AECOM GHD
JOINT VENTURE

LEVEL CROSSING REMOVAL PROJECT

ADDITIONAL 29 LEVEL CROSSINGS

094 - Brunswick 8

Brunswick Urban Design Process

LXRP-LX29-094-0-00-PA-RPT-0003

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Executive Summary

This report has been prepared to support the referral of the Project under the *Environmental Effects Act, 1978* (EE Act) by outlining the Level Crossing Removal Project (LXRP) governance, business practices and urban design processes that have been successfully implemented across metropolitan Melbourne since 2015 and which will apply to the Brunswick Level Crossing Removal Project (the Project). These processes have been developed to ensure the Project will minimise any potential amenity, visual and landscape impact and deliver high quality outcomes that maximises community benefit, public and open space areas and the quality and livability of the urban environment.

LXRP has a proven track record delivering high quality projects. The tools and processes outlined in this report have been successfully applied to more than 75 projects delivered by LXRP and have resulted in multi-award-winning great places for commuters and communities across Melbourne.

The Project will remove eight level crossings between Royal Park and Moreland Road, on the Upfield Railway Line. The level crossing removal solution is proposed to be an elevated rail bridge between the northern extent of Royal Park, Parkville and Moreland Road, Brunswick, similar to the elevated rail bridge constructed between Bell Street and Moreland Road in Coburg on the same line. The Project will also include the delivery of two new train stations, dedicated pedestrian and cycle paths, and high quality public and open spaces. The Project is of strategic significance to the area as a catalyst for positive urban renewal that will reinvigorate and reconnect communities with the removal of the existing at-grade train line and the creation of an elevated rail bridge.

The Urban Design Process

LXRP has a proven track record of delivering high quality urban design outcomes for local communities. This has been achieved because of LXRP's consistent urban design processes. These processes guide the approach to high quality urban design across the Project lifecycle.

The overarching LXRP Urban Design Framework (UDF) establishes clear expectations for the design and delivery of all LXRP projects and is aligned with the Australian National Urban Design Protocol. The Project specific Urban Design Guidelines (UDG) apply the UDF principles, objectives and measures to each project, based on the site, social and cultural context and local community objectives. The UDG is informed by local government and other key stakeholders to ensure that the Project effectively responds to the local context and values and provides clear benefit to local communities. Overseeing and supporting the design development of the Project is the Urban Design Advisory Panel (UDAP), chaired by a representative from the Office of the Victorian Government Architect (OVGA).

Overlooking Assessment and the LXRP Voluntary Purchase Scheme

Good governance processes are in place to ensure that the amenity of surrounding residents is protected and, where possible, significantly enhanced and all existing residents are treated fairly.

Through the design development process, LXRP undertakes a thorough assessment of any potential overlooking where the rail bridge comes within close proximity of residential habitable room windows or private open space of adjacent residential properties. In specific cases, where adjacent residential properties are demonstrably impacted by an elevated rail structure which cannot be mitigated through design measures, they will be assessed for eligability for a Volunatary Purchase Scheme (VPS). The VPS provides eligible landowners who meet a set criteria the option to sell their properties to the State Government for an agreed amount that covers the cost of selling and purchasing a replacement property.

Ensuring high quality outcomes

The design and delivery of the Project will be guided by these established successful urban design and business processes, which will ensure a high quality urban design outcome for the local community and improved amenity for its surrounding residents.

The elevated rail solution for the Project will:

- Deliver a series of connected new community -public spaces, located for communities to socialise and creating strong green connections throughout the corridor.
- Celebrate the area's rich history by retaining and incorporating key heritage assets throughout the proposal.
- Maximise permeability and pedestrian and cyclist connections along and across the corridor and enable access and connections to laneways and side streets.
- Mitigate potential visual concerns from adjacent residents, through design measures including privacy screening to manage any potential overlooking.
- Maximise the retention of mature and significant trees and the creation of new and enhanced landscapes and public spaces.
- Improve the reliability and efficiency of transportation networks by reducing overall congestion and enabling increased active transport.

The Project will act as a catalyst for positive urban renewal that reinvigorates and reconnects communities and creates a legacy, and an innovative and high quality urban environment and place.

1. Introduction

1.1 Purpose

This Brunswick Urban Design Process report (the report) has been prepared to support the referral of the Brunswick Level Crossing Removal Project (the Project) under the *Environmental Effects Act, 1978* (EE Act) and specifically as it relates and responds to the landscape and social (visual and amenity) impact criteria. This report describes the governance, business practices and urban design processes that ensure the Project will minimise any potential amenity, visual and landscape impact and deliver a new high quality urban environment.

This report is supported by the Brunswick Level Crossing Removal Project Urban Design Guidelines (UDG) which set out key guidance in response to local issues and opportunities. This will assist the Project to achieve high quality urban design outcomes and maximise positive impacts through improving connectivity, safety and amenity, functionality and sustainability for the site, surrounding precinct, and broader corridor.

Level Crossing Removal Project's (LXRP) Urban Design Framework (UDF) and management processes, as well as supporting business practices, provide the tools to deliver successful urban design outcomes for local communities and sensitively manage any potential amenity impacts to neighboring properties.

LXRP is highly experienced in delivering similar projects around Melbourne with successful results and will draw on this experience and existing LXRP strategies in delivering this Project. This will assist in maximizing opportunities presented by the Project context and design solution and ensure an appropriate response to any potential environmental impacts.

Since 2016 LXRP has won 16 awards for urban design, architecture, and landscape architecture. This demonstrates the strong industry recognition of the design and construction quality which LXRP delivers to local communities on the program. These include, but are not limited to:

- 2018 – Urban Design Framework – Winner - Leader Leadership, Advocacy and Research – City and Regional Scale Award, Australian Urban Design Awards.
- 2022 – Level Crossing Removal Program – Winner - Built Projects – City and Regional Scale, Australian Urban Design Awards.
- 2022 – Bell to Moreland Level Crossing Removal Project – Winner - Infrastructure (Award of Excellence) Australian Institute of Landscape Architects (Victoria) – Tract (North Western Program Alliance (NWPA)).
- 2023 **–** Bell to Moreland Level Crossing Removal Project **–** Winner – Planning Institute of Australia (Vic division) – Great Places Award 2023.
- 2023 – North Williamstown Station **–** Winner – Infrastructure (National Landscape Architecture Award) Australian Institute of Landscape Architects – Hassell (Western Program Alliance (WPA)).
- 2024 **–** Preston Level Crossing Removal **–** Winner **–** Infrastructure (Award of Excellence) Australian Institute of Landscape Architects (Victoria) **–**Tract (North Western Program Alliance (NWPA)).

This report sets out:

- How LXRP manages the integrated design process to achieve high quality urban design outcomes and maximise positive impacts.
- A summary of the UDF and urban design management processes and supporting activities undertaken by LXRP to ensure positive urban design outcomes and minimise impacts, and the governance processes that are in place to support the outcomes.
- A high level summary of the preliminary urban design assessment and guidance (including landscape and visual values) to inform the design and development of the Project.

1.2 Project summary

The Project is located approximately five kilometres north of Melbourne Central Business District (CBD) on the Upfield Railway Line and approximately 150 metres west of Sydney Road, and extends from Royal Park, Parkville to Albion Street, Brunswick. The Project is proposed to occur within the Referral Project Area (RPA) which extends from south of Royal Park Station, Parkville, and north to Moreland Road, Brunswick.

The Project proposes to remove the following eight level crossings:

- Albion Street, Brunswick;
- Hope Street, Brunswick;
- Victoria Street, Brunswick;
- Albert Street, Brunswick;
- Dawson Street, Brunswick;
- Union Street, Brunswick;
- Brunswick Road, Brunswick; and
- Park Street, Parkville.

The level crossings are located on the Upfield Railway Line, between approximately three to five kilometres north of the CBD within the municipalities of the City of Melbourne and City of Merri-bek.

The Project proposes an elevated rail bridge to separate the rail from the cross roads, beginning north of Royal Park Station and finishing at Tinning Street south of Moreland Road. The existing three stations, Jewell, Brunswick, and Anstey will be consolidated into two new stations. The Victorian Heritage Register (VHR) listed Jewell Station and Brunswick Station will be decommissioned, with the heritage listed buildings and platforms refurbished and remaining in place, while Anstey Station will be removed. Royal Park is also listed on the VHR due to its significance as one of Melbourne's earliest public open spaces for recreation and passive activities.

The new station at Brunswick south will be located between the existing Jewell Station and Brunswick Station, and the new station at Brunswick north will be located to the south of the existing Anstey Station (noting these are placeholder names only). The Project will also deliver at-grade separated cycling and pedestrian paths and new open space, allowing for the retention of VHR listed Jewell Station and Brunswick Station and potentially other rail infrastructure.

The Project will deliver separated cycling and pedestrian paths between Park Street and Moreland Road. The paths will connect into the existing separated path network from Bell Street and east west streets. South of Park Street the paths will connect into the Upfield bike path and City Creek Trail.

The Project will deliver enhanced open and public spaces under the rail bridge between Park Street and Albion Street. The open and public space corridor will incorporate both historic and cultural heritage elements as well as separated pedestrian and cycling paths. As part of the open space corridor the Project will retain the VHR listed stations, Jewell and Brunswick, and other State listed heritage assets. A combination of underground and overland drainage (swales, basins) will be required. The area will be landscaped to attract visitors and the community.

Some temporary and permanent commercial and residential land acquisition will be required for the construction and operation of the new rail bridge and proposed new stations.

To construct the Project, land under the control of State and local government, as well as private land is likely to be required for temporary laydown. Temporary site offices, workforce car parking and warehousing will be located as close to the rail corridor as possible. Where possible, the rail corridor will be accessed from the surrounding existing roads, although access to the rail corridor will likely be required for the Project from surrounding roads into Royal Park. The Project will provide critical infrastructure for Melbourne and is well supported by State and local planning policy. The locality is within a strategic renewal area undergoing rapid change and densification and requires a reliable and efficient transport network to support its growth.

The Project will improve safety and reduce travel time along the Upfield Railway Line, improve safety and connections for pedestrians and cyclists, and reduce congestion. The Project will also improve the liveability of the local area by creating new landscaped open and public spaces and improving cross-corridor connections for local residents and other users, allowing for safer and more convenient access at multiple locations where none currently exist.

The Project will act as a catalyst for positive urban renewal that will reinvigorate and reconnect communities and create a lasting legacy, innovative, liveable and high-quality urban design corridor.

Figure 1 The Upfield Railway Line from Royal Park to Moreland Stations

2. LXRP Urban Design Process

LXRP has established robust and comprehensive processes to support great urban design outcomes for all projects. These processes guide the approach to high quality urban design from inception, through to design and delivery of each project.

The LXRP Urban Design Framework (UDF) is a core document that establishes clear expectations for the design and delivery of projects, aligned with the Australian National Urban Design Protocol.

The UDF also informs the site specific Urban Design Guidelines (UDG), is used to evaluate design proposals and assess built form outcomes. The UDG is prepared for each project, and apply the principles, objectives and measures of the UDF to each particular project, based on the site context and local community objectives.

An UDG report has been prepared for the Park Street, Brunswick Road, Union Street, Dawson Street, Albert Street, Victoria Street, Hope Street and Albion Street Level Crossing Removals in Brunswick and accompanies this report (refer to **Brunswick Level Crossing Removal Project Urban Design Guidelines November 2024**).

