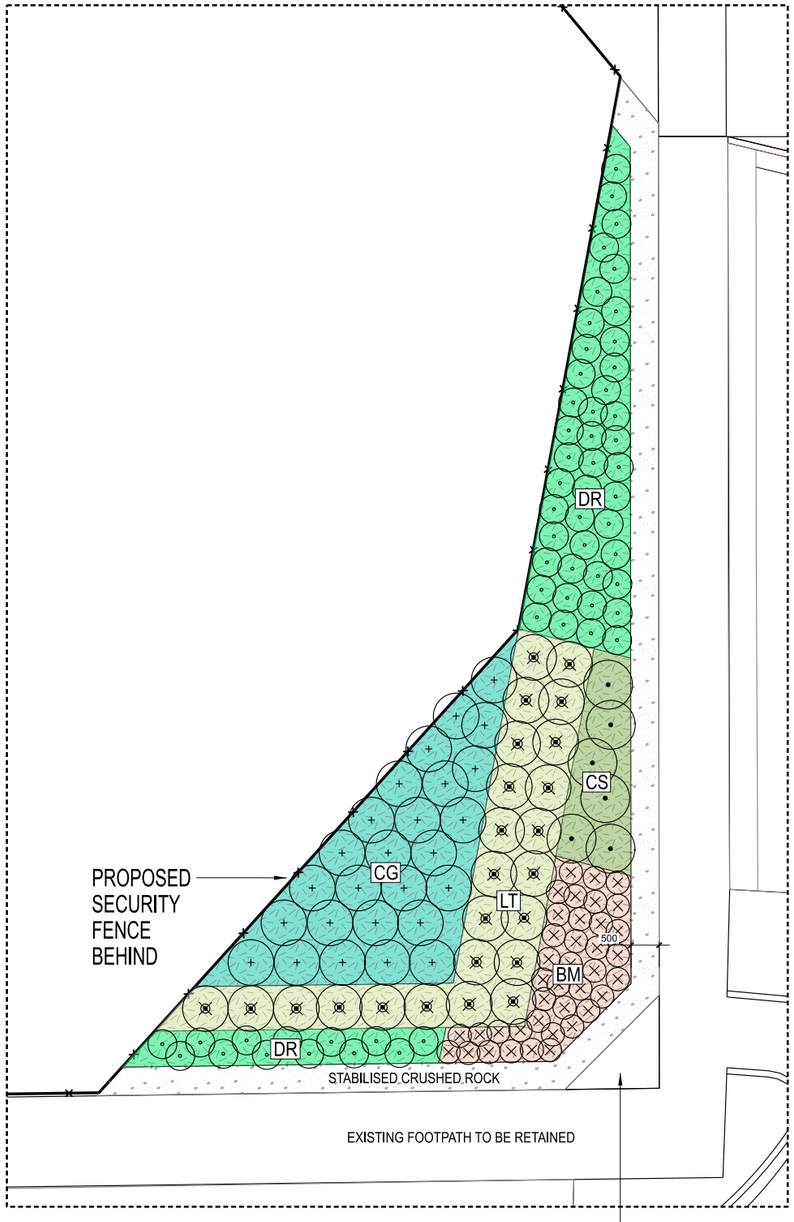

MIX 02
DETAILED PLANTING PLAN - 1:50 @A1

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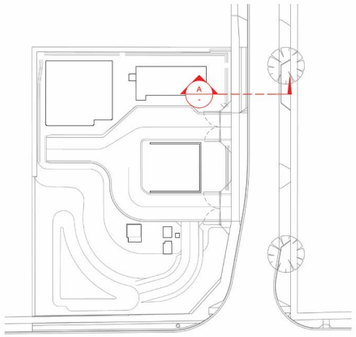
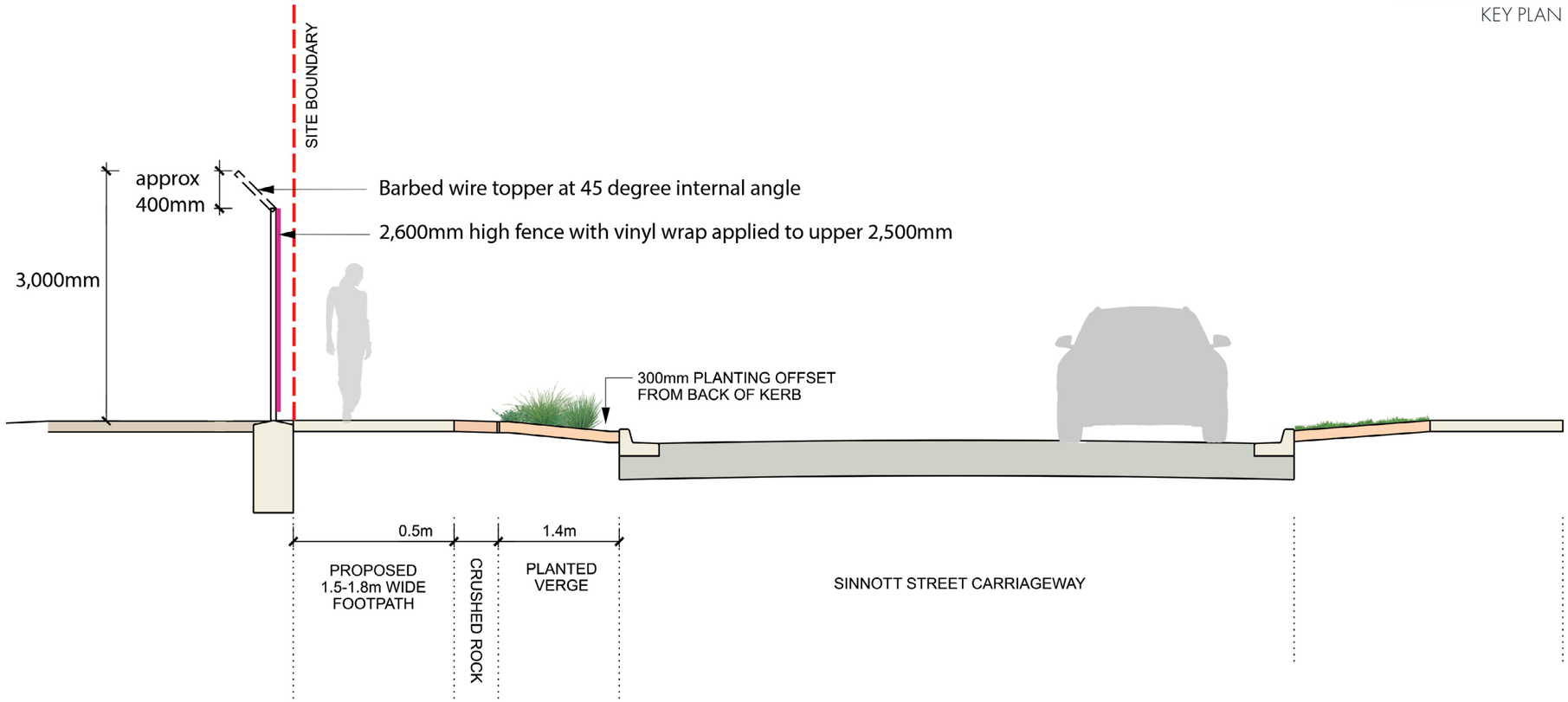


KEY PLAN



Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Fence interface detail - Section A	SRL East – Burwood Network Support Facility Urban Design and Landscape Plan	323-0434-00-U-DR012	A	12.06.2024	TS	NC	KM	0 1 2 3

Appendix B - Compliance Assessments

SUBURBAN RAIL LOOP

Burwood Network Support Facility

Urban Design and Landscape Plan Compliance Assessments

10 October 2024 / SRL East

SUBURBAN RAIL LOOP AUTHORITY

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VICTORIA State Government

Acknowledgement of Country

Suburban Rail Loop is located on the traditional lands of the Wurundjeri Woi Wurrung People to the north and the Bunurong People to the south. We proudly acknowledge all First Peoples as the Traditional Owners and custodians of the land on which we live and work, and we pay our respect to Elders, past and present.

Suburban Rail Loop Authority celebrates the world's oldest living cultures, and we acknowledge that Traditional Owners have lived sustainably in the region for tens of thousands of years. We respect their connection to Country as ongoing custodians, and their spiritual connection to the land, waterways and stories of this Country.

As we work to transform our public transport network, better connect our suburbs, and reshape how our city grows for future generations, we recognise the rich history and cultural significance of these communities. We acknowledge the traditional trade routes and ceremonial paths that First Peoples have used for millennia to connect and journey across the land we now call Victoria.

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1. Surface and Tunnel Plans

1.1 Overview

The Surface and Tunnels Plans identify, at a high level, the location of key infrastructure to be delivered through the SRL East project. Specifically, they identify the SRL East Project Boundary, land associated with the tunnel alignments, the location and entrances to the 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.

1.2 Key Directions and Requirements

The Burwood network support facility site is shown on Map 25 of the Surface and Tunnel Plans. This map identifies the future use and development of land at the north-western corner of the Highbury Road and Sinnott Street intersection for the network support facility.

1.3 Accordance with the Surface and Tunnel Plans

The design and siting of the network support facility, particularly the permanent network support facility 66kV substation building and associated electrical infrastructure as detailed and described through this UDLP, is consistent with the overall layout of Project infrastructure as detailed on Map 25 of the Surface and Tunnel Plans (see Figure 1 below). Specifically, it provides for the development of the land at the corner of Sinnott Street and Highbury Road for the network support facility.

