Melbourne Metro Rail Project

Landscape and Visual Impact Assessment

Version C1

20 April 2016

urbis

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Peter Haack
Lead Consultant	Ashley Poon, Rachel Smithers
Senior Consultant	Carlia Bates
Consultants	Luke Mascarenhas, Verity Miles
Version	C1 Concept Design
Report Number	MMR-URB-PWAA-RP-NN-000823

Approved by

	Peter Haack
Position	Director
Date	20th April 2016

Table of Contents

List of Figures

APPENDICES

Glossary and Abbreviations

Term	Definition	Abbreviation
Amelioration	The ability to reduce the visual impact of a development through siting, design, colour or screening.	-
Canopy Tree	A tree with a minimum height of approximately 10 m with an average crown spread of at least 8 m to 10 m in width	-
Central Business District	The primary high density commercial and retail core of the city.	**CBD**
Landscape and Visual Impact Assessment	The assessment of the impacts of the project on landscape and visual values.	**LVIA**
Local Planning Policy Framework	Local Planning Policies are tools used to implement the objectives and strategies of the Municipal Strategic Statement.	**LPPF**
Modification Level	The degree to which a development contrasts or blends with its setting	-
Municipal Strategic Strategy	The Municipal Strategic Statement (MSS) is Council's key land use strategic planning document and is comprised of the Local Planning Policy Framework and Local Planning Policies.	**MSS**
Principal Project Requirements	Overarching principles that clearly articulate the required outcomes for the project.	**PPR**
Receptor	A location or type of user for which views of the project may be possible.	-
Sensitivity	The degree to which various user groups would respond to change based on their expectation of a particular experience in a given setting, i.e., the expectation of a high level of visual amenity in a national park.	-
Urban Design	Urban design is the collaborative and multi-disciplinary process of shaping the physical setting for life in cities, towns and villages; the art of making places; design in an urban context.	**UD**
Urban Design Strategy	The purpose of the Urban Design Strategy is to provide urban design criteria throughout the development, procurement and implementation of Melbourne Metro to ensure the project makes a positive contribution to local areas and provides a legacy of design excellence for the setting of the project. The strategy also seeks to minimise adverse visual impacts from Melbourne Metro and enhance visual amenity along its entire alignment.	**UDS**
Viewer Perception	The way in which people respond to what they are seeing as influenced by things other than purely visual, – i.e. noise and economic benefits.	-
Viewpoint	Moderate or high sensitivity location from which views to the construction process or components of the project may be possible.	-
Viewshed	The area visible from a particular viewing location.	-
Visual Amenity	The qualities of a landscape setting that are appreciated and valued by a viewer.	-
Visual Catchment	The area over which an object can be seen within the landscape based on line of sight.	-
Visual Impact	The result of assessing the sensitivity level of a viewer and the modification level of a development.	-

Executive Summary

This report assesses the potential landscape and visual impacts of the Melbourne Metro Rail Project (Melbourne Metro), including those on recreational values.

It identifies and assesses potential impacts during the project's construction and its operation and identifies out mitigation measures that are consistent with the Urban Design Strategy (Technical Appendix M).

This report supports the development of an Environment Effects Statement (EES) for the project.

CONTEXT

The majority of the proposed Melbourne Metro alignment and subsequent works are located underground resulting in a minimal extent of visible project components in the urban fabric. The locations within close proximity to the above ground structures would experience some level of landscape and visual impacts during the project's construction and operation phase

Where project elements will be discernible, the existing built form represents a mix of industrial, residential, retail and commercial land uses. The heights and densities of buildings increase with proximity to the Central Business District (CBD) and the Swanston Street / St Kilda Road spine. This means the above ground elements of the project would generally have a limited visual catchment within the inner city landscape, although these project elements would be visible from elevated locations from within buildings and public spaces.

The project area includes high quality streetscape environments defined by their canopy trees and the significant Royal Parade, Swanston Street and St Kilda Road boulevards. There are also significant recreational and historical open spaces at key proposed construction sites where visual impacts would be high, including the Domain Parklands (which includes the Alexandra Gardens, Queen Victoria Gardens and the Shrine of Remembrance Reserve) and the Royal Botanic Gardens and Fawkner Park.

METHODOLOGY

The methodology for the Landscape and Visual Impact Assessment (LVIA) involved:

- Reviewing relevant legislation, policy and guidelines.
- Defining evaluation objectives, criteria and indicators for potential landscape and visual impacts, based on the risks identified in the project's Environmental Risk Assessment. The key objective was to avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.
- Assessing the potential impacts of the project's construction and operation on its viewshed. This is the area where highest impacts are likely to occur, which in the central city landscape would typically be within 500 m of the project's construction and operating infrastructure and activities.

Key components of the methodology were:

Qualitative Assessment

Sensitivity

- How sensitive would viewers be to the proposed development?

Visual modification

- How does the proposed development contrast with the existing landscape character of the surrounding setting?

- What is the quality of the existing landscape setting?

Quantitative Assessment

- Where would the proposed development be visible from?

- How much of the project would be visible from particular viewpoints with regard to the occupied field of view? This component is closely linked to the determination of Visual Modification.

Amelioration / Mitigation Measures

- What measures are appropriate to reduce the project's construction or operating impacts?

Residual Visual Impact

- What is the difference between the existing views pre-development and the views once the proposed amelioration and mitigation measures have been applied such as when revegetation has reached maturity?

Monitoring

- What is the likely effectiveness of the mitigation measures proposed for both the construction and operational phases?

Key issues for the LVIA were:

- The number of sensitive viewing locations.

- The degree to which the project's infrastructure and activities would be visible during construction and operation.

The study area for the LVIA extended beyond the boundaries of the project's proposed Precincts to include all sensitive land use areas within its visual catchment. The assessment method assumed that if the works would not be seen, there is no impact.

Stakeholders such as local governments were also consulted on the visual impacts of the project.

RISK ASSESSMENT

The risk assessment considered the potential consequences of the project's landscape and visual impacts if specific mitigation measures were not applied.

Most of these relate to the construction of the project, when trees and vegetation would be removed at construction sites and construction activities would be visible. While temporary, the majority of these impacts are rated as medium or high and some may be experienced for a significant period of time.

Once operating, the project's above-ground infrastructure would integrate with its surrounding landscape and visual impacts assessed have been assessed as low, as replacement vegetation matures.

IMPACT ASSESSMENT

Construction impacts

The project would have a significant construction footprint. During the construction phase, there would be temporary high-level visual impacts to sensitive viewpoints within close proximity to the construction zone.

Whilst city users are familiar with major construction work sites and construction programs that can take several years to complete, some of the project's components would occupy significant city sites for up to six years during construction. While temporary, these impacts are acknowledged as having a high level of visual impact.

Although it is recognised that those who live, work study and visit Melbourne, particularly its inner suburbs and the CBD, may prefer views that do not include construction sites, it is acknowledged that construction activity has been, and will continue to be, a noticeable component of Melbourne's urban landscape. It is common for appropriately hoarded and mitigated construction sites, as well as tall cranes and other structures, to be encountered on a daily basis.

Therefore, the visual sensitivity to the visual impacts of construction sites is tempered by these common and recurring experiences. On this basis, it is considered that visual sensitivity is reduced somewhat, compared to what would be expected in more pristine settings.

Construction impacts would be mitigated through a range of management measures implemented during the construction process, particularly through well considered approaches as outlined in ***Section 4.6*** of the Urban Design Strategy (Technical Appendix M.

Mitigation treatments such as hoardings and sheds to screen construction activities would help reduce visual impacts from non-elevated viewpoints. Views from sensitive elevated locations, where overlooking of construction activities would be possible, would be more difficult to screen. Elevated locations within proximity to the project are:

- Verve Apartments (Precinct 5 – CBD North).
- The Westin Hotel at the City Square (Precinct 6 – CBD South).
- Shrine of Remembrance Forecourt (Precinct 7 – Domain).
- The Hallmark Apartments (Precinct 7 – Domain).
- Domain Towers (Precinct 7 – Domain).

For many of the more elevated apartments/rooms, the area of construction site or operational components visible from further back within the apartment/room would progressively decrease with increasing elevation.

With increased elevation, one would only be able to obtain the view of the construction site by standing directly at the window [or on the balcony] and looking down.

Further, any downward looking views would also include rooftops of other buildings below the viewer which, although they might present an interesting view, may not be as desirable compared to outward looking vistas of the CBD skyline and beyond that may also be possible from these elevations.

The primary residential areas of detached housing and medium density apartments in proximity to the project are located at the proposed western and eastern portals, on the central city fringe. While overlooking would generally not be possible, construction activities would be visible, often within close proximity to non-elevated locations, resulting in high impacts. The slightly elevated topography of the construction area at South Yarra Siding Reserve would increase potential for views to construction activities. Hoardings and construction sheds would effectively mitigate visual impacts at these locations.

Users of the retail spine of the city along Swanston Street, particularly tourists and visitors, would experience a high visual impact during construction, particularly with views along Swanston Street to St Kilda Road and the Shrine of Remembrance temporarily potentially being blocked by construction activities.

There would be high visual impacts for recreational users of open space and civic spaces during construction at:

- JJ Holland Park.
- University Square.
- State Library forecourt.

- City Square (although this space would be totally occupied by the construction works).
- Federation Square.
- Queen Victoria Gardens.
- Albert Road Reserve.
- Domain Parklands (western edge).
- Fawkner Park.
- South Yarra Siding Reserve (although this space would be totally occupied by the construction works).

The construction activities would be undertaken in close proximity to educational institutions and health care facilities resulting in high visual impacts to the users:

- University of Melbourne.
- Victorian Comprehensive Cancer Centre.
- Royal Melbourne Hospital.
- Royal Melbourne Institute of Technology.

The project construction method and station design would ensure retention of significant vegetation at:

- Parkville (Royal Parade).
- Swanston Street.
- St Kilda Road (Tunnels Precinct works north and south of Domain station).
- Domain Parklands.
- Fawkner Park.

The project meets the draft EES evaluation objectives relevant to landscape, visual and recreational impacts during the construction phase, with residual impacts gradually reducing over a period of 7 to 10 years following construction (as trees and vegetation take time to grow).

Operational impacts

The residual impacts of the project once operating were determined based on the expectation of the delivery of an outcome that is consistent with the directions of the Melbourne Metro Urban Design Strategy (Technical Appendix M) and the project Environmental Performance Requirements (EPRs).

