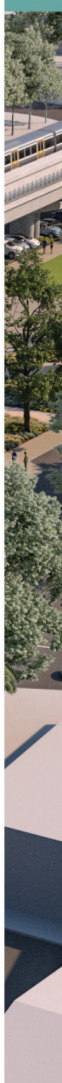
ARMADALE LINE UPGRADE PROJECT

CARLISLE AND OATS STREET TRAIN STATIONS, STATION PRECINCTS AND PUBLIC REALM – DEVELOPMENT APPLICATION NO. 2

PTA DOCUMENT NUMBER: LXR-ALUA-PN-RPT-00003
ALUA DOCUMENT NUMBER: LXR-CON-GN-PM-SM-RPT-00001

ARMADALE LINE UPGRADE ALLIANCE



Document Control Record

Document Prepared by:

element

Level 18, 191 St Georges Terrace,

Western Australia 6000

T 9289 8300

E hello@elementwa.com.au

Document Control						
Report Title	Armadale Line Upgrade Project Carlisle and Oats Street Train Stations, Station Precincts and Public Realm – Development Application No. 2					
Client	ALUA					
Rev	Date	Revision Details / Status	Author	Reviewer	Verifier (If required)	Approver
A	21/12/22	Draft	Renee Young and Murray Casselton			
B	06.02.23	Final	Renee Young and Murray Casselton			
Current Revision	Rev B					

We acknowledge the Whadjuk people of the Noongar nation as Traditional Owners of the land on which we live and work.

We acknowledge and respect their enduring culture, their contribution to the life of this city, and Elders, past and present.

Contents

Executive Summary

The Victoria Park-Canning Level Crossing Removal Project (VPCLXR) forms part of the METRONET rail program, which represents the single largest investment in public transport that Perth has seen.

In delivering approximately 77 kilometres of new passenger rail and 22 new train stations, the METRONET rail program acts as a catalyst to turn more than 8,000 hectares of land around new stations into desirable places to live, work and play.

The VPCLXR project is Perth's first major elevated rail line that will improve public transport safety, reduce traffic congestion and create new publicly accessible spaces for ongoing use by the community within the existing rail corridor. The VPCLXR project includes the following key components:

- Three sections of new elevated rail line, or viaduct, comprising piers, pier headstock and 'U trough/s'.
- The removal of six (6) existing level crossings at Mint Street, Oats Street, Welshpool Road, Hamilton Street, Wharf Street and William Street.
- The development of five (5) new, modern elevated train stations at Carlisle, Oats Street, Queens Park, Cannington and Beckenham.
- The removal of the existing Welshpool Train Station.
- New station precincts at ground plane level around each of the new train stations including bus interchanges at Oats Street and Cannington Stations, passenger parking and landscaping.
- New ground level public realm works between station precincts incorporating public spaces and facilities.

The VPCLXR project will be delivered by ALUA on behalf of the Office of Major Transport Infrastructure Delivery (OMTID) and the rail operator, the Public Transport Authority of Western Australia (PTA). The project is expected to be completed in the first half of 2025.

It was determined very early in the planning phases to make the VPCLXR project an elevated rail line, as opposed to putting the rail line underground. In this regard the extensive early planning and assessments undertaken by the State Government determined that an underground rail solution was not a feasible option, due to the availability of land for the project within the existing Metropolitan Region Scheme (MRS) Railways Reservation, the cost differential (both capital and ongoing operational costs) for sinking the rail rather than elevating it and given the success of similar elevated rail projects in the Eastern States such as the Caulfield to Dandenong Level Crossing Removal project and the Coburg to Moreland Level Crossing Removal project. It was clearly established as part of early planning processes that elevated rail, if done well, provides many positive benefits.

This development application is the second and final development application for the VPCLXR project within the Town of Victoria Park (the Town). It relates only to that section of the VPCLXR project that is located in the Town and is referred to as 'VPDA2'. VPDA2 follows the earlier development application (VPDA1) which was lodged in October 2022 for the early works and structural components of the rail line, including the elevated rail line (viaduct) and associated structures, and operational railway infrastructure.

This development application includes the following scope of works:

- Elevated train station at Carlisle, including ground level station entry and concourse;
- Carlisle Station passenger parking (Park 'n' Ride, and Kiss 'n' Ride);
- Elevated train station at Oats Street, including ground level station entry and concourse;
- Bus interchange at Oats Street;
- Oats Street Station passenger parking (Park 'n' Ride and Kiss 'n' Ride);
- At grade Principal Shared Path (PSP) modifications to augment the existing PSP adjacent to Rutland Avenue;
- Public realm initiatives and improvements between the north abutment adjacent to Mint Street/ Archer Street and the southern abutment adjacent to Briggs Street, incorporating civic spaces, community activation spaces, community nodes, a nature playground, parkland, youth zone, pathways and landscaping; and
- Local road works and intersection modifications.

This application is the culmination of many months of design work for the VPCLXR project. As set out in the Design Report prepared by the Armadale Line Upgrade Alliance (ALUA) (refer to Appendix F), the design process commenced with the METRONET Preliminary Place Plans, which were derived from engagement with the local community as undertaken by METRONET. ALUA built on this early METRONET work with the preparation of high level concept designs which were then refined and developed with more detailed community engagement. This further engagement was undertaken through: the MySay Transport website; Community Reference Groups (CRGs); pop up information booths; and through targeted consultation with business groups and key stakeholders.

The Final Place Plans, architectural plans and landscape plans have also been subject to design review and refinement through the State Design Review Panel (SDRP) and the Design Working Group which was formed to continue the consultative design review process in between SDRP reviews and has continued following the final SDRP review. The Design Working Group includes representatives from the Office of the Government Architect (OGA) and METRONET.

The proposed works are located within the rail corridor and local road reserves adjoining the rail corridor, all of which are within Planning Control Area No.165 (PCA), which extends generally from Mint/Archer Streets to Briggs Street as shown in Figures 1, 2, 3 and 4. A PCA is an enabling planning mechanism that allows the development application for this significant public infrastructure project to be considered and determined by the Western Australian Planning Commission (WAPC).

Refer to Figure 1 – Location Plan

Refer to Figure 2 – Aerial Plan

Refer to Figure 3 – Indicative extent of VPCLXR Work Included in the Development Application

Refer to Figure 4 – Concept diagram of extent of VPCLXR Project, with the extent of work that is included in this development application shown highlighted in red outline (note that the viaduct structure was subject to an earlier, separate development application) (source: METRONET 2022)

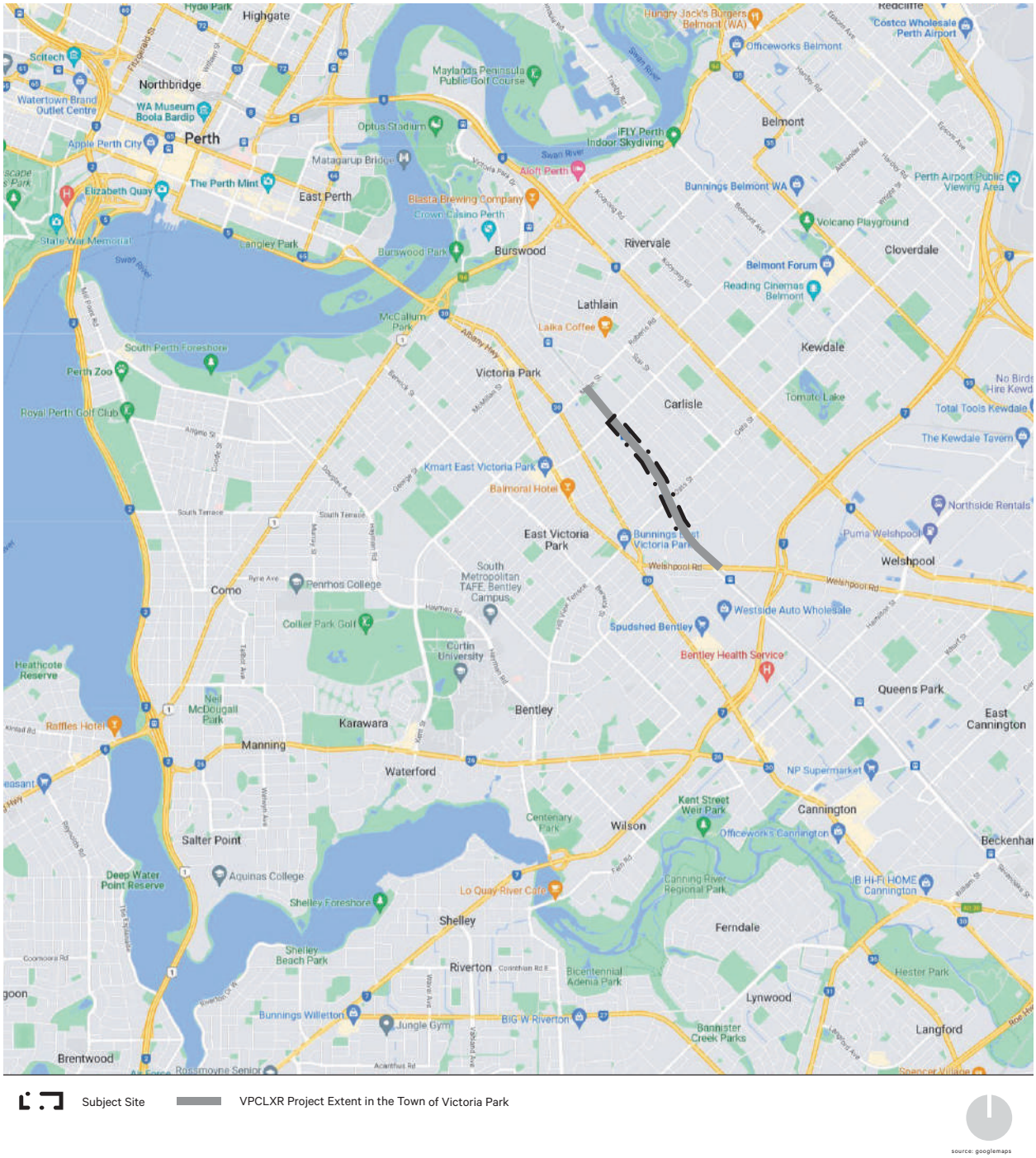


Figure 1. Location Plan

Figure 2. Aerial Plan

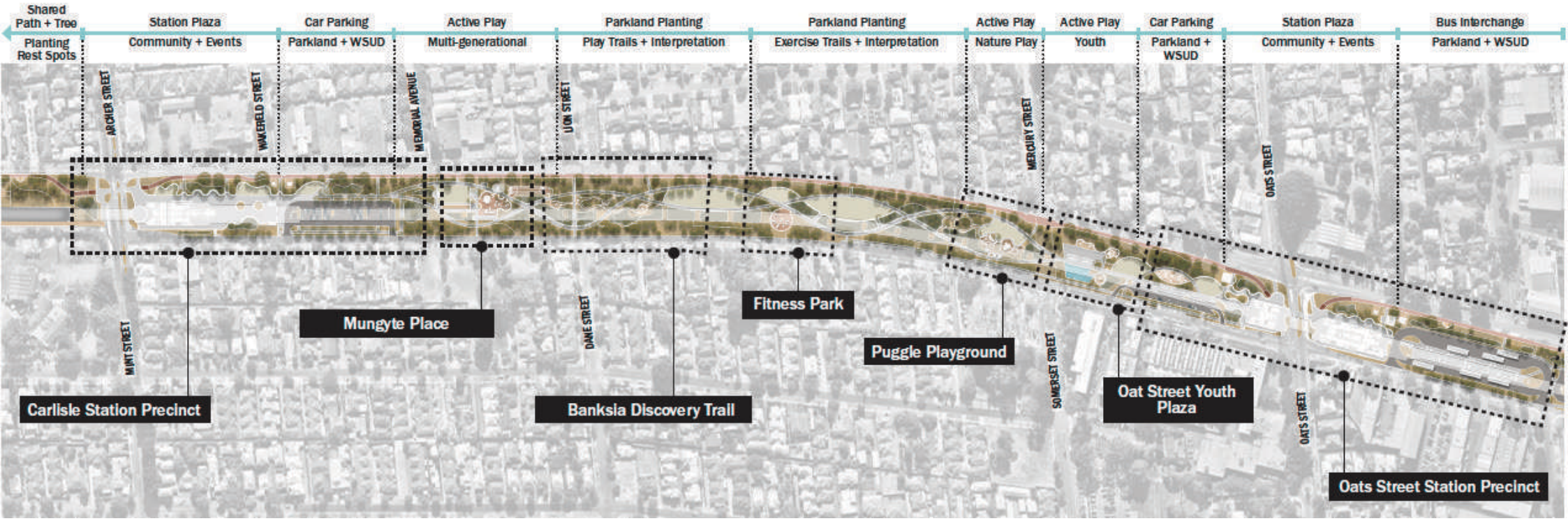


Figure 3. Indicative extent of VPCLXR viaduct Work Included in the Development Application

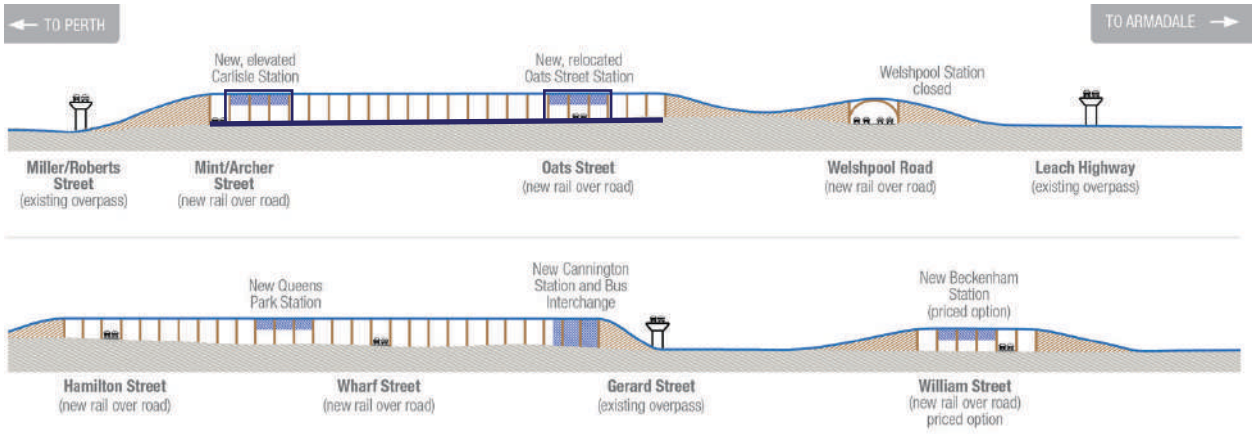


Figure 4. Concept diagram of extent of VPCLXR Project (excluding the Beckenham / City of Gosnells section), with the extent of work that is included in this development application shown highlighted in blue outline (note that the viaduct structure was subject to an earlier, separate development application) (source: METRONET 2022)

A separate development application focusing on the Queens Park and Cannington Train Stations, station precincts and associated public realm initiatives and improvements will be submitted to the City of Canning (the City). It is anticipated that this development application will be lodged in late February 2023. A further development application for the elevated rail line that is located within the City of Gosnells, including the new Beckenham Station and station precinct will be lodged in the second quarter of 2023 once the design work for this section of the upgraded rail line is ready.

Abbreviations

Abbreviation	Definition
CRGs	Community Reference Groups
DAs	Development Applications
DoT	Department of Transport
DWER	Department of Water and Environmental Regulations
GBN	Ground Borne Noise
GBV	Ground Borne Vibration
LPP 10	Local Planning Policy 10 Pedestrian Walkway
LPP 29	Local Planning Policy 29 Public Art Private Developer Contribution
LPP 32	Local Planning Policy 32 Exemptions from Development Approval
LPP 37	Local Planning Policy 37 Community Consultation on Planning Proposals
LPP 39	Local Planning Policy 39 Tree Planting and Retention
LPS	Draft Local Planning Strategy
LPS 1	Local Planning Scheme No. 1
METRONET Act	Railway (METRONET) Act 2018
MRWA	Main Roads WA
MNRG	METRONET Noongar Reference Group
OLE	Overhead Line Equipment
OMTID	Office of Major Transport Infrastructure Delivery
OGA	Office of Government Architect
PCA	Planning Control Area
PD Act	Planning and Development Act 2005
PTA	Public Transport Authority
PSP	Principal Shared Path
SCP	Town of Victoria Park Strategic Community Plan 2017-2032
SDRP	State Design Review Panel
SPP 5.1	State Planning Policy 5.1 Land use planning in the vicinity of Perth Airport
SPP 5.4	State Planning Policy 5.4 Road and Rail Noise
SPP 7.0	State Planning Policy 7.0 Design of the Built Environment
The City	City of Canning
The Town	Town of Victoria Park
TOD	Transit Orientated Development
VPCLXR	Victoria Park-Canning Level Crossing Removal project
WAPC	Western Australian Planning Commission

1. Introduction

This report has been prepared by element, as the nominated planning consultant for the Armadale Line Upgrade Alliance (ALUA), in support of an application for the delivery of the the VPCLXR project within the Town of Victoria Park (the Town).

This report has been prepared to provide:

- an overview of the VPCLXR project;
- an overview and explanation of the works that form part of this development application, requiring approval from the Western Australian Planning Commission (WAPC);
- an overview and explanation of the works that were included in the first development application (VPDA1) for the VPCLXR project, which was lodged in October 2022;
- an overview and explanation of the works that are exempt from the requirement for planning approval;
- an overview of the subject site[1] for the purposes of this development application;
- an assessment of the proposal against relevant planning requirements; and
- an examination of the planning merits of the proposal.

This report is accompanied by detailed development plans and elevations as well as supporting technical reports, detailed as follows:

- Appendix A – Subject Site Details
- Appendix B – Requirements for Planning Approval
- Appendix C – Detailed Planning Assessment
- Appendix D – Certificates of Title
- Appendix E – PCA Boundary
- Appendix F – Design Report prepared by ALUA
- Appendix G – Architectural Drawings for Carlisle Train Station (Plans, Elevations, Typical Sections) prepared by ALUA
- Appendix H - Architectural Drawings for Oats Street Train Station (Plans, Elevations, Typical Sections) prepared by ALUA
- Appendix I – Civil Corridor Landscape and Urban Design Package prepared by ALUA
- Appendix J – Transport Impact Assessment Report prepared by ALUA
- Appendix K – Public Space Consultation Outcomes Report prepared by ALUA
- Appendix L – Acoustic Assessment Reports for Carlisle and Oats Street
- Appendix M – Drainage General Arrangement Plans prepared by ALUA
- Appendix N - Public Art Opportunities document prepared by ALUA
- Appendix O – Basic Summary of Records

The overall VPCLXR project location is shown in Figures 5 to 8.

Further information in relation to the site details relevant to the development application have been included at Appendix A.

Refer to Appendix A – Subject Site Details

Refer to Figure 5 – Indicative extent of full VPCLXR project (extending through both the Town of Victoria Park and the City of Canning)

Refer to Figure 6 – Location Plan - extent of VPCLXR Project within the Town of Victoria Park

Refer to Figure 7 – Aerial Plan – extent of VPCLXR Project within the Town of Victoria Park

Refer to Figure 8 – Site Plan – extent of VPCLXR Project within the Town of Victoria Park

1 The subject site for the purposes of this application is the area within which the works require planning approval, namely within both the PCA and the designated Railways Reservation.