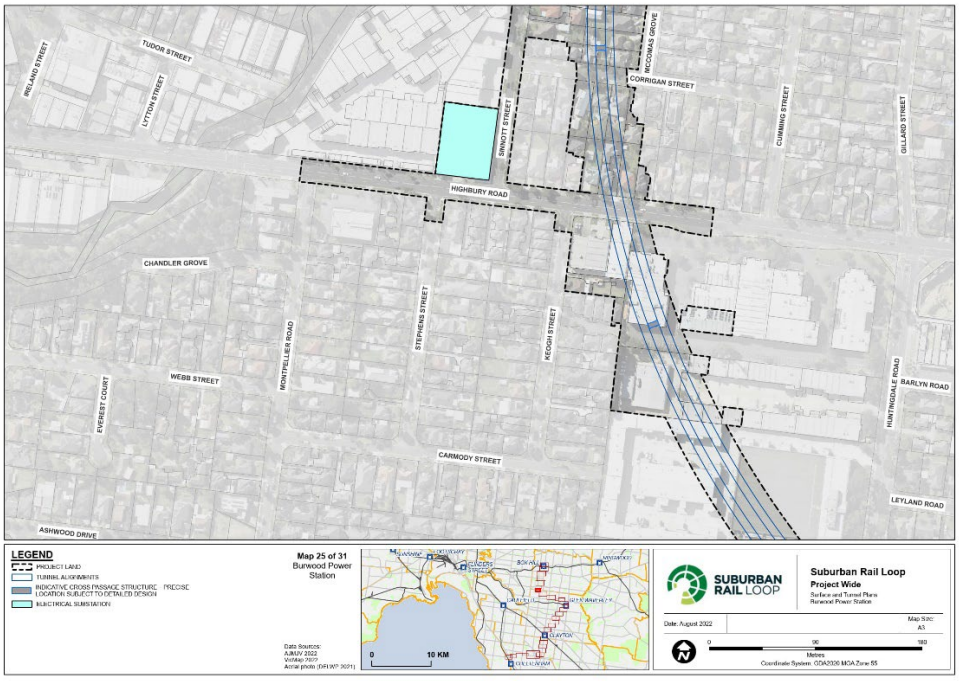

Figure 1: SRL East Surface and Tunnel Plans, Map 25 of 31

2. Urban Design Strategy

2.1 Overview

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

Urban Design Principles and Objectives

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

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 structures, public realm works, landscaping and signage.

The element-based requirements relevant to this UDLP are:

- 5.2 Substations and ancillary structures
- 5.4 Green Infrastructure
- 5.5 Creative Works
- 5.6 Lighting
- 5.10 Materials and finishes
- 5.12 Construction Phase.

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. This UDLP is located within the Burwood SRL precinct, the requirements for which are outlined at Section 6.5 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 register at Section 4 below sets out the list of the requirements of the UDS, including the Place-specific requirements for Burwood, along with an explanation of how the UDLP is in accordance with each.

3. Environmental Performance Requirements

3.1 Overview

The design, construction and future operation of the Burwood network support facility and associated electrical infrastructure and equipment is 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 complies with the relevant EPRs as identified in the approved EMF.

The compliance register at Section 5 below lists all Project EPRs and assesses how the design and construction of the network support facility, as described through this UDLP, will comply with each.

4.UDS Compliance Register

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 permanent network support facility 66kV substation building has been designed to integrate with the future built form context and vision for the Burwood SRL precinct. Whilst the nature of electrical infrastructure requires the built form design to largely be dictated by operational and safety requirements, its overall form, materiality and colour finishes have all been specifically chosen for their longevity and ease of maintenance, allowing for future enhancements if required as part of the transition from construction to operational power requirements.
UD1.2	Future ready - Ensure the design catalyses urban renewal, encouraging the evolution of the precincts and changing uses over time.	The design, siting and treatment of the permanent network support facility 66kV substation building, as well as the temporary buildings, structures and other infrastructure described through this UDLP, has been based on careful consideration of the potential impacts of development staging within the broader Burwood SRL precinct. A key driver in the design process was to ensure that the network support facility delivered through this UDLP provided a positive and flexible outcome in its current context on its own merits, whilst also visually and functionally integrating with planned future changes and improvements to the surrounding public realm. This has been achieved by: • Improving the site's contribution to the public realm along Highbury Road and Sinnott Street through provision of enhanced landscaping within the abutting verges and corner splay, and integration of creative graphics to the perimeter fencing • Siting the largest structure (66kv building) to the most secluded corner of the site to reduce potential for visual bulk.
UD1.3	Resilient - Ensure the infrastructure, buildings and places can survive, adapt and thrive when subjected to stresses and acute	The network support facility layout has been designed to accommodate current and future electrical infrastructure sufficient to provide sufficient power supply to service

	shocks such as changes in climate and technology, and extreme events.	the construction and future operational needs of the SRL network, based on projected population growth, demand and climate variability.
UD1.4	Environmentally sustainable - Optimise environmental performance and embed sustainability initiatives into the design response of the infrastructure project and surrounding precinct.	The 66KV building, hardstand and other built form elements have been designed to maximise the use of recycled materials in its construction. Noting that the requirement for 100-year design life limits the use of certain materials - particularly recycled items. The use of recycled fibres in concrete construction would not satisfy structural technical requirements such as fire resistance. Security lighting will be motion sensor activated and use Led bulbs, maximising energy efficiency. Equipment within and surrounding the building that can be reused or refurbished will be considered with the asset owner.
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 network support facility forms part of the broader Burwood SRL precinct. Whilst physically separated from the future station itself, Sinnott Street is identified within the UDS as a key pedestrian route to the station from the south and consequently may be further enhanced and embellished in accordance with its function within the broader pedestrian and cyclist movement network. The design presented through this UDLP responds to these future conditions through the inclusion of creative elements and design treatments to the perimeter fencing to provide an attractive and visually appealing interface to this key route during the construction period. The siting and design of other key elements facilitated through this UDLP, including delivery of service corridors and electrical conduits, has also been carefully considered to ensure it will not constrain opportunities for future enhancements to the streetscape to be considered through the UDLP developed for the SRL station and surrounding precinct works.
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.	See response to UD2.1 above, noting that for safety and operational reasons direct activation and integration of the network support facility with the broader streetscape is not desirable and public access is explicitly deterred by the design as a result.
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.	See response to UD2.1 above.
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.	No public access is to be provided to or through the network support facility for safety and operational reasons. This is in keeping with existing conditions, noting that there are no meaningful opportunities for new links or connections to be delivered given the Site abuts private land to the north and west. As discussed in the response to UD2.1 above, the design and treatment of the streetscape interface proposed through this UDLP at a minimum maintains existing pedestrian and cyclist routes on both Sinnott Street and Highbury Road. The treatment improves the pedestrian linkage along Sinnott Street by extending the footpath approximately 40m. The design and treatment of the streetscape will also not constrain opportunities for future upgrades to footpaths or the verge being considered through the preparation of the future UDLP for the SRL station and associated precinct works.
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.	See response to UD3.1 above.
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.	See response to UD3.1 above. The design proposed through this UDLP preserves existing sightlines and wayfinding on Sinnott Street and Highbury Road through incorporating low, compact landscape forms within the proposed landscaped garden bed. The proposed fencing has been sited to ensure view lines at the corner are not compromised, with the fencing at the corner being set back into the site. This further enhances planting opportunities on Site and enables clearer view lines at the corner.
UD3.4	Green network - Facilitate green networks that link public and private open space and support urban ecology, biodiversity and cooling.	No planting or landscaping is able to be accommodated within the network support facility Site itself due to safety and clearance requirements, as discussed at Section 3.1.1 of the UDLP report. The proposed landscape design within the abutting nature strips and the corner splay incorporates a mix of species and increase overall vegetation cover over current conditions, noting that the urbanised nature of the surrounding area reduces the potential for meaningful ecological or habitat outcomes to be achieved.
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.	See response to UD3.1 above. Whilst there are no opportunities to provide public access within the Site, the existing condition on Sinnott Street is significantly improved through the extension of the footpath an additional 40m. Any further improvements or enhancements required to pedestrian and cyclist routes on Sinnott Street or Highbury Road to maximise accessibility will be further assessed and considered holistically as part of the wider package of public realm improvements to be delivered through construction of the SRL Station at Burwood, under a separate UDLP process.

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	See responses to UD3.1 and 4.1 above.
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.	See response to UD 3.1 above.
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.	Safety and other CPTED principles have been addressed through this UDLP by siting all permanent and interim electrical infrastructure as far away from the public realm as possible, with the perimeter fencing providing a physical and visual barrier to deter public access, eliminate the potential for hidden or unsafe spaces, and reduce the potential for the network support facility to become a focus for vandalism and anti-social behaviour. Existing street lighting providing consistent illumination and visibility along footpaths and the broader streetscape will provide further visual deterrent.
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 Site and immediately adjacent properties are not formally identified as being of local heritage value or significance. However, the design provides an opportunity for the celebration and enhancement of local culture and identity through the inclusion of the creative surface treatments and associated design process run through the SRLA Creative Advisory Panel, in consultation with the community.
UD5.2	Responsive - Design to respond, connect and build on the unique and valued social, cultural, physical and economic aspects of the precinct.	See response to UD5.1 above. The final design and treatment of all creative surface treatments is subject to separate development through the SRL Creative Advisory Panel, in consultation and collaboration with the community and key stakeholders.
UD5.3	Sensitive - Sensitively enhance landscape and urban realm outcomes; and minimise negative physical and visual impacts associated with the new infrastructure.	The proposed perimeter fencing and associated design treatments will effectively screen primary views from the public realm to electrical infrastructure within the site, with those elements visible above the fencing being set back towards the rear of the site and/or only partially visible, minimising overall bulk and impacts to the streetscape.