The architectural and public realm components of the project would be new elements within the fabric of the city, but would be of a form and scale similar to those that regularly appear as part of new buildings or public realm and streetscape upgrades.

The operational impacts are considered in the visual context of a modern and dynamic city for which change is commonplace.

However, the historical fabric and key viewlines have been respected and the Urban Design Strategy (***Technical Appendix M***) provides recommendations for these key attributes, and others so the project would not detract from the vibrancy, liveability or history of Melbourne.

The Swanston Street to Shrine of Remembrance visual axis would not be impacted by the project once operational.

BENEFITS AND OPPORTUNITIES

The project would provide opportunities to activate and improve the public domain and/or open space at the proposed station and portal precincts in limited ways such as within the CBD North and South precincts or in significant ways such as at:

- JJ Holland Park in Kensington – potential for improvements to the existing rail corridor interface.
- Arden – potential for significant urban renewal as a result of the project and improvement of the urban realm.
- South Yarra - reinstatement and improvement of South Yarra Siding Reserve including the construction of a new bridge accessing the reserve from Osborne Street and improvements to Lovers Walk.

ENVIRONMENTAL PERFORMANCE REQUIREMENTS

The following Environmental Performance Requirements are recommended for project:

Environmental Performance Requirements
Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ Tunnels: Queen Victoria Gardens, Fawkner Park ▪ Western portal: JJ Holland Park ▪ Parkville station: University of Melbourne, Victorian Comprehensive Cancer Centre, Royal Melbourne Hospital, University Square ▪ CBD North station: Royal Melbourne Institute of Technology, the State Library ▪ CBD South station: St Paul's Cathedral, Federation Square, City Square and Flinders Street Station ▪ Domain station: The Shrine of Remembrance, Albert Road Reserve, Domain Parklands ▪ Eastern portal: South Yarra Siding Reserve.
Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture.
Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.

1 Introduction

This Landscape and Visual Impact Assessment (LVIA) report assesses the landscape and visual impacts of the proposed Melbourne Metro Rail Project (Melbourne Metro), including those on recreational values.

It identifies potential landscape and visual impacts of the project during its construction and operation and sets out recommended design responses and measures to mitigate these potential impacts.

This LVIA report was prepared to support development of an Environment Effects Statement (EES) for the project, and key amelioration and mitigation measures for landscape and visual impacts proposed are consistent with the project's Urban Design Strategy (Technical Appendix M).

Relevant stakeholders consulted about potential landscape and visual impacts are listed in ***Appendix A***, along with a summary of their key concerns and the Melbourne Metro's response.

Key contributing factors to the assessment of landscape and visual impacts are impacts on canopy vegetation and heritage landscapes. These related issues have been considered and are addressed in:

- Technical Appendix J *Heritage Cultural Heritage.*
- Technical Appendix R and S A*rboriculture*.

1.1 PROJECT DESCRIPTION

The proposed Melbourne Metro comprises two nine-kilometre long rail tunnels from South Kensington to South Yarra, travelling underneath Swanston Street in the Central Business District (CBD), providing a connection between the Sunbury and Cranbourne/Pakenham lines. ***Figure 1-1*** shows the proposed Melbourne Metro alignment and locations of the new underground stations.

The infrastructure proposed to be constructed as part of Melbourne Metro broadly comprises:

- Twin nine-kilometre rail tunnels from Kensington to South Yarra connecting the Sunbury and Cranbourne/ Pakenham railway lines, to form the new Sunshine-Dandenong Line (with the tunnels to be used by electric trains).
- Rail tunnel portals (entrances) at South Kensington and South Yarra.
- New underground stations at Arden, Parkville, CBD North, CBD South and Domain with longer platforms to accommodate longer High Capacity Metro Trains (HCMTs). The stations at CBD North and CBD South will feature direct interchange with the existing Melbourne Central and Flinders Street Stations respectively.
- Train/tram interchange at Domain station.

Proposed construction methods would involve bored and mined tunnels, cut and cover construction of station boxes at Arden, Parkville and Domain and portals, and cavern construction at CBD North and South. The project would require planning, environmental and land tenure related approvals to proceed.

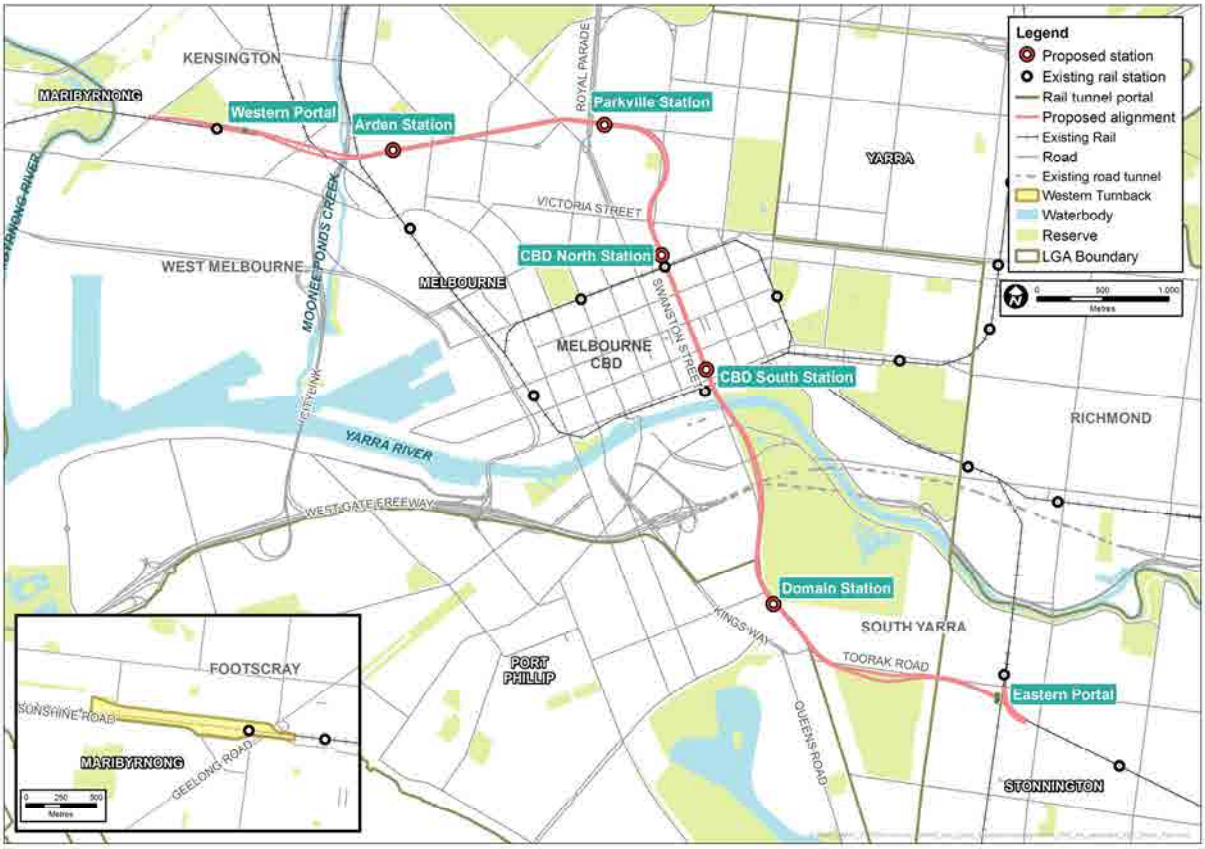

FIGURE 1-1: MAP OF THE PROPOSED MELBOURNE METRO'S ALIGNMENT AND FIVE PROPOSED UNDERGROUND STATIONS

1.2 PROJECT PRECINCTS

For assessment purposes, the proposed project boundary was divided into nine precincts. The precincts were defined based on the location of project components and required construction works, the potential impacts on local areas and the character of surrounding communities.

Proposed Precincts

- Precinct 1: Tunnels (outside other precincts).
- Precinct 2: Western Portal (Kensington).
- Precinct 3: Arden station (including substations).
- Precinct 4: Parkville station.
- Precinct 5: CBD North station.
- Precinct 6: CBD South station.
- Precinct 7: Domain station
- Precinct 8: Eastern Portal (South Yarra).
- Precinct 9: Western Turnback (West Footscray).

The locations of the station and portal precincts are shown in ***Figure 1-2***.