Figure 5. Indicative extent of full VPCLXR project (extending through both the Town of Victoria Park and the City of Canning)

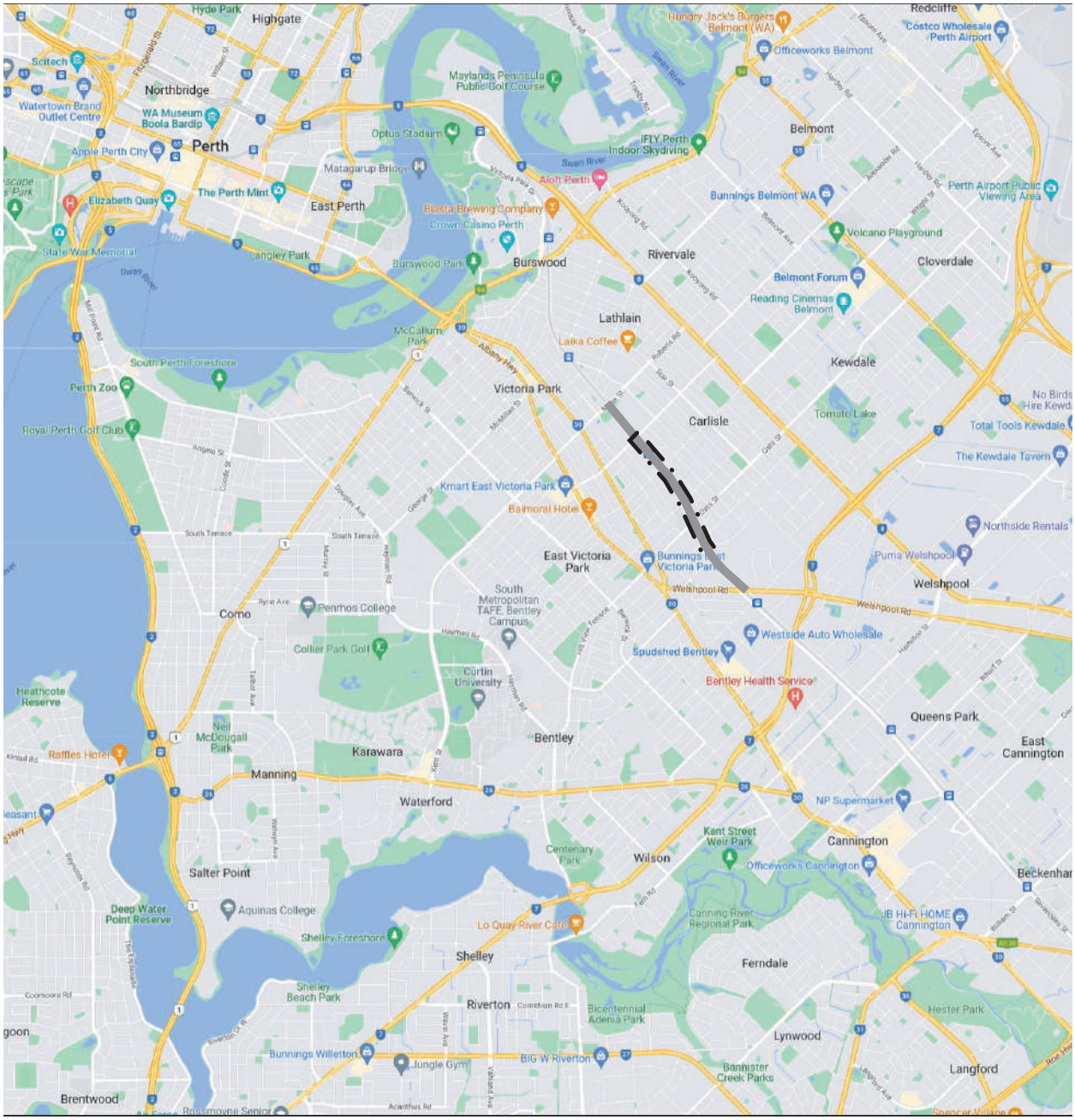


Figure 6. Location Plan - extent of VPCLXR Project within the Town of Victoria Park

Figure 7. Aerial Plan – extent of VPCLXR Project within the Town of Victoria Park

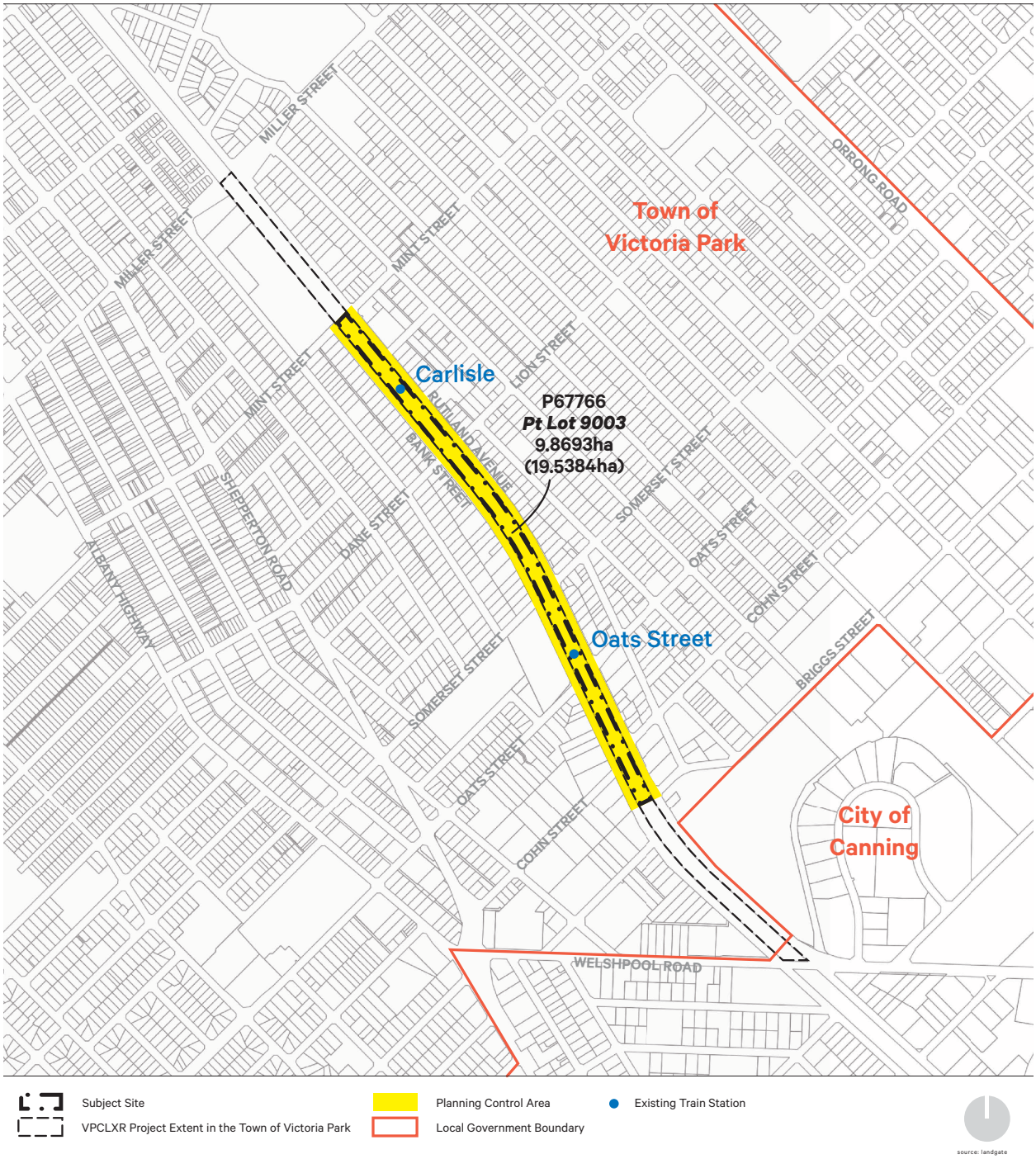


Figure 8. Site Plan – extent of VPCLXR Project within the Town of Victoria Park

This development application is the second and final development application for the VPCLXR project within the Town. It relates only to that section of the VPCLXR project that is located in the Town and is referred to as 'VPDA2'. VPDA2 follows the earlier development application (VPDA1) which was lodged in October 2022 for the early works and structural components of the rail line, including the elevated rail line (viaduct) and associated structures and operational railway infrastructure.

This application seeks approval for the following VPCLXR project components:

Carlisle Train Station Works:

- Construction of an elevated train station at Carlisle, including ground level station entry and concourse;
- Redevelopment of the Carlisle passenger parking to provide new Park 'n' Ride and Kiss 'n' Ride facilities;

Oats Street Train Station Works:

- Construction of an elevated train station at Oats Street, including ground level station entry and concourse;
- Construction of a new bus interchange;
- Redevelopment of the Oats Street passenger parking to provide new Park 'n' Ride and Kiss 'n' Ride facilities;
- PTA staff parking and loading bay facilities at Oats Street;

Other Project Works:

- Modifications to the existimng at grade Principal Shared Path (PSP) to augment the existing PSP adjacent to Rutland Avenue;
- Public realm initiatives and improvements between the north abutment adjacent to Mint Street/ Archer Street and the southern abutment adjacent to Briggs Street, incorporating construction of new civic spaces, community activation spaces, community nodes, a nature playground, parkland, youth zone, pathways and landscaping; and
- Construction of local road works and intersection modifications.

This report has been prepared to provide an overview of the subject site and the proposed project works, as well as an assessment against relevant planning requirements and an examination of the planning justifications for the proposal. The application is also accompanied by supporting plans and technical documents, as discussed throughout this report.

Refer to Appendix F – Design Report prepared by ALUA

Refer to Appendix G – Architectural Drawings for Carlisle Train Station (Plans, Elevations, Typical Sections) prepared by ALUA

Refer to Appendix H - Architectural Drawings for Oats Street Train Station (Plans, Elevations, Typical Sections) prepared by ALUA

Refer to Appendix I – Civil Corridor Landscape and Urban Design Package prepared by ALUA

1.1 Project Overview

The VPCLXR project will deliver an elevated rail line and rail stations for a section of the Armadale Rail Line commencing to the south east of the existing Miller Street overpass in Victoria Park and extending to the north west of the existing Gerard Street overpass in Cannington. The project will also create new and connected open spaces, parkland and community infrastructure that will act as a catalyst for positive social interaction and urban renewal within the surrounding area.

In August 2022 it was announced that there would be a further section of elevated rail added to the scope of the project, extending the project into the City of Gosnells, to include a new Beckenham Train Station and the removal of the William Street level crossing. Given the late inclusion of this section of the rail line in the VPCLXR project, the development applications for the part of the project that is included in the City of Gosnells will follow at a later stage.

The project is designed to improve public transport safety, create new and versatile public spaces for the community and reduce traffic congestion. The key project works include:

- Three sections of new elevated rail line, or viaduct, comprising piers, pier headstock and 'U trough/s'.
- The removal of six (6) existing level crossings at Mint Street, Oats Street, Welshpool Road, Hamilton Street, Wharf Street and William Street.
- The redevelopment of five (5) new, modern elevated train stations at Carlisle, Oats Street, Queens Park, Cannington and Beckenham.
- The removal of the existing Welshpool Train Station.
- New station precincts at ground plane level around each of the new stations including bus facilities, patron parking and landscaping.
- New ground level public realm works between station precincts incorporating public spaces and facilities.

Refer to Figure 9 – Concept diagram of extent of VPCLXR Project, with the extent of the project that is the subject of this development application shown highlighted in red outline (note that the viaduct structure was subject to a separate, earlier development application) (source: METRONET 2022)

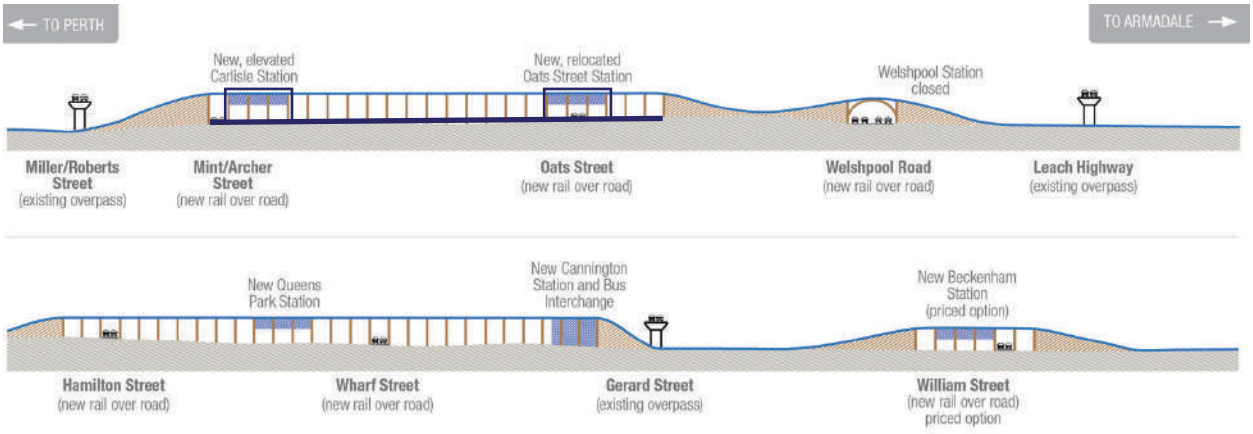


Figure 9. Concept diagram of extent of VPCLXR Project (excluding the Beckenham / City of Gosnells section), with the extent of work that is included in this development application shown highlighted in blue outline (note that the viaduct structure was subject to an earlier, separate development application) (source: METRONET 2022)

This development application relates to the Carlisle and Oats Street Train Stations, station precincts and associated public realm improvements that are located within the Town. This development application follows the earlier development application (VPDA1) which was lodged in October 2022 for the early works and structural components of the rail line located within the Town, including the elevated rail line (viaduct) and associated structures and operational railway infrastructure.

A separate development application is being prepared and will be submitted for the Queens Park and Cannington Train Stations, station precincts and associated public realm improvements that are proposed within the City of Canning.

The following diagram explains the structure and separation of the development applications for specific components of the VPCLXR project, which are described in further detail within Section 5 of this report. At this point in time, given the relatively recent inclusion of the Beckenham Station and City of Gosnells section of the rail upgrades in the VPCLXR project, it has not yet been confirmed how the City of Gosnells components will be progressed or, the timing for lodgement of applications. At this stage it is anticipated that this is most likely to be a single consolidated development application for the viaduct structure, Beckenham Train Station, Beckenham station precinct and associated public realm improvements within the City of Gosnells.

Refer to Figure 10 – Anticipated Development Application Staging

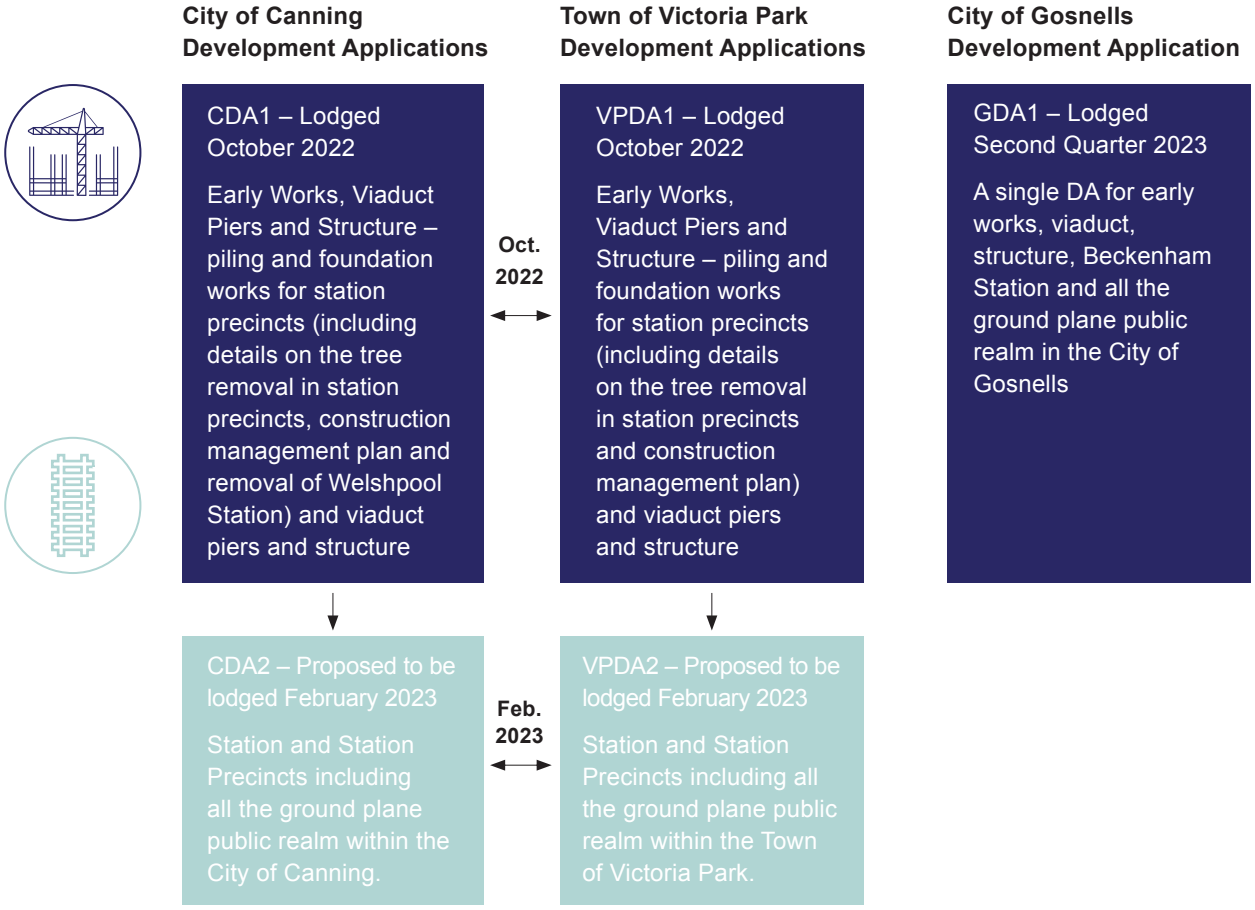


Figure 10. Anticipated Development Application Staging

1.2 Project Team

Table 1: Consultant List

Consortium (providing engineering and construction expertise and delivering the project)	Armadale Line Upgrade Alliance • Acciona Construction Australia Pty Ltd; • BMD Constructions Pty Ltd; • WSP Australia Pty Ltd; and • AECOM Australia Pty Ltd.
Planning Consultant	element
Architect and Landscape Architect	Hassell (part of the ALUA consortium)

1.3 Planning Approval Pathway

The planning approval process for the VPCLXR project is controlled by several key legislative and regulatory provisions, as summarised below:

- The *Planning and Development Act 2005* (PD Act), which provides exemptions for 'public works' from the need to obtain planning approval for such developments under the applicable local government planning framework (i.e. under a local government local planning scheme);
- The *Metropolitan Region Scheme* (MRS), which exempts all work for, or in connection with a railway that are located inside a designated railways reservations from the need for planning approval, other than for the construction or alteration of a railway station, or any related car parks, public transport interchange facilities or associated means of pedestrian or vehicular access;

- Declaration of Planning Control Area No.165 (PCA) under Part 7 of the PD Act. A PCA is an enabling planning mechanism that requires that all development within the PCA is to be considered and determined by the WAPC; and
- The *Railway (METRONET) Act 2018* (METRONET Act) includes the VPCLXR project, which means that certain METRONET works, other than for the construction or alteration of a railway station, or any related car parks, public transport interchange facilities or associated means of pedestrian or vehicular access, are exempt from the need to obtain planning approval where these METRONET works are situated outside of the designated MRS Railways Reservation.The relevant legislative framework that applies to the VPCLXR project has been described in more detail at Appendix B.

Refer to Appendix B – Requirements for Planning Approval

The VPCLXR project works that form part of this application includes the construction of new railway stations, new related car parks, new public transport interchange facilities and new associated means of pedestrian and/or vehicular access and accordingly, these works would not be exempt under either the MRS or the METRONET Act irrespective of the PCA. Nonetheless the works are also all located within both the railways reservation under the MRS and the PCA and therefore require approval from the WAPC under the provisions that relate to PCAs. Further information on the planning approval is provided in Section 5 of this report.

1.4 Related Approval Processes

Figure 11 below illustrates the typical assessment process which will be followed for each development application, including required public consultation and notification requirements.