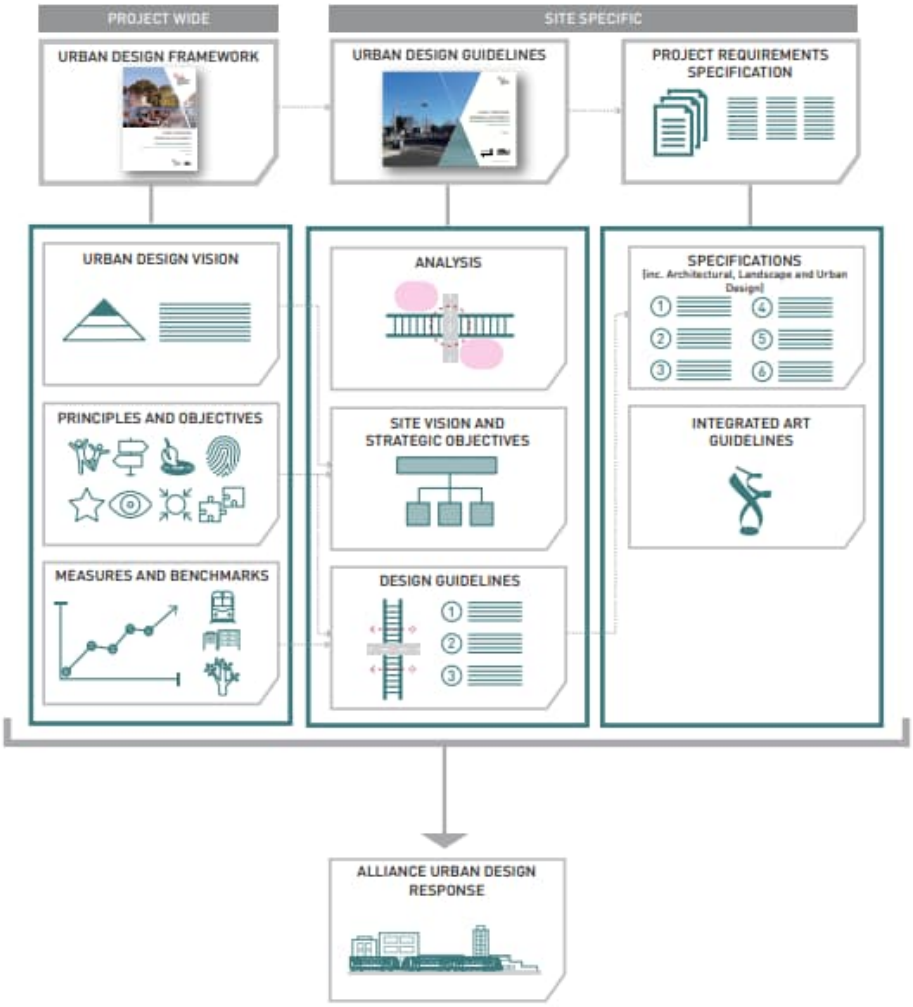

Figure 2 Urban design requirements for LXRP projects

The LXRP Urban Design Advisory Panel (UDAP) oversees the application and implementation of the UDF and UDG to ensure high quality and integrated outcomes are achieved. The UDAP provides advice to design teams on the best possible urban design outcomes, informed by lessons learnt and prior benchmarks across the program of LXRP works.

See below for further information about these documents and processes.

2.1 Urban design business practices

LXRP has embedded business practices that guide the approach to high quality urban design from inception, through to design and delivery of the Project. These practices are consistent with the LXRP Strategic Objective of achieving Great Places.

Key features of urban design business practises are:

Standardised urban design approach:

- Unwavering commitment to challenge-the-norm and set new practices for high quality, integrated urban design.
- Embedded in LXRP's standing operating processes and monitoring throughout project delivery.
- Guidelines, management plans and frameworks capture principles and desired outcomes and establish and inform performance-based requirements.
- Requirements and desired outcomes are clearly articulated.

Dedicated and embedded resources, with a strong leadership focus:

- LXRP leadership has a strong focus and prioritises high quality urban design outcomes.
- Urban design is prioritised during development phase, with constant reviews and challenge.
- LXRP's specialist team is integrated at program-level, as well as embedded in delivery teams, resulting in alignment and continuous oversight from project planning to completions.
- Urban design business practices interface with other technical, core and support strategies and polices to maximise integration.

2.2 Urban Design Framework (UDF)

The LXRP UDF guides the design and delivery of high quality, context sensitive urban design outcomes, which enhance urban amenity and minimise adverse impacts. The UDF is a program wide framework which applies to all level crossing removal projects, and is used to inform site specific urban design guidelines, evaluate design proposals and assess built form outcomes. The UDF is based upon the principles set out in the Australian National Urban Design Forum 'Creating Places for People- an Urban Design Protocol for Australian Cities '. Rather than providing prescriptive urban design solutions, the UDF sets out what is to be achieved in terms of urban design quality and performance and is a living document that is periodically updated as the LXRP program progresses.

The LXRP UDF is available online for members of the community with an interest in the urban design of the program, linked below for clarity.

Level Crossing Removal Project Urban Design Framework Link

The UDF is made up of the following components:

- **Vision and Aspirations** – Describes the goal to achieve high quality urban design outcomes and aligns with the strategic intent for the precinct and place.
- **Principles** – Outlines the expected results for achieving good urban design outcomes. The UDF contains eight principles which are derived from the Australian National Urban Design Protocol *'Creating Places for People'.*
- **Objectives** – Clarifies aspects of the principles and describes specific outcomes to be achieved to give effect to each principle.
- **Measures** – Provides performance requirements, based on a range of elements, demonstrating achievement of the principles and objectives. The measures communicate the expected outcomes as the basis for which proposals will be informed, designed, evaluated and delivered.
- **Qualitative Benchmarks** – Provides a series of images that demonstrate design quality expected for project elements, drawn from relevant LXRP and other precedent projects.

In 2018, the UDF was awarded the winner of the 'Leader Leadership, Advocacy and Research – City and Regional Scale Award' for the Australian Urban Design Awards, a national level urban design program which is co-convened by the Planning Institute of Australia, the Australian Institute of Architects and the Australian Institute of Landscape Architects, with the support of five peak organizations servicing the sector.

2.3 Urban Design Guidelines (UDG)

The UDG is prepared by LXRP for all LXRP projects to capture key design criteria and expectations for each site and provide guidance to delivery partners regarding acceptable standards and expectations for urban design outcomes. To date, LXRP has prepared over 75 UDG to sucessfully guide the urban design of LXRP projects.

The preparation of UDG is derived from the principles and objectives of the UDF, as well as local considerations gained from context analysis, consultation with local government, the community and other key stakeholders.

The UDG are a local site-specific application of the UDF and establishes key design criteria and expectations. The UDG builds upon the UDF, identifying site specific urban design guidelines that the Project design is to achieve by:

- Identifying key issues and opportunities for improving connectivity, safety and amenity, functionality and sustainability for the site, surrounding precinct, and broader corridor.
- Articulating the vision and design intent for the site.
- Setting out site specific guidelines for the Project.

A multidisciplinary team is involved in developing the UDG, which typically includes urban design, architecture, strategic and statutory planning, transport planning and engineering.

The UDG includes:

- Context analysis:
    - Broader area context
    - Historical context
    - Local context and assessment covering:
        - Land use and activity
        - Open space and recreation
        - Built form and heritage
        - Transport network and access
        - Movement and Place
        - Environmental attributes
        - Landscape and visual values
    - Demographics and community profile
    - Planning policy assessment
    - Community and stakeholder engagement
- Issues and opportunities analysis and recommendations
- Project vision,design intent and site-specific urban design guidelines

The UDG is shaped through periodic meetings and discussions with UDAP, the Project team, key stakeholders and local council.

2.4 Urban Design Advisory Panel (UDAP)

The purpose of the Urban Design Advisory Panel is to provide stewardship and guidance for the achievement of the principles, objectives, measures and benchmarks contained within the UDF and UDG. UDAP champions and guides the design quality of LXRP projects through the provision of continuous review and advice on the best possible integrated urban design solutions.

UDAP is chaired by a representative from the Office of the Victorian Government Architect (OVGA), and comprises core members who are experts in urban design, architecture and landscape architecture. Local council and other key stakeholders are invited to attend UDAP meetings at key milestones. UDAP is also able to expand the membership on an ad-hoc basis, to allow for additional expertise if required (for example heritage). The UDAP process has been adopted across other State government infrastructure projects to great success as part of the urban design governance process, and has been engaged on the LXRP since 2016.

UDAP is a collaborative and transparent process, providing iterative expert and valued guidance and advice throughout project life cycle.

UDAP has a design-led approach, promoting site responsive designs that are consistent with the aspirations of each specific site and their adjacent neighbourhoods.

UDAP also has a focus on capturing and sharing lessons learnt and benchmarks across projects and industry.

Figure 3 below shows the design development process of a typical project, with key UDAP reviews at critical milestones. The Project is currently at a stage before the Additional Works Package (AWP)/Total Outturn Cost (TOC) stage, where preferred solutions are still being tested, and a draft proposed solution is still being developed with a preliminary cost-plan.

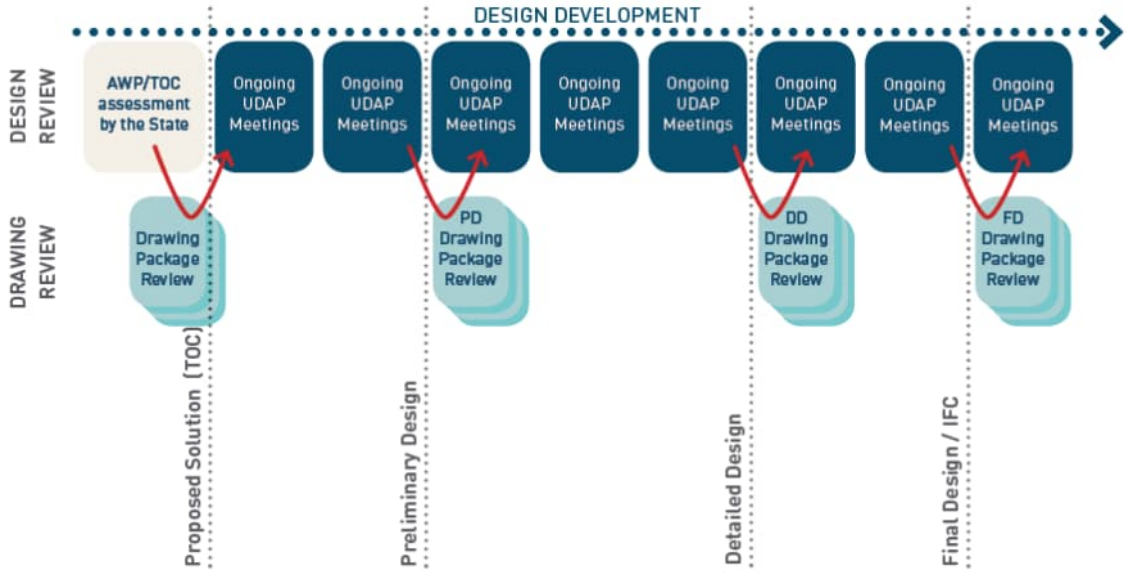

Figure 3 UDAP design review process

2.5 Overlooking assessment process

LXRP has established overlooking assessment processes to ensure all new elevated rail projects are thoroughly assessed against any potential overlooking from the rail and elevated train stations. There is currently no legislative requirement to mitigate overlooking from elevated railway structures, however LXRP applies the Victorian Residential Development Standard (ResCode) as a basis for the consideration of overlooking impacts where the rail bridge comes within close proximity of residential habitable room windows or private open space.

ResCode Standards A15 and B22 relate to overlooking and provide objectives and standards for new residential development where there is overlooking of existing residential land use. The objective of these standards is to “limit views into existing secluded private open space and habitable room windows”. The standards relate to views from new habitable room windows, balconies, terraces, decks or patios into existing habitable room windows or secluded private open space.

LXRP considers that the ResCode objectives and standards provide an appropriate basis for assessing potential overlooking from a window of a train travelling on the new elevated structure within nine metres to existing habitable room windows or secluded private open space. For station platforms on elevated rail, given the likelihood of someone having more time to view surrounding propertines, an assessment of existing habitable room windows or secluded private open space within 50 metres of a viewing point is undertaken.

An LXRP overlooking assessment will include:

- Analysis of adjacent land use types and built form.
- Assessment against ResCode for properties within nine metres (no platform) or 50 metres (at platform) of a viewing point.
- Reviewing line of sight from elevated railway (including platform where relevant).
- Determining if a privacy screen is required and if so, the height, design and treatment of privacy screening based on the assessment.

For the Project a comprehensive overlooking assessment will be undertaken based on the proposed design solution. This will inform where privacy screening is required along the corridor.

2.6 LXRP Voluntary Purchase Scheme (VPS)

The VPS is a program which LXRP, on behalf of the Victorian Government, offers to purchase eligible residential properties that are affected by an elevated structure. The scheme provides eligible landowners who meet a set criteria the option to sell their properties to the State Government for an agreed amount that covers the cost of selling and purchasing a replacement property. The aim is to put landowners who participate in the VPS, in an ‘equal’ financial position to where they were prior to the commencement of works.