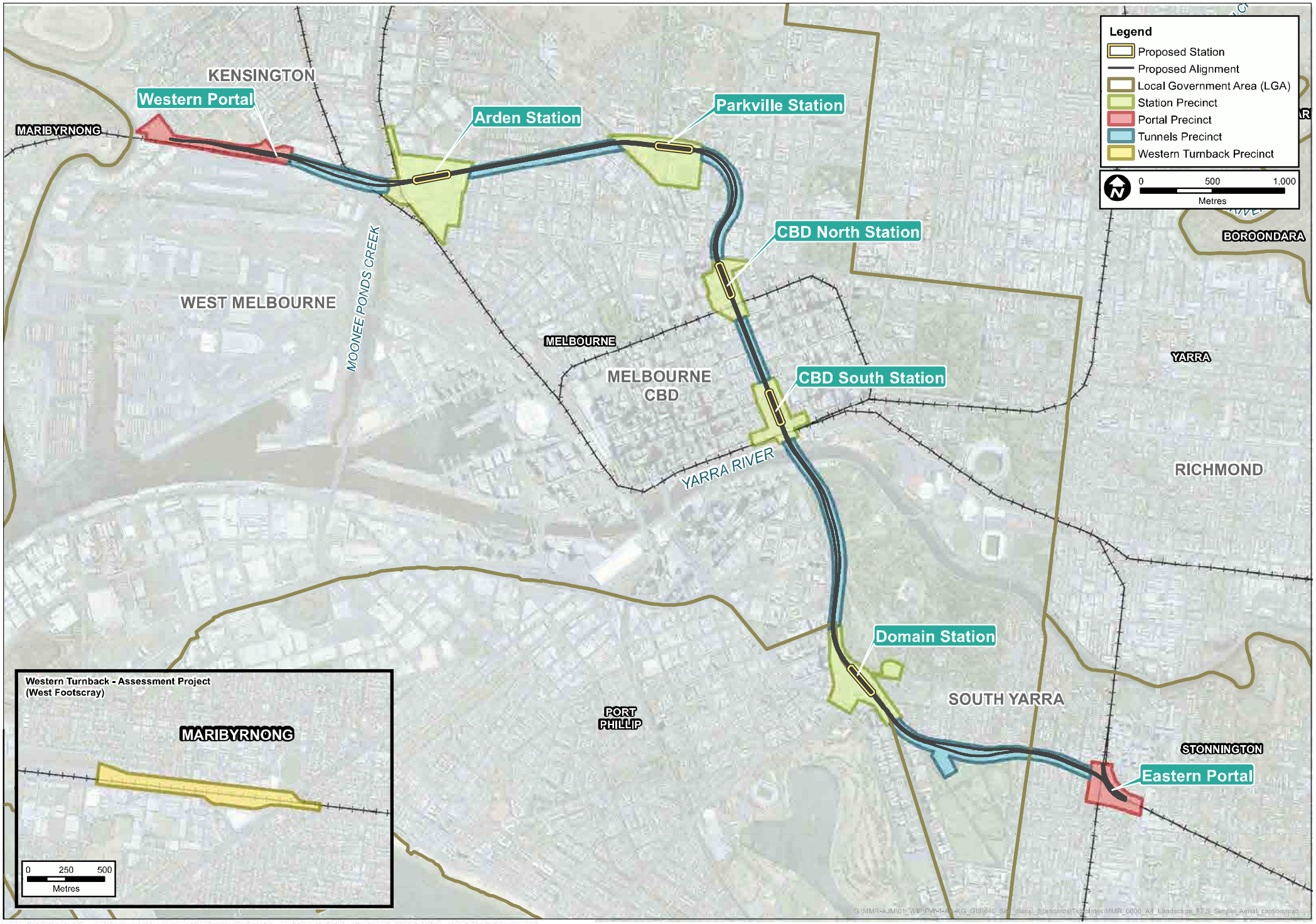

FIGURE 1-2: MAP OF THE PROPOSED STATION AND PORTAL PRECINCTS

2 Scoping Requirements

2.1 EES OBJECTIVES

The draft EES evaluation objective set out in ***Table 2-1*** below is relevant to landscape, visual and recreational values, and identifies the desired outcomes of potential project effects. The draft EES evaluation objectives provide a framework to guide an integrated assessment of environmental effects of the project, in accordance with the *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978*.

Table 2-1 – Landscape, visual and recreational values

Draft Evaluation Objective	Key Legislation
Landscape, visual and recreational values: To avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.	*Planning and Environment Act 1987*

With regard to recreational values, the LVIA assesses the impacts on the visual and landscape setting of recreational open space areas. Impact on recreational activities resulting from the loss of access to recreation areas is assessed as part of Technical Appendix F *Social and Community.*

2.2 EES SCOPING REQUIREMENTS

Table 2-2 sets out the EES Scoping Requirements, issued by the Minister, that are relevant to landscape, visual and recreational values.

Table 2-2 – Scoping requirements for landscape, visual and recreational values

Aspect	Response
Key issues	▪ Identify and mitigate any potential adverse impacts on highly valued urban landscapes, resulting from construction phase works or inappropriate siting of permanent new works. ▪ Identify and mitigate any potential adverse visual impacts from temporary or permanent effects on public open space and recreational areas, affecting access to or enjoyment of recreational opportunities, especially during the construction phase.
Priorities for characterising the existing environment	▪ Identify key visual and landscape features and values in the area or broader vicinity of proposed project works. ▪ Identify condition and uses of public open space and facilities, which could be occupied or otherwise adversely affected by project construction works.
Design and mitigation measures	▪ Identify project design and construction management measures to avoid or minimise adverse effects on landscape character and visual values, especially with regard to long-term effects. ▪ Identify project design and management measures to avoid or minimise adverse effects on recreational values resulting from the project, including during construction, and opportunities for recreational uses to be redirected to alternative sites (if relevant).
Assessment of likely effects	▪ Assess likely extent and duration of residual adverse effects on landscape and visual values, including use of photo-montages or other suitable methods for depicting predicted landscape changes, and available measures to manage or offset those effects. ▪ Identify and assess likely residual effects on recreational activities, including with regard to public land to be used or occupied for project works.

Aspect	Response
Approach to manage performance	▪ Identify principles to be adopted to develop measures to monitor adverse effects on landscape and visual values and contingency measures to be implemented if required. ▪ Describe the approach to identifying proposed methods to monitor effects on recreational opportunities and the effectiveness of mitigation measures that have been put in place.

3 Methodology

The methodology for the LVIA involved:

- Reviewing relevant legislation, policy and guidelines.
- Defining evaluation criteria and indicators for potential landscape and visual impacts, based on the criteria of the project's Environmental Risk Assessment. The key objective was to avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.
- Assessing the potential impacts of the project's construction and operation on its viewshed. This is the area where highest impacts are likely to occur, which in the central city landscape would typically be within 500 m of the project's construction and operating infrastructure and activities.

The risks identified for the landscape and visual impact assessment considered the unmitigated and mitigated risks during construction and at operation. The risk assessment was the first phase to locate potential LVIA risks which was followed by a detailed assessment of the impacts on the landscape and visual values.

The method employed to undertake this LVIA are set out in the following sections.

3.1 RISK ASSESSMENT

The overall context for the risk assessment and a specific context for each specialist study are described in Technical Appendix B *Environmental Risk Assessment Report* of the EES. The context describes the setting for evaluation of risks arising from Melbourne Metro.

The specific context for the landscape and visual impact assessment follows:

> *The potential visual catchment for the project is defined as areas that may have views to the components of Melbourne Metro (permanent and temporary structures, construction hoardings, equipment, etc.) during construction and operation, and considers the potential for views to be blocked or screened by topography, built form or vegetation. The degree of visual impact relates to the sensitivity of the viewer and the nature of the land use and landscape.*
>
> *The nature and sensitivity of the potential visual catchment of Melbourne Metro varies significantly along the alignment and ranges from current industrial areas of low sensitivity through areas of parkland and streetscapes of high visual sensitivity. Some of Melbourne's most recognised urban streetscapes, boulevards and parks are within or close to the proposed project area.*
>
> *Melbourne Metro would require the removal of trees in locations such as within St Kilda Road or due to large construction work sites which would not be screened from elevated locations such as high rise buildings. The proponent would ensure that in accordance with the Urban Design Strategy a high standard of building design and landscaping would be delivered as part of Melbourne Metro.*

The likelihood rating criteria used in the risk assessment is shown in *Table 3-1*.

Table 3-1 Likelihood rating criteria

Level	Description
Rare	The event is very unlikely to occur but may occur in exceptional circumstances.
Unlikely	The event may occur under unusual circumstances but is not expected.

Level	Description
Possible	The event may occur once within a five-year timeframe.
Likely	The event is likely to occur several times within a five-year timeframe.
Almost Certain	The event would occur one or more times a year.

The consequence criteria framework used in the risk assessment is shown in ***Table 3-2***. Each specialist has used this framework to develop criteria specifically for their assessment.

Table 3-2 Consequence framework

Level	Qualitative description of biophysical/ environmental consequence	Qualitative description of socio-economic consequence
Negligible	No detectable change in a local environmental setting.	No detectable impact on economic, cultural, recreational, aesthetic or social values.
Minor	Short term, reversible changes, within natural variability range, in a local environmental setting.	Short term, localised impact on economic, cultural, recreational, aesthetic or social values.
Moderate	Long term but limited changes to local environmental setting that are able to be managed.	Significant and/or long-term change in quality of economic, cultural, recreational, aesthetic or social values in local setting. Limited impacts at regional level.
Major	Long term, significant changes resulting in risks to human health and/or the environment beyond the local environmental setting.	Significant, long-term change in quality of economic, cultural, recreational, aesthetic or social values at local, regional and State levels. Limited impacts at National level.
Severe	Irreversible, significant changes resulting in widespread risks to human health and/or the environment at a regional scale or broader.	Significant, permanent impact on regional economy and/or irreversible changes to cultural, recreational, aesthetic or social values at regional, State and National levels.

The consequence rating criteria used in the risk assessment specifically for the LVIA for the construction and operational phases is shown in ***Table 3-3***.

Table 3-3 Consequence rating criteria – Landscape and Visual Impact Assessment

Level of consequence	Consequence criteria
Negligible	The proposal would have an indiscernible effect on views and will not affect the composition, the appreciation of the landscape character, or the ability to take in or enjoy the view.
Minor	The proposal would cause a low degree of visual change, but would not materially affect the composition, the appreciation of landscape character or the ability to take in or enjoy the view.
Moderate	The proposal would cause a complete temporary change or clearly noticeable permanent change to the view that would affect the composition, the appreciation of landscape character or the ability to take in or enjoy the view.

Level of consequence	Consequence criteria
Major	The proposal would cause a complete permanent change to the composition of the view, the appreciation of landscape character, or the ability to take in or enjoy the view.
Severe	The proposal would result in a substantial permanent alteration to a view of recognised national importance and the appreciation of landscape character, the ability to take in or enjoy the view.

The Environmental Risk Assessment matrix to determine levels of risk from the likelihood and consequence ratings is shown in ***Table 3-4***.

Table 3-4 Risk consequence matrix

		Consequence ratings				
		Negligible	Minor	Moderate	Major	Severe
Likelihood rating	Rare	Very Low	Very Low	Low	Medium	Medium
	Unlikely	Very Low	Low	Low	Medium	High
	Possible	Low	Low	Medium	High	High
	Likely	Low	Medium	Medium	High	Very High
	Almost Certain	Low	Medium	High	Very High	Very High

3.1.1 EVALUATION CRITERIA AND INDICATORS

A draft set of evaluation criteria and indicators to assess potential impacts is set out in ***Table 3-5***. They build on the draft evaluation objectives listed in ***Section 3.6*** of the EES Scoping Requirements. The table comprises the draft EES evaluation objective and the associated criteria and indicators:

- Objective – the desired outcome in the context of the project's potential effects, as outlined in the EES Scoping Requirements.
- Criteria – the means by which the consistency of the project with the objectives can be assessed.
- Indicators – specific and measurable (either quantitatively or qualitatively) ways to determine the extent to which criteria are complied with.

The impact assessment also discusses each impact pathway assessed in the risk assessment and evaluates associated impacts.

Table 3-5 outlines objectives of relevance to the *Environment Effects Act 1978* relating to landscape, visual and recreational values.