		Enhanced landscaping within the nature strips and within the corner splay has been designed to complement the fencing treatment by screening views to the uncovered section at the base of the structure and soften its overall appearance when viewed by passing motorists on Sinnott Street and Highbury Road as well as existing residential properties to the east and south. The planting will also provide additional visual amenity and interest for pedestrians using the footpath directly abutting the Site, providing a green "transition" along Sinnott Street and visual link to vegetation and open space within the Gardiners Creek Reserve which characterises views through to the north.
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.	See response to UD3.1 above.
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 above.
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.	See response to UD3.1, noting that no public access is proposed or desirable through the network support facility itself for safety reasons.
UD6.2	Landscape values - Create a coherent and engaging landscape response that embraces natural qualities, community and cultural values.	As discussed at Section 3.1.1 of the UDLP report, opportunities for integration of landscaping into the design response for this development are significantly constrained by safety and clearance requirements associated with both temporary and permanent electrical infrastructure. Noting that the proposed built form within the Site will primarily be read as part of the surrounding light industrial 'pocket'- characterised by high levels of site coverage and hard surfacing - the landscape response has consequently focused on the public realm through inclusion of enhanced landscape plantings within the adjoining nature strip. These plantings primarily comprise compact shrubs and ground covers to complement the artistic treatments to the fencing and provide a visual link to the surrounding garden suburban neighbourhood character. Further, the corner fence has been set back significantly to accommodate additional planting, as well as to ensure visibility for pedestrians, cyclists and vehicles around this corner. This area will be significant with respect to the landscape response as it will be seen as the 'focal point' of the Site for those travelling through the intersection.

UD6.3	User experience - Enhance the journey and precinct experience for local communities, visitors and transport users.	See response to UD6.2 above.
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 above.
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.	See responses to UD2.1, 3.1 and 5.1 above.

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	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: a. 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 b. Building mass — minimising the footprint and bulk of above ground service buildings and rail infrastructure to minimise their visual impact c. Design — improving place outcomes	The sole purpose of the network support facility is to provide power supply for construction of the underground SRL tunnels, and subsequently operational source to the Burwood SRL Station, both during construction and operation. Overall visual bulk has primarily been managed through the siting of the 66kv building within the most inward corner of the site - being the north-west. The smaller, ancillary structures have been placed closer to the public realm to create an appropriate gradation of form and ensure they are fully screened by the perimeter fencing.
5.2.2	Activation of Substations and ancillary structures is maximised through a combination of: a. 'Sleeving' with active building uses b. Elevating infrastructure and locating active uses at the street level below c. Locating active uses on top of the infrastructure.	Activation of the network support facility through co-location of other uses is precluded by safety risks associated with proximity to high voltage power and cannot be accommodated through this UDLP.

5.2.4	Substations and 'larger-scale' ancillary structures such as ventilation structures, excluding tunnel portals and dive structures: a. Are sensitively sited and well-integrated to minimise negative impact on the surrounding area and adjacent communities b. Are well-designed and make a positive contribution to the identity of the local area through their architectural form, texture, colour and lighting c. Maintain the quality of design detailing and material selection to all visible elevations, acknowledging that buildings and structures will be viewed from numerous locations within the broader context including from the public realm and surrounding development d. Comprise elements that are well-coordinated, neat and attractive while minimising opportunities for vandalism e. Minimise their visual bulk through the use of landform and vegetation, articulation of facades and roof forms, and innovative design	See response to 5.2.1 above.
5.2.5	Where not avoidable, blank walls visible from the public realm: a. Are minimised, especially between ground and first floor levels b. Are designed and executed as an integrated three dimensional component of the building c. Employ tactile and visually interesting materials near the public interface, and durable, low maintenance materials in the higher parts of the building d. Reinforce the human scale by integrating elements at door, window and floor heights e. Integrate lighting as part of the overall architectural response to make a positive contribution to night-time amenity and place identity	Views to built form and structures within the site from the public realm will largely be screened by the perimeter security fencing. Where elements are visible above this, they are constructed in a variety of finishes and materials including steel-clad structures and pre-cast concrete panel structures. A coordinated palette of recessive grey, taupe and cream shades will be applied to these buildings providing contrast and visual delineation between the individual buildings and minimising their overall prominence when viewed against nearby development.
5.2.6	Substations and ancillary structures are designed to: a. Accommodate access requirements while minimising impact on the amenity and functionality of the public realm b. Integrate elements such as vents, openings, doors and hatches, into the architectural scheme.	Access into the site is via the two existing crossovers on Sinnott Street which accommodate an internal circular driveway. Views to this driveway, along with vents, openings, doors and hatches to the network support facility structures, will not be visible from the public realm due to the height and treatment of perimeter fencing and access gates.
5.2.8	Walls, fences or other barriers are well-designed and: a. Use robust and durable materials b. Are well-integrated with the surrounding structures, landscape and urban elements c. Minimise the potential for vandalism and graffiti through material selection, detailing and positioning	Solid perimeter fencing will be provided to the majority of the extent of the Highbury Road and Sinnott Street frontages in order to prevent public access and provide security to electrical infrastructure. The proposed fence is setback into the site at the corner, creating the opportunity for a deep landscaped garden bed. This will be constructed of steel and covered with vinyl wrap on a sail-track system,

	d. Eliminate potential concealment places and entrapment spaces, and maximise perceptions of safety and security e. Have consistently high levels of presentation to all elevations visible from the public realm f. 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.	providing a robust, high quality built form and design interface with the public realm. The vinyl wrap will act as a “canvas” for artwork and design elements, to be developed and confirmed through the SRL Creative Advisory Panel process in consultation with the local community. An inward-angled barbed wire topper is required in accordance with the appropriate technical standards, and to ensure that the Site is safely secured.
5.2.10	New infrastructure is designed and implemented to support SRLA’s sustainability strategy and associated targets.	All infrastructure and associated built form have been designed in accordance with SRLA's sustainability strategy.
5.4	**Green infrastructure**	
5.4.2	The design of new infrastructure and the siting of elements: a. Minimises removal of mature trees, planted and remnant native trees, particularly large amenity trees 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.	The network support facility site is located within an established light industrial area. There is no existing vegetation or known biodiversity values within or immediately proximate to the site which will be impacted by the works proposed in this UDLP. There is an existing tree located in the adjacent nature strip on Highbury Road, however this will be retained and unaffected by the UDLP works.
5.4.3	The Design optimises the number of trees and extent of tree canopy and landscaping	There are no opportunities for canopy tree planting within the Site, given security, safety and clearance requirements. The height and location of planting within the abutting verges has been developed in accordance with the relevant Whitehorse City Council guidelines, taking into account the likelihood of additional utility services and connections to be required in this space as part of the conversion to operational power supply. Additionally, the corner fence has been set back significantly to provide further space for landscaping opportunities, as well as to ensure appropriate sightlines around the corner. The design does not preclude the future provision of street trees within these verges following confirmation of the final location and spatial requirements of utility infrastructure. This will be further assessed and considered through preparation of the UDLP for the ultimate network support facility development, by others.

		See response to 5.4.5 below for further detail.
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.	See response to 5.4.3 above regarding constraints to the location and area available for landscaping. The proposed landscape concept comprises drought-tolerant low level planting, which lessens the requirements for maintenance and provides a more future-proofed outcome. Flowering plants have also been included to provide potential food and habitat for pollinator species, noting that the urbanised nature of the surrounding environment limits the ability for this planting to meaningfully contribute to local biodiversity and habitat.
5.4.5	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: 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	Canopy tree planting cannot be incorporated within the network support facility due to security, safety and clearance requirements. Whilst narrower and/or compact ornamental trees could potentially be viable within the adjoining nature strip, given the likely disruption and/or removal of this landscaping to facilitate construction of the ultimate operational network support facility infrastructure and associated service infrastructure any tree planting would likely be removed prior to maturity, limiting potential benefits to amenity and place.
5.4.6	Opportunities to create fauna habitat and links and enhance biodiversity are maximised.	As outlined above, landscaping opportunities on the site are limited. However, it is recognised that given the highly urban nature of the site, and lack of existing biodiversity value, opportunities to create fauna habitat and links would already be

		minimal.
5.4.7	Habitat is created and biodiversity enhanced to complement connected and adjoining sites: 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.	See response to 5.4.6 above.
5.4.8	Use of potentially invasive environmental weed species is avoided throughout the Project.	The proposed planting schedule does not include listed noxious weeds or plants identified by Whitehorse City Council as local weeds.
5.4.9	Canopy tree planting and vegetation 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.	See response to 5.4.3 above, noting spatial, security and safety limitations on inclusion of canopy trees.
5.4.10	The use of potable water for irrigation is minimised and designs 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	Incorporation of passive irrigation, outside of supplementary run off from the adjoining footpath, has largely been precluded due to site constraints and the limited area available for landscaping. The proposed plant schedule incorporates robust, drought tolerant species which require minimal supplementary irrigation.
5.4.11	Landscape buffers: 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	See response to 5.4.3 above regarding constraints within the Site precluding the provision of a landscape buffer. A considered landscape response within the verges along Sinnott Street and Highbury Road, as well as the corner splay, has been provided instead. The proposed planting palette and landscape concept has been designed to these conditions, with sufficient space available for delivery of a “layered” planting outcome incorporating different heights and forms.
5.4.12	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	Green roofs and similar initiatives could not be accommodated within the design response due to functional, security and safety requirements associated with the network support facility infrastructure.