A VPS assessment is applied to all projects which may affect adjacent properties to the rail infrastructure, to ensure residents and landowners are not compromised by the removal of level crossings and addition of new rail infrastructure. The VPS has been used on multiple level crossing projects since 2016.

Guiding Principles

The LXRP ‘*Voluntary Purchase Scheme – Guiding Principles’* document guides the selection of properties for inclusion in the VPS where the properties may be compromised due to the location of the rail infrastructure. In these instances, property owners may be eligible to sell their property to the State Government in accordance with the VPS. LXRP have developed a set of Primary and Secondary Criteria for evaluating the VPS eligibility, based upon land use, duration of ownership, proximity to the rail corridor, and the height and setback of the property in proximity to the rail infrastructure. To be eligible for the VPS, a property needs to meet all the primary criteria and at least one secondary criterion. The only exception to this is if the LXRP determines to include a property in the VPS where it is satisfied that there is a compelling reason to do so. The secondary criteria relate to visual intrusion and overshadowing.

3. Application of Urban Design Processes

3.1 Brunswick Urban Design Guidelines

LXRP has established comprehensive processes to support great urban design outcomes for all projects.

For all LXRP projects UDGs are prepared to apply the principles, objectives and measures of the LXRP-wide UDF to each particular project, based on the site context and local community objectives.

A UDG (LXRP-LX29-094-0-00-UD-RPT-0001) document has been prepared for the Project. This document has been informed by council's strategic plans, and other information relevant to the Project area and surrounding context.

The site-specific urban design guidelines, along with the UDF, will inform the key elements of the rail infrastructure, station buildings and public open space design for the Project.

The UDG's analyse the issues and opportunities of its urban context in advance of detailed design, and develop guidelines which are focused on the following principles from the UDF:

- Identity
- Urban Integration and Vibrancy
- Connectivity and Wayfinding
- Accessibility
- Safety and Amenity
- Resilience and Sustainability

Through collaboration and consultation with UDAP and local councils, the UDG's are developed to address local issues and opportunities which Merri-bek City Council, Melbourne City Council or UDAP may have, and develop guidelines to either mitigate or improve the issues. With the inputs from Merri-bek Council, LXRP then have confidence that finer grained issues become addressed through the design process, and that agreement amongst the stakeholders is reached in principle prior to detailed design commencing.

The current UDG has been consulted with Merri-bek City Council, Melbourne City Council and Heritage Victoria through a series of UDAP meetings to discuss and agree the issue and opportunities of the site, and the guidelines which are developed as a response to these. This consultation will be ongoing.

The site and surrounding context is provided in the figures below, but also provided in the UDG LXRP-LX29-094-0-00-UD-RPT-0001 submitted with this document as part of the context planning section.

3.2 Existing built form and land use context

Whilst the southern extent of the Project in Parkville occurs predominantly in the rail corridor, there will be some minor incursions into Royal Park. The majority of the Project, once it moves north of Park Street, occurs within the rail corridor in Brunswick, a highly urbanised area that is undergoing rapid change.

Within Royal Park the existing rail line is contained within a rail cutting, with the Upfield Shared Path located to the east of the rail line. The rail cutting screens views of the rail line from Royal Park, which is further screened from Royal Park users by large existing native trees planted to the west of the rail line, and south of Park Street. The trees in this location are significant, and form part of the Victorian Heritage Register for Royal Park.

Figure 4 Upfield rail corridor north of Park Street – residential properties to the west (right) of the rail, Upfield Shared Path to the east (left)

Within Brunswick, the Upfield Railway Line has differing land uses either side of the alignment, ranging from single storey, detached dwellings (primarily in the north west and south west), multi-storey residential developments clustered around Anstey Station (east of the alignment) and around Jewell Station (east and also north west of the station precinct).

The corridor sits to the west of the Brunswick (Sydney Road) Activity Centre that has been designated as an area of significant housing growth and urban densification supported by its proximity to public transport. A civic precinct is located east of the corridor on Dawson Street which includes RMIT Brunswick Design Campus, Merri-bek (Brunswick) council offices and Brunswick Townhall, police station and Brunswick Baths. Figure 5 below shows the existing land use of the Brunswick Activity Centre, with the areas noted in mauve between Sydney Road designated as the Brunswick Activity Centre and having a Design and Development Overlay (DDO), which will allow for mid-rise mixed use developments to be built within these areas. Section B.6 – Land Use and Activity of the UDG details the land use analysis of the corridor.

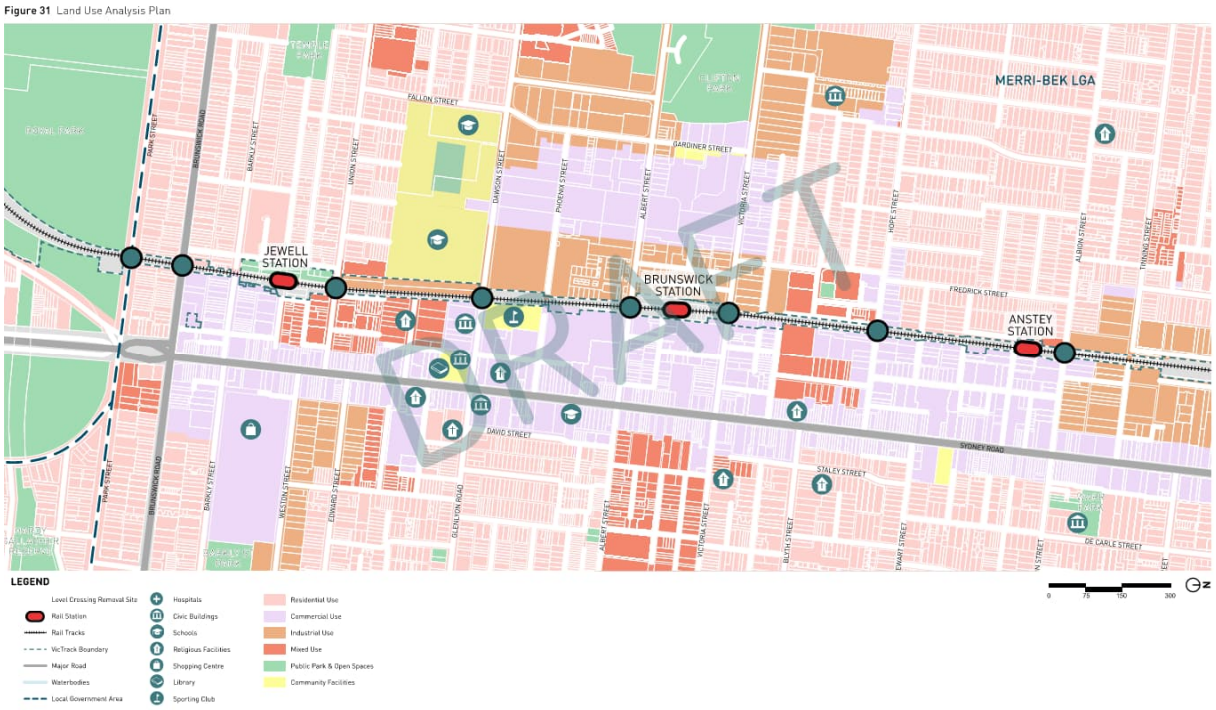

Figure 5 Brunswick Land Use Analysis Plan

Light industrial and commercial properties are located throughout the remainder of the corridor, with high density, multi-storey residential infill and intensification progressively occurring throughout the corridor, primarily between Sydney Road and the rail corridor.

The Brunswick Activity Centre has views to the city in the south, and the east west arterial and local roads have long distance views towards the Upfield Railway Line.

The topography within the corridor and surrounding area is flat between Tinning Street in the north and Park Street in the south. South of Park Street the rail corridor is located in Royal Park, and slopes downward into a rail cutting as it passes McAlister Oval and Royal Park Tennis Club, heading towards the city and Royal Park Station.

Residential properties west of the corridor are mostly single storey, detached dwellings, commonly located to the south west of Jewell Station and north west of Anstey Station. Properties are typically Edwardian brick and weatherboard dwellings with north/south facing façades and backyards.

The majority of these residential properties are aligned parallel to the rail corridor with views to the north and south, and a minority have views directly facing the rail corridor. A small portion of detached houses are located along Orient Grove and have direct views towards Anstey Station and the rail corridor. This interface is considered a sensitive residential interface.

Figure 6 Park Street Level Crossing with Royal Park to the south and heritage listed elements in background (signals pole and signals hut)

Strategic context

The Brunswick Activity Centre is undergoing substantial change, with many multi-storey mixed use developments recently constructed or with current planning applications, superseding the older industrial developments which were traditionally found in the area, particularly between the rail corridor and Sydney Road. Developments adjacent to both Jewell and Anstey Stations are in line with Merri-bek City Council and State Government stategies for infill densification of activity centres and public transport corridors, of which Brunswick has both rail and tram access on Sydney Road, along with good active transport access due to the Upfield Shared Path. Section B.6 and C.2 of the Brunswick UDG note the land use planning and zones for the area in greater detail.

Under the Merri-bek Planning Scheme, the Brunswick Activity Centre has been designated as an area of significant urban densification and is expected to accommodate the majority of the municipality's housing growth. The Upfield Line plays a significant attractor to support the growth and the corridor will undergo significant transformation and renewal over the coming years. Merri-bek has also amended their Planning Scheme to align with the Moreland Industrial Land Use Strategy (2016) which supports the retention of industrial land to provide for future employment and rezoning to commercial, mixed use and multi-storey. Merri-bek City Council has undertaken this work to ensure that Brunswick remains an employment destination, but also supports residential growth within these areas.

Figure 7 Upfield Rail Corridor – north of Victoria Street, looking back to Brunswick Station. Upfield Shared path with light industrial sites to the east and west of the corridor

Heritage

The southern portion of the Project extends into Royal Park between Royal Park Station and Park Street. Royal Park is included on the Victorian Heritage Register (VHR) for its historical and aesthetic significance as an intact example of metropolitan park from the 1840s, along with the extensive remnant vegetation retained on site. Royal Park is 188 hectares in area and was established in 1854. It contains a wide range of designed and informal landscapes incorporating remnant indigenous vegetation, together with historic buildings, structures and community facilities.

Royal Park also includes a site of Regional Geological and Geomorphological Significance known as the 'southern railway cutting' identified by Wakelin Associates (2009).

The existing rail corridor is cut into the surrounding topography with around a 2-3 metre drop to the tracks from surrounding parkland adjacent to Park St. The rail corridor is proposed to widen the cutting slightly to the east to allow for the required rail geometrey for the Park Street rail bridge to maintain a minimum clearance for vehicular traffic.

Further details in relation to Royal Parks' geology, heritage values and landscape values are provided in Sections 3,7,8,10,11,14,18 &19 of the referral.

Jewell and Brunswick stations form part of the Former Coburg Railway Line (VHR H0952).

Jewell Station has recently been refurbished, and integrated into the redevelopments between the rail corridor and Sydney Road, and Brunswick Station sits in the middle of the Brunswick Activity Center's commercial core. Along with the two heritage listed stations, there are eight signal boxes, six gatekeeper cabins and six timber fences/gate used to close the level crossings which are all substantial structures within the VHR.

Royal Park of which the existing Upfiled Railway Line travereses is included in VHR (VHR H2337). Royal Park is historically significant as an outstanding and largely intact example of a 19th century public park.

Figure 8 Union Street Signal Box with apartments and RMIT in the background

The former Brunswick Gas and Coke Company Retort House is adjacent to the Upfield Railway Line and RPA and is also included on the VHR (VHR H2027).

This building is directly adjacent to the rail corridor at Hope Street, and will not be directly impacted by the Project, but may influence considerations of the rail infrastructure or station design due to its proximity.

There are also multiple places of local heritage significance adjacent to the Project, ranging from institutional facilities such as the Kingdom Hall of the Jehovah Witness on Brunswick Road, the Brunswick Baths, Brunswick Town Hall and the Railway Hotel on Dawson Street, along with the Dawson Street Police Complex. Section B.6 – Built Form and Heritage of the Brunswick UDG details the Heritage elements within the rail corridor and adjacent to the corridor.

A local Heritage Overlay (HO) extends across much of the Brunswick Activity Centre, inclusive of multiple detached and semi-detached residential properties around Jewell and Anstey stations. Park Street, north of Royal Park, also falls under HO130 in the Merri-bek Planning Scheme due to the architecture of the houses fronting Royal Park. Figure 9 below shows the HO for the corridor, along with local and State listed heritage properties adjacent to the rail corridor.