Table 3-5 Consequence rating criteria - landscape, visual and recreational values objectives

Landscape, visual and recreational values objective: To avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.	
Criteria	**Indicator**

Landscape, visual and recreational values objective: To avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.	
Criteria	**Indicator**
Avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values.	Sensitive receptors initially identified as experiencing a high, or moderate visual impact are to be assessed as having a low impact at operation as a maximum after mitigation measures are implemented. At operation, the broader landscape values created are consistent with applicable state and local government landscape character policy documents.
Avoid or minimise impacts on valued places, including public open space and recreation reserves.	Valued places and activities of special interest, attraction and value to the community, including public open spaces and recreation reserves initially identified as experiencing a high, or moderate visual impact and/or landscape modification, to be assessed as having a low impact at operation as a maximum after mitigation measures are implemented. At operation, the recreational values created are consistent with applicable state and local government open space policy documents.

3.2 IMPACT ASSESSMENT

The LVIA was based on a detailed analysis of the visual setting and an assessment of the potential impacts of the project on its viewshed during the construction phase, and thereafter during the operational phase (refer to ***Appendix F*** of this report for details).

The construction phase has been assessed assuming implementation of such construction components as the erection of administration and construction support buildings, acoustic construction sheds, temporary cranes, hoardings (noise barriers) up to 6 m in height in some locations to ameliorate noise and visual impacts, creation of stockpiles and storage areas, site compounds and hauls roads. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

With regard to landscape impacts, the potential locations for tree removal are based on the findings of the Technical Appendix R and S *Arboriculture.*

The operational phase has been assessed as at completion of construction and assumes the criteria set out in the Urban Design Strategy (***Technical Appendix M***) would be implemented as part of the development.

The urban viewshed assessed is primarily the area where highest impacts would be likely to occur. In the context of low-rise built-form in an urban context, this is typically within 500 m of the components of the project and would mainly occur where views are possible along roads and other visually open corridors. Within high-density urban areas with tall built form, the ground level viewshed is likely to be reduced due to the screening provided by buildings. However, views from sensitive elevated locations would be possible that may extend up to 1,000 m from the project.

The critical issues considered for this LVIA were:

- The number of sensitive viewing locations.

- The degree to which the proposed works would be visible.

The study area for this LVIA extends beyond the boundaries of the project's proposed precincts to include all sensitive land use areas within its visual catchment. The assessment method assumed that if the works would not be seen, there is no impact.

In any city like the CBD of Melbourne which is striving for liveability excellence, there are on-going improvement works and disruptions to urban life, and as such the assessment of the visual fit for this project should be considered against the context of a dynamic city.

Likewise, although it is recognised that those who live, work, study and visit Melbourne, particularly its inner suburbs and the CBD, may prefer views that do not include construction work sites. Construction activity has been, and would continue to be, a noticeable component of Melbourne's urban landscape. It is common for appropriately hoarded and mitigated construction work sites, as well as tall cranes and other structures, to be encountered on a daily basis.

Therefore, the visual sensitivity to the visual impacts of construction sites is tempered by these common and recurring experiences. On this basis, it is considered that visual sensitivity is reduced somewhat, compared to what would be expected in more pristine settings.

The LVIA methodology is summarised below and its sequential steps are shown in ***Figure 3-1.***

Qualitative Assessment

Sensitivity

- How sensitive would viewers be to the proposed development?

Visual Modification

- How does the proposed development contrast with the existing landscape character of the surrounding setting? An example of low visual modification would be a black and white cow in a rural setting. It is an expected element within its visual setting. An example of a high visual modification level would be a red cow in the same setting. Although of a form which would typically exist within the setting, its colour makes it a contrasting element which would be highly noticeable.

- What is the quality of the existing landscape setting?

Quantitative Assessment

Where would the proposed development be visible from – Visual catchment?

How much of the proposed development is visible from particular viewpoints with regard to the occupied field of view? This component is closely linked to the determination of Visual Modification.

Amelioration / Mitigation Measures

What measures are appropriate to be applied to the proposed development to reduce construction or operating impacts?

Residual Visual Impact

What is the difference between the existing views pre-development and the views once the proposed amelioration and mitigation measures have been applied such as when revegetation has reached maturity?

Monitoring

What is the effectiveness of the mitigation measures implemented for both construction and operational?

Appendix C of this report provides more details about the methodology applied to this LVIA.

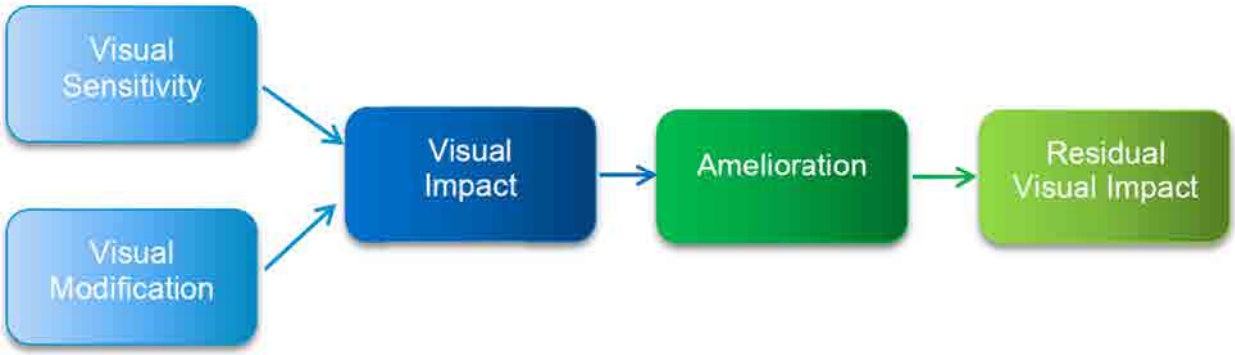

FIGURE 3-1 LVIA METHODOLOGY PROCESS

3.2.1 VISUAL IMPACT – PRIMARY REPRESENTATIVE VIEWPOINTS

Analysis was undertaken to identify a range of typical representative sensitive viewpoints within the visual setting of the project (refer to ***Appendix F*** of this report). For sub-regional and local settings (based on proximity to the project), the assessment has been undertaken for a typical sensitive viewpoint representative of other similar viewpoints within a particular setting.

Distances expressed in the quantitative assessment are based on those from the viewpoint to the closest, most visible components of the project.

3.2.2 APPROACH TO IMPACT DETERMINATION

The basis of the methodology is that the initial visual impact of a proposed development is determined by evaluating the degree of visual modification/fit of the development within the context of the visual sensitivity of surrounding land use areas from which a proposed development may be visible. The visual initial impact (the impact prior to amelioration) resulting from the combination of visual modification and visual sensitivity, or viewer sensitivity, is illustrated in ***Table 3-6***. The residual impact is the impact following the incorporation of the recommended amelioration measures. In the case of grass and shrub planting, the duration is typically short, i.e., one to three years. In the context of canopy trees, seven to ten years is typical.

Table 3-6 - Visual impact determination matrix

Level of Visual Impact VL = Very Low, L = Low, M = Moderate, H = High		**Viewer Sensitivity**		
		H	M	L
Level of Visual Modification*	H	H	H	M
	M	H	M	L
	L	M	L	L
	VL	L	VL	VL

**Adverse, Neutral or Beneficial*

3.2.3 IMPACTS OF NIGHT-LIGHTING

Australia does not have standards for the assessment of lighting impacts; therefore, the assessment of the impacts of lighting at night-time has been based on the UK's *Guidance Notes for the Reduction of Obtrusive Light* (***Appendix E*** of this report). This guidance note identifies four environmental zones for

exterior lighting which are categorised by the degree of artificial lighting within an area. For example national parks would be categorised as an intrinsically dark landscape (Category E1), where as a city centre with high levels of night-time activity would be categorised as a high district brightness area (Category E4). The applicable environmental zones for the project would include Category E3 which is a medium district brightness area such as open space parklands like JJ Holland Reserve and Domain Parklands, and E4 as outlined above.

Australian Standards[1] do exist for the minimisation of light spill. Regardless of the existing brightness of a particular setting, it is a widely accepted principal that light spill, particularly upward light spill, be minimised wherever possible.

3.2.4 AMELIORATION AND MITIGATION MEASURES

Amelioration and/or mitigation measures are recommended for each assessed viewpoint. The measures are derived from the Melbourne Metro Urban Design Strategy (Technical Appendix M) and the requirements of relevant planning policy. Amelioration and/or mitigation for construction and operation would also be guided by the recommended Environmental Performance Requirements.

Examples of temporary works associated with the project construction activities include aesthetically designed hoardings and sheds and temporary activation of spaces as demonstrated in ***Figure 3-4*** and ***Figure 3-3***, screening designed to allow views to works in progress, and greenwalls like the image in ***Figure 3-2*** to mitigate any adverse impacts. It should be noted that some viewers enjoy watching the progress of large scale construction activities and may not be sensitive to these temporary works.

FIGURE 3-2: EXAMPLE OF A TEMPORARY GREEN WALL THAT CAN BE APPLIED TO A HOARDING

[1] Standard AS 4282 - 1997 Control of the obtrusive effects of outdoor lighting

FIGURE 3-3: EXAMPLE OF A HOARDING BEING USED AS A PROJECT INFORMATION BOARD

FIGURE 3-4: EXAMPLE OF TEMPORARY ACTIVATION OF A SPACE

Examples of operational elements to be integrated into the townscape include consistent branding and wayfinding, public art to incorporate ventilation ducts spaces as demonstrated in ***Figure 3-5***, architectural portal entry design and high quality station entrances. ***Figure 3-6*** and ***Figure 3-7*** illustrate examples of station entries integrated at the ground level of a building and within the streetscape. It should be noted that the visual impact of operational elements could be a positive addition to the precinct.

FIGURE 3-5: EXAMPLE OF A VENT WITHIN THE STREETSCAPE

FIGURE 3-6: EXAMPLE OF A STATION ENTRY AT THE GROUND LEVEL OF A BUILDING

FIGURE 3-7: EXAMPLE OF A STATION ENTRY INCORPORATED INTO ELEMENTS WITHIN THE PUBLIC REALM

The influence of amelioration measures in the reduction of visual impact are reflected in the assessed level of residual visual impact.

3.3 ASSUMPTIONS

Assumptions made for this LVIA are summarised in ***Table 3-7***.

Table 3-7: Summary of assumptions

Precinct	Item	Potential to influence assessment outcomes
All Precincts	Adoption of a worst case scenario for during operation building mass – defined by the height and extent of the building footprint.	Potentially significant increase in occupied field of view.
	Adoption of a worst case scenario for during construction extent of clearing and construction activity zones.	Potentially significant increase in occupied field of view.
	Adequate soil depth over station boxes would be possible to allow the planting of new trees in close proximity to where trees may be required to be removed.	Reduction in landscape amenity and reduced opportunity in the mitigation of views from elevated sensitive locations.
	In the determination of visual prominence, the screening effects of existing or proposed vegetation are not considered.	The outcome is therefore conservative and sometimes adverse. However, vegetation is considered in the determination of visual modification level.