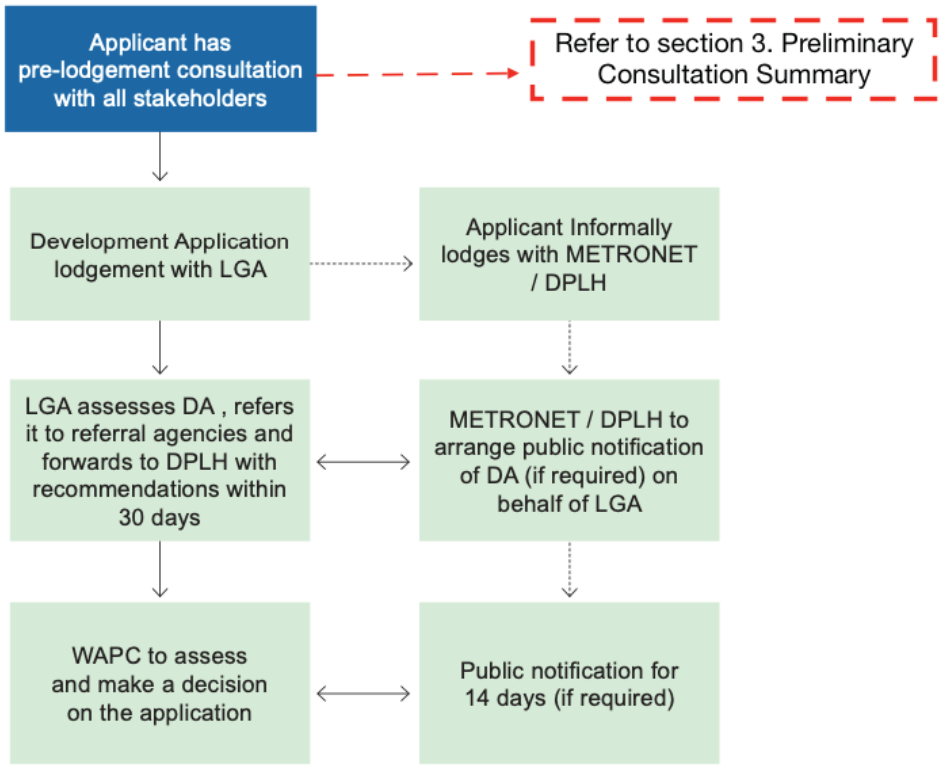


Figure 11. Typical development application assessment flow chart

As demonstrated in Figure 11, the applications will be referred to a number of State Government Agencies, who are key stakeholders for the VPCLXR project. The referral agencies include but are not limited to:

- METRONET;
- Office of the Government Architect;
- Public Transport Authority;
- Main Roads Western Australia; and
- Department of Water and Environmental Regulation.

These stakeholders will be given an opportunity to review the applications and provide comments and recommendations to the WAPC that will be used to inform the assessment of the proposed development and to set any associated conditions of approval.

2. Project Background

The VPCLXR project is Perth's first major elevated rail line designed to improve public transport safety, create new and versatile public open space for the community and reduce traffic congestion through the removal of level crossings.

Level crossings on the Armadale Rail Line have been causing significant problems, including vehicle and pedestrian safety issues and traffic congestion and delays. The removal of the level crossings will address the objectives of the METRONET rail program by:

- Supporting sustainable, economic growth in Perth;
- Improving connectivity between communities and businesses; and
- Increasing accessible travel and lifestyle options.

The VPCLXR project proposes the removal of six level crossings along the Armadale Rail Line including; the Mint Street, Oats Street, Welshpool Road, Hamilton Street, Wharf Street and William Street level crossings. The new elevated rail line or viaduct will allow the removal of the level crossings by removing the movement barrier associated with the existing at grade rail line. As a consequence of the elevated rail line all existing at grade train stations along this part of the line will need to be removed and replaced with new elevated train stations and associated public parking, bus interchange and public realm treatments, including new public spaces and facilities.

It was determined very early in the planning phases to make the VPCLXR project an elevated rail line, as opposed to putting the rail line underground. In this regard the extensive early planning and assessments undertaken by the State Government determined that an underground rail solution was not a feasible option, due to the availability of land for the project within the MRS Railways Reservation, the cost differential (both capital and ongoing operational costs) for sinking the rail rather than elevating it and given the success of similar elevated rail projects in the Eastern States including the Caulfield to Dandenong Level Crossing Removal project and the Coburg to Moreland Level Crossing Removal project. It was clearly established as part of early planning processes that elevated rail, if done well, provides many positive benefits, which include:

- Elevated rail stations can be configured to have two or more entries, which can improve accessibility and can extend the station catchment, thus enhancing the integration between land use and public transport for the benefit of the local community. Multiple entrances are generally more difficult and costly for underground stations.
- Elevated rail lines are able to be constructed more efficiently and quickly than underground rail, minimising disruption to rail services.
- Opportunities to build over underground rail are limited due to structural load limitations and limitations on basement construction.
- Underground rail can be challenging in areas where the water table is high, introducing risk of flooding and increasing the complexity of construction.
- Elevated rail provides the opportunity to readily add capacity to the rail network at a later date by duplicating the viaduct if needed. These opportunities are much more difficult in an underground scenario and generally require tunnel duplication.
- Elevated rail provides the opportunity to easily integrate ground level development at a later date within the space under the viaduct, which provides the opportunity to stimulate desirable economic and social development around stations at the appropriate time.
- Both elevated rail and underground rail can deliver an extended networks of linear parks and dedicated pathways for safer walking and cycling.
- Elevated rail offers rail passengers a superior passenger experience, with views and way-finding when compared with underground rail.
- Elevated rail requires less electricity for cooling and lighting than underground rail.
- Elevated rail is more efficient and safer for the rail operator in the long term.

Many cities across the world are showing a strong preference for elevated rail over underground rail systems, these include[2]:

- Bangkok has the BTS Skytrain, which has been so successful that additional elevated rail is being planned.
- New York and Berlin have systems which mix underground rail and elevated rail.
- Dubai has an elevated metro system.
- Singapore's MRT runs underground through the city centre but is elevated in the less congested outskirts of the city.
- Delhi has a mostly elevated metro system.

The new elevated rail line will create a major opportunity for positive and desirable land use changes that generate:

- Increased recreational opportunities (active and passive) and social interaction associated with new public spaces and facilities at ground level along the length of the viaduct;
- Improved amenity for the surrounding areas from new public open space and an upgraded public realm;
- Reduced urban heat island effect through increasing vegetation and tree canopy along the length of the project;
- Improved passive surveillance and safety as a result of designing the new infrastructure and public realm in a manner that is consistent with the principles of Crime Prevention Through Environmental Design (CPTED);
- Opportunities to increase public use and patronage of the rail line through the provision of new train stations, bus interchanges and parking facilities;
- Opportunities to support enhanced community interaction and activity through the delivery of event spaces within the public realm (station forecourts and appropriately configured public spaces) that support 'pop up' events and markets (or similar); and
- Opportunities to leverage new local development opportunities from the significant investment in public infrastructure and improvements in the local environment.

The project has been designated by the WA Government as a 'project under acceleration' as part of its commitment to economic recovery in the wake of the COVID-19 pandemic and is outlined in the State Government's WA Recovery Plan.

Removing the level crossings will allow road traffic to move more safely and efficiently by travelling beneath the rail line without stopping or queueing for boom-gate closures. The area underneath the raised rail line will be transformed into public open space and will facilitate active transport connectivity through the project area and beyond. The improvements to the rail line and the new train stations with platform lengths that will also be able to service longer trains sets.

Whilst most of the existing stations are to be rebuilt as elevated stations, Welshpool Station is to be removed from the system due to its low patronage numbers.

The project is to be principally constructed during an 18 month shut down period during which the rail line will be closed and replacement bus services will be in operation. METRONET has publicly acknowledged that this shutdown process will be disruptive to the community however it was determined as the most appropriate option to deliver the new rail line quickly and safely. Temporary bus stops and bus interchanges will also be established during this period to support replacement bus services until the new permanent bus stops and interchanges come on line as part of the delivery of the VPCLXR project. Importantly, the recent shut down of the Mandurah line in January 2022 has provided Transperth with a number of valuable learnings that will help to ensure that when the Armadale Line is shut the replacement bus network will provide a suitable alternative.

2 https://www.hindustantimes.com/mumbai-news/despite-advantages-of-underground-mrt-cities-prefer-a-mix-of-elevated-and-underground-metros/story-I5US12iyHL1WadOS6jXKDI.html (September 02, 2019)

3. Preliminary Consultation Summary

3.1 Pre-Lodgement Agency and Community Consultation

3.1.1 Community Consultation

METRONET commenced consultation on the VPCLXR project with the community in 2020 with advertisements relating to the project released to the public as early as June 2020 through online mediums and letterbox drops.

Early engagement with the local community included in-person briefings before moving online for a few months due to the restrictions brought on by the COVID-19 pandemic. A summary of the communication and engagement statistics are listed below:

- 2020: A total of 44 sessions/online advertisements reaching approximately 110,347 individuals;
- 2021: A total of 28 sessions/online advertisements reaching approximately 68,941 individuals; and
- 2022: One (1) letterbox drop reaching 60 individuals.

The information provided to the public included updates on the project, requests for input, services notices and general information relating to the project.

Two Community Reference Groups (CRGs) were established to help inform the design concepts for the VPCLXR project. The Oats Street CRG covers the works proposed to Oats Street, Mint Street and Welshpool Road and the Wharf Street Community Reference Group (Wharf Street CRG) covers Wharf, Hamilton and William Streets. The groups are each made up of 10 residents, business owners and community group representatives. The works proposed as part of this report were reviewed by the Oats Street CRG.

Four (4) meetings were held with the Oats Street CRG across 2020 and 2021. These CRGs were facilitated by METRONET prior to ALUA's involvement in the project. The CRG members reviewed early design concepts to decide the best locations for public spaces, facilities and access points. These meetings primarily discussed the desired public realm outcomes associated with the project.

Between July and September 2022 ALUA undertook a public space community engagement program to inform the public space design of the VPCLXR project, with the aim of raising awareness of the project, as well as seeking feedback from the community that are living and working around the VPCLXR project boundary.

Key highlights of this most recent ALUA consultation program included:

- Information flyers dropped to 17,266 residents and a social media campaign to raise awareness of the consultation program.
- A dedicated online engagement platform provided affected local communities with information and opportunities to provide feedback into the process.
- An online survey, which was completed by 292 community members, demonstrated community preferences and ideas for future public spaces.
- Key community and interest groups representative of the local communities engaged through tailored workshops.
- Pop up information sessions were held in the VPCLXR project area to connect with the local community.
- Collaboration with the project's two CRGs.
- Engagement with industry and local government representatives to collect their insights.
- Consistent and timely information delivered through the METRONET project website and social media.

The key themes that emerged from the ALUA consultation, which have influenced the design of the public realm improvements include:

- Connectedness – a desire to feel more connected to places, people and opportunities.
- Activation – the excitement of new activities that support social interaction.
- Movement – the opportunity to create convenient ways to travel between home, work, school and local places.
- Safety – a strong desire for both individual and community safety through good design.
- Environment – a desire for greater connection to the natural environment.

The key themes that emerged from the community's feedback have been fundamental to ALUA's design process, which includes balancing the vision identified by the community within the limitations of the VPCLXR project area. Some stakeholders were interested in elements relating to the whole project while others were interested in the detail. Some of the key design outcomes that have been shaped by this consultation process include:

- High quality and flexible community spaces in station plazas and along the corridor to enable a range of programming including community events (music festivals, food vans, markets etc). The programming of spaces will be reviewed by local governments and the Public Transport Authority.
- A performance stage will be added adjacent to the public space near the Harold Hawthorn Centre, to allow for flexible events. Additional seating walls and furniture will also be provided within the space.
- The Youth Plaza will be located near the South Metropolitan TAFE Carlisle Campus and focus on young people between the ages of 13-25 years old and includes:
    - A chill out zone to create gender neutral activation
    - A skate park rather than a BMX pump track
    - A proposed basketball half court, which has been moved away from the residential edge and positioned closer to the TAFE, to locate noise from activity nodes away from residents.
- Due to the existing amenities for dog owners within the Town, there was a preference from the community and the local government, to support dog walking amenities rather than a dog park, with dog water bowls and bags allowed for along the corridor.
- Refining the location and alignment of pedestrian cross connections between key destinations identified by the community.
- The online survey identified the most important activity or infrastructure for the community was universally accessible and connected footpaths. On this basis, particular attention has been paid to commuter cyclist routes and community recreational paths. The design team has tested the path width, reviewed sight lines and considered appropriate signage along the corridor.
- Along the length of the rail corridor people were keen to preserve the effectiveness of the existing shared paths. Supporting elements such as drink fountains, bike racks (including bike shelters) will be provided in all station precincts.
- Conflict points along shared paths and other recreational pathways have been reviewed. Paths have been re-aligned to reduce potential collision points and to emphasise the need for fast commuters to be located at the outer boundary of the rail corridor with slower, relaxed cycling and walking to occur under the shade of the elevated rail and trees.
- Ensuring adequate parking is available was important to the community. The number of parking bays currently available will be the same following the delivery of the project.
- Members of the Harold Hawthorn Centre in Carlisle asked for more seating in proposed event spaces, to help them be more active. The design has been refined to include regular places to rest along the corridor.
- Easy pick up and drop off areas was a re-occurring theme in the feedback and kiss and ride facilities will be made available at all stations.
- Selecting local, "first", native seeds in the landscape planting.
- Emphasis on creating shade and tree canopy.
- Including parkland trails between Carlisle Train Station and Oats Street Train Station.

- Increasing the extent of green lawn and open spaces, in consultation with local governments.
- Water came up as an important design element, driven by the community's desire to reference the river and water ways. A focus on sustainability and Water Sensitive Urban Design (WSUD) has influenced the design outcomes for public spaces.

Further detail on the process undertaken by ALUA and the outcomes that have influenced the final project design are included in the Public Spaces Consultation Report included at Appendix K.

Refer to Appendix K - Public Spaces Consultation Report

3.1.2 Stakeholder Consultation

ALUA has continued to engage with a number of key stakeholders that are relevant to VPCLXR project. These have included:

- METRONET;
- Department of Planning, Lands and Heritage Assessment Teams;
- Office of the Government Architect;
- State Design Review Panel;
- Public Transport Authority;
- City of Canning;
- Town of Victoria Park;
- City of Gosnells;
- Community Reference Groups;
- METRONET Noongar Reference Group;
- Main Roads;
- Western Power;
- Other relevant servicing agencies (i.e. ATCO gas).

4. Site Analysis and Design Response

4.1 Design Principles

State Planning Policy 7.0 – Design of the Built Environment (SPP 7.0) requires that new development proposals and planning frameworks address design principles within the policy which have been identified to promote good design outcomes. ALUA has prepared design principles responses for the two new train stations at Carlisle and Oats Street and the associated station precincts as well as for the landscaped public realm to address how the proposed design of the VPCLXR project responds to the SPP 7.0 design principles. The design responses are summarised in Table 2 below. For more specific details on the design responses employed in each of the train stations and/or the public realm please refer to the Design Report at Appendix F.

Table 2 – Assessment Against SPP 7.0

Principle	Response
Context and Character	
Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.	The Carlisle and Oats Street Train Stations have been carefully embedded into each precinct. They have been designed to be 'good neighbours' by enhancing and celebrating the elements that make each place unique, building on local Aboriginal and post-colonial histories and stories. The stations recognise the buildings, streets and landscapes appreciated by the locals from the vernacular Australian homes to the watering holes and wetlands by the Swan River. The stations materiality and colouration is designed to be distinct and responsive to the specific local contexts of each station whilst maintaining a consistent line-wide character. The local context response for the two train stations include: • Carlisle Station has been located to provide visual and physical connections to Archer Street, enabling a new place for local community connection. • The development potential on Rutland Avenue is recognised at Carlisle Train Station, with the station plaza and connection points orientated and located to provide for a merging of the station edge with Rutland Street activity. • At Oats Street Train Station, the station has been relocated to the south and configured with two entry buildings either side of Oats Street to provide for an enhanced accessibility and catchment to the station. The bus interchange is located to the south of the station for enhanced connectivity to the employment land uses in this area. • The landscape design under the viaduct opposite the South Metropolitan TAFE Carlisle Campus responds to the local context, providing a skate park, youth plaza, halfcourt basketball court and performance spaces.
Landscape quality	
Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.	The hard and soft landscape, and urban design elements throughout the corridor are imbued with stories and meaningful connection to the community, to First Nations 'Country', to place, and beyond. Each part of the public realm has been carefully designed in a considered manner to provide places that respond to the local identity and streetscape character. The principles applied to each of the areas seeks to enhance sustainability, reinforce identity, encourage connectivity across the rail corridor, connect local communities, create safe and comfortable spaces and to promote activation and development. The consideration of environmental factors such as water and soil management, ground and site conditions, solar access, micro-climate tree canopy, urban heat island impacts, habitat creation and preservation of green infrastructure has also been incorporated in the landscape design. The native planting palette is used to define character and promote biodiversity, with the aim to restore lost and damaged ecosystems and endemic vegetation complexes, where possible.

Principle	Response
Built form and scale	
Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.	The scale, massing and height of each station building responds to the form of the viaduct and the need to provide appropriate weather protection to stations whilst also responding to the adjacent planned built fabric and desirable future higher density development. Whilst the train station buildings are prominent, they are designed to be urban markers without forming new physical and visual barriers. The built form is broken up into compartments to maximise visual porosity whilst also providing sufficient weather protection. The orientation, proportion, composition, and articulation of the built form elements responds to the context of the local setting whilst providing functional train stations. This includes: • The provision of two entry buildings at the Oats Street Train Station. • Orientation of the main entrance to the Carlisle Train Station to Archer Street. • Orientation of the Carlisle Train Station plaza towards Rutland Street. • Using a stretched form of a typical pitched residential roof to cover the station areas, which creates a dramatic form that references the residential vernacular of the area. • The extent of solid roof is minimized as needed to provide weather protection and privacy to adjoining properties without unnecessarily adding to the bulk and scale of each station building. • Upper canopies on both train stations are detached from the station building plinth as much as possible to provide a dynamic design that expresses the buildings' function as a train station that is in harmony with, yet distinct from, the adjoining residential vernacular. • The roof forms diffuse into a lattice structure over the upper part of the stairwells to reference verandah structures found on many inter-war homes in the area. Defining the public domain of the station precincts to respond to local character will ensure these areas contribute positively to the character of the adjacent streetscape and open spaces. The station precincts are also designed to provide good amenity for people at ground level with connections to important views, vistas, and landmarks.
Functionality and build quality	
Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full lifecycle.	The train stations have been designed to be functionally simple and efficient with a clear arrangement of un-paid, paid and service spaces to facilitate good relationships between spaces and ease of use. Given the elevation of the stations it is important that vertical access (in terms of stairs, lifts and/or elevators) are designed in a manner that is integrated and safe, providing functional and ready access for passengers to the platforms. Matters that have been considered include enabling the efficient movement of passengers to and from the stairs during peak times, sight-lines and dwell areas. The designs have been planned to provide flexibility and adaptability for future PTA requirements without the need for major modifications. The new rail infrastructure will become a long-term asset for each neighbourhood that is designed in a robust way to get 'better with age'. Good build quality in the train stations will be achieved by using durable materials, finishes, elements and systems that are easy to maintain and weather well over time. Good build quality is also being applied in the public realm, this has been informed by consultation with the Town on the materiality and finishes proposed in areas of the public realm that will be managed by the Town in the future. Architectural product selections and details have focussed on resilience to wear and tear expected from intended use, upgrade ease and maintenance minimisation. An integrated systems approach has been implemented to achieve a functional and serviceable final outcome, without detriment to aesthetic appearance. Consideration has been given to the full life-cycle of systems and mitigation of potential climate change impact.