The management of impacts to heritage places and values listed in VHR and Merri-bek planning scheme will be undertaken in accordance with the *Heritage Act, 2017* and *Planning and Environment Act, 1987* respectively.

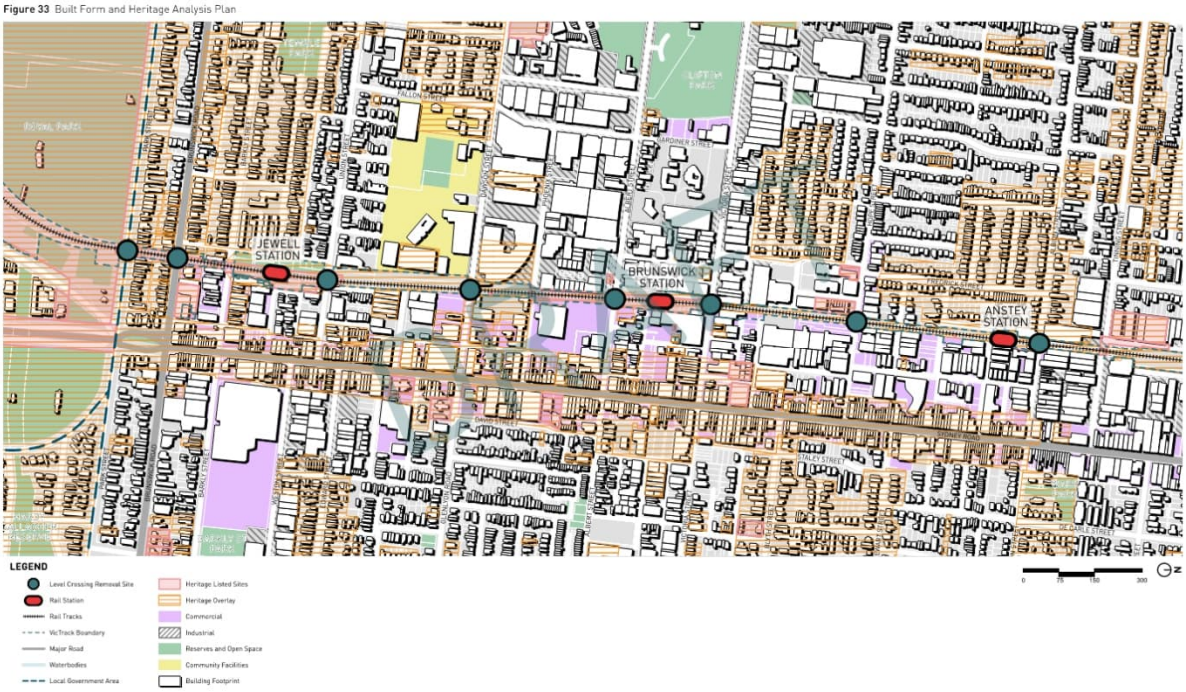

Figure 9 Built Form and Heritage Analysis Plan

3.3 Brunswick Urban Design Vision and design principles

The Brunswick UDG includes a project vision and design intent to guide the Project, which has been consulted with both Merri-bek City Council and the City of Melbourne to ensure alignment with the stakeholders. Consultation with both councils will be ongoing during the development and finalisation of the guidelines. Further consultation with both councils will re-commence prior to further design works re-commencing on the project.

“The Project will form a series of connected, community and public realm spaces strategically located for communities to socialise and recreate into the future.

The Project will support the development of a series of distinctive precincts through the corridor, which reflect the sense of place of Brunswick, celebrating diversity and heritage, whilst allowing for future growth. The station architecture should respond to the dynamic, and complex built form of the area which makes Brunswick a modern and changing suburban destination for all ages.”

The vision will be achieved through the following design principles:

- Honour and respect the history and heritage of the site - the Project will celebrate the area’s rich history by retaining and re-purposing the heritage assets throughout the proposal.
- Improve east-west pedestrian and cyclist connectivity and prioritise south-north movement - Maximise cross corridor permeability through opening up access and reconnecting in laneways and side street connections to enhance existing pedestrian and cyclist connections and harness opportunities for new connections to nearby local attractions.
- Enhance the value of natural environment and green open spaces - Establish a strong green connection throughout the Project by making a visual connection to the nearby open spaces
- Create attractive and active interfaces along the corridor – Ensure the Project delivers a high-quality integrated design for all built form and landscape elements that respond sensitively to the local context and create a vibrant, safer and well-integrated precinct enjoyed by the local community.
- Celebrate the diversity of identities within the corridor – Positively respond and enhance the unique changing character of the neighbourhoods surrounding the rail corridor. This changing character reflects the diverse local community with differing identities and needs.

3.4 Current project concept

The proposed Project solution is an elevated rail bridge rising from an abutment in the north and south of the existing Upfield Railway line, crossing the eight level crossings at between 5-5.5 metres height to the base of the rail bridge structure from the proposed ground level.

The southern abutment is proposed to be located in Royal Park, south of Park Street, and will likely be a retained earth structure which will rise out of the rail cutting between McAlister Oval to the west and the Royal Park Tennis Club to the east. The retained earth structure may take the form of either a planted embankment or vertical retaining walls, dependent upon the final design configuration. The City of Melbourne have requested a planted embankment to retain the amenity of views from Royal Park, and this will be factored into the design options. Several sections of rail bridge are proposed south of Park Street to open the structure to allow for Crime Prevention Through Environmental Design (CPTED) purposes due to the shared path alignment and visual amenity issues in the immediate area for Royal Park users. This will allow views along Park Street to be less obstructed by the rail bridge, and improved pedestrian connectivity east west along Park Street to Royal Park. The undercroft area of the rail bridge may also be used for pedestrian and cyclist connections through to Royal Park, if appropriate, but will also lead to an improved CPTED outcome in the area. A retaining wall will most likely be proposed on the east side of the rail alignment adjacent to the Royal Park Tennis Club due to limited space, but this will be minimised to allow for increased rail bridge spans where appropriate.

Within the existing Park Street level crossing site there is several existing infrastructure elements which will be retaining or refurbished. In the VicTrack land to the south east of the Park Street is an existing substation and maintenance carparking area, directly to the east of the shared path alignment. This element will be either retained or upgraded as part of the proposed works. An existing heritage VHR listed gatekeeper's hut is located directly south and east of the level crossing at Park St, which will also be either retained and refurbished or relocated and rufurbished, upon agreement with Heritage Victoria.

The Project will see limited removal of existing trees adjacent to the Park Street level crossing removal, as detailed in other documentation. The trees to be removed in this location are within the road reserve, or within one metre of the road/rail reserve. These trees will need to be removed to allow for the lowering of Park Street to allow for height clearances to the rail bridge over Park Street, and for the construction within the rail corridor of the new embankment/elevated structure. A substantial stand of existing native trees between McAlister Oval and the rail alignment will be retained and maintain a similar level of screening of the rail corridor as the existing conditions. The proposed use of multiple rail bridge sections south of Park Street will allow for a lighter and less visually obtrusive backdrop to the screening trees within McAlister Reserve, and increased CPTED opportunties for users of the shared path.

The existing three stations (Jewell, Brunswick and Anstey) will be consolidated into two stations (Brunswick south and Brunswick north) with a combination of side and island platforms dependent upon the final configuration of the stations and their locations.

The rail bridge is currently proposed to be elevated on top of concrete piers and crossheads at approximately 28 metres apart. There will likely be a combination of large single piers and crossheads holding both rail bridges, with single piers separated at potential island platform stations and 'portal' piers at side platform stations, with the station typologies still to be finalised.

Figure 10 Bell to Moreland open space with active transport links and open space beneath the elevated rail bridge

Privacy and visual considerations

LXRP has established overlooking assessment processes to ensure all new elevated rail projects are thorough assessed against any potential overlooking from the rail and elevated train stations, so that this interface can be appropriately managed.

The existing Upfield Railway Line is located alongside several multi-storey residential apartments along the corridor, in the south around the existing Jewell Station reserve and in the north to the east of the existing Anstey Station. This is an existing railway line with existing impacts (noise, visual, amenity, traffic, safety) within a highly urbanised mixed use environment.

The introduction of an elevated rail structure has the potential to result in some visual concerns by residents due to the height of the structure in proximity to adjacent properties and potential privacy issues. Whilst some of these properties could be eligible for VPS, some other properties adjacent to the elevated rail may not form part of the VPS, but feel their privacy, due to proximity to the rail infrastructure, is compromised.

A detailed assessment of potential overlooking will be undertaken, in accordance with LXRP Overlooking Assessment Process, to inform where privacy screening will be applied to the elevated rail. Similar to other elevated rail projects delivered by LXRP, privacy considerations will be managed through the use of privacy screens adjacent to habitable rooms and private open space, and treated consistently for urban design amenity improvements.

The rail bridge will likely have screens on both sides of the structure to prevent overlooking into relevant habitable room windows and private open space of adjacent properties. Throughout the corridor (not at stations) screens would likely be 1.2 metres high. At stations, privacy screen heights will be approximately 1.8 metres high consistent with previous projects such as Coburg and Moreland stations or Bell and Preston stations. The design of the screens will be part of an overall urban design strategy aligned with the station architectural response, and will be developed in consultation with the UDAP (see section 2.2).

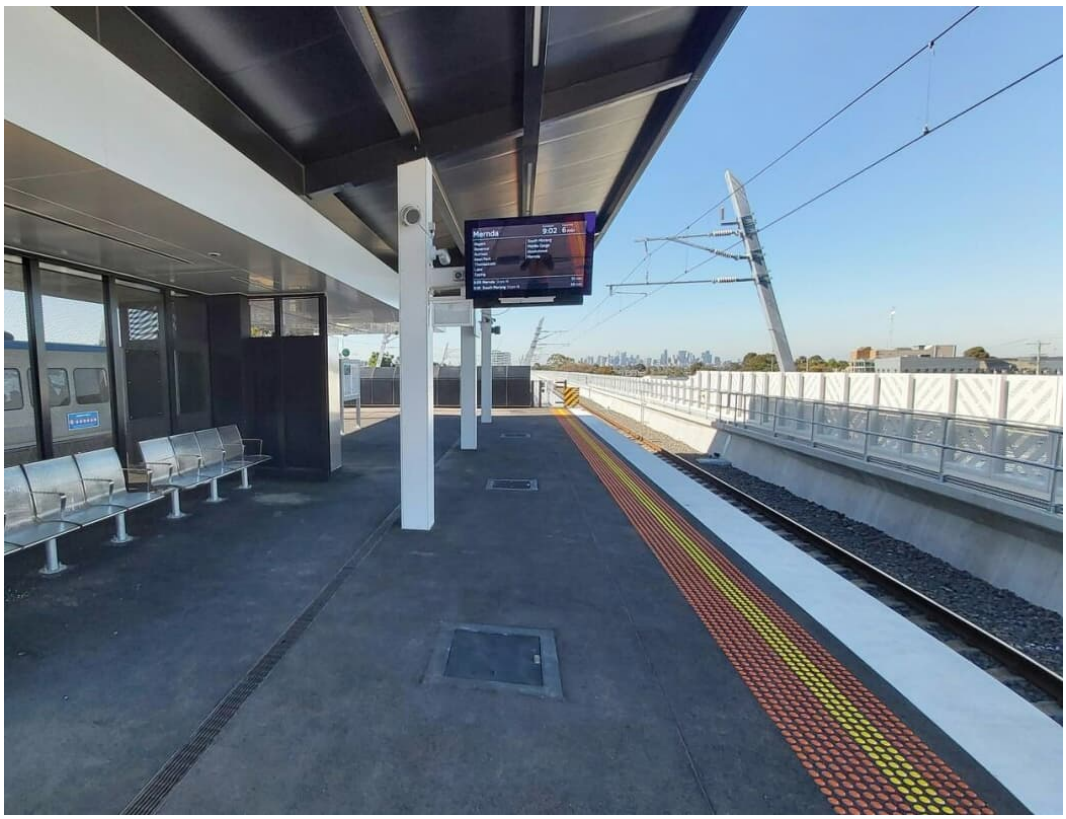

Figure 11 Preston Station privacy screening with normal height rail bridge screening in the distance

The height of station vertical transport may vary dependent upon the specific design solution. However, based upon previous LXRP station designs, this will likely be between 12-14 metres in height from the ground level to the top of the structure. Each of the proposed stations will likely use end loaded platforms to allow for improved walk up from the north and south of the sites, which would spread the vertical transport across either two or four locations dependent on the final design and platform configuration.