3.4 LIMITATIONS

The limitations associated with this LVIA are:

- At the time of this LVIA's preparation, the Concept Design for all Precincts was being progressed to reduce the footprint and massing of the project's components. This LVIA is based on the Concept Design.
- Access to sensitive viewpoints on private land, such as hotels, accommodation or residences, were not undertaken for this LVIA. However, impacts from these locations were considered in the assessment.
- Assumed minimum soil depth of 1.5 m to allow for tree growth.

4 Policy and Guidelines

Table 4-1 summarises the relevant primary policy and guidelines that apply to the potential landscape and visual impacts of the project during construction and operation.

Table 4-1 Primary legislation, policy and guidelines

Legislation/ policy	Key policies/ strategies	Summary of implications for this project
Commonwealth		
Creating Places for People: An Urban Protocol for Australia (2012)	Entire document of relevance	Provides the principles for achieving high quality, function and active spaces.
State		
Victorian Urban Design Charter	Entire document of relevance.	Provides the principles for achieving high quality, function and active spaces.
State Planning Policy Framework (SPPF)	Clause 15 Built Environment and Heritage	Ensure all new land use and development appropriately responds to its landscape, valued built form and cultural context, and protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value. Ensures high quality urban design and architecture that responds positively to the local urban character, sense of place and cultural identity of the community.
	Clause 15.01-1 Urban design	Seeks to create urban environments that are safe, functional and provide good quality environments with a sense of place and cultural identity. Encourages the retention of existing vegetation or revegetation as part of development proposals.
	Clause 15.01-2 Urban design principles	Main pedestrian spaces, streets, squares, parks and walkways should be protected and enhanced. Landmarks, views and vistas should be protected and enhanced or, where appropriate, created by new additions to the built environment. Interfaces between buildings and public spaces should enhance the visual and social experience of the user.
	Clause 15.01-5 Cultural identity and neighbourhood character	Ensure development responds and contributes to existing sense of place and cultural identity. Ensure development recognises distinctive urban forms and layout and their relationship to landscape and vegetation.

Legislation/ policy	Key policies/ strategies	Summary of implications for this project
	Clause 18.01-2 Transport system	Locate transport routes to achieve the greatest overall benefit to the community and with regard to making the best use of existing social, cultural and economic infrastructure, minimising impacts on the environment and optimising accessibility, safety, emergency access, service and amenity.
Plan Melbourne Refresh Discussion Paper	Entire document of relevance	Review and update guidance on the future growth and development of Melbourne and reflects the current government transport commitment such as Melbourne Metro.
Good Design + Transport (2014), Office of the Victorian Government Architect	Entire document of relevance	Provides guidance on approaches to provide quality urban outcomes within the context of specific rail related functional requirements.
Station and Station Precinct Design Policy (2014), Public Transport Victoria	Entire document of relevance	Provides guidance on the functional and maintenance requirements for stations and their surrounds.
Local		
Urban Forest Strategy - City of Melbourne	Entire document of relevance	Provides a strategic approach to the retention and reinforcement of the streetscape and parkland character of Melbourne and the increase in tree canopy to improve aesthetic, physical and environment.
Melbourne Municipal Strategic Statement	Clause 21.05-2 Significant environments and landscapes	To enhance the environmental value of Melbourne's parklands waterways and other open spaces**.** Protect and enhance the vegetation, biodiversity, habitat, amenity and attractiveness of the city's parklands, the Yarra and Maribyrnong Rivers and the Moonee Ponds Creek.
	Clause 21.06 Built Environment and Heritage	Reinforce the City's overall urban structure through the protection of Melbourne's distinctive physical character in particular maintain the importance of places of heritage significance, the Shrine of Remembrance, the Hoddle Grid, the network of parks and gardens, the Yarra River corridor and boulevards. Ensure that development on the City's boulevards respects and maintains the prominence of their landscaped character. Maintain the visual prominence of heritage buildings and landmarks and protect iconic views, including views to the Shrine of Remembrance along Swanston Street from the State Library. Protect the significant landscape and cultural heritage features of the City's parks, gardens, waterways and other open spaces. Within heritage precincts and from adjoining areas protect buildings, streetscapes and

Legislation/ policy	Key policies/ strategies	Summary of implications for this project
		precincts of cultural heritage significance from the visual intrusion of new built form.
	Clause 21.09 – 1 Integrated transport	Ensure that development along the City's established boulevards of St. Kilda Road, Flemington Road, Victoria Parade, Royal Parade and Footscray Road (Harbour Esplanade) maintains the prominence of their landscape character.
	Clause 21.10-2 Open space	Ensure that development in and surrounding the City's parks and gardens does not adversely impact on the recreational, cultural heritage, environmental and aesthetic values, or amenity, of the open space. Protect heritage significant trees and landscapes in parks and heritage areas.
	Clause 21.15-3: Sports and entertainment area	Protect key views to the Shrine of Remembrance and ensure that new buildings surrounding the Shrine of Remembrance preserve its significance as a historic and cultural landmark. Maintain the beauty, cultural values and functionality of the Royal Botanic Gardens and Domain Parklands and the institutions within them.
	Clause 21.16-1: St Kilda Road and South Yarra	Ensure future development in St Kilda Road respects and maintains the prominence of the landscaped boulevard character which includes generous landscaped front setbacks, the appearance of "buildings in grounds" and established street trees. Ensure that building design along St Kilda Road maintains the prominence of views to the Arts Centre Spire and Shrine of Remembrance.
Melbourne Local Planning Policy Framework	22.01: Urban Design within the Capital City Zone	Retain views into and out of the Capital City Zone and vistas to important civic landmarks.
Greening Port Phillip - City of Port Phillip	Entire document of relevance	Provides a strategic approach to the retention and reinforcement of the streetscape and parkland character of Port Phillip and the increase in tree canopy to improve aesthetic, physical and environment.
Port Phillip Municipal Strategic Statement	Close 21.05-1: Heritage	Maintain the visual prominence and silhouette of the Shrine of Remembrance. Preserve key views and vistas to and from the Shrine of Remembrance.
	Clause 21.05-2: Urban Structure and Character	To reinforce key elements of the City's overall urban structure including the St Kilda Road boulevard. Retain and enhance key landmarks that terminate important vistas, accentuate corner sites and provide points of interest and orientation, including The Shrine of Remembrance and St Kilda Road. Ensure the retention of all significant trees within Port Phillip, including the established mature trees that line Port Phillip's streets and the significant trees in the private realm, where they form part of the neighbourhood character.

Legislation/ policy	Key policies/ strategies	Summary of implications for this project
	Clause 21.06-7: St Kilda Road and Queens Road	Protecting the significance of the Shrine of Remembrance by managing the scale of buildings and maintaining a respectful urban setting. Protecting key vistas to the Shrine of Remembrance and adjacent parklands.
Port Phillip Local Planning Policy Framework	22.06-3: Policy	Encourage new development to preserve the visual prominence of key landmarks from adjoining streets and other key public spaces which include the Shrine of Remembrance. Encourage new development to maintain and enhance important vistas including, but not limited to along St Kilda Road, particularly towards the Shrine of Remembrance and the Shrine Vista. Encourage all new developments to retain all existing street trees and public landscape elements that contribute to the streetscape and amenity of the area.
Stonnington Municipal Strategic Statement	Clause 21.06 Built Environment and Heritage 21.06-1 Overall urban structure 21.06-2 Landscape character 21.06-4 Built form character	Protecting the City's vistas and views from intrusive development. Ensures protection and reinforcement of the key elements of the City's overall urban structure and character. Encourages repair and reinforcement the high quality landscape character of the City. Ensures that the qualities and attributes that define the City's valued urban character are recognised and inform the design of new developments. Ensures a high standard of built form, detailing and architectural design in all new development.
	Clause 21.07 Open Space and Environment	Ensures the provision of equitable public open space quality and quantity across the municipality, sufficient to meet future needs and which improves the accessibility, safety and environmental sustainability of the open space system.
	Clause 21.08 Infrastructure	Ensures that quality physical and community infrastructure that is provided that is appropriate, accessible, responsive and sustainable to the community.
Stonnington Local Planning Policy Framework	Clause 22.05-2 (Urban Ecology)	Provides environmentally sustainable landscapes and natural habitats, and minimise the urban heat island effect. Requires a Sustainability Management Plan for a development of a non-residential building with a gross floor area of more than 1000m^2. This should identify achievable environmental performance outcomes and document the means by which they would be achieved.
Maribyrnong Municipal Strategic Statement	Clause 21.05-1 Landscape values	Ensured the expansion and enhancement of the open space network
	Clause 21.06 Built Environment	Encourages appropriate development responses to gateway locations. Ensures landscaping is included to provide shade and visual relief within pedestrian

Legislation/ policy	Key policies/ strategies	Summary of implications for this project
		networks. Encourages high quality design and development that responds to the preferred neighbourhood character and improves the appearance, comfort and safety of public spaces.
	Clause 21.09 Transport	Ensures opportunities to improve public transport services are maximised. Prioritises connections between the open space network, recreation facilities and activity centres to encourage more active communities.
Maribyrnong Local Planning Policy Framework		Nothing stated in the Local Planning Policies

5 Impact Assessment - Precinct 1: Tunnels

The following impact assessment sections (*Sections 5* to *13*) describe the project components, existing conditions, the key issues, benefits and opportunities and findings of the impact assessment for the project, based on the Concept Design, and alternative design options where relevant. The tunnel portals are dealt with as separately assessed precincts.

Precinct 1 extends underground from the western portal at Kensington to the eastern portal at South Yarra, but does not include the portals.

The urban environment for the proposed alignment and its corridor is diverse and includes highly urbanised areas such as the CBD as well as industrial areas which are proposed to be subject to medium to long term urban renewal, such as the Arden/Macaulay and Dynon precincts, as well other areas adjacent to the CBD such as Southbank/St Kilda Road.

Melbourne has strong links to its historical past; represented by valued heritage buildings, tree lined streets and boulevards, and its public spaces. An active culture of design excellence, driven primarily by the local Councils, has supported the development of high quality architecture and public spaces.