5.4.13	Landscaped areas minimise the steepness of the grade to support long-term plant establishment and growth, and to minimise mulch and soil loss	Grades within the verge landscape beds are suitable for long-term plant establishment and growth. The arrangement of verge landscape beds are a result of discussions with Whitehorse City Council in line with their expectations for the area. Further, this is in line with surrounding topography, and creates limited potential for erosion or soil loss.
5.4.14	Planting is selected, located and able to be maintained to achieve clear sight lines for safety and wayfinding.	The landscape design incorporates compact low bushes, shrubs and groundcovers which will be located within the verges, whilst remaining outside key sightlines on Highbury Road and Sinnott Street. Additionally, the corner fence is set back significantly to ensure appropriate sightlines around the corner, and as such, will comprise low planting. Planting is in line with the Whitehorse City Council Naturestrip Planting Guidelines.
5.4.15	Landscape areas are clearly defined and are not left-over and undesirable spaces.	As discussed in Section 5.4.3, security, safety and operational requirements have dictated where landscaping can and cannot be achieved on the Site. Landscaping has been selected to be located in the verge of Sinnott Street and Highbury Road to enhance the pedestrian experience, whilst providing enough space for meaningful planting. Some landscaping has been able to be accommodated within the Site, specifically within the corner splay area. The corner fence is set back into the site, providing space for appropriate landscaping. However, given the importance of sightlines around the splay, low planting has been selected. As such, the landscaping is located in the most visually prominent and effective location when viewed from the public realm.
5.4.16	A 'water-sensitive urban design' (WSUD) approach is used to support water management objectives and achieve a broad range of community and environmental benefits.	Due to the location of future works and construction activities immediately adjacent to the network support facility compound, upfront delivery of permanent WSUD treatments has not been included in this UDLP. Potential impacts to water quality have been addressed through minimising the overall level of hard surface and run off generated by the development. This includes incorporation of a gravel, rather than concrete, base within the network support facility compound to maximise opportunities for infiltration of flows.
5.4.17	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.	See response to 5.4.16 above. The future UDLP to be prepared for the SRL station at Burwood and associated precinct works will also identify and consider opportunities for integration of IWM principles and infrastructure, to maximise the potential effectiveness of these treatments and ensure they are implemented holistically as part of a broader system.
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 above.
5.4.19	Drainage and WSUD infrastructure including retarding basins is well located and integrated into the design of the public realm and	

	does not adversely impact on the primary functions of the space, nor limit the ability to: a. Provide trees and landscaping to manage visual impacts and provide amenity b. Enhance recreational values and contribute positively to the quality and function of the open space c. Maximises opportunities to replicate natural processes in the treatment of water, andenhances stormwater management outcomes, as well as broader urban design andecological values.	
5.5	**Creative Works**	
5.5.1	Any creative works and initiatives: a. Are well-integrated into built outcomes and surrounding context b. Are appropriately located and do not impede pedestrian circulation, lines of sight, maintenance, service or emergency vehicle access c. Are located and designed to support interchange user information cognition and experience d. Are responsive to the local environment, culture and sense of place e. Embrace opportunities for the contemporary interpretation and celebration of Indigenous and non-Indigenous history and cultural heritage f. Are responsive to the architectural and public realm design g. Are of appropriate scale.	Given the restricted footprint available for construction of the required network support facility electrical equipment and restrictions on the type and treatment of materials in proximity to high voltage electrical infrastructure, opportunities for integration of creative works are limited to surface-based treatments to the perimeter fencing. This fencing will be used as a 'canvas' for the display of creative imagery and artistic treatments, to be applied via a vinyl wrap to the fence structure. This will provide a visually pleasing streetscape outcome as well as create a sense of identity for the site prior to delivery of the SRL station at Burwood and broader precinct works.
5.5.4	The location and design of creative works: a. Minimises risk of damage from routine uses and maintenance activities b. Allows them to be accessed, maintained and operated in line with community expectations and the requirements of the ultimate asset owner	See response to 5.5.1 above. Creative works are limited to the proposed perimeter fencing.
5.10	**Materials and finishes**	
5.10.1	Built form and public realm materials are of high quality and are used to: a. Create atmosphere and contribute to amenity b. Establish or enhance a sense of identity that responds to local context, expresses local history and character	The materials selected for proposed built form and structures, where visible above the perimeter fencing comprise pre-cast concrete panels and steel-cladding. These are high quality and durable with respect to their estimated lifespan on the site and the purpose they provide.

	c. Make the place memorable and contribute to a positive user experience	The perimeter fencing is to be constructed of steel, which is both durable and provides a physical barrier to access by trespassers, with a barbed wire topper. This also allows the vinyl wrap to be attached via a sail-track system, which is more secure and less susceptible to damage than other methods. The 66KV building, hardstand and other built form elements have been designed to maximise the use of recycled materials in its construction. Notign that the requirement for 100-year design life limits the use of certain materials - particularly recycled items. The use of recycled fibres in concrete construction would not satisfy structural technical requirements such as fire resistance. Security lighting will be motion sensor activated and use Led bulbs, maximising energy efficiency.
5.10.3	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: a. Is easy to maintain, and replace with minimal impact on the integrity of finishes b. Will weather and age well over time	The design response incorporates utilises readily available materials and colour finishes, such as Colorbond steel, which are both durable and can easily be maintained and or replaced with like-for-like treatments.
5.10.4	Selection and application of materials and finishes discourages and minimises the potential for vandalism including graffiti.	Given the non-porous nature of the vinyl wrap, any graffiti can be easily removed without compromising the quality or integrity of the creative surface treatments.
5.10.5	Opportunities are maximised to use materials that are recycled, recovered, have lower embodied energy and are ethically sourced.	Key opportunities identified for the network support facility development include the use of reused content in pavements, concrete and fill materials. This will be further reviewed and confirmed through the detailed engineering design process.
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.	The proposed finishes to the permanent network support facility 66kV substation building and fire walls comprise a mix of beige and grey Colorbond steel and tinted concrete oxides. These are light enough to reduce potential heat retention whilst also avoiding reflectivity and glare.
5.10.7	Construction methodology supports well-designed detailing and durable finishes	See response to 5.10.1 above.
5.10.8	The palette of hard and soft landscape elements is coordinated with any local government strategy, guideline or palette where relevant.	All landscape elements have been selected to be consistent with the Whitehorse City Council's landscape guidelines, with plant species chosen from the local pre-1750 Ecological Vegetation Class (EVC). No local or state environmental weeds have been included.
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.	The proposed perimeter fencing will be in place for up to 7 years pending construction of the ultimate operational network support facility infrastructure. The design, materiality and landscape treatment to this fence has been carefully selected to ensure it presents a quality and durable addition to the surrounding

		streetscape and enhances, rather than detracts from, outlook from existing residences on the eastern side of Sinnott Street.
5.12.2	Enclosures, hoardings, screens and temporary barriers: 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 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.	The proposed perimeter fencing is constructed from steel treated with vinyl wraps to provide a high quality, robust finish which provides opportunities for visual enhancement of the site and streetscape through inclusion of creative surface treatments.
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).	The design provides for enhanced landscape planting within the abutting verges and the corner splay, noting that the final landscape design for these areas – including the potential for street trees or additional planting - will be considered through the future UDLP for the SRL station at Burwood and associated precinct works.
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.	Access to the footpaths on Sinnott Street and Highbury Road will be maintained during the construction of the works identified in this UDLP. Any temporary impacts to on-street parking or property access will be managed in accordance with the Worksite Transport Management Plan and WEMP prepared for the network support facility works as part of overall construction management.
5.12.6	Temporary landscape treatments, features or screening are reused across the Project, where appropriate.	Opportunities for reuse of the perimeter fencing and temporary materials within the network support facility site will be considered as part of the relevant Recycle First and Sustainability Management Plans. The potential for retention and further enhancement of the nature strip and corner splay planting as part of the ultimate development of the network support facility for operational power supply will be further considered and confirmed through a future UDLP process.
5.12.7	Opportunities to recycle and reuse excavated materials, site materials, site elements (including demolition materials), and any	Due to limited site availability at the Burwood Network Support Facilty site, it is not possible to stockpile and reuse excavated material on the site. Recycled products are utilised where possible.

	trees removed as part of the Project, are maximised to create new valued design outcomes	