Figure 12 Bell Station rail bridge privacy screens on the elevated structure

New public spaces and share use paths

The Project is an important project for Melbourne which is well supported by State and local planning policy. The corridor is within a strategic renewal area undergoing rapid change and densification and requires a reliable and efficient transport network to support its growth.

The Project is within an existing railway line with existing adverse impacts (noise, visual, amenity, traffic, safety) within a highly urbanised mixed use environment with transport deficiencies.

The Project will improve safety and reduce travel time along the Upfield Railway Line, improve safety and connections for pedestrians and cyclists, and reduce congestion. The Project will also improve the liveability of the local area by creating a new open space and landscape corridor and improving cross-corridor connections for local residents and users, allowing for safer and more convenient access at multiple locations where none existed previously.

The elevation of the rail structure will enable the creation of public spaces underneath the rail bridge, as successfully delivered by LXRP as part of the Bell to Moreland and Preston level crossing removals. Within these projects, the addition of public open space to the rail corridor has provided valuable amenity and functionality to the rail corridor. Whilst the ultimate public uses for public spaces has yet to be resolved for the Project, at a minimum the following will be investigated, with the final design to be informed by engagement with council and the local community:

- Dedicated walking and cycling paths.
- Amenity planting providing biodiversity and urban heat island cooling effects.
- Playgrounds- nature play and active play areas.
- Dog park.
- Event spaces which can be utilised for community events.
- Youth focused spaces with parkour, skate elements and basketball courts.

Merri-bek City Council's Open Space Strategy highlights the importance of open space within the local area. The Open Space Strategy outlines that this project site is located within an area that currently has a low provision of open space and does not meet community needs. Brunswick has developed over time in an ad-hoc manner, and subsequently has a low allocation of public open space in general. The Project will deliver high quality public spaces and improved pedestrian and cyclist connectivity across and along the rail corridor. The Project will also create valuable public spaces for residents within walking distance of the corridor. The Merri-bek Open Space Strategy recommends open space be provided within 500 metres of all residential properties and 300 metres of all activity centres.

Figure 13 Bell to Moreland – dog park located beneath the elevated rail bridge

Heritage

LXRP has a proven track-record of successfully delivering projects which intersect with places of local and state heritage signficance including:

- Bell to Moreland LXRP / Moreland and Coburg Stations
- Union and Mont Albert Roads LXRP / Mont Albert Station
- Balcombe Road LXRP / Mentone Station
- Ferguson Street LXRP / North Williamstown Station

For the delivery of the the Project, LXRP will take a similar approach to LXRP's Bell to Moreland Level Crossing Project, as both projects form part of the Former Coburg Railway Line (VHR H0952) where both Coburg and Moreland Stations were retained, refurbished and incorporated into the landscape and urban design response. Within these precincts, other heritage elements were also retained and refurbised to celebrate and intepret the unique rail history of the Upfield Railway Line.

A strategy for the assessment, retention and refurbishment of elements within the Upfield Railway Line Rail Precinct that are included on the VHR will be undertaken in close consultation with Heritage Victoria. The heritage strategy will assess the cultural and historical value of each of the heritage elements, and identify historical elements for retention, refurbishment and interpretation.

Jewell Station has recently been refurbished as part of the station precinct redevelopment and, along with Brunswick Station, will be retained and refurbished.

The timber structures of the gatekeeper cabins and signal boxes will also be assessed for retention value and re-purposing as part of the overall heritage strategy in consultation with Heritage Victoria. The example below for the Moreland signal box is similar to what will likely be expected for the Project.

Figure 14 Moreland Station heritage signal box with interpretive signage

The Project extents also extend to Royal Park, which has a Victoria Heritage Register listing (H2337) due to its historical and aesthetic significance as an intact example of metropolitan park from the 1840s, along with the extensive remnant vegetation retained on site. It contains a wide range of designed and informal landscapes incorporating remnant indigenous vegetation, together with historic buildings, structures and community facilities.

Royal Park also includes two sites of Regional Geological and Geomorphological Significance known as the Royal Park Railway Station cutting (ML 042) and the Southern Railway cutting, Royal Park (ML 069) identified by Wakelin Associates (2009). Only site ML 042 (Royal Park Railway Station cutting) is potentially impacted by the Project, due to new rail geometry which is required to elevate the rail line over Park Street.

The Project will work with the City of Melbourne and Heritage Victoria to confirm the scope and extents outside of the required works within the cutting, and to maximiste retention of the existing vegetation which contributes to the landscape character of the park and long distance views across the park.

3.5 Urban design development

During detailed design, the Project team will undertake an urban design strategy for the Project, in response to the UDF and UDG, which will inform the further development of the concept and detailed design stage of the Project. The strategy will analyse existing conditions and gather data on usage patterns of people across and around the corridor, to understand existing and future pedestrian movements and walking catchments, cross corridor movement and land use activity around the corridor. Using this data, the strategy will identify precincts across the corridor, each with specific opportunities relevant to the context. The strategy will also identify various potential public realm opportunities to be proposed for the public realm, such as dog parks, outdoor gyms, community gardens, playgrounds and othe opportunities such amphitheaters or outdoor event spaces for community events.

Alongside the UDF and UDG, the strategy forms the basis for the Project urban design response and place activation strategy. This will also inform the design review process and engagement with the community, relevant stakeholders and local council.

During design development for all projects, including the Project, design packages are reviewed at key milestones by subject matter experts to ensure compliance with the UDF, UDG and any other relevant project requirements. Reviews are undertaken by a suitably qualified architect and landscape architect on behalf of LXRP, who are independent from the delivery partner, to maintain objectivity and impartiality.

OVGA-chaired UDAP meetings are held regularly across the Project lifecycle to assist design teams in maintaining high quality outcomes.

External stakeholders such as Metro Trains Melbourne (MTM), V/Line and local council are also involved in the design review process through participation in UDAP meetings, reviewing of relevant drawing packages and Safety in Design workshops, as required.

3.6 LXRP Voluntary Purchase Scheme (VPS)

LXRP has a proven track record successfully implementing VPS programs and an experienced team of specialsts dedicated to assisting eligible property owners through the VPS process.

An assessment of the final Project design, relative to the criteria in the *VPS Guiding Principles*, will be undertaken during the detailed design phase to confirm the extent of properties that may be elegible for VPS. Final design measurements will be required prior to making this assessment.

4. Conclusion

The Project is an important project for Melbourne which is well supported by State and local planning policy. The Project will improve safety and reduce travel time along the Upfield Railway Line, improve safety and connections for pedestrians and cyclists, and reduce congestion. The Project will also improve the liveability of the local area by creating a new open space and landscape corridor and improving cross-corridor connections for local residents and users, allowing for safer and more convenient access at multiple locations where none existed previously.

The Project is being delivered in a strategic renewal area undergoing rapid change and densification and requires a reliable and efficient transport network to support its growth. This is an existing railway line with existing adverse impacts (noise, visual, amenity, traffic, safety) within a highly urbanized mixed use environment with transport deficiencies.

LXRP has a proven track record of delivering high quality urban design outcomes for local communities as part of similar projects around Melbourne with successful results. LXRP will draw on this experience and existing LXRP policies in delivering the Project. LXRP has designed the Project to maximise the opportunities presented by its context and ensure an appropriate response to any potential environmental impacts.

To enable this outcome, processes have been established to ensure that urban design outcomes are prioritised throughout the Project lifecycle. Key documents, such as the UDF and UDG, set clear expectations for urban design quality. Business processes ensure that UDAP is engaged throughout the Project lifecycle, providing expert advice on design quality, to support the delivery of high-quality urban design. Good governance processes are in place to ensure that the amenity of surrounding residents is protected, and where possible significantly enhanced, and all existing residents are treated fairly. The elevated rail solution for the Project will connect the Upfield Rail Corridor to Royal Park providing the communities of Coburg and Brunswick with connectivity along and across the corridor. This will enable a series of better connected public spaces, strategically located for communities to socialise and recreate into the future.

The Project will enable a series of distinctive precincts throughout the corridor, which will reflect the sense of place of Brunswick, celebrating diversity and heritage, whilst allowing for future growth. The Project design will address the area's history, whilst also providing a contemporary response to Brunswick as a modern and changing urban activity centre. The Project will:

- Celebrate the area's rich history by retaining and incorporating key heritage assets throughout the proposal.
- Maximise permeability and pedestrian and cyclist connections along and across the corridor and enable access and connections to laneways and side streets.
- Establish new public spaces and strong green connection throughout the corridor.
- Deliver a high-quality integrated design that responds to the local context and creates vibrant, safe and well-integrated precincts for the local community.
- Deliver a series of connected new community public spaces, located for communities to socialise, and create strong green connections throughout the corridor.
- Positively respond to and enhance the unique changing character of the neighbourhoods surrounding the rail corridor.
- Mitigate potential visual concerns from adjacent residents, through design measures including privacy screening to manage any potential overlooking.
- Maximise the retention of mature and significant trees and the creation of new and enhanced landscapes and public spaces.
- Improve the reliability and efficiency of transportation networks by reducing overall congestion and enable increased active transport.

This Project will act as a catalyst for positive urban renewal that reinvigorates and reconnects communities and create a legacy, and an innovative and high quality urban environment and place.

Appendices

Appendix A – Urban Design Framework – Project Specific Measures Relevant to Landscape and Visual Values

Urban Design Framework

Project specific measures

The following table extracts specific UDF Measures that are relevant to the Project and how each Measure will be considered in the Project design and solution.

UDF Measure	Expected Project response
Program-Wide Measures	
*M1.1 The design delivers a **high quality, well-resolved, innovative outcome** that is enduring in expression and timeless in nature.*	The Project design, particularly architecture and landscape architecture, will respond positively to the local character through the use of materials, built form, landscape palette and consideration of interfaces. The design will capture the sense of place specific to Brunswick and will be compatible with the Bell to Moreland elevated rail urban design treatment.
*M1.2 The design addresses **visual impact** through integration with topography and landscape.*	The elevated rail bridge design will be traversing through a transport corridor which is within a mixed-use activity centre and will take site specific measures and guidelines to integrate the design into the overall urban context.
*M1.5 The design contributes to the **line-wide identity** as well as legibility of the corridor.*	The Project will positively contribute to the local identity and legibility of the corridor through elements such as the station architecture and landscape architecture, along with public open space elements such as activation nodes and elements designed within these spaces, which will form a strong identity for the area. It will strengthen identity and elements already built from the Coburg and Moreland corridor to the north also.
*M1.10 Structural, functional and **service elements** are integrated with the landscape, land use and character of the precincts.*	The Brunswick infrastructure elements and general arrangements will be integrated with adjacent land use functions and present a co-ordinated suite of materials and elements which strengthens the built form and landscape character of the area.
*M1.12 **New interfaces** are integrated and positively contribute to the neighbourhood.*	During preliminary design, the urban design strategy will analyse appropriate active and passive recreation uses within the corridor and their placement. The retention and improvement of the Upfield Shared Path will also improve safety and connectivity of the corridor.
*M1.13 The design uses high-quality **precedents** to inform the development of large and small-scale elements.*	The Level Crossing Removal Project has delivered over 84 level crossing removals and 45 new stations, which have been designed as innovative and high-quality stations.