The proposed alignment passes beneath Swanston Street for its length within the CBD and crosses beneath the Yarra River. High quality streetscape environments, defined by their canopy trees and public realm improvements, such as Royal Parade, Swanston Street and St Kilda Road, are important boulevards, which form distinct spaces, and provide a highly aesthetic urban character to the Melbourne and its major approaches.

Significant recreational and historically significant open spaces within, or closely adjacent to the corridor include the Domain Parklands (which includes the Alexandra Gardens, Queen Victoria Gardens and the Shrine of Remembrance Reserve), the Royal Botanic Gardens, Albert Park and Fawkner Park.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Tunnels Precinct include:

- Minimising the height and bulk of the aboveground structure, in particular that of any elements that are higher than ground level adjacent to the King Edward VII Memorial if the intervention shaft is located near the memorial.
- Respecting the architectural character, vistas to, and the cultural significance of existing memorials if the intervention shaft is located in Tom's Block.
- Being of a form that presents well when viewed in the round.
- Minimising the visual impact of aboveground structures through the use of recessive materials and colours.

5.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance for both the Concept Design and options are outlined as follows:

- Fawkner Park.
  - Concept Design – Tunnel Boring Machine (TBM) launch site and emergency access shaft located at the north east of Fawkner Park.
  - Option 2 - Emergency access shaft located within the TBM launch site.
- Linlithgow Avenue.
  - Concept Design - Queen Victoria Gardens - emergency access shaft.

- Option 3 – Tom's Block - emergency access shaft.

The construction of the TBM and emergency access shafts would impact on landscape and visual values in Precinct 1.

The construction period for the emergency access shafts, for both the Concept Design and options, would be around 3 years.

The construction period for the Fawkner Park TBM site would be 5 years.

Construction phase impacts at each of the above locations would potentially result from:

- Vegetation removal and ground plane disturbance.
- Construction hoardings up to 6 m in height, acoustic sheds and equipment and materials storage. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.
- Dust and lighting.

Alternative designs provide options for where the emergency access shafts are located – either on a TBM site or a separate site. The *EES Map Book* provides more detail on the location and type of physical components of the project for Precinct 1, including the alternative design options for this precinct.

5.2 KEY ISSUES

5.2.1 CONCEPT DESIGN

The key issues associated with the Concept Design are identified in ***Table 5-1***.

Table 5-1 Key issues associated with the Concept Design

Concept Design	Issue
TBM Southern launch site	
Fawkner Park open space and tennis courts	Visual impacts on park users and adjacent residents north of Toorak Road resulting from vegetation removal.
Emergency access shafts	
Fawkner Park north east location	Visual impacts on park users and adjacent residents north of Toorak resulting from additional built form introduced into the parkland setting.
Queen Victoria Gardens, adjacent to Linlithgow Avenue	Visual impacts on users of a heritage landscape including recreational users and tourists.

5.2.2 ALTERNATIVE DESIGN OPTIONS

The key issues associated with the alternative design options are identified in *Table 5-2.*

Table 5-2 Key issues associated with alternative design options

Alternative Design Options	Issue
Emergency access shafts	
Option 2 – using the location of the proposed Fawkner Park TBM launch site	Operational visual impacts on residents to the north of Toorak Road and users of parkland resulting from additional built form introduced into the parkland setting.
Option 3 - Linlithgow Avenue, located in Tom's Block	Operational visual impacts on park users and tourists resulting from new built form introduced into the parkland setting. Potential impact on trees along Linlithgow Avenue and / or St Kilda Road. Potential visual impact on the setting of the Police Memorial.

5.3 EXISTING CONDITIONS

5.3.1 FAWKNER PARK

Figure 6-1 shows Fawkner Park which is a regional open space area providing for both sport and recreation activities. It was laid out over a century ago and still retains much of that layout today with the pathway network throughout the park still lined by the original Moreton Bay figs, oaks and elms. It has a heritage overlay of State significance given its vegetation, layout and, historic recreational and sporting uses.

5.3.1.1 ALTERNATIVE DESIGN OPTION 2 – USING THE LOCATION OF THE FAWKNER PARK TBM LAUNCH SITE

The Option 2 emergency access shaft would be located within the construction area of the Fawkner Park TBM launch site. The site is located adjacent to Toorak Road in the northwest corner of Fawkner Park. It is located within an existing clearing surrounded by tall, mature vegetation, which would be retained.

5.3.2 LINLITHGOW AVENUE

The journeys along Linlithgow Avenue from Alexandra Avenue to St Kilda Road, as well as that south along the edge of the Kings Domain to Birdwood Avenue and the Shrine of Remembrance, are some of the most picturesque in Melbourne. Landscape elements within the parklands, which are visible from the roadway or footpaths, include a number of fountains, rotundas, ornamental garden features as well as memorials relating to the Shrine precinct.

Individual park elements of significance include, but are not limited to, the King Edward VII Memorial, the floral clock and the Lady Janet Clark Rotunda.

Figure 5-2 illustrates the existing attributes and representative sensitive viewpoints.

5.3.2.1 ALTERNATIVE DESIGN OPTION 3 - LINLITHGOW AVENUE – TOM'S BLOCK

The parkland is part of the broader Domain Parkland and contains a number of monuments and memorials, including the Victoria Police Memorial and the 'Weary' Dunlop Memorial. Mature trees line Linlithgow Avenue and St Kilda Road (refer to ***Figure 5-2***).

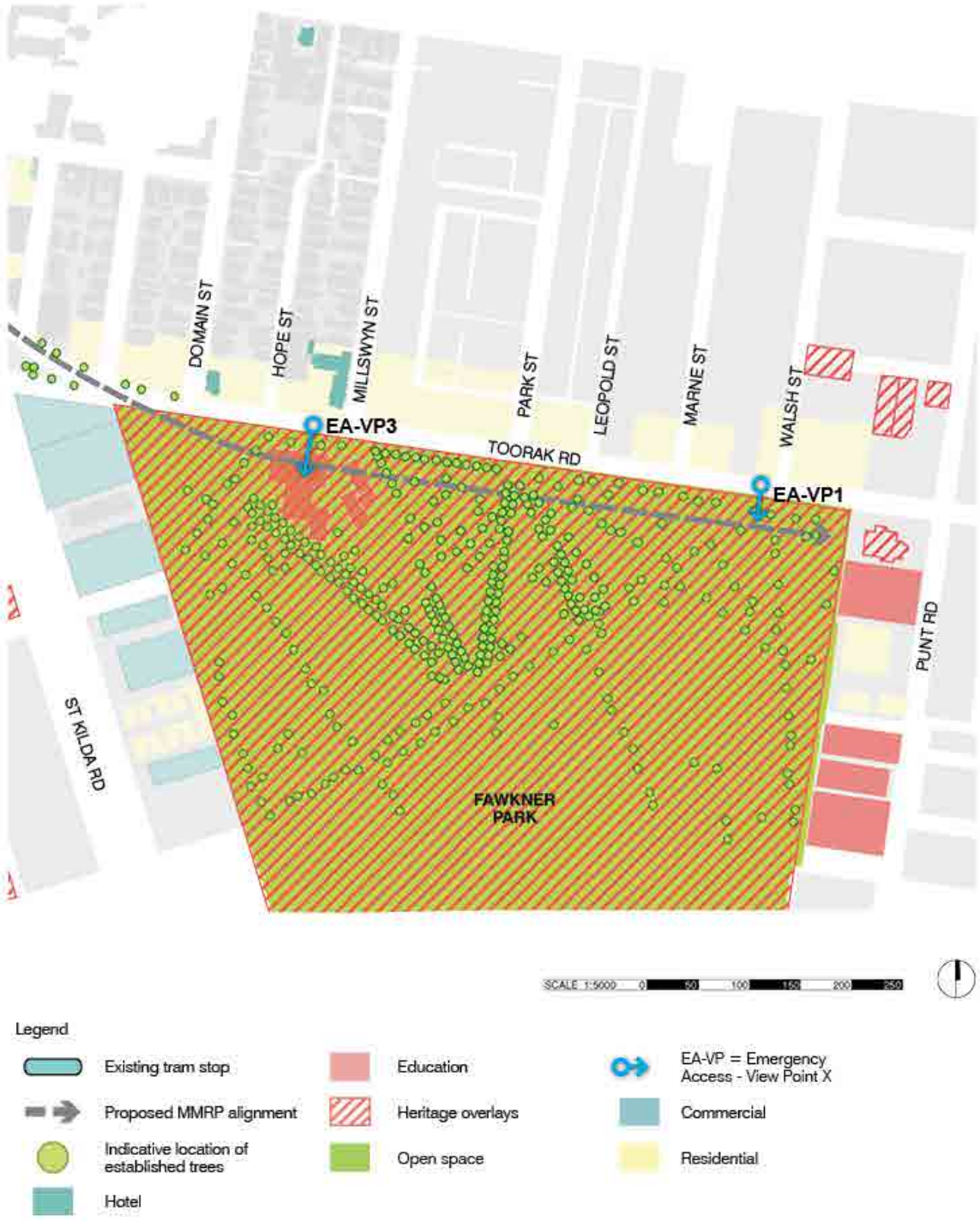

FIGURE 5-1: FAWKNER PARK – TUNNELS PRECINCT: EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