Principle	Response
Sustainability	
Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.	The Carlisle and Oats Street Train Stations are being designed to achieve a four star Green Star equivalency target rating, both in their design and 'as built'. Initiatives include: • The designs apply a sustainability approach through the use of passive environmental design measures, responding to local climate and site conditions having regard to orientation, shading, thermal performance and natural ventilation. • WSUD and landscape principles have been applied to minimise negative impacts on existing natural features and ecological processes. • The reduction of reliance on technology for heating and cooling will minimise energy use, resource consumption and operating costs over the life-cycle of the project. • The use of sustainable construction materials, recycling, good waste management practices, re-use of materials and existing structures, harnessing of renewable energy sources, and total water cycle management will also be incorporated, where applicable. In addition, the project more holistically will deliver high quality new train stations with increased catchments and improved integration with bus services. This will result in high quality low-emission transport options for thousands of locals, consistent with the principles of sustainability.
Amenity	
Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.	The corridor's landscape and activity spaces offer universally accessible places and opportunities for people to meet and socialise, providing optimal levels of external amenity, functionality and weather protection while encouraging social inclusion, equitable access and respect for the public and neighbours. Paid zones, service rooms and other internal spaces will be adequately sized, comfortable and easy to use and furnish, with good levels of daylight, natural ventilation and outlook. Where applicable, appropriate levels of acoustic protection and visual privacy, adequate storage space, and ease of access for all will be provided.

Principle	Response
Legibility	
Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.	A movement and access strategy has informed the design of both the train stations and the station precincts and public realm improvements to create a legible network of spaces and places. PTA's station access hierarchy prioritises pedestrian access as the most important, followed by cycling, bus access, Kiss 'n' Ride and finally Park 'n' Ride access. The design implements this access hierarchy, which assists in ensuring easy and legible station access for pedestrians and minimisation of conflict points. The hierarchy is used to resolve conflict points between transport modes. Station and public realm legibility will be enhanced with a wayfinding and signage strategy that is to be developed in due course. Design initiatives to aid legibility include: • Retaining most of the existing PSP adjacent to Rutland Avenue as a primary cyclist route, utilising pavement, materiality, colour and signage to define the PSP and control speeds. Where the PSP intersects with the train station plazas the PSP merges into plaza paving to denote that this is a shared zone with pedestrian priority. • Providing entries to commuter car parking areas and bus interchanges from the western side of the corridor to minimize conflict / crossing points with the PSP. • Providing a three (3) metre wide recreational shared path within the landscaped corridor for pedestrian and cyclist connectivity within this corridor which is separated from the higher volume / faster commuter cyclists on the PSP. • The 2.5 metre wide secondary paths weave through the corridor, connecting back at all points to the main three (3) metre wide recreational shared path for legibility. • Utilising different colours and materiality to distinguish between the path network to aid legibility. • The three (3) metre wide recreational shared path within the landscaped corridor connects to the station plazas of both train stations, contributing to wayfinding and legibility. • Train station plaza entry points have been located having regard to the surrounding local context to provide connectors and entry points that are orientated and located to direct people into the train stations. Permeability is maximized with these fine grain connections. • Train station plazas are designed with a simple open form that provides clearly identifiable entrances that are orientated to be legible opening points to the train station buildings for intuitive wayfinding. • Kiss 'n' Ride facilities are located in highly visible and readily accessible locations within the Carlisle and Oats Street station precincts where they are also proximate to the train station entrances for ready and legible station access. • At Oats Street Train Station the bus interchange has been located to be visible and legible from the northern side of the train station. Safe, legible access into the bus interchange area from the train station and wider public realm is critical to the success of modal transfers and use of the bus interchange more generally. • Lifts and stair (and/or escalator) access within each station building is located to be readily identifiable and accessible for passenger legibility to the platforms. • Bike storage is located to be visible from the PSP, at Carlisle the bike storage is proposed to be located in the ground level station building, accessible from the outside; whilst at Oats Street, bike storage is proposed to be located in two separate bike storage units (one on each side of Oats Street) located to be readily accessible and visible from the PSP.

Principle	Response
Safety	
Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.	Throughout the corridor, safety is a key consideration and the design has been informed by DPLH's proposed draft Safer Places by Design Guidelines. The design team have focussed on providing clear, open sightlines in and around the pillars throughout the public realm and to / from train station main entrances. Design measures for safety include: • New spaces beside and under the viaduct are designed to encourage activity through the incorporation of a broad range of activity spaces (playgrounds, youth plazas, event spaces, recreational equipment, seating areas etc) which will aid passive surveillance and safety. • A lighting strategy will ensure that all accessible areas are well lit. • The design of vehicular transport routes such as busways and vehicle drop-offs have been configured to aid connectivity to the train stations in a safe and legible manner. • Within the station buildings, opportunities for passive surveillance will be maximised through the provision of clearly defined paid and un-paid spaces with well-lit secure access points. • CCTV infrastructure managed by the PTA will be provided within the train stations, bus interchange and passenger car parking areas. • Landscaping has been carefully curated to ensure appropriate species are used so as to not impact on sightlines or create areas concealed by landscaping. • Security fencing is used to restrict access to maintenance areas or at grade areas of the rail line where the public is not permitted.
Community	
Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.	The train station built form, plaza and public realm designs have all been informed by the existing and planned future retail, commercial and residential development in the immediately surrounding context. This ensures that the design encourages social engagement and physical activity in an inclusive, equitable manner and contributes to the activation of public spaces both within and adjacent to the rail corridor. Significant public realm investment is focussed on the community use and benefit in the train station plazas and public realm, delivering flexible spaces that can be activated for community events. The new public spaces being delivered within the public realm (playgrounds, youth plazas, skate ramps, basketball half courts, event spaces, recreational equipment, seating areas etc.) have all been informed through the community engagement process undertaken by METRONET and ALUA to ensure that the design is responding to community needs and the social context of the site. As evident from the broad range of different facilities and spaces that are proposed within the public realm, there is a diversity in spaces to facilitate use by a diverse and varied mix of people from the community, facilitating broader social interactions across different community segments. Careful consideration has also been given to integration with local movement networks to improve general access from these highly walkable neighbourhoods to the rail corridor more broadly.

Principle	Response
Aesthetics	
Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.	The look and feel of stations and plazas have been designed with a simple aesthetic that has an emphasis on functionality. The design responds to PTAs requirements in terms of station capacity and functional requirements and has been informed by a careful design process that is the culmination of many months of design work for the VPCLXR project. As set out in the Design Report prepared by ALUA (refer to Appendix F), the design process commenced with the METRONET Preliminary Place Plans, which were derived from engagement with the local community as undertaken by METRONET. ALUA built on this early METRONET work with the preparation of high level concept designs which were then refined and developed with more detailed community engagement undertaken through: the MySay Transport website; Community Reference Groups (CRGs); pop up information booths; and through targeted consultation with business groups and key stakeholders. The Final Place Plans, architectural plans and landscape plans have also been subject to design review and refinement through the SDRP process and the Design Working Group which was formed to continue the consultative design review process in between SDRP reviews and has continued following the final SDRP review. The Design Working Group includes representatives from the Office of the Government Architect (OGA) and METRONET. This represents a comprehensive and judicious design process consistent with the principles of SPP 7.0. Notably in relation to aesthetics, the identity of each train station building and the surrounding precinct has also been carefully curated to reflect the history of the particular area with a themed colour identity that will run through the metalwork, floor finishes, station plaza paving and brickwork for each precinct/building.

4.2 State Design Review Panel Engagement

The State Design Review Panel (SDRP) provides independent, expert advice to Government agencies, decision makers and proponents regarding the design quality of a range of project types.

The VPCLXR project is a significant public works project and is eligible for SDRP review. In this regard ALUA has met with the Office of the Government Architect (OGA) to develop a design review framework that has regard to the overall project objectives, costings and critical timings.

The proposed design review framework agreed with the OGA broadly comprises three (3) separate design reviews with each of these focusing on specific project elements as outlined below:

1. Initial SDRP No. 1 – Previously completed in METRONET Project Definition Plan phase of the project.
2. Interim SDRP No. 2 – Completed in June 2022.This SDRP meeting covered the whole of the project area and scope, including critical infrastructure components (such as the viaduct structures), elements that are exempt from requiring planning approval and initial conceptual ground level public realm elements, built form and character analysis of stations and station precincts.
3. SDRP No. 3 – Completed in August 2022. This SDRP focussed on the built form of all new train stations and associated station precincts.

Feedback received during SDRP No. 3 has been considered by ALUA in consultation with key stakeholders through the Design Working Group, which was formed to continue the consultative design review process in between SDRP reviews and has continued following the final SDRP review. The Design Working Group includes representatives from the OGA and METRONET.

The SDRP indicated their support for the overall project, however noted that the design approach was not yet supported and required further development. Notably, the SDRP stated that resolution of key design issues could proceed with the assistance of the Design Working Group. The SDRP provided the following summary comments:

> *This is a significant project, with complex and competing demands. The ambitions and vision for this landscape-driven elevated rail project are strongly supported by the Panel, and it has transformative potential for transport design, precinct development, and as a Western Australian landmark. There is great responsibility to deliver a sophisticated and enduring rail corridor with a high-quality public realm. User experience will determine the success of this project, both as transport and public realm, and these are complex and varied environments in terms of amenity and functionality.*
>
> *The design ambition to balance the cohesion of a line wide solution with a legible response to local context and character in the design of stations and public realm is commended, however not yet fully realised.*

The SDRP requested further information including more detailed plans at a smaller scale, communication on the design in its context to assess connectivity and integration and detailed sections on the public realm to assist with resolution of safety and amenity matters.

Key recommendations from the SDRP that have been pursued by the design team in consultation with the Design Working Group since the August 2022 meeting have included:

- *continued development of a cohesive line wide design solution with differentiation of the design and identity of stations*
- *confirmation of the landscape design approach and detail*
- *minimise / mitigate modal conflicts in landscape and car park design, and in the movement of buses through pedestrian access ways*
- *capitalise on the mass and materiality of the viaduct and its piers, as a design strategy appropriate to the project scale and engineering nature, consider exposing connections between the viaduct and other elements*
- *pursue the folded plane roof canopies as singular, landmark forms, uninterrupted by service elements*
- *progress sustainability strategies*
- *minimise hardscaped surfaces, optimise permeable materials, water attenuation, landscaping, and tree planting*
- *optimise infrastructure for alternative modes of transports such as bike storage and e-charging*
- *maximise reused and recycled materials*
- *maximise rainwater harvesting and reuse*
- *pursue provision of escalators from day one*
- *optimise shelter from wind, glare, sun, and rain through the design of the public realm, station platform and 'folded roof' design*
- *optimise the legibility of stations by heightening visual and physical permeability and develop a strong wayfinding strategy*
- *prepare a CPTED assessment that considers opportunities for activation, passive surveillance, and clear points of egress*
- *develop a lighting strategy*
- *consider how an integrated public art approach could contribute to a line-wide identity, while offering a legible, local response to place.*

A summary of the comments from the SDRP as they relate to the scope of this development application and the manner in which these have since been addressed by the proposal is outlined in Table 3 below.

Table 3 - Summary of SDRP Comments and Design Responses

Principle	SDRP Comment	Design Response
Principle 1 **Context and character**	The SDRP identified the need for further work to develop and differentiate local identities at each station. The SDRP also requested that ALUA build on existing Aboriginal consultation to connect to local stories and develop strategies, that go beyond public art, to inform context specific architecture and public realm responses.	Since the SDRP meeting in August 2022 there has been ongoing refinement to the design concept, including colour, materiality and planting species to develop the station and precinct identities. These are set out in the Design Report prepared by ALUA (refer to Appendix F). The design integration strategy has also progressed since the last SDRP meeting and specific stories have been identified within the Noongar Cultural Context Document which will be used to inform the public art brief for specific works. This is set out in the Design Report prepared by ALUA (refer to Appendix F).
Principle 2 **Landscape Quality**	The SDRP noted the significant opportunity for a continuous linear park and the strong vision held by the ALUA team for this. The SDRP supported the richness, diversity and intensity of landscape proposed, and requested further details on species types, locations, and ongoing maintenance. The SDRP supported planting being taken as close to the viaduct as possible. The SDRP suggest there was a need for further investigation into tree species having regard to disease resistance, water requirements and shading from the viaduct. The SDRP suggested that ALUA should seek to optimise tree planting within car parking and other areas of hardscaping. The SDRP supported landscape buffers at the transitions of at-grade intersections.	The detailed planting selection is an ongoing iterative process that is being coordinated between ALUA and the LGAs. This will continue to be resolved as the detailed design work occurs following the development application process. ALUA is also engaging with PTA to ensure that tree planting can be as close to the viaduct as possible. Tree selection is important to ensure the canopy height doesn't impact on the viaduct. It is noted that most of the hardscaped areas (car parking etc) are located under the viaduct where planting is not supported. Tress are being maximised wherever possible in the corridor.

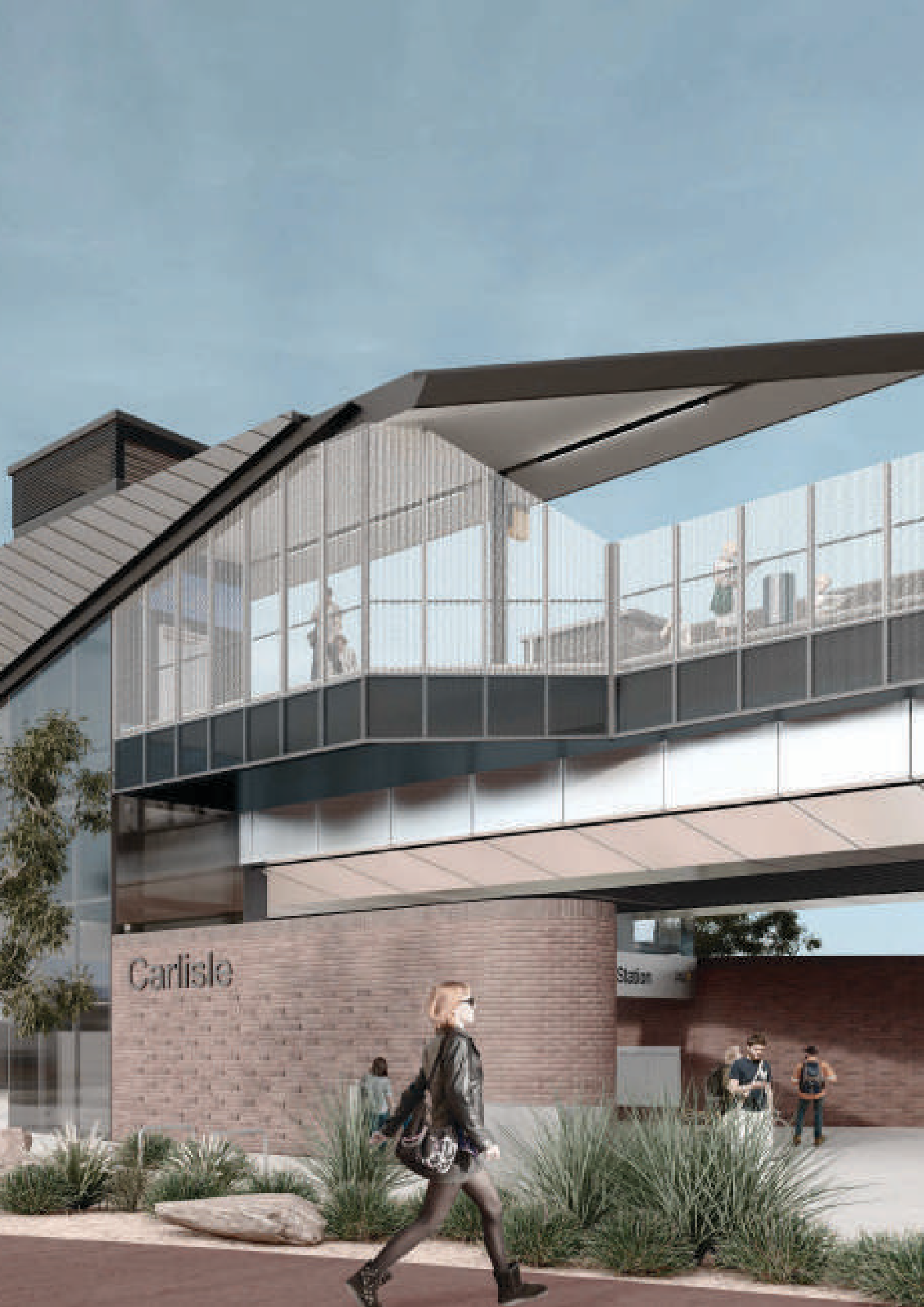
Principle	SDRP Comment	Design Response
Principle 3 **Built Form and Scale**	The SDRP encouraged further development and refinement of scale, details, and junctions to enhance the differing identities of each station. The SDRP noted that the scale of the viaduct and its piers present an opportunity to work with this mass and materiality and allow it to be an expressed and celebrated form, and to hit the ground strongly. The SDRP encouraged the expression of the viaduct, where it intersects the stations, as a piece of significant infrastructure rather than concealing it in additional built form. The SDRP encouraged ALUA to explore the exposing of junctions, such as where the viaduct meets screens and balustrades, as intentional form rather than attempting to conceal them. Concealment risks overly complex junctions, additional costs, and complex maintenance. The SDRP noted that the folded plane roof canopies are important focal points and present an opportunity to strengthen identity as landmark forms. Ensure that when later intersected with service elements, such as lift overruns, they will not lose their singular language and scale, thus reducing their impact. The SDRP welcomed the improved responsiveness to local context as expressed in the brick colour at stations and suggested that this extends to paving variations and fixed furniture at each location. The SDRP also requested that ALUA consider the form of smaller canopies in the landscaped areas, and how these may contribute to the contextual response.	Since the SDRP meeting in August 2022 there has been ongoing refinement to the design concept, including colour, materiality and planting species to develop the station and precinct identities. These are set out in the Design Report prepared by ALUA (refer to Appendix F). Notably in response to the SDRP comments: • the expression of the folded roof plane is an important design strategy. The proximity of the lift to the external face and the height of the lift overruns are constraints that are being handled carefully to ensure the design response is not compromised and that the roof plane elements maintain their strong form and landmark qualities; • the strong form of the viaduct is expressed in the architecture of the stations; • the canopies within the landscaped areas have been colour themed to correspond to the station and station precinct identities; and • individual identity at each train station is being further reinforced through the paving treatment, seating, plant species and other ancillary structures. Further detail on the manner in which the design responds to the SDRP's comments are set out in the Design Report prepared by ALUA at Appendix F.

Principle	SDRP Comment	Design Response
Principle 4 **Functionality and Build Quality**	The SDRP requested comprehensive transport and movement plans be developed for each station to enable an evaluation of how the stations manage modal conflict, safety, flows of traffic and legibility of movement. In refining the design, the SDRP requested ALUA review: • pathways to manage conflict points; • the manner in which pedestrians pass through/around the bus interchanges; • location/configuration of the Kiss and Ride to manage conflict points; and • relationship of the PSP near Oats Street Station and the TAFE.	A comprehensive and cohesive movement strategy is one of the keys to the success of the development. Movement plans have been reviewed and refined through the ongoing engagement with MRWA, the Town and Department of Transport (DoT) since the last SDRP meeting in August 2022. Specific access plans have been developed for each train station and station precinct to demonstrate the considered approach to the PSP, pedestrian paths and plaza connectors. These are included in the Design Report prepared by ALUA (refer to Appendix F). The approach to the PSP has also been carefully considered in consultation with MRWA and DoT in relation to it being an at grade PSP that crosses roads and intersects with plaza connectors. The PSP strategy has been carefully tailored to control speeds and maximise safety for all users. The oscillating recreational path and secondary shared path are key components of the overall strategy of 'loops and trails', focused on how the community can use the public realm in different ways. The path network has a hierarchy of widths and treatments to manage how people use each path. The design response allows pedestrians to walk through the bus interchange in a deliberate manner to enhance activity and passive surveillance within this area. The alternative is to utilise the PSP. There are paths on the eastern and western sides of the Oats Street Kiss and Ride parking area to carefully separate pedestrians from vehicles and minimise opportunities for conflict. Multiple paths are also present at the Carlisle Kiss and Ride parking area.