UDF Measure	Expected Project response
Infrastructure Measures	
*M2.1 Within site constraints, the horizontal and vertical **alignment** of the rail or road geometry responds positively to the local context by:* *– **integrating** with adjacent activity centres, local street geometry and public space.* *– considering any impacts of **construction methodologies** on landscape and urban design.* *– aligning rail and road to maximise retention of **existing vegetation**.* *– considering how the solution aligns with activity centre **structure plans**.* *– maximising **active transport** links across and along corridors for improved directness, amenity and safety for users.* *– **consolidating infrastructure** to minimise footprint and maximise landscape opportunities.* *– promoting intuitive **wayfinding**.* *– aligning CSR and underground services to **maximise deep soil zones** for canopy trees.* *– reducing the need for screening to **mitigate overlooking** to adjacent neighbours, overshadowing and light spill issues.*	The design team will work through the station siting as key element of the design, to provide direct and accessible access to the station for users and improve efficiencies to the transport network. The siting will be informed by the activity centre planning and adjacent developments. The landscape and urban design will be another key element has been consulted with Merri-bek Council and the City of Melbourne and will continue through the design process. The overall infrastructure design will build upon previous projects and lessons learnt from 84 completed level crossings and 45 new stations, and will aim to improve place, identity and connectivity i across and through the corridor. The design of major utilities and services will be subject to early investigations by the design team and UDAP to maximise opportunities for the landscape and urban realm within the corridor, per previous projects. Due to the narrow corridor, analysis will take place in areas where privacy screening may be required, and if so, will be installed at locations where there is a potential for overlooking. This is similar to previous elevated rail projects such as Preston and Bell to Moreland, where a consistent approach has been applied to the rail bridge screening to provide urban identity and privacy requirements. Overshadowing considerations will form part of the overall screening approach.
*M2.2 Rail and road alignments are designed to strengthen **connectivity** by:* *– visually and physically **connecting precincts** that were previously disconnected* *– supporting multi-modal access to enable and encourage **growth** in sustainable transport modes* *– providing direct and universally accessible **cross-corridor connectivity** to increase permeability along the corridor* *– demonstrating the potential for **integrated development opportunities**.*	The elevated structure will allow for improved community and active transport connections underneath the rail bridge and across the corridor. Previously disconnected street networks will be reconnected to allow pedestrians and cyclists to connect east-west while improving the north-south connectivity. Merri-bek Council and the City of Melbourne will also inform active transport connectivity, and the Department of Transport and Planning will also form part of the quorum of integrated stakeholders who will input to the integration of the adjacent public transport networks within the corridor and station precincts.
*M2.3 The design of new and modified bridges, rail bridges, or ramps should respond to **local context** appropriately.*	As per previous projects, the design of the rail bridge and its transitions across major and minor roads will form part of the overall urban design for the Project, responding to the local context and also forming part of the regional wayfinding across the transport network due to the urban design treatments. This will respond to the local context and will be reviewed and assessed during the preliminary design through to detailed design by UDAP.

UDF Measure	Expected Project response
*M2.4 Elevated structures are aligned to **minimise visual bulk** to adjacent sensitive interfaces and public space.*	The rail bridge design and elevated structures has been developed across the LXRP program from Coburg to Moreland, Preston to Bell, High St Reservoir and Keon Park amongst others, and provides a visually consistent element with a consistent and minimal profile which also reduces noise due to the unique design.
*M2.5 Bridge pier **alignments and crosshead clearances** provide comfortable pedestrian environments and maximise public space opportunities.*	The height and alignment of the rail bridge will be subject to detailed inputs regarding clearances across road crossing and within the station precincts to ensure a generous undercroft area which can also function well as public realm and landscape within the corridor.
*M2.6 Maximise **extent of open spans** in elevated structures to support direct cross corridor pedestrian movement.*	The proposed design of the Project will maximise elevated rail bridges to promote activation and increases public realm within the undercroft areas of the rail bridges, per previous LXRP precedent projects such as Coburg to Moreland and the Preston to Bell level crossing removals.
*M2.7 Elevated structures maximise **daylight** to the ground plane and public space, while minimising overshadowing to adjacent sensitive interfaces.*	The infrastructure design will aim to maximise daylight to the undercroft areas of the rail bridges and maximise the landscape and public realm opportunities to areas with good solar access. Minimising the overshadowing of adjacent sensitive interfaces will also be a focus of the detailed design and site planning.
*M2.8 Maximise bridge spans for improved pedestrian amenity and clear sightlines to improve **passive surveillance.***	The rail bridge design will improve passive surveillance within and across the corridor beneath the rail bridge within the Project extents.
*M2.17 **Roadside barriers, anti-throw screens and corridor fencing** positively contribute to the station precinct and corridor.*	A coordinated and integrated palette of street furniture, fencing and other elements will form part of the overall urban design for the Project.
*M2.18 **Integrate WSUD** with landforming and infrastructure for stormwater management and biodiversity.*	Stormwater management and WSUD will form a balance to the public realm and landscape strategy for the rail corridor, in collaboration with Merri-bek Council and based upon previous LXRP projects.
Public Space Measures	
*M3.1 Accessibility and general amenity for the community is improved through a **coherent, legible and continuous public space**.*	The urban design and public realm design will form a major element of the design team's focus, in consultation with community and local stakeholders.
*M3.2 Public spaces are **comfortable and inclusive** with good access to daylight, shade, shelter and eating.* *M3.3 Public spaces support a diversity of **active and passive uses***	The Project team has worked with Merri-bek City Council to map place attractors and community facilities which require enhanced connectivity. Connectivity across and along the corridor will be enhanced through the removal of at-grade infrastructure.
*M3.4 The design enhances **visibility and surveillance** through clear sightlines and minimising visual clutter.*	Visibility and surveillance of the rail corridor will be vastly improved beneath the elevated rail bridges, with increased activation of the undercroft areas also.

UDF Measure	Expected Project response
*M3.5 Station forecourts are interchanges that allow for **seamless movement of pedestrians and cyclists** during peak times while accommodating spaces for people to wait*	The design of the station forecourts will be subject to detailed inputs by Merri-bek Council and the Department of Transport and Planning as part of the quorum of integrated stakeholders who will input to the integration of the adjacent public and active transport networks within the corridor and station precincts.
Landscape Measures	
*M4.2 The **corridor landscape** is enhanced through a coherent, well resolved planting design with consideration of diversity, densities, form, colour and texture.*	Based upon previous project precedents, the Project will deliver a well-resolved and detailed landscape and public realm design. This will also be subject to review from Merri-bek Council and other stakeholders and will respond to the local context whilst being a robust and resilient landscape areas.
*M4.3 The design of new infrastructure, car parks and ancillary buildings are aligned to **minimise loss of mature trees**, remnant vegetation, significant landscapes and open space.*	A detailed tree retention plan will form the basis of the preliminary design for the rail corridor. All efforts will be made to minimise the loss of mature and remnant trees, particularly within heritage areas such as Royal Park.
*M4.5 **Significant existing trees** are integrated with the design of new infrastructure.*	Per M4.3, a tree retention plan will make all efforts to retain significant and remnant trees where possible.
*M4.6 Maximise **tree canopy coverage** to enhance the immediate and surrounding landscape through shade, wind protection, comfort and visual amenity.*	The urban design guidelines and detailed design will aim to maximum tree canopy coverage within the corridor and adjacent development areas where possible.
*M4.8 **Plant species selection**, densities and layout are resilient to changes in climate and suit the micro-climate.*	The selection of a plant palette for the Project will aim to choose species which can easily adapt to climate change and improve the local microclimate. As part of their stakeholder inputs, both Merri-bek Council and the City of Melbourne will be part of the design process and will be consulted on plant species for the Project.
*M4.9 Planting design should provide **visual buffers** to service infrastructure from sensitive receptors.*	The Project will aim to integrated service infrastructure into the public realm and urban fabric of the Project, through integration of architectural materials and /or vegetative screening where required,
*M4.10 **WSUD and drainage basins** are integrated into the landscape with shallow sided batters for improved planting outcomes and reduced fencing requirements.*	The use of WSUD and stormwater elements such as drainage and detention basins will be resolved through the preliminary design to ensure that these elements form part of a coherent and well-resolved landscape strategy for the rail corridor. The use of fencing will be minimised where possible.
*M4.16 Appropriate **site preparation** is implemented to enable successful plant growth.*	Based upon previous project precedents and recent lesson learnt from LXRP projects, the landscape strategy will benefit from additional site surveillance and deep decompaction to allow for improved plant growth and the formation of deep planting zones for trees where required.

UDF Measure	Expected Project response
*M4.17 Tree planting, lighting and CCTV layouts are coordinated to **maximise the number of trees** whilst addressing safety concerns.*	LXRP relies upon careful coordination of design packages through the detailed design process to ensure that civil, safety and public realm elements work in unison to maximise tree canopy cover within the rail corridor where possible.
Active Transport Measures	
*M5.1 The design promotes efficient, comfortable, safe and legible **active transport** with:* • *priority modes accommodated* • *walking and cycling paths that cater for desire lines* • *intuitive wayfinding through visual and physical connectivity* • *cycling facilities that are safe, robust and an integral part of the station design.*	An active transport strategy will form part of the urban design response to the Project, in connecting the separated cycle and pedestrian paths which will form part of the public realm. This has been developed and built on Coburg to Moreland, and with inputs already from Merri-bek Council on lessons learnt from that project, LXRP believe we will be able to deliver a great improvement to the Upfield Strategic Cycling Corridor.
*M5.2 Existing pedestrian and cyclist connections are re-established at locations that increase **cross-corridor connectivity** and retain local desire lines. New paths build on and feed into existing and proposed networks.*	Working with Merri-bek Council, the Project team has already commenced mapping strategic active transport connections and community facilities across the corridor which should be re-connected.
*M5.6 The **existing pedestrian and cycling network** along and across the rail corridor and to the station precinct is enhanced for all users.*	Refer to M5.1 response.
*M5.7 Pedestrian and cycle **paths are safe and clearly delineated** through the station precinct.*	Separation of cycle and pedestrian paths through the station precinct has been a strong focus on previous projects such as Coburg to Moreland and Preston to Bell.
*M5.8 **Pedestrian road crossings** are raised, where possible, and are safe and appropriately located.*	A hierarchy of consistently treated pedestrian and active transport crossings will be developed for the Project, continuing a similar strategy to Coburg to Moreland.
*M5.10 Pedestrian and cycle routes are designed to **minimise conflict** with other modes of transport.*	Successive projects have successfully delivered great places with high capacity active transport routes.
*M5.13 The **alignment of paths** minimises vegetation removal and is coordinated with utility placement.*	Minimising vegetation loss is a high priority for LXRP. Coordinating the design of active transport and utility placement has often been done through ensuring the active transport paths can double as maintenance paths, with utilities placed to the side of the paths to minimise impacts. This will be developed further for the Project.

UDF Measure	Expected Project response
Station Measures	
*M6.1 Architectural and structural design are integrated to achieve high quality design outcomes and **reduce excess materials**.*	The design of the stations and infrastructure on level crossing removal projects has been progressively fine-tuned over successive projects, and now has a formal lessons learnt and solutions re-use project which enables the design teams to economise materials and provide design efficiencies on the station and infrastructure.
*M6.2 The station design responds to **user needs** including functionality, safety, amenity, ease of access, cleanliness and weather protection at all times.*	Each station will be a site specific design based upon the location and aspect of the station. The design team will work with stakeholders to provide a responsive design to the site context and adjacent developments.
*M6.4 The station is **integrated** to:* *– support the existing movement network and responds to **future access needs*** *– maximise opportunities to **activate adjacent activity centres*** *– provide suitable interfaces to, and increase amenity of, **surrounding areas**.*	The stations for the Brunswick level crossing removal will be site specific and be designed in the preliminary stage to an agreed precinct plan with the Department of Transport and Planning which addresses the existing movement networks, access to the adjacent activity centre corridor of Sydney Road and interfaces appropriately with adjacent developments.
*M6.6 The design maximises **daylight** and user comfort in station environments.* *M6.7 **Station concourses** are comfortable places to wait that provide access to daylight, high visual amenity and intuitive wayfinding.*	As part of the precinct planning and infrastructure design, daylight will be maximised to the station precinct and undercroft area to provide usable spaces which are comfortable, activated and welcoming to users.
*M6.8 The **bridge undercroft** is considered as a high quality interior space with a good amenity and an appropriate level of lighting.*	Station design for the Project will be developed per M6.6 to maximise daylight within the undercroft area and create a high quality amenity to the station forecourt.
*M6.9 Location and number of **station entries** considers passenger convenience, local movement, and land uses.*	The location and number of station entries will be designed to allow for the most efficient access to the station for users, accessing the stations from a variety of modes and directions which will be mapped out in the precinct planning with the relevant stakeholders.
Substation and Utility Measures	
*M8.1 Substations and utilities should contribute positively to sensitive adjacent land uses through **architectural screening and landscape**.*	The location and design of the substations and other utility buildings will form part of the urban design elements of the Project and will form part of the consolidated suite of materials for the Project. The substation and utility buildings will aim to provide amenity and a positive contribution to the corridor or station precinct.
*M8.2 The **scale and access** to substations is reduced for improved amenity to users of the corridor.*	The locations of the substations will form part of the precinct planning for the stations, where access and scale will form part of the station design. CPTED will also form a large part of the design, ensuring that these structures are placed in locations which do not form long term issues for maintenance and safety of the corridor.