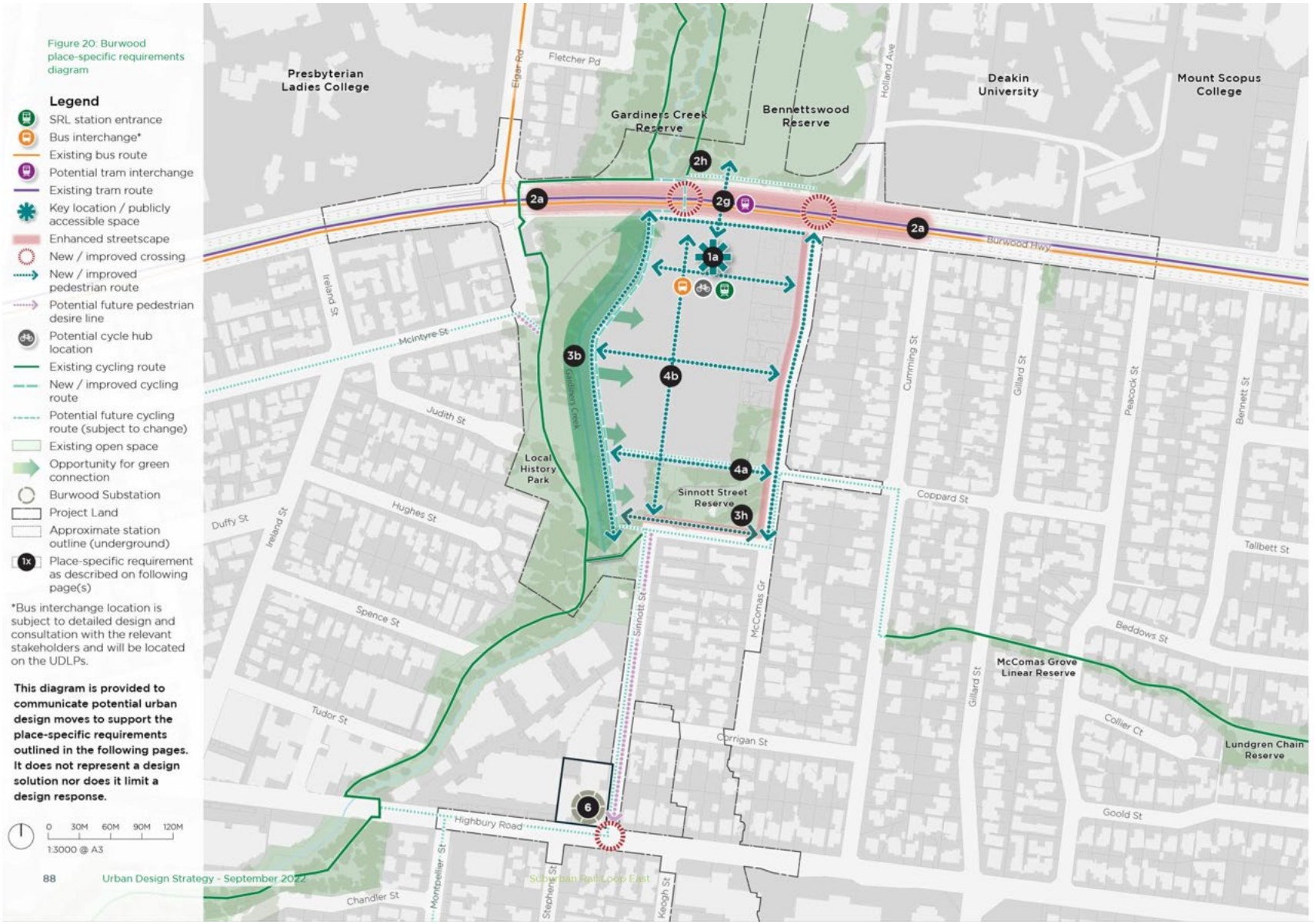

*Figure 2: Burwood Place Specific Requirements Diagram (SRL East UDS, p. 88)_*

Table 3: Assessment against UDS Place-Specific Requirements – Burwood

6.5 Place-specific requirements – Burwood		
Reference	**Requirement**	**Response**
Outcome BUW 6 A well-designed Substation that maximises positive place outcomes for the surrounding area.		
6a	Provide a strong architectural concept that authentically reflects the purpose of the Substation.	The only permanent structure to be delivered through this UDLP is the 66kV building. The design treatment of this building has deliberately been kept simple in order to maintain flexibility for its future enhancement and/or embellishment once the network support facility is modified for operational power and the final architectural theme and treatments for the development as a whole are resolved through a future UDLP process.
6b	Minimise negative impacts on the character and amenity of the area and on sensitive residential interfaces that overlook the site by providing well-designed built edges, screens and walls: i. To create a built form interface to Sinnott Street and Highbury Road that is well-considered in scale and articulation ii. To complement the established streetscapes of the site's residential context iii. To screen negative views of unsightly elements and service areas iv. To create an architectural interface that contributes positively to the public realm, and feels comfortable and friendly to people walking next to it v. That are not reliant on the establishment of plants and landscaping for success.	Potential visual impacts from the 66kV building to the streetscape and nearby residential properties to the east will primarily be mitigated by the perimeter security fence. At 2.6m in height, this will screen the majority of direct views to electrical equipment and associated infrastructure with the application of the vinyl wrap and associated creative treatments providing activation of the adjoining streetscape and improving the overall visual presentation and appearance of the fence. Planting within the abutting nature strip and corner splay will further enhance the overall aesthetic appearance of the development, as well as providing a visual connection to the surrounding 'garden' landscape character on Sinnott Street.
6c	Use materials that respect and complement the existing residential neighbourhood character.	Due to the interim nature of the majority of built form to be delivered through this UDLP, external materials have been predominately selected in accordance with safety and functional requirements. Notwithstanding, where built form is visible from the public realm (ie above the perimeter fencing), muted taupes, green and grey colour finishes have been incorporated to reference and respond to residential fencing and dwelling designs in the immediately surrounding area.
6d	Provide a high-quality architectural response to the prominent corner site.	See response to 6a above.
6e	Provide landscaping within the project boundary to create an interface with Sinnott Street and Highbury Road that achieves a	Due to clearance and safety requirements associated with high voltage power landscaping for this stage has not been able to be accommodated along the Site boundaries, other than where the fence has been setback at the corner of

	balance of planted areas and architectural built form that reflects the surrounding neighbourhood landscape character.	Highbury Road and Sinnott Street. The majority of landscape planting will be provided within the abutting verge on the west side of Sinnott Street and abutting verge on the north side of Highbury Road, which fall within the broader SRL East project boundary. The current landscaping design does not preclude any future landscaping opportunities.
6f	Ensure the Substation design allows for a continuous green streetscape adjacent to the Substation site to reflect the treed character of Burwood.	The proposed nature strip and corner splay planting will provide an enhanced greening outcome in the streetscape when compared to current conditions, particularly at the northern end of the site. The footprint and alignment of underground cables and service connections from the network support facility has been carefully designed to minimise encumbrances within the adjacent verge preserving the opportunities for street tree planting and additional landscape treatments to be incorporated through the future UDLP prepared for the ultimate network support facility development.
6g	Locate maintenance access driveways carefully, to maintain and provide for continuous street tree planting and safe, attractive pedestrian and cycle routes.	The network support facility access is via two existing crossovers off Sinnott Street. The existing double width crossover to Highbury Road is being removed and replaced with verge landscaping. In addition, the indented parking bays on Sinnott Street are being removed and replaced with verge landscaping. The footpath along Sinnott Street is also being extended approximately 40m, providing an improvement from the existing condition.

4. EPR Compliance Register

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** 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.	An EMS has been developed in accordance with ISO 14001:2015, which will be implemented and maintained by the Managing Contractor
Environmental Management Framework	EMF2	**Develop and deliver the Project in accordance with Management Plans** 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: 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	The Managing Contractor has prepared and is required to implement an Environmental Strategy and all relevant Management Plans

		availability of on-site hydrocarbon spill kits.	
Environmental Management Framework	EMF3	**Audit and report on environmental compliance** 1. Appoint an Independent Environmental Auditor (IEA) to: a) Review the Environmental Strategy, CEMP, WEMPs, OEMP and other plans required by the EPRs for compliance with the EMF and the EPRs. 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.	An IEA has been appointed who will be responsible for review and verification of environmental compliance documentation
Environmental Management Framework	EMF4	**Develop and implement a complaints management system** 1. Develop and implement a system for recording, managing, and resolving complaints received from affected stakeholders. The complaints management arrangements must: 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	The SRL Authority (SRLA) has established a complaints management system

		respond to complaints, instant acknowledgement and assessment of complaints and provision of summary of outcome to complainant as required. Ensure the complaints management system is consistent with the communications and stakeholder engagement framework required under SC1.	
Aboriginal Cultural Heritage			
Aboriginal Cultural Heritage	ACH1	**Comply with the Cultural Heritage Management Plan** 1. Implement and comply with Cultural Heritage Management Plans (CHMPs) approved under the Aboriginal Heritage Act 2006.	This UDLP is located within the activity area of CHMP 18527 (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.
Air Quality			
Air Quality	AQ1	**Develop and implement an Environmental Air Quality and Dust Management Plan (EAQDMP)** 1. Develop and implement an Environmental Air Quality and Dust Management Plan (EAQDMP) for each site in consultation with the EPA. 2. The plans must: 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:	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.

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 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. 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).	Pre-construction arboricultural assessments have been undertaken for all trees adjacent to this UDLP area. This data has informed the preparation of this UDLP and preparation of the Tree Protection and Removal Plans under AR2 and AR3 below.

		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	**Develop and implement Tree Removal Plans** 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: 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.	There are no existing trees being removed within the network support facility land or UDLP boundary. As such, this is not relevant.
Arboriculture	AR3	**Develop and implement Tree Protection Plans** 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 *Protection of Trees on Development Sites*. 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: a) River Red Gum (*Eucalyptus camaldulensis*) (CH-8113) at 66 Mattheison Street, Cheltenham b) Peppercorn Tree (*Shinus molle*) (CL-4056) at the existing Clayton Station	See response to EPR AR2 above.

		c) Lone Pine (*Pinus halepensis*) (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.	
Arboriculture	AR4	**Develop and implement a Tree Canopy Replacement Plan** 1. Develop and implement a Tree Canopy Replacement Plan to replace double the amount of tree canopy cover (m^2) removed as a result of the Project in each local government area by 2050. 2. Ensure the Tree Canopy Replacement Plan: 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 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	SRLA has prepared a Tree Canopy Replacement Plan. Tree replacement is a project-wide requirement. No trees are required to be removed to facilitate the works required under this UDLP, and due to operational and safety requirements associated with the network support facility tree planting within or adjacent to the site cannot be facilitated under this UDLP.

		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. 7. Provide replacement tree canopy in accordance with the Tree Canopy Replacement Plan.	
Business			
Business	B1	**Minimise disruption to businesses, including from acquisition** 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.	All land subject to this UDLP has or will be acquired by SRLA prior to commencement of the works.
Business	B2	**Provide support to businesses that are relocating due to acquisition** 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: a) Consultation with owners and tenants of commercial properties: 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. 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.	SRLA will manage the land acquisition process in accordance with these guidelines.
Business	B3	**Prepare and implement a Business Disruption Mitigation Plan** 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	The Early Works Business Disruption Management Plan (BDMP) for the Burwood Precinct

		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. 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: a) Promotion and marketing to encourage patronage of businesses in proximity of construction sites. 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. 3. Include the following in the BDMPs: 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. 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. 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.	specifically focuses on potential impacts to the light industrial/commercial businesses adjacent to the network support facility site, north and west of the Highbury Road/Sinnott Street intersection. This includes the abutting properties to the north and west of this UDLP. Actions identified for these properties are primarily focused on minimising disruption from noise, vibration, and temporary changes to access arrangements (e.g., partial lane closures to facilitate utility works) during construction of surrounding works, and will primarily be addressed through the relevant EPR management plans and support processes. In addition to the above, this UDLP has incorporated additional design measures to minimise disruption once the network support facility is operational, including noise mitigation through enclosure of all permanent and temporary power infrastructure within buildings; and provision of solid fencing on common property boundaries to minimise visual impacts and/or direct views into the facility.