Principle	SDRP Comment	Design Response
Principle 5 **Sustainability**	The SDRP noted that hardscapes should be minimised where possible in terms of minimising heat and run-off, suggesting that ALUA investigate permeable materials and infiltration strategies. SDRP requested a review of the bike storage provided at Carlisle and Oats Street Stations to encourage alternative means of transport and requested investigation of e-charging opportunities. SDRP requested investigation of rainwater re-use.	The sustainability initiatives for the project include: • Achievement of a four star rating against the Green Star Railway Stations rating framework. • Achieving tree canopy and urban forest targets for the project. • Utilising low maintenance design opportunities where possible. • Minimising hardscapes near train stations whilst maintaining functionality. It is noted that permeable paving solutions are still being investigated with the PTA. • Investigating permeable materials for car parks and plazas with PTA (noting that these do not currently meet PTA standards). This is being further resolved with the Design Working Group. • The combination of landscape WSUD, subsoil drainage and grading are designed to avoid the requirement for underground tanks and gross pollutant traps etc. • Refinement of the drainage design is ongoing and will inform the landscape response. The infrequent flood event areas are all created as usable spaces with integrated play and interpretive elements. • The bike storage proposed reflects the PTA requirements. The storage design is being refined to seek to enable increases in capacity in the future.

Principle	SDRP Comment	Design Response
Principle 6 **Amenity**	The SDRP requested: • the use of escalators be investigated in all stations; • diagrams be prepared showing how wind, sun, glare and rain impacts are being mitigated on platforms; and • acoustic performance of stations. The SDRP supported the generosity of plazas set away from roads and the intent to include diverse public realm spaces. SDRP requested that platform walkway widths be generous in width for safety and amenity.	It is noted that escalators have now been included in the Oats Street Train Station scope (they were not included when the application was last reviewed by the SDRP). However patronage levels at Carlisle are estimated to remain low through to the forecasts for 2051 and therefore the demands are expected to be readily accommodated with the proposed lifts (two per platform). The designs have been prepared to be able to accommodate escalators at Carlisle Train Station in the future if required. Acoustic modelling and testing has informed the design of the new stations and associated infrastructure (e.g. carparks, plant rooms etc) to comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*. Wind and rain modelling has been undertaken to inform the location and design of station canopies and bus shelters etc to ensure passenger comfort. The proposed platform widths are designed to meet the PTA's requirements. These widths have been assessed by the ALUA pedestrian modelling team to ensure that the platforms comply with passenger flow and level of service requirements.
Principle 7 **Legibility**	The SDRP encourages a strong wayfinding strategy for the project and noted that the visual and physical permeability of stations and legibility of entries are critical for continuity of the pedestrian urban realm and connectivity of the precinct.	A wayfinding consultant has been engaged to prepare a wayfinding signage strategy for the train stations and public realm. This will be enhanced by the architectural approach which seeks to enable intuitive wayfinding with legible entrances to train stations as well as through the thematic approach to the train stations and station precincts, utilising colour, materiality and planting species to develop different train station and precinct identities. Both the Carlisle and Oats Street Train Stations incorporate open, permeable and legible entrances and visually permeable concourse spaces.

Principle	SDRP Comment	Design Response
Principle 8 **Safety**	The SDRP recommended: • a comprehensive Crime Prevention Through Environmental Design (CPTED) assessment; • a lighting strategy to ensure stations and public spaces are appropriately lit and activated; • prioritising the visual and physical porosity of stations for perceived and actual safety; • ensuring platform safety with conspicuous and easily located points of access and central lifts; and • resolution of the PSP and forecourt areas and how cyclists are managed.	A security working group has been created for the project which includes members from the PTA security team, WA Police and the Town's security and crime prevention representatives. This group has reviewed the design and CPTED considerations throughout the duration of the project. The CPTED approach is documented in the Design Report prepared by ALUA (refer to Appendix F). A lighting strategy is also included in the Design Report prepared by ALUA (refer to Appendix F). As noted earlier, the visual and physical porosity of the train station designs is an important security element. The upper building façade and platform screening approach maximises the extent of visually permeable area. Due to community feedback and concern for overlooking at the main platform waiting area, the façade is solid. The approach to the PSP has been carefully considered in consultation with MRWA and DoT in relation to how this adjoins and passes the train station forecourts. The PSP strategy has been carefully tailored to control speeds and maximise safety for all uses. The detail on the PSP approach is included in the Design Report prepared by ALUA (refer to Appendix F).
Principle 9 **Community**	The SDRP supported continued discussions with the LGAs regarding opportunities for revenue generating activities in the public realm and semi-permanent activation of these spaces. The SDRP also requested that consideration be given as to how the stations function at night.	The landscape spaces adjacent to Rutland Avenue near the Carlisle Train Station have been designed to create opportunities for modular tenancies and coffee or food trucks, with associated seating opportunities and connection points for water and power to provide for the activation of these spaces. A kiosk tenancy is provided at the Oats Street Train Station. The lighting and CPTED strategy have all been considered having regard to night time operations.
Principle 10 **Aesthetics**	The SDRP requested a rigorous approach to public art to ensure that it is integrated into the design of the place and not just a decorative addition. The SDRP suggested that public art could contribute to an overall cohesive line-wide design whilst offering a legible, local response to place. The SDRP also requested that the design team explore the exposure of junctions.	The Place Plan for each train station requires an integrated art response and strategy to be located across the elevated rail structure, activity nodes and paths, with a focus on the train stations. As set out in the Design Report at Appendix F, there will be multiple public art opportunities line-wide, including on screening, embankment walls / retaining walls / noise walls, abutments, piers, ceilings/ soffits, shelters, precinct hardscapes, transformers, and play elements.


Carlisle

5. Description of Proposed Development

5.1 Development Overview

This development application relates to the following components of the VPCLXR project that are located within the Town:

- Elevated train station at Carlisle, including ground level station entry and concourse;
- Carlisle passenger Kiss 'n' Ride facility and Park 'n' Ride car park;
- Elevated train station at Oats Street, including ground level station entry and concourse;
- Bus interchange at Oats Street;
- Oats Street passenger Kiss 'n' Ride facility and Park 'n' Ride car park;
- At grade Principal Shared Path (PSP) modifications to augment the existing PSP adjacent to Rutland Avenue;
- Public realm initiatives and improvements between the north abutment adjacent to Mint Street/ Archer Street and the southern abutment adjacent to Briggs Street, incorporating civic spaces, community activation spaces, community nodes, a nature playground, parkland, youth zone, pathways and landscaping; and
- Local road works and intersection modifications.

Further details of each of these aspects of the project are described in greater detail below under each of the following sub-headings:

- Carlisle Train Station Building – Concourse / Entry Building / Platform
- Oats Street Train Station Building – Concourse / Entry Building / Platform
- Public Realm
- Croquet Club
- Landscaping
- Road Network
- Principal Shared Path
- Car Parking
- Bicycle Parking
- Bus Interchange and Bus Facilities
- Architectural Treatments, Materials and Finishes
- Sustainability and Green Star Rating
- Signage and Wayfinding
- Public Art
- Lighting
- Land Management and Allocation Arrangements
- Tree Removal
- Tree Planting
- Services
- Precinct Access Arrangements
- Project Delivery.

One of the overarching principles that has guided all aspects of the design is the PTA's station access hierarchy, which prioritises pedestrian access as the most important and highest order of priority followed by cyclist access, bus access, Kiss 'n' Ride and finally, Park 'n' Ride. The design essentially seeks to reward pedestrian, cycle and bus users with shorter distances, higher convenience and higher comfort levels than private car users.

5.2 Carlisle Train Station Building–Concourse / Entry Building / Platform

The proposed new Carlisle Train Station has been relocated from its existing location within the Railways Reserve (which is generally located between Wakefield Street and Memorial Avenue), further to the north to enable the main entrance to be accessed directly from Mint / Archer Street, creating a visual and physical interface with the street environment. The proposed new station incorporates secondary entrances from the southern façade of the new station building to provide access for those utilising the new Kiss and Ride and Park and Ride facilities. The combination of entrances from both the northern and southern sides of the building ensures the building is permeable, with legible entrances from within all areas of the public realm.

Refer to Figure 12 – Carlisle Train Station, Forecourt and Plaza General Arrangement Plan

The placement of the Carlisle Train Station and associated forecourt is designed to allow for connectivity with active edges in the urban realm beyond the new train station. This provides for linking plazas and permeable edges that interface between the Railways Reserve and the surrounding built form on Rutland Avenue and Archer Street.

The southern curtilage to the new train station provides a generous plaza. This is located between the new train station building and the new car parking area (Kiss and Ride and Park and Ride) and is designed as a flexible community activation space which is free of fixed furniture to provide use flexibility. Integrating with this southern plaza area, the landscape spaces adjacent to Rutland Avenue have been designed specifically to create opportunities for modular tenancies and coffee or food trucks, with associated seating opportunities and connection points for water and power.

The new Carlisle Train Station car parking area (Park and Ride and Kiss and Ride facilities) is located under the viaduct on the southern side of the new train station, away from active community edges. The car park has been carefully located with access from the eastern side of the Railways Reserve so as to avoid additional conflict points with the PSP.

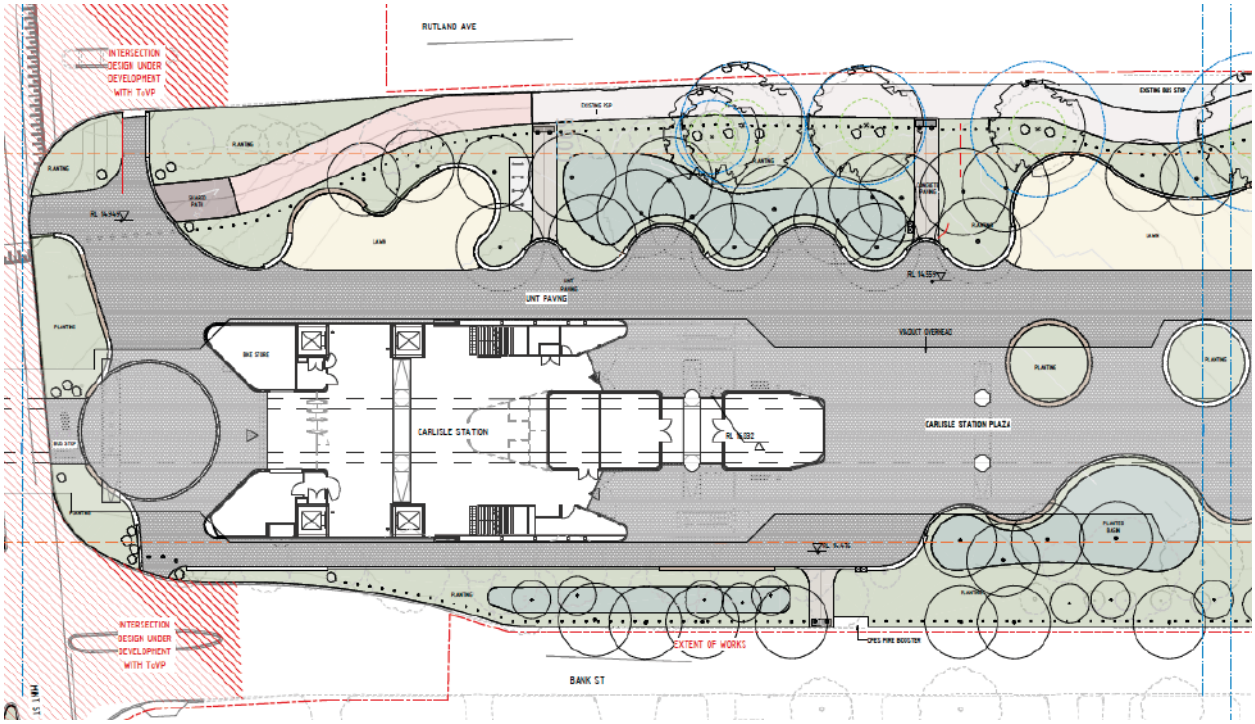


Figure 12. Carlisle Train Station, Forecourt and Plaza General Arrangement Plan (refer to Appendices G and I for further details)

The following provisions have been incorporated into the design of the Carlisle Train Station entry building:

- Bike store, with provision for 18 bikes, which has a glazed façade and which faces the station forecourt / main entry;
- A concourse;
- Four lifts (two to each platform);
- Stairwell to each platform;
- A number of electrical, services, communications and store rooms including:
  - Lobby Communications Room (LCR);
  - Track Side Equipment Room (TSER);
  - Station Main Communications Room (SMCR);

The eastern and western facades of the new train station incorporate glazed curtain wall facades adjacent to the lift entrances and mesh to the stairwells to provide for passive surveillance from within the station to the public realm and vice versa.

The VPCLXR project uses two side platforms at the Carlisle Train Station, with the rail line located centrally. The platforms at the station are designed to facilitate access to six (6) rail carriages. The platform canopies are designed to cover just over 80% of the length of the platforms to ensure that there is sufficient weather protection for passengers.

The Carlisle Train Station will be an unstaffed station and access will be controlled by roller shutter doors which close the main and secondary entrances after hours, securing the building and platforms.

5.3 Oats Street Train Station Building–Concourse / Entry Building / Platform

The proposed new Oats Street Train Station has also been relocated from its existing location within the Railways Reserve (which is generally located north of Oats Street), further to the south, with two entry buildings located either side of Oats Street, allowing the platforms to be accessed without crossing Oats Street. The provision of two entry buildings either side of Oats Street provides for maximum accessibility from the surrounding urban realm and represents the optimal access solution for this train station, which is one of the busier train stations in the VPCLXR project.

Each of the two Oats Street Train Station entry buildings incorporate a main entry on the northern side of the building and a secondary entry on the southern side of the building. Like the Carlisle Train Station this ensures a permeable train station with legible entry points from all parts of the surrounding public realm.

Refer to Figure 13 – Oats Street Train Station, Forecourt and Plaza General Arrangement Plan

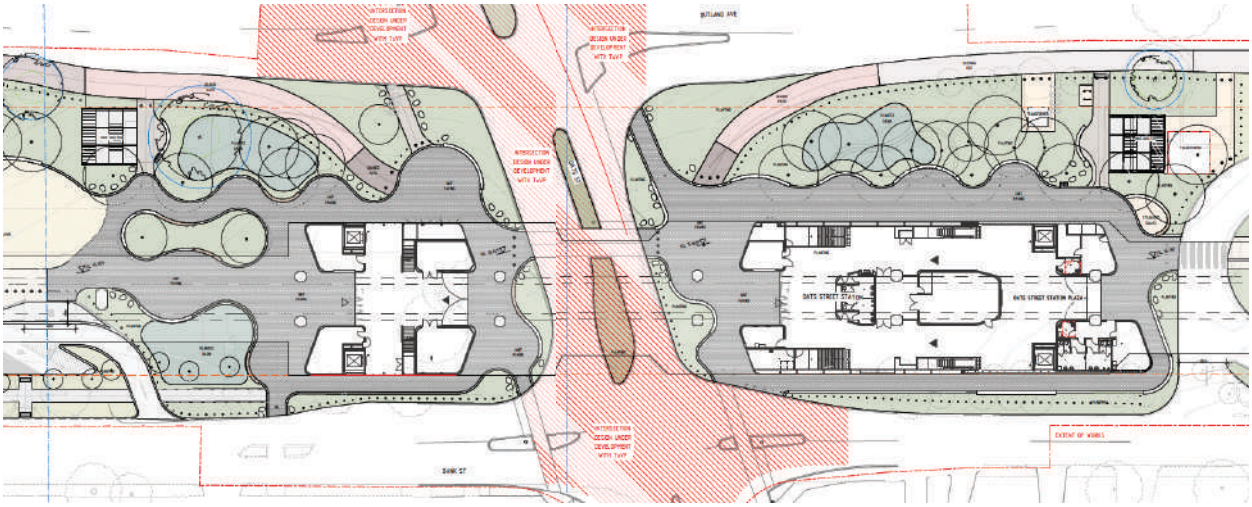


Figure 13. Oats Street Train Station, Forecourt and Plaza General Arrangement Plan (refer to Appendices H and I for further details)

The following provisions have been incorporated into the design of the northern Oats Street Train Station entry building:

- A concourse;
- Two lifts (one to each platform);
- Stairwell to each platform;
- A number of electrical, services, communications and store rooms including:
    - Lobby Communications Room (LCR);
    - Track Side Equipment Room (TSER); and
    - Station Main Communications Room (SMCR).

The following provisions have been incorporated into the design of the southern Oats Street Train Station entry building:

- A concourse;
- Two lifts (one to each platform);
- Stairwell to each platform;
- A kiosk which is located within the southern façade of the building, facing into the public realm and towards the bus interchange, providing activation and passive surveillance;
- Staff crib room and staff toilets;
- Universally accessible toilet for the public, accessible from within the station building;
- Public toilets, accessible from within the station building;
- A number of electrical, services, communications and store rooms including:
    - Lobby Communications Room (LCR); and
    - Cleaners Store.

The bicycle storage for the Oats Street Train Station includes78 bicycle parking spaces within two bicycle storage enclosures that are located to the east of the Oats Street Train Station buildings within the public realm (one storage enclosure on each side of Oats Street).

The VPCLXR project uses two side platforms at the Oats Street Train Station, with the rail line located centrally. The platforms at the Oats Street Train Station are designed to facilitate access to six (6) rail carriages. The platform canopies are designed to cover just over 80% of the length of the platforms to ensure that there is sufficient weather protection for passengers.

The eastern and western facades of the new train station incorporate glazed curtain wall facades adjacent to the lift entrances and mesh to the stairwells to provide for passive surveillance from within the station to the public realm and vice versa.

The Oats Street Train Station will be a staffed station, given its higher patronage levels. Access will be controlled by roller shutter doors which close the entrances after hours, securing the building and platforms.

5.4 Public Realm

The proposed development seeks to deliver a significant new public realm between the new Carlisle and Oats Street Train Stations. This includes recreational and shared paths which traverse the corridor, and landscaped swales and shallow basins as part of the WSUD response and significant new planting. The paths also connecting a number of activity nodes and amenities that are being delivered as part of the VPCLXR project, which include:

- Mungyte Place is to be located on the southern side of the new Carlisle parking area. This is a multi generational space located opposite the Harold Hawthorne Community Centre and associated independent living village. The provision of a multi-generational node is designed to create a community hub for the centre users and village residents and their extended families as well as the wider community. It is specifically designed to provide for interaction by people of all ages and abilities and to provide sensory experiences. The space provides:
    - Double flying fox;
    - Sensory play/climbing dome;
    - Basket swing;
    - Seniors movement/fitness circuit;
    - Trampolines set within rubber soft fall;
    - Community lawns for picnics and informal recreation/gatherings;
    - Stage for performances/activation;
    - Shade shelters and picnic tables;
    - Seating walls;
    - BBQs and drinking fountain; and
    - Bike parking.
- The Banksia Discovery Trail, which comprises a series of informal pathways weaving through planting and swales to create a playful children's discovery trail utilizing balance logs, timber steppers and stepping stones. Interpretation signs will be used in the area to support storytelling and challenging children to engage with the space.
- A Fitness Park, which provides accessible fitness equipment for individual and group based circuit style training through the provision of equipment that supports both cardio and strength training. Information signage panels, shade and seating is also incorporated into this space. An adjacent open lawn area provides space for group fitness classes.
- The Puggle Playground is a small nature playground that creates a play space close to the Oats Street Train Station Precinct for younger children. The focus in the space is to provide free and loose parts play for younger children including cubby building, steppers and balance beams with small climbing opportunities and interpretation opportunities. Picnic tables, benches and informal seating are also provided adjacent to and within this space.
- The Oats Street Youth Plaza incorporates a skate plaza, chill out zone, basketball half court, four square court and Tik Tok performance space. It is located opposite the Southern Metropolitan TAFE Campus to provide a breakout space for students and the wider community. The space also provides opens areas which can be used flexibly for programmed events in and around the Oats Street Train Station.
- Seating Nodes are located throughout the Railways Reserve corridor. These are generally spaced 60-100 metres apart outside of the station precincts and activity nodes. These provide pedestrians and cyclists the opportunity for resting spots and social interaction. They include seating walls, a bike rack and shade from planting.