UDF Measure	Expected Project response
M8.4 ***Pit lids*** *are integrated with paving materials and strategically placed to avoid visual clutter and maximise landscape opportunities.*	The design of pit lids and pit clusters for major utilities will be part of a coordinated design review process, to ensure that these elements are not dominant items within the public realm but can also be maintained safely and accessed in emergencies. Combined service route (CSR) alignments to be located in locations beneath cycle paths to not encroach into landscape areas, per previous projects such as Coburg to Moreland and Preston to Bell where these elements were coordinated closely to ensure integration.
M8.5 ***Services are integrated and concealed*** *within structures or building fabric to reduce visual clutter.*	LXRP have been progressively innovating on the placement and concealment of services through each successive project. Concealment and integration to reduce visual clutter will be a focus of design review within the detailed design of the Project.
Lighting Measures	
M9.1 A cohesive and ***integrated approach*** *to functional and feature lighting responds to location, user experience, and land use.*	Feature and public lighting design for the station and corridor areas will be site specific and completed during detailed design to comply with relevant safety requirements which MTM and DTP require for station precincts and active transport sections of the corridor. Feature lighting of stations is generally designed to provide presence and identity to the stations, whilst minimising light spill to adjacent properties.
M9.2 Lighting is designed sensitively to ***reduce light spill*** *to neighbours and impacts to fauna.*	Lighting within the station precinct and corridor will be done to minimise urban light spill and also light spill to adjacent properties.
M9.4 Integrate new lighting with ***existing neighbourhood lighting*** *to provide a safe and seamless user experience.*	LXRP will consultant and collaborate with Merri-bek City Council and the City of Melbourne during the detailed design process to ensure lighting extents and lighting levels are consistent with adjacent streets and tie into the overall lighting strategy for the area.
M9.5 Lighting design in ***undercroft areas****, including platforms and underpasses, increase safety, amenity, and comfort.*	Per M9.-9.4, the lighting design will comply with the relevant standards of local council, MTM and DTP to ensure compliance with the relevant standards and that CPTED is not compromised.
M9.6 ***Enhance identity*** *through feature lighting of prominent infrastructure, architecture or landscape.*	Feature lighting of the station precincts and urban design elements will be part of the overall urban design strategy and be part of the review process with UDAP and local stakeholders such as Merri-bek City Council.
M9.7 Promote ***daylight*** *to undercroft or trench environments through high quality, transparent skylights.*	The use of skylights within stations and undercroft areas has been used successfully on previous LXRP projects such as Frankston Station, Glenroy and Pakenham Station to provide natural light and reduce the reliance on artificial light to these areas.

UDF Measure	Expected Project response
*M9.8 Enhance lighting, both artificial and natural, to promote **safer and more accessible walkability** for all users at night*	A lighting strategy for the station precincts and corridor will form part of the preliminary and detailed design of the Project. A CPTED assessment of the stations and corridor will form part of the design review process, along with inputs from MTM, DTP and local stakeholders including Merri-bek City Council.
*M9.10 Engage **lighting design specialists** with demonstrated experience to ensure a safe and high-quality user experience for all times of day.*	Per M9.8, a lighting strategy for the Project will form part of the preliminary design. An overall CPTED assessment will take place of the corridor and the station precinct.
Screens and Barrier Measures	
*M10.1 Screening elements are **coordinated with the overall design** and respond positively to adjacent interfaces.* *M10.2 The design **responds to users** immediately adjacent to the screening element as well as from the broader context.*	Per previous comments, the design of rail bridge screens will be part of the overall urban design strategy and coordinated as part of the review process via UDAP and the review process with local stakeholders including Merri-bek City Council.
*M10.3 The screening elements are well integrated with the structure to minimise **extent and visual bulk**.*	Per comments on M10.1-10.2.
*M10.4 Screening elements **minimise overshadowing** of sensitive land uses including residential properties, open space, waterways, and valuable habitat.*	The locations and design of screening elements will be reviewed during detailed design but will aim to minimise overshadowing of sensitive receptors adjacent to the rail alignment.
*M10.5 **Visual permeability** of anti-throw screens and barriers is maximised to increase passive surveillance and visibility for all corridor users, particularly cyclists and pedestrians.*	The design of anti-throw screens and barriers will allow for increased passive surveillance where required.
*M10.6 Screening elements are designed to discourage vandalism and enable **efficient maintenance through articulation and texture.***	The design of screening elements will be reviewed within the UDAP process and internal design review to minimise maintenance requirements and minimise vandalism.
Materials and Finishes Measures	
*M11.1 The material palette is **context sensitive**, responding to the local environment, and supporting the precinct identity and wayfinding strategy for the corridor.*	The material palette of the Project will be developed as a site specific response within the urban design strategy and will support the sense of place and identity of the area through the material choices.

UDF Measure	Expected Project response
*M11.2 A **palette of materials, treatments and finishes** is developed for the whole corridor and key precincts as part of the urban design concept, including:* • *public transport interchanges, roads, bridges and elevated structures* • *noise barriers, retaining walls, abutments, fencing and barriers* • *pedestrian and cycle paths and infrastructure* • *land forming, trenches, cut and fill batters* • *activation nodes, playgrounds and undercroft spaces* • *associated elements including signage, lighting and furniture.* *M11.3 The materials and finishes are high quality, durable, safe, robust, **easy to maintain and age well over time**.* *M11.4 Consideration is given to using a **preferred solution** when selecting materials and finishes.*	Per previous comments, the material palette and architectural elements will be design as part of the urban design strategy for the Project and will be part of the UDAP design review process which will include local stakeholders including Merri-bek City Council.
*M11.5 **Vandalism and graffiti opportunities** are deterred through thoughtful material surface articulation, material quality, texture and colour.*	As part of the design review process, a graffiti management strategy will form part of the urban design strategy and also the CPTED assessment. Mapping of passive and active surveillance area of the corridor and station precincts will also inform the corridor design to ensure that areas of low passive surveillance can be managed within the design process.
Commercial Opportunity Measures	
*M13.12 Existing buildings with **heritage** importance are reactivated for commercial or other opportunities, where relevant.*	Heritage Victoria will be actively consulted on the Project as a major stakeholder. There will be ongoing discussions regarding the retention and re-purposing of both Jewel and Brunswick stations, along with the remainder of the extensive heritage listed rail elements within the rail corridor. A heritage strategy will be formed in consultation with Heritage Victoria specifying both retention and refurbishment elements for the heritage infrastructure.
*M13.13 Design decisions for **heritage asset** reuse include early consideration of future ownership and management expectations.*	Ultimate asset ownership will inform the heritage strategy in consultation with Heritage Victoria and Merri-bek City Council.

Appendix B – Urban Design Guidelines – Project Specific Issues, Opportunities and Design Guidelines Relevant to Landscape and Visual Values

Urban Design Guidelines issues, opportunities, and design guidelines

The Brunswick Urban Design Guidelines (LXRP-LX29-094-0-00-UD-RPT-0001) are specific to the rail corridor and its urban context. Fundamental to the document is the identification of key issues and opportunities, which inform design guidelines and develop the urban design vision of the Project. The issues and opportunities identify matters relevant to the Project, based on the existing conditions of the area,

In preparing the UDG, LXRP has consulted with the relevant local councils to appreciate the local community assets and usage patterns of residents and visitors. Merri-bek City Council and Melbourne City Council have been engaged to inform the content of the UDG and will continue to be engaged to inform the final UDG as the Project moves towards the detailed design stages.

The issues and opportunities and design guidelines sections have been developed for the corridor as well as station precincts.

The following table extracts specific UDG issues, opportunities and design guidelines that are of most relevance to landscape and visual values, along with a rationale as to why these have been identified, and how the Project is expected to respond.

UDG Section	UDG content	Rationale and explanation
3.0 Issues and Opportunities – Pg 14	*Issue 2: Abutment location and type may impact significant existing vegetation and biodiversity to the southwest of the proposed abutment location in Royal Park. These may require mitigation to prevent impacts within the TPZ's of the trees.*	Issue noting the significance of existing vegetation in proximity to the southern abutment location, and its location requiring sensitivity to the site.
3.0 Issues and Opportunities – Pg 16	*Issue 10: Vacant land (old Australian Licorice Company) to the east of the existing Brunswick station is being consolidated for development, with an undetermined land use and plan which may compromise the station re-activation and corridor connectivity*	Issue noting that the urban character of the Brunswick Activity Centre is changing and that a specific block was being land-banked for development at the time of writing.
3.0 Issues and Opportunities – Pg 18	*Opportunity F: Abutment type and construction typology in Royal Park to be assessed early in the development works to assess potential connectivity impacts within Royal Park.*	Opportunity highlighting the visual amenity aspect of the abutment design within Royal Park and to residents/users of Park St where there may be sensitive views into Royal Park. Connectivity through to Royal Park from the east is also a key issue. The elevated rail abutment located south of Park Street is proposed be a retained earth structure which will rise out of the rail cutting between McAlister Oval in the west and the Royal Park Tennis Club in the east. This abutment and the rail bridge across Park Street will be a material change to the

UDG Section	UDG content	Rationale and explanation
		existing environment. Maximising the retention of mature trees for screening and high quality design of the infrastructure elements will mitigate the impacts for users of Royal Park. The City of Melbourne will be consulted on the visual amenity of the structure, and they have already provided input to the UDG.
3.0 Issues and Opportunities – Pg 20	*Issue 2: An elevated design solution may present potential visual, noise, privacy, and overshadowing effects to sensitive residential and mix used interfaces at upper and ground levels due to the proximity of the rail bridge.*	It is recognized that the Project will pose some changes to the urban condition and particularly to adjacent multi-storey apartments. To mitigate overlooking from the train, the elevated rail bridge will utilise perforated screens. The locations and heights of the screens will be based on a thorough assessment of potential overlooking, as outlined at Section 2.5 above.
3.0 Issues and Opportunities – Pg 20	*Issue 3: Many of the residential properties do not face the rail line with no surveillance, creating under-utilised and un-inviting spaces along the corridor with poor passive surveillance and inactive facades.*	Potential CPTED issue to be addressed due to orientation of the adjacent residential properties and potential graffiti issues.
3.0 Issues and Opportunities – Pg 20	*Issue 9: Maintenance and parking areas adjacent to the VicTrack substation location impact the amenity and safety of the USP and crossing points of the USP at Park St.*	Issue based upon the large, existing carpark south-east of Park Street, used for maintenance access of the existing substation.
3.0 Issues and Opportunities – Pg 20	*Opportunity A: Assess and analyse public realm elements within the activity centre to tie into existing cross-corridor nodes and civic spaces.*	Opportunity to improve amenity and safety by rationalising the location of public realm furniture and fixtures at key active transport connections and nodes.
3.0 Issues and Opportunities – Pg 20	*Opportunity B: Mitigate potential negative amenity and privacy impacts by creating a consistent screening treatment and strategy for both elevated and ground level treatments.*	Opportunity to identify amenity and privacy issues early in project development, and ensure they are addressed as the design is further developed.
3.0 Issues and Opportunities – Pg 20	*Opportunity D: Create a cohesive corridor treatment for both the infrastructure and station precincts which references the built form of the existing area.*	Develop a suite of materials and finishes to support a cohesive design response. This will be done during preliminary and detailed design with the inputs of UDAP and stakeholders.
3.0 Issues and Opportunities – Pg 20	*Opportunity E: Ensure the abutment type and associated structures retain the existing visual amenity from Royal Park and sensitive interfaces with Park St.*	Opportunity noting the visual amenity of the rail infrastructure is to be well considered and well resolved as high quality built elements.