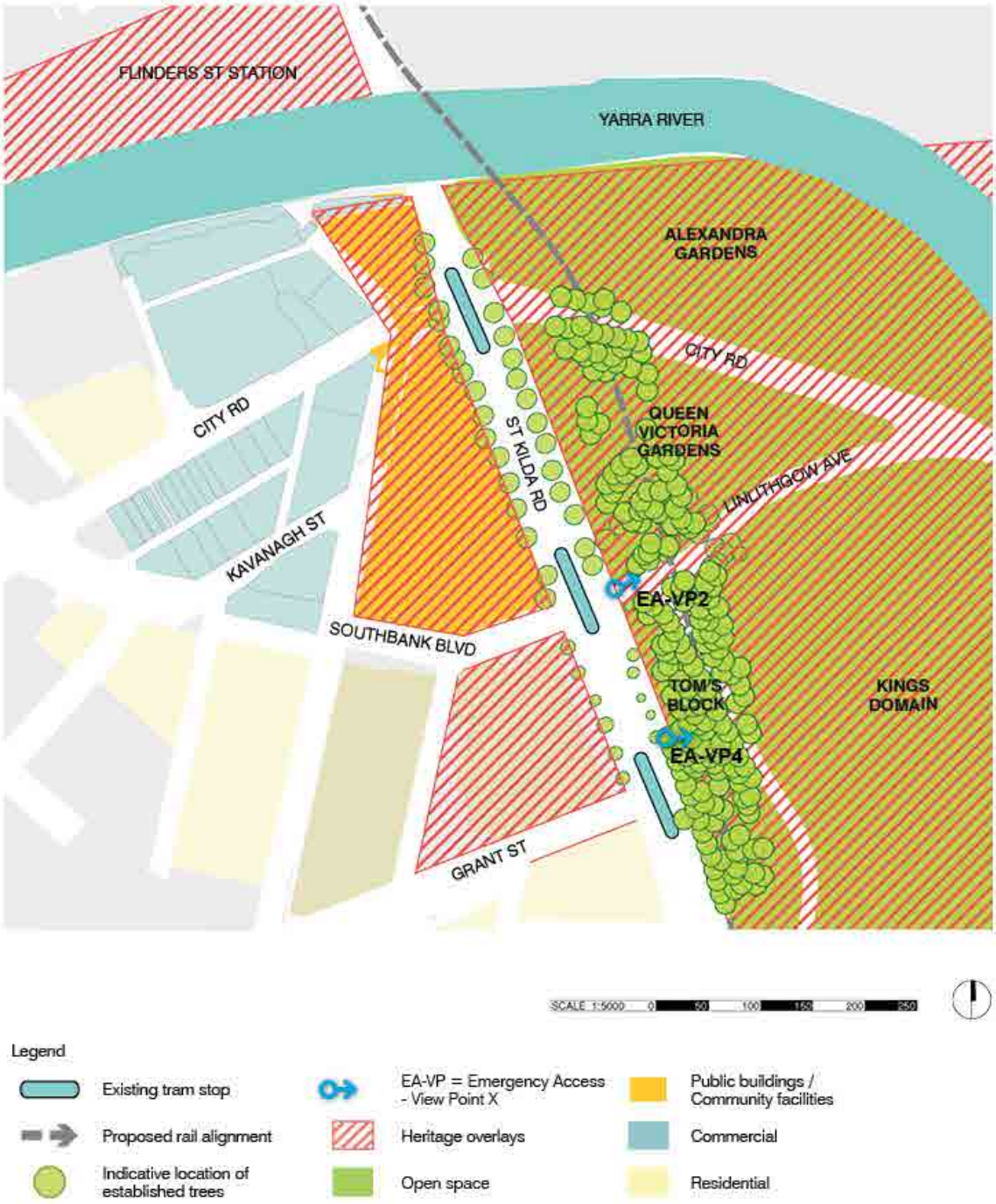

FIGURE 5-2: LINLITHGOW AVENUE AND TOM'S BLOCK – TUNNELS PRECINCT: EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

5.4 IMPACT ASSESSMENT - FAWKNER PARK TBM LAUNCH SITE, SHAFT AND OPTION

The draft EES evaluation objectives and assessment criteria relevant to this assessment are outlined in ***Table 3-5***.

5.4.1 VISUAL CATCHMENT

Figure 5-3 demonstrates that the ground level visual catchment is contained by built form adjoining the park's boundaries to the west and east and by built form along the northern edge of Toorak Road west to the north of the Park. The ground level visual catchment extends southwards into the park.

5.4.2 VISUAL SENSITIVITY

Key high sensitivity users and viewing locations are illustrated in *Figure 5-3* and include:

- Users of Fawkner Park (open space – recreation).
- Residents located to the north of Toorak Road west and to the northeast of Fawkner Park.

5.4.3 VISUAL IMPACT – CONSTRUCTION AND OPERATION

5.4.3.1 CONCEPT DESIGN – FAWKNER PARK NORTHEAST SHAFT LOCATION

From non-elevated and second storey high sensitivity residential viewpoints at the northern edge of Fawkner Park, overlooking of the ground plane of the relatively confined construction area would be possible but would not result in a large area being visible.

Close proximity views would be possible from the footpath along the northern boundary of the park along Toorak Road west, as can be seen in *Figure 5-4 EA-VP1*. The proximity to the construction works would result in an overall moderate to high visual impact level for this viewpoint during construction.

Following construction, the visual modification level as viewed from surrounding high sensitivity viewpoints would progressively reduce from high to low, as the built form components of the project are integrated within the setting through appropriate architectural design responses and the incorporation of landscape treatments.

A key consideration with regard to the determination of visual modification in this location is colocation of the emergency access shaft with an existing toilet block structure which provides it with a high degree of visual fit within an existing modified setting.

The reducing visual modification level would result in a low level of residual visual impact.

Residual Visual Impact: Low

5.4.3.2 CONCEPT DESIGN – FAWKNER PARK TBM LAUNCH SITE

The proposed construction activities are proposed to be undertaken on the site of existing tennis courts. *Figure 5-5 EA-VP3* provides a view of the existing tennis courts. The activities are temporary, with a duration of around 5 years, and would be subject to mitigation measures such as hoarding that would assist with screening of the construction area.

The construction activities would result in a low visual and landscape impact.

Post construction, paths, grass and playing field surfaces would be returned to their pre-construction condition. The location of the proposed activities avoids many of the mature trees that provide the recreational open space area with a high level of landscape amenity.

The operational residual visual impact following completion of amelioration measures would be low.

Residual Visual Impact: Low

5.4.4 IMPACTS ON LANDSCAPE

Fawkner Park is significant as an example of an early recreation park with an intact landscape layout dating from the 1870's.

Figure 5-6 shows landscape cover and heritage at the proposed Fawkner Park site. Tree removal in this location as a result of the TBM launch activities would result in the removal of approximately 62 trees within the central north western section of the park.

Canopy trees are the most significant contributor to landscape and public realm character and quality. Given a significant number of trees are to be removed, the residual landscape impacts for park users are anticipated to be moderate to high, reducing to low over approximately 7 years as re-planting matures.

Landscape Impact: Moderate (overall) reducing to low

FIGURE 5-3: TUNNELS PRECINCT – EA-VP1: EXISTING VIEW FROM TOORAK ROAD FOOTPATH OF FAWKNER PARK EMERGENCY ACCESS SHAFT – CONCEPT DESIGN

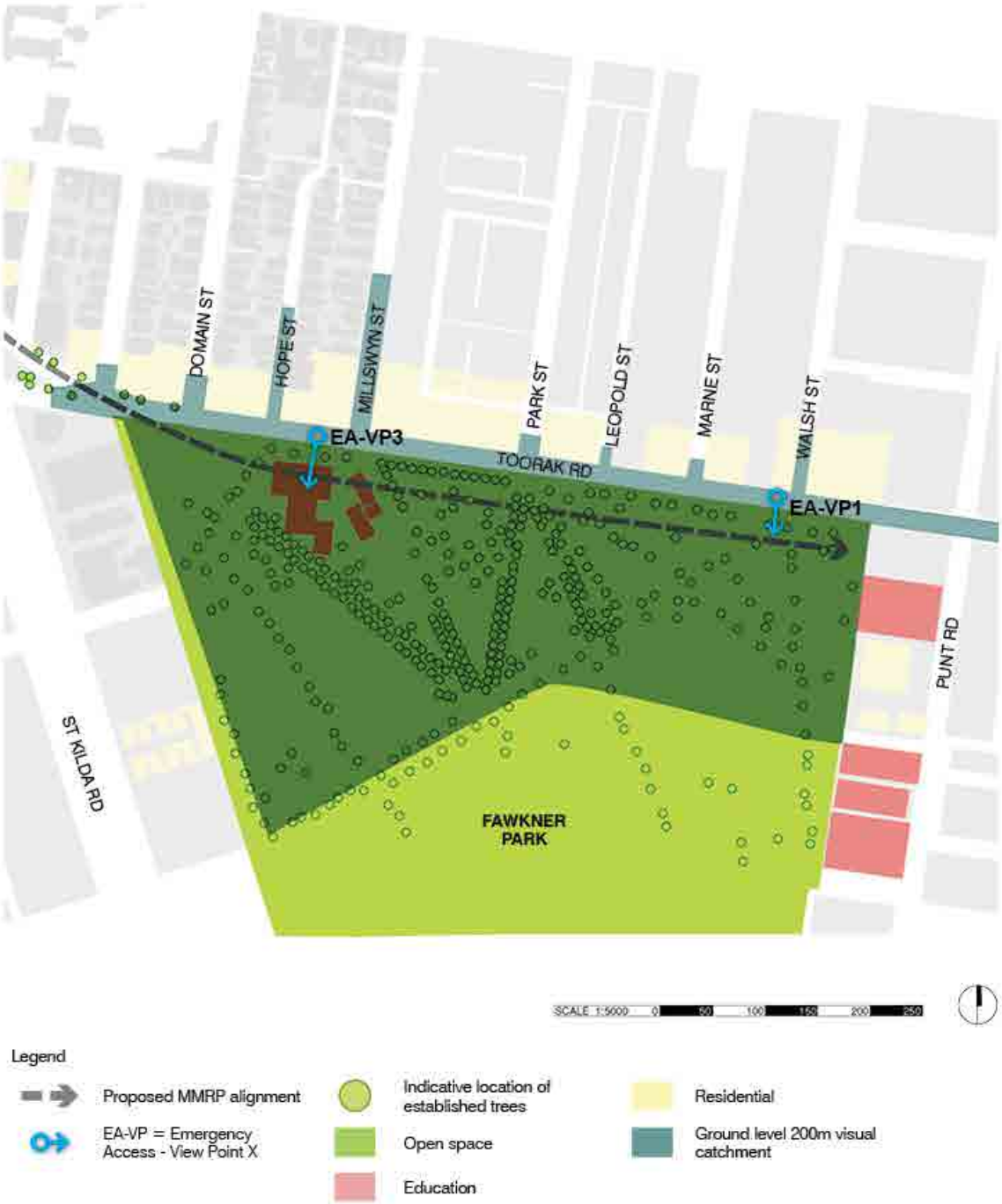

FIGURE 5-4: FAWKNER PARK – TUNNELS PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

5.4.4.1 FAWKNER PARK - EMERGENCY ACCESS SHAFT OPTION 2 – USING THE LOCATION OF THE FAWKNER PARK TBM LAUNCH SITE

The proposed construction activities are proposed to be undertaken on the cleared TBM launch site as illustrated in ***Figure 5-5 EA-VP3.*** The activities are temporary, with a duration of around 3 years, and would be subject to mitigation measures such as hoarding that would assist with screening of the construction area.