Refer to Figure 14 – Oats Street Youth Plaza (one of the many activity nodes that are part of the VPCLXR project)

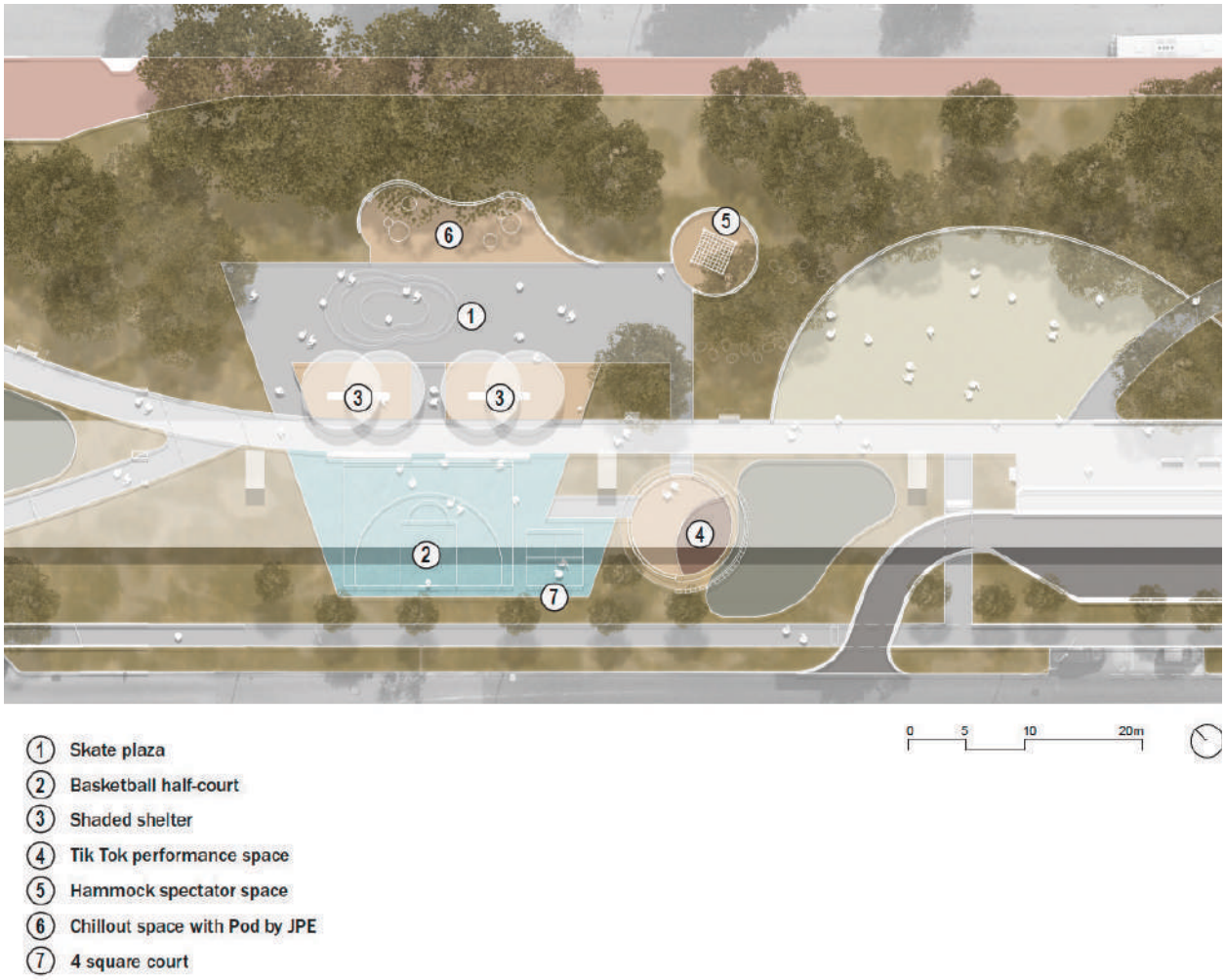


Figure 14. Oats Street Youth Plaza (one of the many activity nodes that are part of the VPCLXR project)

5.5 Former Croquet Club

At the request of the Town, ALUA is investigating the opportunity for the former Victoria Park Croquet Club to be relocated from its existing location at 31 Rushton Street, Burswood to the Railways Reserve corridor as part of the VPCLXR project. The former Victoria Park Croquet Club is identified as a local heritage item under the Town's Heritage List as a Category 2 Place of Considerable Significance.

The proposed location for the former Victoria Park Croquet Club is to the east of the proposed new Oats Street car parking area. The Town's vision is for the former croquet club building to become a hub for culture and community within the Railways Reserve, similar to the Goods Shed at Claremont. At this stage, ALUA is investigating the feasibility of this proposal with the Town and has shown indicatively on the landscape plans where this building could be accommodated within the VPCLXR project if this proposal is to be pursued.

Importantly, the potential relocation of the former croquet club will be subject to a separate development approval process (if required) to assess any heritage impacts/mitigation strategies. This will be undertaken by the Town (rather than ALUA). If relocation does proceed, the identified space for its relocation will be redesigned in greater detail in consultation with the Town. Matters that will need to be considered include the proposed use of the building and any implications (such as liquor licencing or food preparation areas and associated servicing requirements including parking, loading and access to water, electricity and gas).

Refer to Figure 15 – Indicative potential location for the former Victoria Park Croquet Club

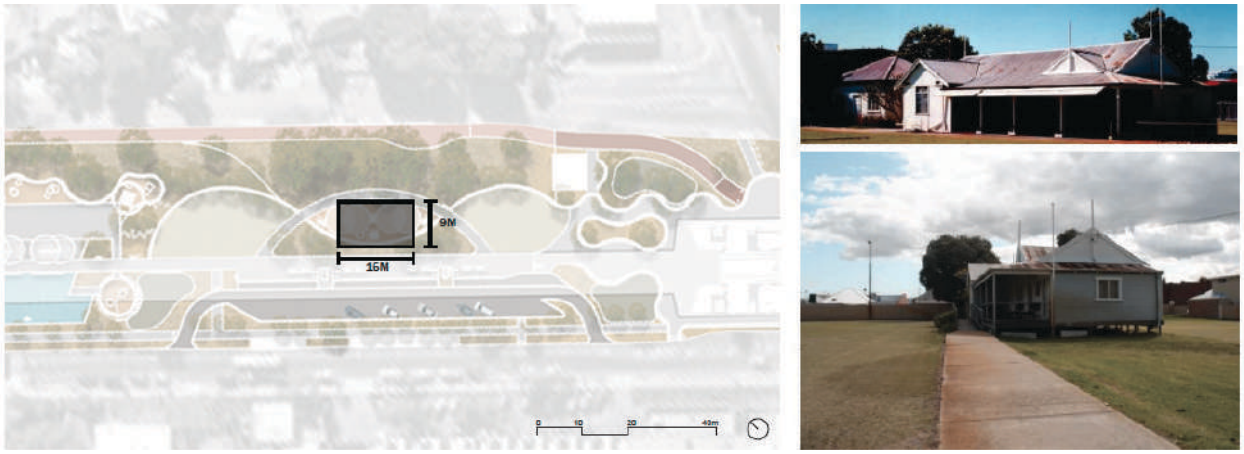


Figure 15. Indicative potential location for the former Victoria Park Croquet Club

5.6 Landscaping

The design principles that have been applied in preparing the landscape design response for the VPCLXR project have included:

- Enhancing sustainability with rehabilitation planting, opportunities for re-wilding insects, reptiles and birds and providing opportunities to connect with nature and greenspace.
- Integrating stormwater natural systems to retain and treat water on site in a thoughtful and explicit way utilising best practise WSUD principles.
- Retaining as many existing trees as possible and reusing all felled timber on site (for mulch, habitat logs and nature play opportunities etc).
- Utilising waterwise planting and focussing irrigation to primary and high use areas such as stations and activity nodes.
- Considering whole of life costs throughout the project process and utilising robust materials that are sourced responsibly.
- Developing a detailed site wide design narrative that responds to the Preliminary Place Plan framework of Collective, Connected and Specific, the METRONET Noongar Cultural Context Document and the METRONET "Gnarla Biddi - Our Pathways" Strategy.
- Implementing an engagement strategy with the community, traditional owners and stakeholders to ensure stories and narrative are developed appropriately.
- Encouraging connections across the rail corridor through generous user friendly station plazas with high levels of pedestrian and user permeability, pathway connections across the corridor at intersections with adjacent streets and clear direct movement paths to link adjacent community facilities, parks and services.
- Providing clear and direct movement paths between stations and associated transport modes.
- Creating visual and physical permeability across the rail corridor allowing intuitive wayfinding.
- Facilitating and retaining natural water crossings and swales where possible.
- Connecting communities through connecting pathways linking key roads, destinations and future developments and through community activation nodes adjacent to associated community uses. This includes youth plazas adjacent to the TAFE and multigenerational spaces near the Harold Hawthorne Community Centre etc.
- Facilitating flexible community spaces and facilities for programming and activation.
- Providing a range of spaces that accommodate different users and numbers from small intimate spaces to larger social gathering areas.
- Creating safe and comfortable spaces where people will wish to dwell and enjoy by reducing heat load by retaining vegetation (where possible), providing new increased canopy and understorey planting, by retaining water via WSUD best practice and by creating new permanent shade structures.

- Encouraging activity with walking loops, seating and rest points and ensuring universal access to encourage activity for all ages and ability.
- Providing two shared paths to separate user speeds and mitigate potential conflict.
- Providing natural surveillance to minimise antisocial behaviour.
- Ensuring adequate lighting within nodes, plazas and pathways.
- Creating defined spaces and clear ownership boundaries.
- Providing clear pathways and access points reinforced through wayfinding and signage.
- Promoting activation and development with a high quality public realm and landscape spaces that complement adjacent community uses and neighbourhood centres.
- Providing links to or flexibility for, future connections to potential development sites and anticipated adjacent uses.
- Ensuring future proposed road crossing points are facilitated for within the landscape design.

Refer to Appendix I - Civil Corridor Landscape and Urban Design Plans

5.7 Road Network

The removal of the level crossings at Mint and Archer Streets and Oats Street provides the opportunity to make intersection modifications to improve the intersections and increase safety for pedestrians and cyclists crossing these intersections.

Copies of the proposed road and intersection modifications are included at Appendix P.

Refer to Appendix P – Civil Road Plans

The key changes to the road intersection layouts at described in the Traffic Impact Assessment (TIA) included at Appendix J.

Refer to Appendix J – Traffic Impact Assessment

As shown on the civil plans and explained in the TIA the key changes to the Mint and Archer Street intersections with Rutland Avenue and Bank Street are as follows:

- Increased size of median traffic island with pedestrian cut throughs on Mint Street on approach to intersection with Bank Street;
- New median island with cut through on Bank Street at intersection with Mint Street;
- New larger median island under the viaduct with pedestrian cut throughs and a raised wombat crossing;
- New larger median island with pedestrian cut through on southern section of Rutland Avenue at the intersection with Archer Street; and
- New larger median island with pedestrian cut through on Archer Street at intersection with Rutland Avenue.

All existing movements at the Mint / Archer and Banks Street / Rutland Avenue intersections are maintained as per the existing arrangements.

As shown on the civil plans and explained in the TIA the key changes to the Oats Street intersections with Rutland Avenue and Bank Street are as follows:

- A median traffic island is proposed at the Oats Street and Rutland Avenue intersection to restricting movements to left in/ out for Rutland Avenue (from both directions) onto Oats Street;
- At Oats Street/ Tuckett Street, a small roundabout is proposed to provide access to the existing childcare centre on Rutland Avenue;
- A signalised intersection is proposed at Oats Street and Bank Street, with median traffic islands and pedestrian cut throughs within all medians; and
- A right turn lane from Oats Street into Bank Street is provided.

The proposed intersection modifications will enhance pedestrian and cyclist safety. Whilst SIDRA analysis of the performance of the modified intersections also demonstrates that the intersections will perform within capacity during both AM and PM peaks both at opening and five (5) years after opening.

5.8 Principal Shared Path

PTA requires ALUA to provide a continuous PSP along the length of the project other than at the intersections, which are not grade separated. The PTA scope also requires that the existing PSP be maintained wherever possible. The existing PSP is aligned outside the Railways Reserve on its eastern side (on the western side of Rutland Avenue). For the most part this existing PSP is being maintained, unchanged in this location other than near the Carlisle and Oats Street Train Stations, where the PSP is being reconfigured to slow cyclist traffic down at the crossings of Archer and Oats Streets. Incremental speed reduction is achieved with a combination of path geometry, utilising 30, 20 and 10km/hr curves which brings cyclist speeds down to 10km/hr before all crossings and plaza entries. The path geometry is reinforced via the materiality of the path, using colour change and tactile cues and line marking and signage to denote the zones of change.

Refer to Figure 16 – PSP Geometry/Speed Reduction Zones and Crossing Points

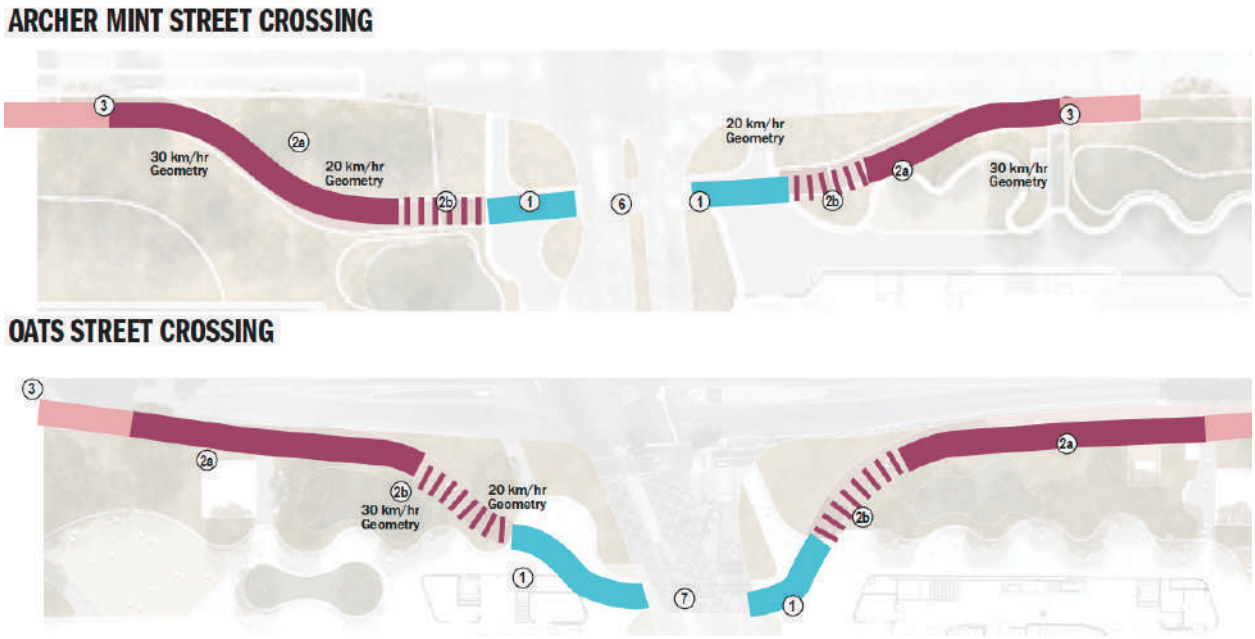


Figure 16. PSP Geometry Zones

Maintaining the PSP in its existing alignment on the eastern side of the Railways Reserve ensures that conflict points with cars and buses is minimised as the bus interchange and car park access are all situated on the western side of the Railways Reserve. This arrangement is supported by the pedestrian access report, traffic assessment, universal access report and community engagement feedback.

The proposed PSP configuration satisfies security and CPTED requirements with clear sightlines and intuitive wayfinding. Vegetated buffers and alignment on the eastern edge of the corridor serves to minimize conflict points.

5.9 Car Parking

New car parking facilities are proposed to support each of the new train stations.

5.9.1 Carlisle Passenger Car Parking Facilities

This includes a new combined Kiss ‘n’ Rise and Park ‘n’ Ride parking facility for the Carlisle Station, which is located to the south of the southern station plaza. The parking area utilises one combined ingress/egress point from Bank Street at the northern end of the car park and an egress only access point from Bank Street at the southern end of the car park. The existing and proposed quantum of parking for the Carlisle Train Station is as follows:

- two (2) formalised Kiss and Ride car parking bays (an increase from no Kiss and Ride car parking bays at the existing Carlisle Train Station) located closest to the station entrance;
- Two (2) ACROD bays (maintaining the current provision of two (2) ACROD bays); and
- 57 car parking bays (maintaining the current provision of 57 bays).

Refer to Figure 17 – Proposed Carlisle Train Station Parking Facilities

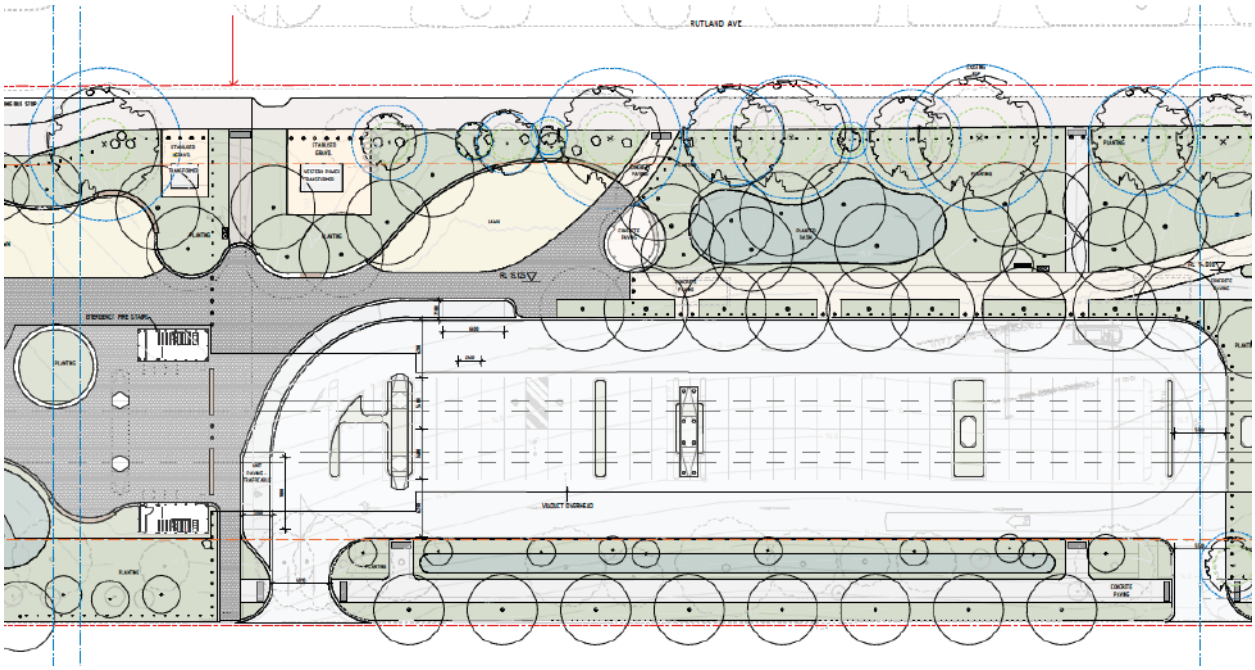


Figure 17. Proposed Carlisle Train Station Parking Facilities

5.9.2 Oats Street Passenger Car Parking Facilities

The parking at Oats Street Station is split. On the northern side of the northern entry building a new car parking area is provided incorporating:

- Four (4) PTA staff parking bays;
- Four (4) Park and Ride parking bays;
- One (1) taxi drop off bay;
- One (1) loading bay;
- Two (2) ACROD bays (maintaining the current provision of two (2) ACROD bays); and
- Five (5) formalised Kiss and Ride Car Parking Bays (an increase from no Kiss and Ride car parking bays at the existing Oats Street Train Station).

South of the Oats Street Train Station, on the southern side of the Oats Street bus interchange a new dedicated Park and Ride car parking area will be provided which contains 94 car parking spaces. It is noted that there are currently 73 car and motorcycle bays at Oats Street Train Station and that parking supply will be increasing.