UDG Section	UDG content	Rationale and explanation
3.0 Issues and Opportunities – Pg 20	*Opportunity F: Create a consistent station and corridor design strategy which retains and integrates the redeveloped areas around Jewell Station into the level crossing project scope.*	Potential to retain existing Jewell Station heritage building and public realm into the Project scope to maintain the sense of place and identity.
3.0 Issues and Opportunities – Pg 20	*Opportunity I: Propose to MTM additional locations for the maintenance access points at Cameron St to allow for improved amenity and CPTED in this area.*	Issue highlighting potential safety and amenity issues in Cameron Street at MTM access locations.
3.0 Issues and Opportunities – Pg 22	*Issue 4: Sight lines and CPTED issues on the Upfield Shared Path (USP) have resulted in the removal of screening vegetation adjacent to the Royal Park Tennis Club and UPS. The abutment type and location proposed adjacent to this location may cause a similar issue.*	Issue highlighting existing CPTED issues adjacent to the Upfield Share Path and that a poor abutment design may exacerbate this issue.
3.0 Issues and Opportunities – Pg 22	*Issue 5: The existing substation south of Park Street creates CPTED and sight line issues to the Upfield Shared Path (USP). The addition of an abutment adjacent may exacerbate the issue.*	Supporting issue to Issue 5 above- an existing substation blocks connectivity and sight lines creating CPED issues. Proposed design to mitigate the issues.
3.0 Issues and Opportunities – Pg 22	*Opportunity A: Improve and increase passive surveillance and public lighting along the corridor, especially around residential and industrial interfaces with existing inactive frontages.*	Corridor wide opportunity reflecting the existing issues with passive surveillance and lighting in the corridor, and the opportunity to improve these within the Project.
3.0 Issues and Opportunities – Pg 22	*Opportunity B: Strategic Cycling Corridor design to allow for improved sightlines and more frequent access/egress points for CPTED purposes.*	Opportunity to improve shared path safety due to the elevated rail, and increased opportunities for improved spatial arraignments of conflict points.
3.0 Issues and Opportunities – Pg 22	*Opportunity D: Opportunity to improve the lighting, passive surveillance and sight lines between the abutment and substation.*	Opportunity responding to the multiple issues highlighted around the southern abutment and substation location relative to the Upfield Shared path and its perceived CPTED issues.
3.0 Issues and Opportunities – Pg 22	*Opportunity F: Opportunities for graffiti management through creative strategies and access to properties on boundaries to be limited. Liaise with asset owner on the most appropriate long-term activation method for car parks and rear facades management.*	Opportunity to reduce anti-social behaviour by improving passive surveillance and a targeted program with local council to manage graffiti and create opportunities to manage this through a formal creative process.
3.0 Issues and Opportunities – Pg 22	*Opportunity I: Opportunity to improve the abutment location and spatial arrangements of the northern abutment through the massing to sightlines across the corridor to the Strategic Cycling Corridor and provide avenues of escape for CPTED purposes.*	Opportunity to improve safety at the abutment for cyclists and pedestrians through considered structural design and lessening the visual bulk of the abutment retaining structures.

UDG Section	UDG content	Rationale and explanation
4.0 Issues and Opportunities – Brunswick South Station – Pg 24	*Issue 2: Industrial and commercial back-of-house interfaces, along with existing car parks around the station create an unattractive and unsafe corridor at the new station location.*	Issue highlighting the safety concerns with existing carparking and back of house interfaces that provide poor passive surveillance.
4.0 Issues and Opportunities – Brunswick South Station – Pg 24	*Issue 5: There are several mixed-use developments immediately adjacent to the east of the station which have the potential to affect the privacy and amenity of nearby residents.*	Issue highlighting the requirement to assess the potential overlooking to habitable room windows and private open space of adjacent residential apartments.
4.0 Issues and Opportunities – Brunswick South Station – Pg 24	*Opportunity E: Reduce the visual amenity impacts to sensitive residential interfaces creating a more attractive station interface and implementing screening measures where required.*	Opportunity to mitigate potential privacy and amenity issues for residents east of the station location.
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Issue 1: New medium-high density residential developments are adjacent to the station precinct, which will have privacy and amenity issues for the residents.*	Highlighting potential for privacy and amenity issues for some residents at the Nightingale apartments at Anstey Station.
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Issue 5: The station car park interface on the west side at Orient Grove is potentially unsafe space for pedestrians and cyclists with poor passive surveillance from the corridor.*	Safety issue noting Orient Groves's potential isolation at nighttime due to poor passive surveillance.
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Opportunity A: Privacy and amenity impacts for nearby residents will require being mitigated within the station precinct.*	Response to Issue 1, noting mitigation may be required due to privacy and amenity issues.
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Opportunity C: Improve the perception of safety with better sightlines and improve the car park interfaces at Orient Grove. Currently a council car park.*	Opportunity to improve safety by improving sightlines at car park interfaces.
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Opportunity G: Create a well-integrated architectural and landscape design integrating the diversity of built-forms adjacent to the station precinct and building on the recent station architecture vernacular of the Upfield Line.*	Opportunity to improve sense of place and identity by using materials in the station that complement urban adjacencies
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Opportunity H: Architectural design and station configuration should take into account the narrow nature of the corridor.*	Opportunity for a specific architectural response for the station design in this narrow section of the corridor.
5.0 Issues and Opportunities – Brunswick North Station – Pg 26	*Opportunity O: Opportunity to frame the station views from West/Florence and Duckett Streets and allow for improved station legibility and wayfinding.*	Opportunity to improve wayfinding and connectivity by integrating the station precinct and rail infrastructure into the urban setting

UDG Section	UDG content	Rationale and explanation
6.1 Overall Design Intents – Pg 32	*Create attractive and active interfaces along the corridor.*	Ensure that the design response encourages people to use the corridor for movement and socialising to improve public safety and create a vibrant public realm.
6.1 Overall Design Intents – Pg 32	*Celebrate the diversity of identities within the corridor.*	Guideline to ensure that the diverse character of the corridor remains an identifying feature.
6.3 – Design Guidelines-Corridor – Pg 34	*Guideline 4: The infrastructure design should provide a consistent and unique identity which builds upon the existing sense of place of Brunswick, strengthening the urban identity of the corridor.*	The design response to positively reflect the local context and sense of place.
6.3 – Design Guidelines-Corridor – Pg 34	*Guideline 5: The design of the infrastructure should capitalise on the long views to the city, along with short and middle distance views to the surrounding urban landscape to provide context to Brunswick and interest to the public transport journey.*	Ensure that the passenger experience is enhanced with new vantage points while ensuring that privacy is respected.
6.3 – Design Guidelines-Corridor – Pg 35	*Guideline 2: Undertake a detailed assessment to determine privacy requirements along the corridor to adjacent developments where required. Provide an adequate level of privacy screening to the surrounding neighbourhood to minimise visual intrusion on private open spaces.*	Ensure that privacy screening is provided according to an overlooking assessment and is completed in a site specific manner.
6.3 – Design Guidelines-Corridor – Pg 35	*Guideline 11: Assess the overshadowing from the elevated design solution along the corridor to gauge the viability of the open space interfaces and the local of potential active hubs/precincts.*	Ensure that overshadowing is understood the enable the best response to changes to solar access.
6.3 – Design Guidelines-Corridor – Pg 39	*Guideline 1: Ensure a corridor wide CPTED assessment forms part of the overall site analysis and design development to improve passive surveillance, sightlines, and precinct activation where required and appropriate. Allow for inputs from Merri-bek Council for lessons learnt and activation strategy.*	Ensure that the design improves sense of personal safety through considered engagement with stakeholders and appropriate environmental design of the public realm and station precincts.
6.3 – Design Guidelines-Corridor – Pg 39	*Guideline 2: Consult and engage local government and adjacent property owners to create a strategy to positively manage vandalism and graffiti of the urban elements along the corridor. Ensure the design deters future vandalism and graffiti where appropriate, and long term management plans are established which retain the identity of the corridor and Brunswick sense of place.*	Ensure that the design considers any potential opportunities for anti-social behaviour and vandalism.

UDG Section	UDG content	Rationale and explanation
6.3 – Design Guidelines- Corridor – Pg 39	*Guideline 3: Design of the southern abutment will need to be an integrated design which prevents CPTED issues and is sensitive to active transport users visual amenity, and connectivity while retaining the amenity for Royal Park users*	Amenity and Safety guideline to ensure the southern abutment in Royal Park is in keeping with the local context and its VHR listing for Royal Park, and that the design solution improves existing CPTED issues.
6.3 – Design Guidelines- Corridor – Pg 39	*Guideline 9: The location and type of abutment proposed for the northern abutment at Tinning St should take into account the tight spatial allocation of the existing SUP and adjacent Brunswick Plaster Mills site. The abutment design should improve the existing conditions and allow for passive surveillance across the corridor from Colebrook Street, and the creation of alternate routes for pedestrians through to Moreland Road.*	As per Guideline 3 above.
6.3 – Design Guidelines- Corridor – Pg 39	*Guideline 10: Diversify and activate the passive and negative interfaces with well designed landscape areas to improve amenity along the corridor.*	Identify design responses that improve amenity and sense of personal safety for spaces which have poor passive surveillance.
6.3 – Design Guidelines- Corridor – Pg 41	*Guideline 5: The corridor and stations precincts should incorporate WSUD strategies which support strong greening of the corridor and create green east-west and north-south connections to improve the urban amenity and character through the corridor. Design of the drainage system should balance the pedestrian connectivity and improve the amenity of the open space.*	Resilience and Sustainability guidelines to ensure that drainage infrastructure allows for pedestrian connectivity and is a positive addition to the corridor.
6.3 – Design Guidelines- Corridor – Pg 43	*Guideline 1: Stations architecture should allow for a flexible and evolving program of spaces within the public realm and station forecourt which promotes the changing nature of Brunswick's urban fabric and land uses.*	The UDG will guide engagement with stakeholders to ensure the design responds to Brunswick's local character and urban context. Guideline to promote the design of the station precinct is flexible and allows for elements such as event spaces, food trucks can be catered to for community events.
6.3 – Design Guidelines - Brunswick South Station – Pg 43	*Guideline 2: Liaise with RMIT to investigate and develop pedestrian connections from the campus to the station precinct and improve CPTED by creating a permeable pedestrian interface.*	Guideline to ensure the station design links and connects safely into the RMIT campus directly adjacent, and that RMIT can also utilize the improved connectivity.
6.3 – Design Guidelines - Brunswick South Station – Pg 43	*Guideline 3: Create a station-built form that integrates and responds to the surrounding visual and privacy requirements at the different levels (forecourt and platform level) and aligns with the corridor-wide aesthetics strategy.*	Ensure that the design of the rail bridge addresses the close proximity to adjacent residential properties through a sensitive response to screening and landscape design.

UDG Section	UDG content	Rationale and explanation
6.3 – Design Guidelines - Brunswick South Station – Pg 43	*Guideline 6: Improve the interface with carparks, industrial and commercial back-of-houses to create a more attractive and surveilled interface on the north and south sides of the station precinct.*	In areas where the adjacent boundaries may be a poor amenity, the public realm design should aspire to provide improved amenity and surveillance through the consolidation of infrastructure.
6.3 – Design Guidelines - Brunswick South Station – Pg 43	*Guideline 7: Ensure a CPTED assessment forms part of the overall site analysis and design development to improve passive surveillance, sightlines, and precinct activation where required and appropriate. Allow for inputs from Merri-bek council for lessons learnt and activation strategy*	Ensure passive surveillance is improved at the station precinct, and that CPTED is applied in the siting of public spaces and activation zones.
6.3 – Design Guidelines - Brunswick South Station – Pg 43	*Guideline 10: Continue a north-south prioritized active transport link through the station precinct that responds to the surrounding local street network and connects directly to key existing and future destinations.*	Ensure that the active transport connection through the station precinct is logical and align with the existing network.
6.3 – Design Guidelines - Brunswick North Station – Pg 45	*Guideline 1: The architectural design of the station should enhance and celebrate the identity of this precinct and respond to the different scales and styles of residential developments around the station.*	Ensure the station character and identity is reinforced by the design response and is appropriate to the context.
6.3 – Design Guidelines - Brunswick North Station – Pg 45	*Guideline 2: Improve the interface with adjacent carparks, commercial back-of-houses, and residential streets to create a more attractive and surveilled interface on the north and south sides of the station precinct.*	Ensure passive surveillance is improved at the station precinct along with the interface and aesthetics of the precinct.
6.3 – Design Guidelines - Brunswick North Station – Pg 45	*Guideline 5: The station design and elevated railway design solution should mitigate the perception of narrowness of the corridor in this section and consider the potential overshadowing of recreational private open space on both sides of the alignment.*	The station design should mitigate the overshadowing of adjacent properties and aspire to create a generous atmosphere in the areas beneath the rail bridge. Ensure the station design responds to constrained corridor width.