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. 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.	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.
Business	B5	**Provide effective replacement of car parking spaces in Glen Waverley** 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. 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.	Not applicable to these works. This EPR relates to the Glen Waverley precinct only.
Business	B6	**Develop and implement a strategy to support businesses displaced due to acquisition in Box Hill** 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. 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.	Not applicable to these works. This EPR relates to the Box Hill precinct only.
Business	B7	**Support businesses with sensitive equipment in operation** 1. Support continuity of existing businesses with sensitive equipment potentially affected during operation of the Project.	Not applicable to this UDLP as this EPR specifically relates to electromagnetic interference and/or vibration resulting from

			operation of underground services.
Business	B8	**Develop a business and commercial property purchase scheme** 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: 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 to the business or commercial property; and 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.	A Voluntary Purchase Scheme has been prepared in accordance with this EPR and will be implemented as required.
Business	B9	**Develop an Employee Assistance Strategy** 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: 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 expertadvice, a package of individual employee assistance plans prepared with and for each employee who requests it, in consultation with the employer, that: 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.	SRLA has developed an Employee Assistance Strategy in accordance with this EPR. This identifies a series of support measures for employees of those businesses to be acquired as part of the network support facility development.
Contaminated Land			

Contaminated Land	C1	**Environmental investigation, monitoring and reporting** 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: 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 (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.	The Managing Contractor has prepared a Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP) addressing the requirements of EPRs C1, C2, C3 and C6. Site investigation activities as required under EPR C1 have been undertaken in accordance with this plan and will continue to be implemented through the construction period.
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	Addressed through the Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP) as described in the response to C1 above.

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

		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) CUFP 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 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) CUFP 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	Not relevant to this UDLP – relates to land within the Stabling Facility precinct only.

		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	**Manage contamination risks during operation** 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 this UDLP. Responsibility for operational matters will be defined through development of a future OEMP as part of the broader Burwood SRL station works by others.
Contaminated Land	C6	**Develop and implement a Potential Acid Sulfate Soil and Rock Management Plan** 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: 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 oxidisation 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)	Addressed through the Spoil, Contaminated Land and Acid Sulfate Soil Management Plan (SCLASSMP) as described in the response to C1 above. Based on preliminary soil investigations there are no potential Acid Sulfate Soils or Rock which would be disturbed as part of the network support facility works, due to the minimal extent of excavation required.
Contaminated Land	C7	**Develop and Implement Suitable Air Cover and Treatment Controls for excavation works at SRL Cheltenham station** 1. Conduct excavation and removal under suitable air cover controls with associated treatment as 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 environmental 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 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).	Not relevant to this UDLP as this EPR applies to Cheltenham precinct only.

Contaminated Land	C8	**Human Health Risk Assessment – Stabling Facility** 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: 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 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.	Not relevant to this UDLP – this relates to the Stabling Facility precinct only.
Ecology			
Ecology	EC1	**Minimise vegetation and habitat removal and disturbance** 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: 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. 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.	There is no remnant native vegetation within the proposed development footprint of the network support facility facility, as detailed through this UDLP. The closest area with potential ecological values is the Gardiners Creek reserve, approximately 150m to the north west. An Ecology sub-plan has been prepared by the Managing Contractor as part of the Early Works Construction and Environmental Management Plan (CEMP). This outlines the processes and requirements for management and protection of ecological values during works. This includes pre-construction inspections to confirm the results of previous

			assessment and inform final design.
Ecology	EC2	**Implement vegetation protection measures** 1. Include sub-management plan(s) in the Construction Environmental Management Plan (CEMP) that sets out the requirements and methods for: 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.	See response to EC1 above.
Ecology	EC3	**Obtain native vegetation offsets** 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.	No native vegetation has been identified within this UDLP area or will be impacted/removed as a result of the proposed works.
Ecology	EC4	**Implement fauna management measures to minimise impacts to fauna** 1. Include requirements and methods in the CEMP, including any sub-management plans: 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 the Wildlife Act 1975 and in consultation with public land managers where relevant. 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: 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 (*Chroicocephalus novaehollandiae*) from	In accordance with the verified and accepted Ecology Management Sub-plan of the Construction Environment Management plan, the Managing Contractor will complete a pre-construction assessment prior to commencement of works. A pre-construction ecological assessment will be undertaken in consultation with the relevant land manager

		congregating.	and/or Council to: • Identify and map ecological values and threatened species, including those which may have not been identified by the EES. • Assess extent of native vegetation removal required for the Early Works based on detailed design to confirm the area and number of trees and other vegetation proposed to be impacted and provide opportunity for the minimisation of vegetation removal. • Identify fauna habitat that will require supervision by a wildlife handler / spotter catcher (with Management Authorisation under the Wildlife Act 1975) during removal. • Identify and recommend management measures for noxious or other priority weeds, weed infestations or pest animals present within the project boundary. The assessment will be undertaken by a suitably qualified ecologist engaged by the MC and will identify interfaces between vegetation and design. This will inform the design review and

			construction planning process and enable the MC to minimise disturbance to ecological values where practicable. 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. The outcomes of the pre-construction ecological assessment will be included in the precinct specific WEMPs. Prior to any disturbance, clearing or grubbing activities in any locations, the following must be in place: • The MC's Permit to Disturb Land or Vegetation has been completed and signed by an Environmental Advisor or the Environment, Land and Planning Manager (refer Appendix 3). • A licensed wildlife handler / spotter catcher (with Management Authorisation under the Wildlife Act 1975) has conducted a search for any wildlife that may need to be removed and

			relocated, immediately prior to habitat removal (including hollow bearing trees). • The environmental advisor has confirmed that vegetation and trees to be retained have been adequately protected from impact, i.e. no-go zones for protected areas of vegetation and TPZs have been established, fenced and signage installed.
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 this UDLP – the future naturalisation and/or upgrade of Gardiners Creek will occur as part of construction of the future SRL Station at Burwood and associated public realm/road network improvements, and be detailed in the accompanying UDLP.
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 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.	Not applicable to these works. There are no existing process statements in place for land/facilities within the Burwood precinct.

		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	**Develop an Electromagnetic Compatibility (EMC) Management Plan** 1. Develop an Electromagnetic Compatibility (EMC) Management Plan in accordance with AS/RISSB7722:2016 *EMC Management* to inform the design and construction of SRL East (EMC Management Plan), that includes (but is not necessarily limited to) the following: 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: 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: i. equipment environmental specifications; ii. stakeholder requirements; iii. background EMI levels; and iv. where existing shielding or mitigations are installed. For the purposes of sub-paragraph (i), equipment environmental specifications are either: (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. (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.	SRLA have developed a Project Wide EMCMP as a sub-plan of the Rail & Infrastructure Management Plan in accordance with EPR EMI1. This plan has been verified and accepted by the IEA.

		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** 1. Design and construct SRL East in accordance with the EMC Management Plan, including through: 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.	The MC will implement applicable parts of the EMC Management Plan to comply with the EMI2.
Electromagnetic Interference	EMI3	**Manage and monitor EMI levels during operation** 1. Develop and implement an EMI Operational Plan for operational activities that addresses the following:	See response to EMI1 above.

		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.** 1. To inform the design of tunnels, cross passages, shafts, stations, and portals: a) Develop and maintain Ground Movement Models that are informed by geological and groundwater models (as per GW2) which: i. Inform tunnel design and the construction techniques to be applied for the various geological and groundwater conditions 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 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 c) Predict ground movements during construction and when post-construction effects would stabilise to determine potential impacts on affected assets 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 is managed through the Managing Contractors Ground Movement Management Plan. The controls applicable to the scope included in this UDLP will be managed through implementation the temporary works process during excavation and preparation of the building foundations.
Ground Movement	GM2	**Measure seasonal ground movements and conduct condition surveys** 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	Measurement to be undertaken in accordance to the Managing Contractors Ground Movement Management Plan.

		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.	
Ground Movement	GM3	**Develop, implement and maintain Ground Movement Plans** 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: 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) 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	Ground Movement is managed through the Managing Contractors Ground Movement Management Plan. The controls applicable to the scope included in this UDLP will be managed through implementation the temporary works process during excavation and preparation of the building foundations. The proposed network support facility 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 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, utility services or other infrastructure.
Ground Movement	GM4	**Undertake repair works to assets impacted by ground movement**	Ground Movement is managed through the

		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.	Managing Contractors Ground Movement Management Plan. The controls applicable to the scope included in this UDLP will be managed through implementation the temporary works process during excavation and preparation of the building foundations. Rectification works, if required, will be undertaken as per the Ground Movement Management Plan.
Groundwater			
Groundwater	GW1	**Design underground structures to minimise groundwater changes** 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 (including the potential for acid to be generated by oxidation of acid sulfate soils).	Underground structures associated with the network support facility 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.
Groundwater	GW2	**Design and construction to be informed by groundwater modelling** 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	See response to GW1 above.

		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.	
Groundwater	GW3	**Develop, implement, and maintain a Groundwater Management Plan** 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: 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 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.	A Groundwater Monitoring and Management Plan is under preparation to meet the requirements of EPR GW3, GW4, GW5 and GW6. Based on the limited extent of earthworks required for construction of the network support facility 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. The EMF states in Section 5.2.2, “before any activity identified in SRLA’s EMS or the contractors’ Environmental Strategy as giving rise to the risk or potential effect addressed by the document or plan”. Therefore, given the information above and as per the Managing Contractors Environment Strategy, the Groundwater Monitoring and Management Plan is not required to be accepted prior the commencement of

			the works included in this UDLP.
Groundwater	GW4	**Develop and implement a Groundwater Disposal Strategy** 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: 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** 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	See response to GW3 above.

		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** 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.	See response to GW3 above.
Historical Heritage			
Historical Heritage	HH1	**Design and construct to avoid and minimise impacts on heritage** 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).	There are no sites of local/state heritage significance subject to formal protection under the Whitehorse Planning Scheme or the Heritage Act 2017 within or adjacent to the network support facility works area.
Historical Heritage	HH2	**Undertake works to protect and manage heritage places and fabric** 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	Not applicable to this UDLP - see response to HH1 above.

		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.	
Historical Heritage	HH3	**Undertake archival photographic recording** 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.	Not applicable to this UDLP - see response to HH1 above. .
Historical Heritage	HH4	**Monitor and manage condition of heritage sites** 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.	Not applicable to this UDLP - see response to HH1 above.
Historical Heritage	HH5	**Develop and implement an Archaeological Management Plan** 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: 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	Not applicable to this UDLP - see response to HH1 above.
Historical Heritage	HH6	**Develop and implement an unexpected discovery protocol** 1. Develop and implement protocols for managing previously unidentified historical archaeological sites discovered during the works in consultation with Heritage Victoria.	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.