Refer to Figure 18 – Proposed Oats Street Train Station Parking Facilities

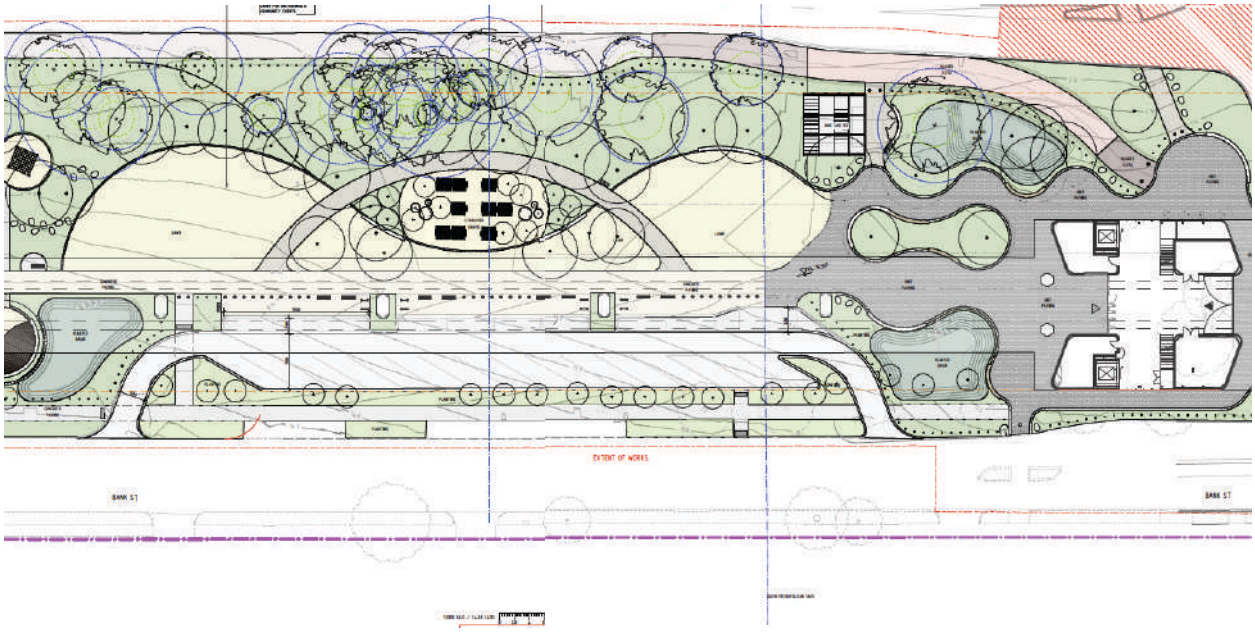


Figure 18. Proposed Northern Oats Street Train Station Parking Facilities Including Staff Parking, Loading Bays and Kiss ‘n’ Ride Facilities

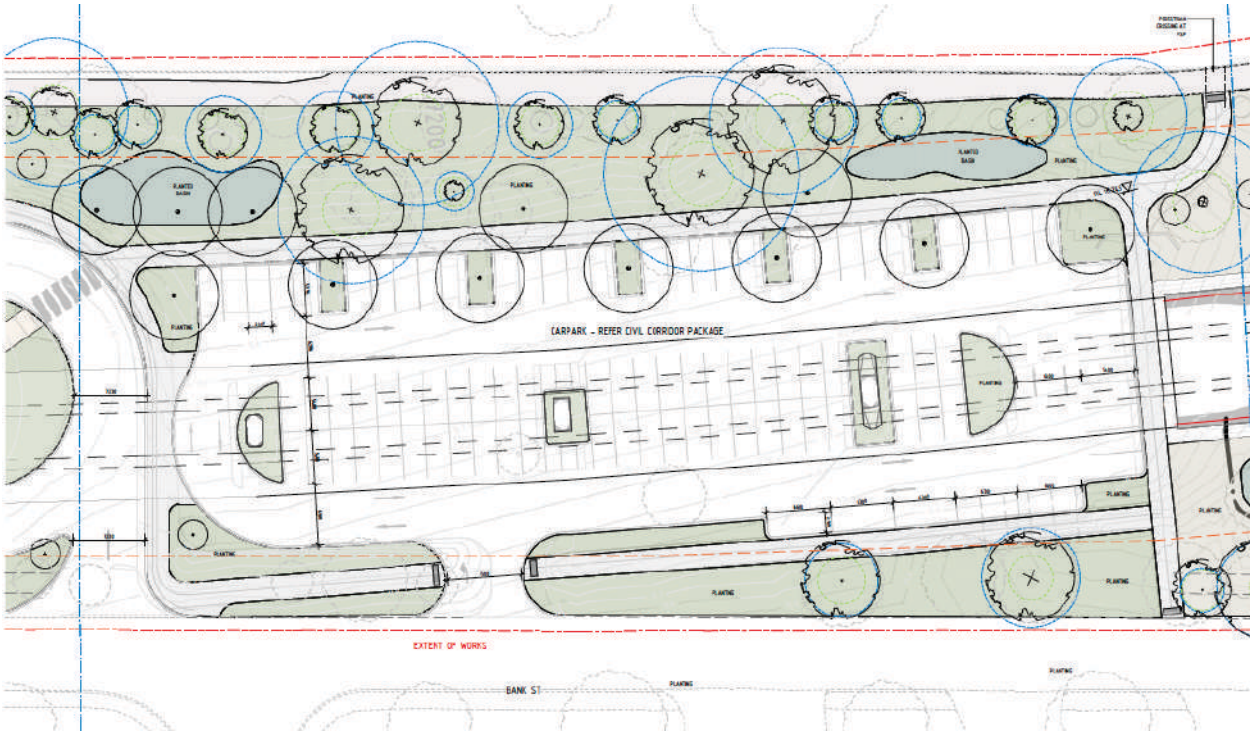


Figure 19. Proposed Oats Street Train Station Long Term Park 'n' Ride Parking Facilities (located to the south of the station)

5.10 Bicycle Parking

New dedicated bicycle parking facilities are proposed as part of the VPCLXR project. This is part of an integrated transport offering that promotes multi modal and sustainable transport options. The proposed bicycle parking facilities include:

- 18 bicycle parking spaces in a dedicated bicycle storage room that is located within the northern façade of the Carlisle Train Station entry building. The bicycle storage room is directly accessible from the exterior of the building.
- 78 bicycle parking spaces within two bicycle storage enclosures that are located to the east of the Oats Street Train Station buildings within the public realm (one storage enclosure on each side of Oats Street).

5.11 Bus Interchange and Bus Facilities

A new bus interchange is proposed at the Oats Street Train Station. This is located immediately to the south of the southern station entry building. The proposed new bus interchange will provide for eight (8) active bus stands and four (4) layover bays. The layover bays are provided for buses to park between services (or whilst drivers are having meal breaks etc).

The bus interchange will operate as a one way road with an anti-clockwise loop. The active bus stands are provided around the central island under the viaduct, whilst the layover bays are provided in a parallel arrangement along the eastern edge of the bus interchange.

The central island within the bus interchange facilitates efficient and easy boarding and alighting of buses from under the viaduct, which offers weather protection, whilst also being able to accommodate commuters who may be moving through the space to access the Oats Street Train Station. Given the weather protection that is provided by the viaduct, it is proposed that smaller, individual, bus shelters be used to provide weather protection for passengers alighting or exiting busses. The use of smaller individual canopies is considered to provide a more articulated architectural response when compared with a larger, more continuous canopy given the adjacent mass of the viaduct.

New bus stops are proposed at the Carlisle Train Station on Archer Street, underneath the viaduct.

These are directly accessible from the station forecourt/main entry. Shelters are not proposed at this location due to the weather protection afforded by the viaduct.

The VPCLXR project is proposing to utilise a bespoke bus shelter design that responds to the architectural design of the stations. The final design of these shelters is yet to be resolved, however are indicatively shown in the Architectural Design Report at Appendix F.

5.12 Architectural Treatments, Materials and Finishes

The stations materiality and colouration has been designed to be distinct and responsive to the local contexts\ whilst maintaining a consistent line-wide character. Both stations utilise a face brick plinth and aluminium roof in colours that reflect and respond to the local vernacular.

The Carlisle Train Station utilises a capital red face brick colour and shale grey light weight metallic roofing to respond to the interwar residential housing in the immediate area.

The Oats Street Train Station utilises a blonde face brick colour and shale grey light weight metallic roofing to directly reference the later 21st century brick choice and the TAFE buildings in the area but with a contemporary forward looking configuration.

A materials schedule for each station, including swatches, is included in the Design Report at Appendix F.

Also in the Design Report is a full schedule of brickwork, platform tiles and concourse tiles for each station in the VPCLXR project demonstrating how these have been selected to respond to the colour identity that is being proposed for each station and station precinct.

Refer to Appendix F – Design Report

5.13 Sustainability and Green Star Rating

The development has been designed having regard to the sustainability framework outlined in the METRONET Sustainability Strategy. In this respect the proposed design has been developed with the intention of achieving a four (4) star rating against the Green Star Railway Stations rating framework (or equivalency rating).

Notably, station and precinct design has considered the use of passive design measures, such as natural ventilation, shading, weather protection and thermal performance. Where applicable, the station precincts and buildings will also incorporate sustainable construction materials that are sourced locally, will include recycling facilities, good waste management strategies and WSUD outcomes.

Energy use and operational costs across station life cycles has also been considered as an integral design feature, specifically in the selection of materials and finishes that will meet the requirements of the PTA.

5.14 Signage and Wayfinding

Efficient wayfinding ensures smooth passenger flow to and from the train station platforms from the public realm, from the bus interchange facilities and from car parking facilities. It determines how easily people can navigate the stations, bus stops and bus interchanges and the surrounds, particularly during peak times.

Poor wayfinding can create barriers to the use of train stations, and can create confusion, congestion and poor user experiences. Given the importance of signage and wayfinding to the design of the VPCLXR project, wayfinding has been a central pillar in the design approach to the development. Key design cues to assist with wayfinding include:

- Providing clear lines of sight to station entrances;
- Providing permeable station buildings with multiple connection points and legible entrances that connect to the corridor/public realm;
- Providing expansive open concourses around the station entries;
- Providing recreation paths which lead to station plazas and forecourts and a PSP which diverts past the station entrances;

- Designating pedestrian crossings; and
- Use of landscape markers and a thematic station, station precinct and public realm design to provide wayfinding cues in the public realm.

At this stage of the design process a signage and wayfinding plan has not yet been developed. The intention is that this will be prepared prior to the operation of the new train stations. It is anticipated that this requirement will be conditioned as part of the approval of the development.

5.15 Public Art

An indicative plan for integrating art and cultural content into the VPCLXR project has been prepared by Artify in alignment with Gnarla Biddi, METRONET'S Aboriginal Engagement Strategy. The plan has a particular focus on two applications; integrated design concepts and public art.

Integrated design concepts are embedded into the urban realm, landscape and station architecture. A number of integrated design concepts are big, symbolic opportunities that are often deeply abstracted in their form and presence, which visually and thematically connect the corridor as a whole.

Themes and narratives will inform the project at a more granular, detailed scale through layered opportunities that are connected to specific sites. These narratives and stories will be expressed through physical and digital interpretation, public artwork opportunities and community participation projects.

Whilst integrated design concepts will explore and celebrate cultural narratives in a high-level, abstracted way, public art themes will allow for specific and detailed narratives of place, people and events to be explored and shared.

The project sits within a richly diverse historical, social, economic, and environmental context. There are four (4) broad themes to ensure a balanced and nuanced narrative is explored:

- Places of Significance;
- People of Significance;
- Rail History; and
- Abundant Country.

The following methodology has been adopted by Artify, Barry McGuire and Carol Innes in the preparation of the Plan for Integrating Art + Cultural Content:

- Review the Gnarla Biddi Aboriginal Engagement Strategy and the VPCLXR Cultural Context document, sharing insights and key findings with the project team to ensure a deep understanding and appreciation for the work undertaken by METRONET, Nyungar Birdiyia and the METRONET Noongar Reference Group.
- Develop the Art + Culture Vision for the project which aligns with METRONET and ALUA's aspirations and intent for the VPCLXR project, including the Gnarla Biddi Aboriginal Engagement Strategy and relevant Place Plans.
- Develop a series of objectives which define the tangible goals the project sets out to achieve, providing a framework for assessing the project over time.
- Develop a series of values as a filter through which we evaluate decision making and intangible benefits for the lifespan of the project.
- Undertake additional research and investigation into local historic, cultural, environmental and social contexts and stories outlined into the Cultural Context document.
- Building on the ideas and narratives outlined in the VPCLXR Cultural Context Document, develop a Cultural Framework which outlines two streams of interpretation.
- How generative concepts and themes will conceptually and aesthetically inspire Integrated design concepts within the architectural and landscape design.
- How layered opportunities, including digital interpretation, physical interpretation, public art, education programs and place activation, will provide an opportunity for deep and site specific storytelling.

The public art plan preparation has followed the following methodology:

- Review METRONET Public Art Strategy, METRONET Armadale Line Public Art Guide and Place Plans for each of the stations.
- Define high-level public art opportunities across the station precincts detailing the following information.
  - Approximate location within the station precinct;
  - Relevant themes and narratives;
  - Artwork typology and scale; and
- Prepare a cost analysis, based on benchmark projects, to inform the overall public art budget.

The Place Plans require an integrated art response and strategy to be located across the elevated rail structure, activity nodes and paths, with a focus on stations. There will be multiple public art opportunities line-wide, including screening, embankment walls / retaining walls / noise walls, abutments, piers, ceilings/ soffits, bus shelters, precinct hardscapes, transformers, and play elements. Further detail on the specific public art opportunities identified for the VPCLXR project can be found in the Public Art Opportunities document prepared by ALUA and included at Appendix N.

Ownership of public art is defined through the commissioning process, the contract and the land on which it is located. Through the contract with the artist, the artwork usually becomes the property of the commissioning body once the art is supplied and paid for. However, the contract may enable the commissioner and the artist to own joint copyright of the artwork. Artwork located on public land is the responsibility of the managing authority of the land on which the art is located.

Refer to Appendix N - Public Art Opportunities

5.16 Lighting

Lighting plays an important role in enhancing the sense of safety within the public realm and in and around the new train stations. Good lighting design can assist in reducing antisocial behaviour, improve visibility and therefore more frequent use of the public realm by the community.

The lighting objectives for the VPCLXR project include:

- Enhance the perception that the spaces are a safe, welcoming environment;
- Be integrated into and accentuate the design;
- Provide a destination experience for pedestrians;
- Activate the space both day and night at station precincts;
- Increase visibility at night;
- Assist wayfinding;
- Enrich the user experience; and
- Meet the required specifications.

Three types of lighting categories have been identified for use within the VPCLXR project. These include:

- Train Stations: Within station buildings, plazas and associated car park and bus interchange areas lighting will be required at different levels both inside and outside operational hours for differing levels of security. During operational hours these will be lit from dark until the last train/bus of the evening. After operational hours they will be lit for security, which will be from the last operational train or bus services until dawn.
- Parkland: Within parkland spaces the recreational shared path and activity nodes will be lit to LGA requirements. These will typically be lit from dusk until 9pm.
- Urban Connectors: Pathways that form part of the urban grid such as the PSP, cross connectors where perpendicular streets intersect, and verge footpaths will require lighting throughout the night to ensure safe travel of users across the corridor. These will be lit from dusk throughout the night.

A Lighting Strategy is included in the Design Report at Appendix F, which contains further information regarding the approach to lighting.

Refer to Appendix F – Design Report

5.17 Land Management and Allocation Arrangements

The PTA has been involved in ongoing discussions with the Town to resolve the final agreements for the management of land following the completion of the development and the commencement of operation of the rail infrastructure. It is proposed to be as follows:

- Town:
  - Roads and verges generally (including where roads go under the rail infrastructure);
  - PSP where it is located within the road reserve adjacent to Rutland Avenue; and
  - Public realm between station concourses/plazas.
- PTA
  - Concourses and plazas around the station entry buildings;
  - Bus interchange facility adjacent to the Oats Street Train Station;
  - Commuter car parks at Carlisle and Oats Street Train Stations;
  - Viaduct and station platforms; and
  - PSP where it introduces path geometry to bring the PSP past station concourses to crossing points.

5.18 Tree Removal

A Tree Management Plan (TMP) was prepared and lodged as part of VPDA1 in October 2022. This TMP identified the trees to be retained as part of the project, trees to be relocated and trees to be removed. It also showed the tree protection zones which will be fenced. The conditions of approval on VPDA1 control the management of trees to be retained and protected during the construction of the early works and viaduct.

The trees that are to be retained are reflected in the Civil Corridor Landscape and Urban Design plans included at Appendix I. Within the PCA, where located within the Town, it is proposed that:

- 227 trees be retained; and
- 413 trees be removed.

5.19 Tree Planting

The VPCLXR project recognises that trees are a core aesthetic and environmental component of the urban landscape. They influence air quality, reduce urban heat, provide health benefits, manage storm water and offer many other advantages.

The approach to tree planting across the precincts is based on the following principles:

- Develop a planting palette that responds to and reinforces the design narrative and framework - Collective, Connected and Specific.
- Retain existing mature trees where possible.
- Reinforce the existing adjacent streetscape planting in consultation with the individual LGAs.
- Use robust Australian native trees for shade to parkland and station forecourt areas.
- Add an overlay of local tree and understorey species endemic to the site vegetation complexes.
- Utilise trees where possible to create green volume and screening to minimise scale and visual impact of viaduct from surrounding residents.
- Respond to the Town of Victoria Park's Urban Forest Strategy and work with Town officers to inform the delivery of the tree planting across the site area.

The proposal incorporates 506 new trees within the PCA within the Town. The existing canopy cover in this area, based on the net site areas calculated using the project extent but excluding areas of road, viaduct, station and at grade rail is 4.4%. The future canopy cover of the proposal, with trees at maturity will be approximately 30%, which is more than a six (6) times increase over the existing situation.

Refer to Appendix F - Architectural Design Report

Refer to Appendix I - Civil Corridor Landscape and Urban Design Plans

Figure 20. Proposed Canopy Cover

5.20 Services

There are a number of critical major services that are being managed as part of the construction process either by avoiding, protecting or relocating existing infrastructure. The work associated with removing or relocating services, or providing new services to the viaduct was included in VPDA1 lodged in October 2022.

New and upgraded utility connections required for the train stations, car parking areas, bus interchange and PSP will be coordinated directly with the service providers and/or the Town as relevant.

5.21 Precinct Access Arrangements

The public will be able to access the train stations and bus interchange facilities as part of their public transport journey during station opening hours (5:15am to 1am Sunday to Thursday and 5:15am to 2:30am on Friday and Saturday).

The areas around the exterior of the station entry buildings will remain open and publicly accessible 24 hours a day, 7 days a week. These have been designed to be part of an integrated public realm arrangement.

PTA operations and maintenance staff will have access to the precinct for parking and any operational requirements (e.g. structural inspections, services maintenance, etc.).

5.22 Project Delivery/Shutdown

The VPCLXR project is to be constructed predominantly during the 18-month shut down period which is anticipated to a commence in late 2023. The 18-month shutdown was carefully considered by the PTA along with several alternative options, including multiple temporary and shorter shutdowns over a longer period of time.

It was determined that shorter shutdowns could have unnecessarily prolonged the project and caused more disruption than necessary to passengers and the community.

The shutdown will effectively create a ‘greenfield site’ which will allow for a more efficient construction of the elevated rail, which delivers the project in a shorter timeframe and provides a safer environment for construction workers.

6. Key Planning and Design Considerations

6.1 Relationship with Surrounding Urban Context

The VPCLXR project traverses through the suburbs of Carlisle and East Victoria Park within the Town's local government area. The VPCLXR project will elevate the Armadale Rail Line within the Town from Mint/Archer Streets through to the abutment at Biggs Street.

The area surrounding this section of elevated rail infrastructure is generally characterised by single and two storey residential development of a low to medium density on both the western and eastern sides of the Armadale Rail Line corridor. The Carlisle Hotel and Harold Hawthorne Community Centre are situated in close proximity to the Carlisle Train Station. The South Metropolitan TAFE Carlisle Campus and various existing commercial and light industrial developments are situated in close proximity to the Oats Street Train Station.