Historical Heritage	HH7	**Minimise impact and undertake reinstatement of Box Hill Gardens** 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.	Not relevant to this UDLP – this EPR relates to the Box Hill precinct only.
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. No specific actions or activities are required to be implemented though this UDLP.
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.	Not applicable to this UDLP – this requirement relates to works in the Box Hill precinct only.

Land Use Planning			
Land Use Planning	LUP1	**Minimise design and construction impact on existing land uses** 1. Develop and implement a plan that specifies how the design and construction of the Project minimises impacts on existing land uses as follows: 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: 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.	A Land Use Interface Plan has been prepared for the Burwood SRL precinct in response to this requirement covering all Early Works activities, including the construction of the network support facility. It is noted that the siting of the network support facility as proposed in this UDLP is consistent with the endorsed Station and Tunnel Plans.
Land Use Planning	LUP2	**Develop and implement an Interim Land Use Guideline** 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).	An Interim Land Use Guideline has been prepared for the SRL East project. This EPR is not relevant to this UDLP as all land within the UDLP boundary is required for construction of permanent SRL East infrastructure (both through this UDLP and the future Burwood SRL Station UDLP).
Land Use Planning	LUP3	**Minimise impacts from the location of services and utilities** 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	Whilst the proposed network support facility is located opposite existing residential land and established residential properties, this location was

		infrastructure where practicable.	specified in the Surface and Tunnels Plans and impacts assessed in detail during the SRL East EES process. The network support facility itself and supporting power infrastructure has largely been sited towards the north-east corner of the UDLP area, as far away from nearby residential properties as is practicable. Electrical lines and cables will also be undergrounded, avoiding visual and noise impacts from overhead lines.
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.	Not applicable to this UDLP – no public open space will be impacted or occupied by the network support facility works.

		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.	
Land Use Planning	LUP5	**Prepare a guide for planning permit applications under the SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document** 1. Develop a guide for planning permit applications under the SCO15 Suburban Rail Loop East Infrastructure Protection Incorporated Document that: 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 this UDLP
Landscape and Visual			
Landscape and Visual	LV1	**Designs to be in accordance with the Urban Design Strategy** 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: 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 above.
Landscape and Visual	LV2	**Plant trees early to re-establish amenity** 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: a) Planting shrubs and understory vegetation b) Planting appropriate trees in accordance with AR4 and the UDS 2. NOTE: All advanced and semi-advanced tree stock is to be in accordance with AS2303-2018 Tree Stock for Landscape Use.	Opportunities for canopy tree planting within and around the network support facility site are constrained by safety and operational requirements, particularly with respect

		3. Take into account future garden bed design in the locations for trees, including consideration of water sensitive urban design such as passive irrigation	to fire risk. In addition, there will be significant disturbance to the adjoining nature strips during installation of the ultimate electrical/operational infrastructure in this site (under a future UDLP) which precludes any early planting. As a consequence, landscaping treatments have been limited to low level shrubs/ground covers abutting the public footpaths in Sinnott Street and Highbury Road. Opportunities for canopy tree planting within the adjoining nature strips can be explored further through development of the future Burwood SRL station UDLP, noting that Sinnott Street is identified as an ”enhanced streetscape” in the UDS and will be a key pedestrian route to the future station. See Section 4 - Design Response for further detail and discussion.
Landscape and Visual	LV3	**Minimising operational lighting impacts** 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.	Permanent lighting associated with the network support facility will be designed and delivered in accordance with the relevant Standards, noting that lighting will baffled/oriented away from

			adjacent residential properties. There is no nearby habitat which could be impacted by operational lighting.
Landscape and Visual	LV4	**Minimising construction lighting impacts** 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).	The nearest sensitive receptors to the works proposed in this UDLP are the existing dwellings on the eastern side of Sinnott Street (141 Highbury Road and 2, 2A and 2B Corrigan Street), and south of Highbury Road. All construction lighting will be baffled and oriented away from these dwellings, noting that this forms a requirement of the
Landscape and Visual	LV5	**Minimise visual impacts during construction** 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.	The construction layout, works and associated activities required to develop the network support facility site have been designed to satisfy the relevant requirements at section 5.12 of the UDS, as follows: - Early establishment of perimeter site hoarding/fencing to a maximum height of 3m to the Highbury Road and Sinnott Street frontages, - Temporary construction fencing, to be screened (mesh) where there is a direct boundary abuttal to private land. This fencing will be replaced with the treatments identified in this UDLP prior

			to completion of the works, and as soon as is practicable.
Landscape and Visual	LV6	**Minimise visual impacts from changed interface with residential dwellings** 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: 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.	See Section 4.2 Design Response of the UDLP report.
Landscape and Visual	LV7	**Enhance visual screening for the Stabling Facility** 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 applicable to this UDLP – requirements relates to Stabling Facility precinct only.
Noise (airborne and ground borne) and Vibration			
Noise and Vibration	NV1A	**Process Statements** 1. Apply EPRs NV1-NV18 to any sensitive receiver except 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. 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	Not relevant to this UDLP. There are no existing process statements in place for land adjacent to or in proximity to the works site.

demonstrate that the levels or targets proposed are no less stringent than the reference levels (including any table notes) in NV1-16.

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.

Noise and Vibration	NV1	**Minimise noise and vibration impacts to sensitive receivers during construction** 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.	A Construction Noise and Vibration Management Plan (CNVMP) has been prepared by the Managing Contractor.

Time period	Applicable hours	Reference levels $L_{Aeq,\ 15\ mins}$
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	For the first 18 months after the commencement of continuous project works at a location. • Pre-existing background noise level (L_{A90}) plus 10 dB After 18 months from the commencement of continuous project

	holidays	works at a location: • 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** 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: 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})	The works program for construction of the network support facility has not yet been prepared. It is currently anticipated that works can be accommodated within normal working hours. Should out of hours works be required, these will be undertaken in accordance with the requirements of this EPR and subject to approval of the IEA

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

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
   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 *Residential Support Guidelines*
   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)
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.

Noise and Vibration	NV3	**Develop and implement a Construction Noise and Vibration Management Plan (CNVMP)** 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	See response to NV1 above.

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** 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 — External noise level 60 dB (free-field)	See response to NV1 above.

		noise intrusion, for example reading, meditation	
		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).				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.

	Reference levels – Vibration Dose Values (m/s1.75)			
	Day (7 am to 10 pm)		Night (10 pm to 7 am)	
Type of space occupancy	Preferred value	Maximum value	Preferred value	Maximum 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:
   a) 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.
   b) For the purposes of undertaking measurements, modelling and further assessment of construction impacts, which are generally undertaken in the velocity metric (mm/s), these VDVs 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].
   c) 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:
   a) 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.
   b) 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** 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).	See response to NV6 above.

Type of structure	Reference levels for Peak Component Particle Velocity, vi,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 occupancy	5	5 to 15	15 to 20	15	20
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.

<table>
<tr>
<td>Noise and Vibration</td>
<td>NV8</td>
<td>
Minimise construction ground-borne (internal) noise impacts on residential amenity

1. Develop and implement management and contingency actions if:
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).

<table>
<tr><th>Time of Day</th><th>Ground-borne noise reference levels
Internal noise level measured at the centre of the most affected habitable room</th></tr>
<tr><td>Evening (6 pm to 10 pm)</td><td>L_{Aeq}(15 minute) = 40 dBA</td></tr>
<tr><td>Night (10 pm to 7 am)</td><td>L_{Aeq}(15 minute) = 35 dBA</td></tr>
</table>

Include Management actions, such as community consultation and respite offer in accordance with the SRLA Business Support Guidelines and SRLA Residential Support Guidelines.
</td>
<td>See response to NV6 above.</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>NV9</td>
<td>
Minimise amenity impacts from blast vibration and blast overpressure

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.

<table>
<tr><th>Category</th><th>Type of blasting operations</th><th>Reference levels
Peak component particle velocity (mm/s)</th></tr>
<tr><td>Sensitive site</td><td>Operations lasting longer than 12 months or more than 20 blasts</td><td>5mm/s for 95% blasts per year
10 mm/s maximum unless agreement is reached with the occupier that a higher level may apply</td></tr>
<tr><td>Sensitive site</td><td>Operations lasting less than 12 months or less than 20 blasts</td><td>10 mm/s maximum unless agreement is reached with occupier that a higher level may apply</td></tr>
<tr><td>Occupied non-sensitive sites such as factories and commercial</td><td>All blasting</td><td>25 mm/s maximum value unless agreement is reached with occupier that a higher level may apply. For sites</td></tr>
</table>
</td>
<td>Not applicable to the works, as no blasting is proposed or required for development of the network support facility or related infrastructure.</td>
</tr>
</table>

premises		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 20 blasts	115 dBL for 95% blasts per year. 120 dBL maximum unless agreement with occupier that a 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	**Minimise impacts on bio-resources and sensitive research** 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: 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	Not applicable to works - no bio resources or other sensitive research facilities were identified within the Burwood SRL precinct.

		non-rodent bioresources 2. NOTES: 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 Design Requirements Manual, 2008).	
Noise and Vibration	NV11	**Undertake noise and vibration modelling and monitoring** 1. **Construction phase** 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** 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 *Mechanical vibration – Ground-borne noise and vibration arising from rails systems – Part 1: General guidance.* 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** 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	**Minimise airborne rail noise levels for operation** 1. Avoid, minimise or mitigate rail noise at source, so far as reasonably practicable	Not applicable to this UDLP as no rail infrastructure is proposed.

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 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 wherepeople 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) LAmax is defined as maximum A-weighted sound pressure level and is the 95th percentile of the highest value of the A-weighed 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.

Noise and Vibration	NV13	**Minimise ground-borne noise impacts for operation** 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.	Not relevant to this UDLP as no rail infrastructure proposed

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).

		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.	Not relevant to this UDLP as no rail infrastructure proposed.