The surrounding area is of mixed character and includes a number of underdeveloped sites and vacant land parcels where there are opportunities for new development in the area to leverage from this significant investment in public infrastructure. This is evident in Figures 20 and 21, which show the existing context of the train stations. In this respect the VPCLXR project is anticipated to act as a catalyst for future growth and development investment within the Town in close proximity to the rail corridor and beyond. This application will specifically support this through allowing for the following outcomes:

- Provision of high quality new train stations that are readily accessible and legible from the surrounding urban realm;
- Provision of a permeable network of paths to facilitate greater connectivity within and across the Railways Reserve;
- Carefully integrated bus and train services to better facilitate sustainable transport choices;
- Flexible open spaces to promote community activation; and
- High quality community nodes that respond to the communities expressed desires for new multigenerational spaces, passive reactional spaces, fitness nodes, playgrounds, skate plazas, half court basketball courts and gathering places which will facilitate greater social connectivity and cohesion.

Figure 21. Existing Carlisle Train Station Context

Figure 22. Existing Oats Street Train Station Context

6.2 Applicable Planning Framework

6.2.1 The Purpose and Intent of Applicable Planning Schemes

The following planning schemes are relevant to this development application:

- **Metropolitan Region Scheme:**
  - The MRS defines the future use of land and provides the legal basis for planning in the Perth Metropolitan Region. It also provides the regulatory planning framework that typically exempts all METRONET work[3] inside railways reservations from the need for planning approval. Notwithstanding the exemptions provided by the MRS a PCA has been placed over parts of the project area, which requires all works in the PCA to be approved by the WAPC, as mentioned in Section 5.2.
  - The VPCLXR project aligns with the reserve description for Railways as the project is providing upgraded public transport facilities that promote connectivity and accessibility.
- **Town of Victoria Park Local Planning Scheme No. 1:**
  - The objectives and intentions of the Town's Local Planning Scheme No. 1 (LPS 1) are to control and guide development and growth in a responsible manner and in a manner which can initiate, accommodate and respond to change. The goal of LPS 1 is to ensure that the Town is recognised as providing a high level of services and amenities.
  - One of the objectives of LPS 1 includes ensuring that planning at the local level is consistent with the MRS and wider regional planning strategies and objectives. In this respect, it is noted that the proposed VPCLXR project is for a new elevated rail line, new train stations, a new bus interchange and public parking (Kiss and Ride and Park and Ride) facilities within the MRS Railways Reservation and is consistent with wider regional planning strategies including Perth and Peel @3.5 Million to increase the capacity of Perth's metropolitan rail network. The provision of a high quality public realm as part of the VPCLXR project is consistent with Perth and Peel @3.5 Million with respect to promoting urban renewal in areas surrounding the upgraded rail infrastructure.
  - As the reservation of the subject site is established by the MRS, LPS 1 does not provide specific requirements or objectives for the Railways Reservation. LPS 1 establishes the zonings for the surrounding land parcels which are in close proximity to the project area.
  - As this development application is being made within a PCA, development approval is not required under the local planning scheme. Nonetheless, the success of the project rests in part, on the manner in which the development responds to and interacts with adjoining land uses, both existing and future. Accordingly, the objectives of the local reservations and/or land use zones of LPS 1 have been considered in terms of the manner in which the public realm and station realm connects to and interacts with adjoining land. The development is considered to be consistent with the objectives of LPS 1 in this respect. Some of these design responses include (but are not limited to):
    - Responding to the commercial zoned land on Rutland Avenue, opposite the Carlisle Train Station.
    - Providing activity nodes which respond to the adjoining land uses, such as the multigenerational Mungyte Place, which responds to the adjacent Harold Hawthorne Community Centre and the Oats Street Youth Plaza, which responds to the adjacent Southern Metropolitan TAFE campus.
    - Focussing the activity nodes closest to the train stations, which are adjacent to the areas of most intensive existing and future development.
    - Providing an architectural response to both train station designs which responds to the local architectural vernacular of the Carlisle and East Victoria Park areas.
    - Splitting the Oats Street Train Station across both sides of Oats Street to respond to the different land use contexts and expand the catchment and ease of accessibility of this station.

3 METRONET work and 'Permitted development' under the MRS are defined to cover the same extent of works. 'Permitted development' for the purposes of land reserved for Railways under the MRS is defined as works *"for the purpose of or in connection with a railway, but this does not include the construction or alteration of a railway station or any related car parks, public transport interchange facilities, or associated means of pedestrian or vehicular access"*.

6.2.2 Relevant State and Local Planning Policies

The following State and local planning policies and other identified planning instruments are relevant to this development application:

- State Planning Policy 5.1 - Land use planning in the vicinity of Perth Airport
- State Planning Policy 5.4 - Road and Rail Noise
- State Planning Policy 7.0 - Design of the Built Environment
- Local Planning Policy 10 - Pedestrian Walkway
- Local Planning Policy 29 - Public Art Private Developer Contribution
- Local Planning Policy 37 - Community Consultation on Planning Proposals
- Local Planning Policy 38 - Signs
- Local Planning Policy 39 - Tree Planting and Retention

The proposed development has been assessed against the planning framework documents listed above in Appendix C.

Refer to Appendix C – Planning Assessment

6.2.3 Orderly and Proper Planning and Preservation of Amenity

The principles of orderly and proper planning require that new development is a logical and efficient extension of existing development, and consistent with the planning vision and strategic direction for the locality. This project represents a significant investment by the WA Government in enhancing the capacity of the train network to support long term future population growth and urban consolidation, improving safety and congestion issues associated with existing level crossings and improving the amenity of the VPCLXR project area to support urban renewal and consolidation.

Within the Town, the VPCLXR project will deliver two new train stations and associated station entry buildings, new station plazas, new Kiss and Ride and Park and Ride parking facilities, new bus facilities (interchange and stops) that integrate with the new train stations and significant new ground plane public realm revitalisation and improvement, inclusive of new bespoke public spaces and facilities all within the existing Railways Reserve. In addition the proposal seeks to ensure that the existing PSP is augmented to provide a safe and functional route for cyclists and pedestrians that provides appropriate connectivity to the stations and safe crossing points across local roads.

Specific regard has been had to:

- The distribution of stations and uses within the Railways Reserve that responds to and is consistent with the existing approved use of adjacent land along the Railways Reserve.
- The design and scale of the proposed development has had careful regard to the context of existing surrounding development.
- The location of the proposed development is wholly contained within the Railways Reserve (other than local road network improvements).
- The development will provide high quality facilities to facilitate the use of the rail infrastructure and new public spaces by local residents and workers, providing a significant new community asset that meets contemporary standards and requirements in terms of accessibility, safety and functionality.
- The proposal will enhance the functionality of train and bus services, the catchments of the train stations and the operation of the PSP as well as pedestrian movements across and within the Railways Reserve.
- The design of the development is high quality and it is designed to respond to the context and characteristics of the site.
- The design of the proposed development has been supported by the SDRP and the Design Working Group.
- The proposal will maintain and supplement the availability of Park and Ride and Kiss and Ride car parking for commuters.

- The proposed development has been developed with careful regard for weather protection and CPTED principles and will ensure safe and protected use of the spaces being delivered (as appropriate to the functionality of the space). Shade and amenity will be significantly increased as a result of the project.
- The proposal has been shaped by a detailed consultation process with the community and other stakeholders.

Given the above, the proposed development is considered to be consistent with the principles of orderly and proper planning.

6.3 Crime Prevention Through Environmental Design

The WAPC's Designing Out Crime Planning Guidelines (DOCP Guidelines) were established in 2006 and are intended to be a readily useable, illustrated reference document, which demonstrates 'good' and 'bad' examples of design in the urban environment from a crime prevention perspective. The DOCP Guidelines are currently under review, with a new document Safer Places by Design: CPTED Guidelines, recently subject to public consultation.

ALUA in consultation with key stakeholders has had regard to CPTED principles in relation to the proposed station designs, station curtilage designs, Kiss and Ride and Park and Ride designs, bus stop and bus interchange designs and public realm design.

The principles of CPTED that have been applied to the design of the development, consistent with the DOCP Guidelines, include:

- to maximise the use of public transport by a wide range of people over extended operational hours in a safe environment;
- to discourage anti-social behaviours;
- to encourage all users to feel safe by increasing safety provisions; and
- to promote surveillance.

There are a number of design and operational measures proposed to ensure that safe places and spaces are provided for all users consistent with the DOCP Guidelines and Safer Places by Design (as relevant). These include:

- Ensuring passive surveillance at station entrances and active surveillance with CCTV cameras positioned at the entry (with ancillary views of these spaces).
- Clear sightlines at main station entries.
- Public routes and station entries being generally well viewed from adjacent properties and roadways.
- Small areas that are confined on most sides by building elements such as pillars, walls or other non-opaque entrapment spots or places where intruders may be concealed being avoided in the design.
- Clear sightlines being provided to stairwell and lift entrances.
- Transparent materials being utilised in the station design, increasing natural surveillance and light.
- The toilets at the Oats Street Train Station being only accessible from within the station and designed to avoid loitering spots at the doors.
- The location of the kiosk at Oats Street Train Station to increase activity and passive surveillance on the southern side of this station entry building.
- Clear sight lines provided through the car parks and bus interchange.
- The PSP being separated from other pathways and routes, such as to the bus to station and car park to station routes, providing clarity in zones and improved safety.
- Shrubbery and vegetation being planned to allow direct sightlines and maximise security and wayfinding
- CCTV being coordinated with tree placement and lighting location/coverage.
- Security lighting being provided.
- Furniture and finishes being selected to avoid misuse, dumping or tagging.

- Community uses and ownership of the spaces being encouraged to facilitate positive social interactions in the public realm and to avoid conflicting uses.

The following further processes are either underway or are proposed to inform the detailed design phases for the project:

- Security / Crime Risk Assessment Workshops – which are being held with relevant stakeholders such as the PTA (Transit Officers/N&I), LGAs and WA Police.
- Human Factor Workshop with CPTED principles incorporated in safety risk mitigation during construction.
- Lighting coverage modelling to demonstrate adequate lighting is provided to improve users' feeling of safety.
- CCTV modelling to demonstrate viewing objectives especially in high-risk areas as per PTA standards are met.

It is acknowledged that the overall construction period associated with the VPCLXR project is relatively long. Therefore, ALUA in consultation with key stakeholders are committed to ensuring that spaces surrounding the construction site are safe and fit for purpose to limit risks to pedestrians as far as practically possible. A Construction Management Plan (CMP) has been prepared by ALUA for VPDA1 (as lodged in October 2022) which addresses the safety of construction workers, pedestrians and road users using the area and the ongoing use of the rail line during the temporary construction period.

6.4 Sustainability Approach

The METRONET Sustainability Strategy 2021 (Sustainability Strategy) aims to create a sustainable legacy for Perth through the planning, design, procurement, and construction of transport infrastructure, train stations and precincts.

The VPCLXR project has had regard to the social, environmental and economic themes of the Sustainability Strategy. Importantly, the Carlisle and Oats Street Train Stations are being designed to achieve a four (4) star Green Star equivalency target rating, both in their design and 'as built'.

The sustainability initiatives incorporated into the works included in this development application include:

- The designs apply a sustainability approach through the use of passive environmental design measures, responding to local climate and site conditions having regard to orientation, shading, thermal performance and natural ventilation.
- The reduction of reliance on technology for heating and cooling will minimise energy use, resource consumption and operating costs over the life-cycle of the project.
- Utilising low maintenance design opportunities in both the station, public realm and landscape where possible.
- Achieving tree canopy and urban forest targets for the project.
- WSUD and landscape principles have been applied to minimise negative impacts on existing natural features and ecological processes. Further, the combination of landscape WSUD, subsoil drainage and grading are designed to avoid the requirement for underground tanks and gross pollutant traps etc.
- The use of sustainable construction materials, recycling, good waste management practices, re-use of materials and existing structures, harnessing of renewable energy sources, and total water cycle management will also be incorporated, where applicable.
- Minimising hardscapes near train stations whilst maintaining functionality.
- Investigating permeable materials for car parks and plazas with PTA (noting that these do not currently meet PTA standards).
- Incorporating bike storage to reflect the PTA requirements with designs that enable increases in capacity in the future.

In addition, the project more holistically will deliver high quality new train stations with increased catchments and improved integration with bus services. This will result in high quality low-emission transport options for thousands of locals, consistent with the principles of sustainability.

7. Key Technical Considerations

7.1 Acoustic Considerations

Acoustic Assessment Reports have been prepared for both the Carlisle and Oats Street Train Stations. These are included in Appendix L. The purpose of these assessments is to assess and determine the level of compliance of the design (or stations, car parking areas and bus interchanges etc) having regard to surrounding noise-sensitive premises and to ensure that passenger station areas meet appropriate standards having regard to noise and vibration.

These assessments are being used to influence the design and material selection. As noted in these reports further assessment is ongoing as the design of the project moves into the detailed design phase.

Operational rail noise and vibration for the rail line / viaduct has been separately assessed as part of VPDA1 lodged in October 2022.

7.2 Wind and Rain

ALUA is required by the PTA to undertake wind and rain assessments of the passenger areas including station platforms, station entries and bus interchanges and stops. This is to ensure that the external environmental comfort for passengers is appropriate and that the design responds to any risk areas where passengers may feel uncomfortable as a result of wind and/or rain.

These climatic studies have informed the platform canopy designs and bus shelter location and designs. The studies are ongoing and will continue to inform the design as it progresses into the detailed design phase for construction.

7.3 Construction and Traffic Management

The project is to be principally constructed during an 18 month shut down period during which the rail line will be closed and there will be replacement bus services in operation. METRONET has publicly acknowledged that this shutdown process will be disruptive to the community however it was determined as the most appropriate option to deliver the new rail line quickly and safely. Temporary bus stops and bus interchanges will also be established during this period to support the replacement bus services that are operational during this time and until the new permanent bus stops and interchanges come on line as part of the VPCLXR project.

The construction of the stations, car parks, bus interchanges, road works and public realm will be managed holistically with the construction of the viaduct during the 18 month shut down period. It is noted that construction and traffic management has been separately assessed as part of VPDA1, which was lodged in October 2022. An updated CMP will be required to be provided to the Town and DPLH as a condition of approval on VPDA1. This updated CMP will address all relevant construction and traffic matters for the project holistically.

7.4 Geotechnical Considerations

Geotechnical considerations have been separately assessed as part of VPDA1 lodged in October 2022.

7.5 Contaminated Land

A search of the Department of Water and Environmental Regulations (DWER) contaminated sites database determined that small portion of the project area adjacent to Mint Street has been identified as a suspected contaminated site.

The basic summary of records has been included at Appendix O. The records state that:

> *A dissolved hydrocarbon plume extends from the source parcel of the Site (166 Rutland Ave, Carlisle) to the northwest. The plume extends beneath Archer St, 3 Archer St, 1 Archer St, Rutland Ave, the Railway Reserve and East Vic Park Primary School.*

This site was reported to the Department of Environment and Conservation (DEC) as per reporting obligations under section 11 of the 'Contaminated Sites Act 2003', which commenced on 1 December 2006. The site classification is based on information submitted to DEC by March 2007 on the basis that 166 Rutland Avenue, had historically been used as a service station.

The identified restriction on use states that groundwater abstraction is not permitted at the source of the affected land because of the nature and extent of groundwater contamination.

Given that groundwater abstraction is not proposed as part of the construction activities or development, it is considered that the affected part of the rail corridor that is included in the subject site is suitable for the proposed development.

Refer to Appendix L – Basic Summary of Records

7.6 Water Management

Stormwater Management for the VPCLXR project comprises a number of elements as follows:

- To manage post development flows within the public realm, WSUD principles have been applied within the drainage design. This includes shallow basins/swales with landscaped plants/vegetation to treat (remove pollutants) the surface water runoff from the viaduct, roof catchments, hard landscaped areas, and soft landscaped areas. The WSUD principles that have been applied in the public realm design are detailed in the Design Report included at Appendix F.
- Soak wells and high-level overflow catchpits will be positioned within some shallow basins / swales as the inlet and outlet respectively. The pipe outlet from the high-level overflow catchpit will then connect into adjacent basins or the existing local road drainage network, ensuring the flows remain at pre-development rates to not adversely impact the existing drainage network. High-level preliminary calculations show that the existing drainage network has sufficient capacity to retain 1% AEP storms.
- Basins are anticipated to have a depth of 300mm and up to 500mm where required (noting that fencing may be required where these are greater than 300mm). Underground drainage storage tanks will be considered if the 500mm deep retained basin does not have sufficient capacity to meet the 300mm freeboard and pre-development flow requirements of the project.
- Drainage runoff from the viaduct will flow down the centre of the pier and will freely discharge at ground level onto rock pitching into swale treatments to provide natural irrigation. Where piers are located within a hard landscaped area (i.e. stations, forecourts, pavement, etc.), the design involves a PVC outlet below finished ground level into an atco drain for inspection/maintenance and then connected into a piped system for further conveyance.
- Where possible, surface runoff from car parks and bus interchanges will sheet flow into vegetated swales / rain gardens. The vegetated swales / rain gardens will help to manage the post development flows and treat the surface runoff prior to discharging into the existing local road drainage network. Where there are existing trees or limited space and hence swales / rain gardens cannot be proposed, then pit and pipe systems with gross pollutant traps are being used.
- Where the rail corridor has restricted access with a 1.8 metre high chain link fence (outside of the PCA), 1.5 metre deep basins can be proposed with 1V:3H side slopes to help manage the pre-development flows.
- Road drainage design replicates the existing drainage scenario as much as possible. It is proposed to design new drainage structures to suit the road design (widened lanes, amended kerbs, etc.), connecting to the existing Town drainage structures, which outlet to existing basins. The drainage design is to have no adverse impacts to the Town's existing drainage network.
- It is noted that the existing rail corridor and road stormwater drainage does not include any specific water treatment infrastructure to treat runoff from the roads. Through the proposed drainage design for the rail corridor, at-source treatment is proposed prior to any connections to the existing road network. However, if any further water treatment is required prior to discharging into the existing Water Corporation basins (such as GPT's on the existing pipe networks downstream of the project), it is assumed that there are existing measures in place, and it is not part of the corridor and drainage scope of work.

- Groundwater will be utilised to meet operational irrigation requirements, in line with METRONET's target of utilising 100% non-potable water for all landscaping beyond the establishment phase. An irrigation strategy outlining the approach to irrigation is under development and will need to be agreed with the Town.
- Prior to use for irrigation purposes, bore water shall be treated to minimise risk of iron staining. A strategy for this approach is yet to be confirmed.

Refer to Appendix F – Design Report

Refer to Appendix M – Drainage General Arrangement Plans

7.7 Services and Infrastructure

Most of the new and relocated services required as part of the VPCLXR project formed part of the early works and viaduct development application (VPDA1) which was lodged in October 2022.

A number of new or upgraded utility service connections will be required for the new train stations, public precincts, car parks, and to supply lighting to the public realm. ALUA is engaging with service providers and the Town as relevant to facilitate these connections.

8. Conclusion

This report has been prepared by element, on behalf of ALUA, in support of a development application for the following VPCLXR project components:

- Elevated train station at Carlisle, including ground level station entry and concourse;
- Carlisle passenger Park and Ride car park;
- Elevated train station at Oats Street, including ground level station entry and concourse;
- Bus interchange at Oats Street;
- Oats Street passenger Park and Ride car park;
- At grade Principal Shared Path (PSP) modifications to augment the existing PSP adjacent to Rutland Avenue;
- Public realm initiatives and improvements between the north abutment adjacent to Mint Street/ Archer Street and the southern abutment adjacent to Briggs Street, incorporating civic spaces, community activation spaces, community nodes, a nature playground, parkland, youth zone, pathways and landscaping; and
- Local road works and intersection modifications.

The VPCLXR project represents a major upgrade to the Armadale Rail Line and a significant investment in new public realm facilities for the community. It the represents the single largest investment in public transport that Perth has seen and will deliver a multitude of benefits to the local resident and worker community as a result of the new public transport infrastructure and new public realm that is being delivered as part of this project.

Based on the justification provided throughout this report, we respectfully request that the Town support and recommend approval of this application to the WAPC and that the WAPC approve the application subject to appropriate and reasonable conditions.