			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.

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. 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: a) 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 b) 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 c) 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.	Not relevant to this UDLP, as this requirement specifically relates to impacts from tunnelling/underground rail services on premises utilising specialised and sensitive equipment.

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	**Minimise noise from the Stabling Facility, SRL stations and fixed plant** 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 *Environment Protection Regulations 2021* to: • 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 *Environment Protection Regulations 2021* 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), *Measuring and analysing industry noise and music noise* (Technical Guide: EPA Publication 1997) and, where relevant, the *Noise guideline – assessing low frequency noise* (EPA Publication 1996).	The network support facility has been designed to minimise potential operational noise impacts in accordance with the requirements of this EPR. Monitoring of noise impacts during construction will be undertaken in accordance with the procedures outlined in the CNVMP.

		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: 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).	
Noise and Vibration	NV17	**Assess cumulative noise levels from the Stabling Facility** 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). 2. Compare the predicted cumulative L_{Aeq16h} and $L_{Aeq\ 8\ h}$ 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).	Not applicable to this UDLP – relates to noise impacts from train movements and associated infrastructure/activities which have not yet been designed. This EPR will be assessed, incorporating any noise generated by the network support facility, through the UDLP prepared for the broader Burwood SRL precinct.
Noise and Vibration	NV18	**Non-compliance of operational ground borne noise and vibration** 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: 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.	Not relevant to this UDLP as no rail infrastructure is proposed.

		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 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.	
Social and Community			
Social and Community	SC1	**Develop a Communication and Stakeholder Engagement Management Framework** 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: a) Engagement principles and goals b) Governance c) Project stakeholders, including but not limited to communities, universities, and businesses d) Engagement approach including: 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.	SRLA has prepared a project wide Communication and Stakeholder Engagement Management Framework. The Managing Contractor will implement the key requirements of this framework through the Early Works Communication and Stakeholder Engagement Management Plan (CSEMP) in accordance with EPR SC2.
Social and Community	SC2	**Develop and implement Communications and Stakeholder Engagement Plans to manage interactions with the community** 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.	The Managing Contractor have prepared an CSEMP for all construction activities within the Burwood SRL precinct, including the network support facility.

		2. Ensure public-facing documents developed in accordance with any Community and Stakeholder Engagement Plans are 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.	
Social and Community	SC3	**Minimise impacts on public open space and recreational infrastructure** 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: a) Management of construction impacts on the users of public open space where these occur. 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. 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.	Not relevant to this UDLP. There will be no impacts from construction or operation of the network support facility on nearby public open space, given the distance between the proposed works and the Gardiners Creek Reserve and extent of intervening development.
Social and Community	SC4	**Minimise disruption to public and private events** 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: 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.	Planned events which may disrupt or may be disrupted by construction of the network support facility have been identified through the CSEMP. Potential impacts will be communicated and managed through implementation of the CSEMP.
Social and Community	SC5	**Provide relocation support to community facilities** 1. Implement measures set out in the SRL Business and Residential Relocation Support Guidelines for	Not applicable to the network support facility works as no community

		community facilities including, but not limited to: 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.	facilities are required to be relocated.
Social and Community	SC6	**Minimise Disruption and Impacts on residents of Uniting AgeWell at Box Hill** 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).	Not relevant to this UDLP as this applies to works within the Box Hill precinct only.

		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** 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.	A voluntary purchase scheme has been developed by SRLA and will be implemented across the alignment as required.
Surface Water			
Surface water	SW1	**Develop and implement a Surface Water Management Plan during construction** 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: 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	A Surface Water Management Plan has been prepared for construction activities within the Burwood SRL precinct, including the network support facility.

		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 water runoff must not enter the stormwater drainage network or receiving waterways, so far as reasonably practicable (see SW6) 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 un-authorised 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	**Develop and implement flood emergency management plans** 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.	Based on the flood modelling undertaken to inform the design of all early works activities within the Burwood SRL precinct, there is no land within the network support facility works site or connecting roads which is currently subject to flooding.
Surface water	SW3	**Minimise risks from changes to flood levels, depths, flows and velocities** 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 *Standards for infrastructure projects in flood prone areas* (2019). The risk of blockage of key drainage infrastructure is to be included in this assessment. 2. Develop and implement measures for temporary and permanent works in consultation with the relevant statutory authority to: 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	Flood modelling of the network support facility has been undertaken in accordance with Melbourne Water Standards for Infrastructure Projects in Flood Prone Areas (2019), with any drainage requirements incorporated

		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.	into the detailed engineering design.
Surface water	SW4	**Model climate change effects on surface water** 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 *Standards for infrastructure projects in flood-prone areas* (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 *Climate Change Act 2017* (Vic). 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.	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.
Surface water	SW5	**Design and operate SRL East to manage stormwater runoff** 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: 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)	. Preparation of a standalone Stormwater Management is not required for the Early Works scope. The relevant requirements of this EPR will be met through implementation of the Water Quality Monitoring Program included as an appendix to the Surface Water Management Plan prepared under EPR SW1.

		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.	Runoff from construction activities and/or hard surfacing within the network support facility site will be monitored and managed in accordance with these documents, including through provision of temporary drainage infrastructure if required. The final drainage and stormwater quality requirements for development of the site will be further assessed through the development of the UDLP for the operational power network support facility.
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 network support facility will be managed in accordance with controls outlined in the Water Quality Monitoring Program 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	**Develop and implement a Water Quality Monitoring Program** 1. Develop and implement a Water Quality Monitoring Program which can: 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: 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.	Water quality monitoring during construction will occur in line with the Water Quality Monitoring Program and Surface Water Management Plan.
Surface water	SW8	**Develop and implement a management plan for naturalisation of Gardiners Creek** 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.	Not relevant to this UDLP – see response to EC5 above

		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** 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: 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: 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.	A whole of project Integrated Water Management Strategy has been prepared by SRLA. Opportunities for site- or precinct-specific IWM initiatives to be delivered within the network support facility site will be considered as part of the future UDLP for the ultimate infrastructure works.
Surface water	SW10	**Provide access to drainage authority assets** 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.	New drainage assets to be constructed to service the network support facility facility have been 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	**Develop Sustainability Targets and Performance indicators**	SRLA has developed sustainability targets for the

		. 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. 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.	design, construction and operation of the Project.
Sustainability and Greenhouse Gas	SGG2	**Develop and implement a Sustainability Management Plan** 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	**Achieve a Sustainability Rating for Infrastructure** 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 this UDLP – this relates to works within the Stabling Facility precinct only.
Sustainability and Greenhouse Gas	SGG4	**Achieve a Sustainability Rating for Stations** 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.	Not relevant to this UDLP – does not include construction of the future SRL stations.
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 this UDLP – this relates to works within the Stabling Facility precinct only.
Sustainability and Greenhouse Gas	SGG6	**Achieve a Sustainability Rating for construction of the Operations Control Centre (Green Star)**	Not relevant to this UDLP – this relates to works within the Stabling Facility precinct only.

		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.	
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 this UDLP 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** 1. Investigate and implement opportunities for the use of lower carbon materials supportive of Victoria's circular economy goals to the extent reasonably practicable.	Key opportunities identified for the network support facility development include the use of reused content in pavements, concrete and fill materials. This will be further reviewed and confirmed through the detailed engineering design process, in accordance with the relevant processes and initiatives identified in the Sustainability Management Plan prepared in accordance with EPR SGG2.
Traffic and Transport			
Traffic and Transport	T1	**Develop and implement Transport Management Plan(s) (TMP)**	A Transport Management Plan (and Worksite

		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.	Transport Management Plan) have been prepared for construction activities within the Burwood SRL precinct, including the network support facility.
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. 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;	SRLA has established a Transport Management Liaison Group (TMLG). The Transport Management Plan (and Worksite Transport Management Plan) as per EPR T1 have been consulted with the TMLG.

		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	**Manage road transport impacts during Construction** 1. Ensure the TMP(s) address the following for road transport management: a) **Road network management** 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** 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. 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	Construction vehicle access and egress from the network support facility work site is via two existing crossovers to Sinnott Street, with heavy vehicle routes to be via Highbury Road. This will minimise potential impacts on residential streets to the north. Further mitigation measures will be outlined in the TMP in accordance with the requirements of this EPR. All construction staff parking will be provided on site within the dedicated Early Works site compound located within the future SRL station site to the north, as detailed on the approved plans under EPR-LUP1.

		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: 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.	There are no public transport routes located in proximity to this UDLP or that will be impacted by the works. The closest public transport service is the 767 bus which operates on Huntingdale Road and Highbury Road, approximately 350m east of the UDLP boundary.

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. 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.	There are no designated cycling or pedestrian routes which will be impacted by the proposed network support facility works, noting that the Gardiners Creek Trail is located approximately 150m to the west, well outside of the construction footprint.
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.	Development of the network support facility does not involve delivery of new roads or works to existing roads. There will be no permanent loss of existing public parking, including on-street parking, as a result of the works. The network support facility works may result in short term disruption and/or occupation of existing on-street parking spaces on the west side of Sinnott Street, including the indented parking bays used by the existing business in the northern part of the UDLP area (1-3 Sinnott Street). Given these spaces are primarily utilised by businesses which will be

		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 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.	acquired to facilitate construction of the network support facility, it is not considered that this will significantly impact on parking availability and/or congestion on local streets.
Traffic and Transport	T7	**Public transport design and operation** 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: 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.	Not relevant to this UDLP – no bus interchange proposed within this precinct.
Traffic and Transport	T8	**Active transport design and operation** 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: 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. 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.	Sinnott Street is identified in the UDS as a potential future cycling route and pedestrian desire line through to the SRL station to the north. Delivery of the supporting infrastructure to facilitate these aims will be reviewed and assessed through the preparation of the future UDLP for the SRL Station, noting that the future delivery of the ultimate electrical/operational infrastructure (not part of this UDLP) within the network support facility land will impact on this streetscape, requiring significant rework to any

			improvements delivered through this UDLP.