The proposed construction activities would result in a low visual impact on recreational and residential uses due to the works being incorporated within the existing TBM work construction site.

Post construction, paths, grass and playing field surfaces would be returned to their pre-construction condition. The location of the proposed activities avoids many of the mature trees that provide the recreational open space area with a high level of landscape amenity.

The operational residual visual impact following completion of amelioration measures would be low.

Residual Visual Impact: Low

5.4.5 IMPACTS ON LANDSCAPE

The project components located in the previously disturbed TBM launch area and consequently they do not result in any additional removal of vegetation.

Landscape Impact: Low

5.4.6 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the landscape and recreational components being returned to their pre-construction condition and the retention of most of the mature canopy trees within the open space.

FIGURE 5-5: TUNNELS PRECINCT – EA-VP3: EXISTING VIEW TOWARDS SITE OF FAWKNER PARK EMERGENCY ACCESS SHAFT FROM TOORAK ROAD FOOTPATH – ALTERNATIVE DESIGN OPTION TBM LAUNCH LOCATION

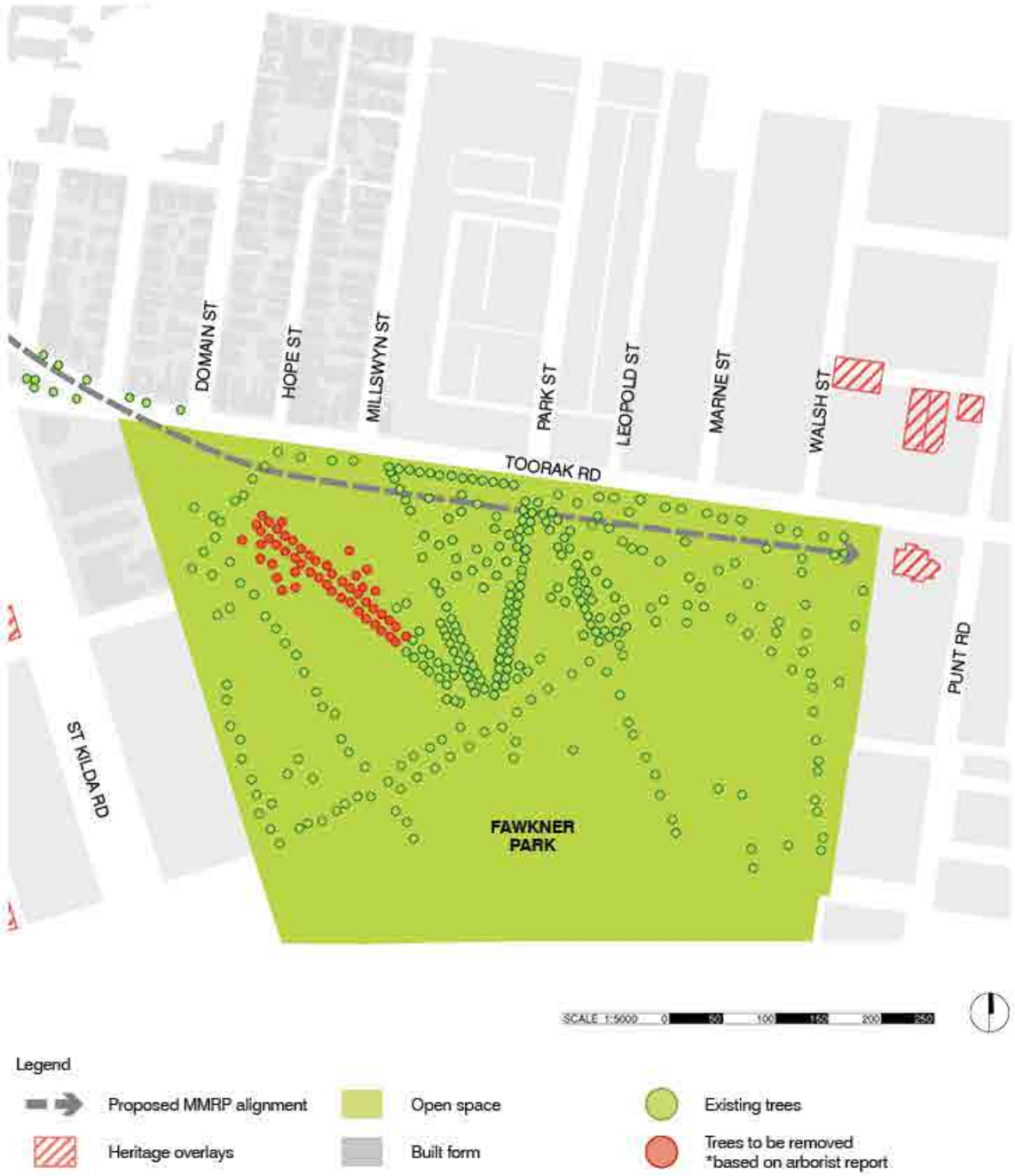

FIGURE 5-6: FAWKNER PARK - TUNNELS PRECINCT: LANDSCAPE IMPACTS – LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

5.5 IMPACT ASSESSMENT – LINLITHGOW AVENUE SHAFT AND OPTION

The draft EES evaluation objectives and assessment criteria relevant to this assessment are outlined in ***Table 3-5***.

5.5.1 VISUAL CATCHMENT

The ground level visual catchment is confined to the west by the built form of the National Gallery of Victoria (NGV) and the Victorian College to the Arts; to the east, the views open out into the landscape of the Queen Victoria Gardens and Kings Domain. ***Figure 5-7*** shows the visual catchment and representative sensitive viewpoints and high sensitivity land uses for Linlithgow Avenue and the Tom's Block option.

5.5.2 VISUAL SENSITIVITY

Key high sensitivity users and viewing locations include:

- Users of the open space – recreation and tourism (the Queen Victoria Gardens and Kings Domain), including the Tan.
- The identified historically significant view from St Kilda Road, over the floral clock, to the King Edward VII Memorial.
- Tourists in vehicles, on foot or bike using roadway or footpaths along St Kilda Road, Linlithgow and Birdwood Avenues.
- Visitors to the Police Memorial.

5.5.3 VISUAL MODIFICATION ON THE SETTING

5.5.3.1 CONSTRUCTION

From the surrounding viewpoints, which are non-elevated, overlooking of the ground plane of the relatively confined construction area would not be possible. ***Figure 5-8*** shows the view from the intersection of Linlithgow and Birdwood Avenues towards the proposed site for the emergency access shaft on Linlithgow Avenue. ***Figure 5-9*** shows the view from the floral clock, east towards the King Edward VII Memorial.

Figure 5-10 shows the view to the Tom's Block Option from the St Kilda Road footpath to the Police Memorial.

The proximity to the construction works would result in an overall high visual modification level for the surrounding viewpoints for both sites during construction.

Visual Modification: Moderate to High – Linlithgow Avenue and Tom's Block option

5.5.3.2 OPERATION

A key consideration with regard to the determination of visual modification in this location is colocation of the emergency access shaft with an existing structure which provides it with a high degree of visual fit within an existing modified setting. ***Figure 5-9*** shows the view towards the Linlithgow emergency access shaft site from the floral clock.

The Tom's Block option would result in an additional element being located within the backdrop to views from the primary viewing location (refer to ***Figure 5-10***).

Following construction, the visual modification level for surrounding sensitive viewpoints would progressively reduce from high to moderate or low, as the built form components of the project are integrated within the setting through appropriate architectural design responses and the incorporation of landscape treatments.

Visual Modification: Low to moderate – Linlithgow Avenue. Low to Moderate – Tom's Block option

5.5.4 VISUAL IMPACT

5.5.4.1 CONSTRUCTION

The surrounding high sensitivity open space – recreation and tourism viewpoints as seen in ***Figure 5-10***, combined with the high modification level during construction, would result in a high level of visual impact to views from the Tan, St Kilda Road and from Queen Victoria Gardens.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city or inner urban users are accustomed to.

Visual Impact: High – Linlithgow Avenue and Tom's Block option

5.5.4.2 OPERATION

The operational residual visual impact following completion of amelioration measures would be moderate reducing to low.

Residual Visual Impact: Low – Linlithgow Avenue. Low to Moderate – Tom's Block option

5.5.4.3 IMPACTS ON LANDSCAPE

As illustrated in ***Figure 5-11*** tree removal in the Linlithgow Avenue (Queen Victoria Gardens) location would be minimal (1 no. canopy tree), although the extent of formal garden beds and lawn would be reduced to some extent.

Canopy trees are the most significant contributor to landscape and public realm character and quality. Given the minimal loss of canopy trees and that the ground plane landscape could be replaced within a short time frame, the residual landscape impacts at Queen Victoria Gardens are anticipated to be low.

For the Tom's Block option, the shallow tunnelled section above the CityLink tunnels would result in the removal of trees from the Domain Parklands (Tom's Block) as a result of ground stabilisation works rather than as a direct result of tunnel boring. Up to 30 mature trees, identified out of a total of 55 trees would potentially require removal. The majority of the removed trees are located within the parkland, with mature canopy street trees around the perimeter of the parkland being retained. As a result, impacts on the landscape would typically be confined to the internal area of the parkland and the setting of the Police Memorial. Impacts on the St Kilda Road streetscape and Domain Parklands east of Linlithgow Avenue would generally be reduced.

The alternative design option for the tunnels to pass under the CityLink tunnels would remove the potential for substantial loss or damage of trees within this portion of the Victorian Heritage Register (VHR) listed Domain Parklands.

The substantial number of trees to be removed for the Tom's Block option would result in a moderate to high residual landscape impacts for park users, reducing to low over approximately 7 years as re-planting matures.

Residual Visual Impact: Low – Linlithgow Avenue. Moderate reducing to low – Tom's Block option

5.5.5 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The low residual visual impacts are consistent with the draft EES evaluation objectives.

5.6 BENEFITS AND OPPORTUNITIES

5.6.1 CONCEPT DESIGN

Table 5-3 provides the benefits and opportunities associated with this precinct.

Table 5-3 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
TBM Southern launch site		
Fawkner Park open space and tennis courts	Minimises additional tree removal required as opposed to constructing on another “Greenfield” site.	Potential to replace park and facilities to a standard better than the existing.
Emergency access shafts		
Fawkner Park north-east location	Located on site of existing toilet block.	Potential to consolidate shaft and toilet block into a single structure.
Queen Victoria Gardens, adjacent to Linlithgow Avenue	Located on site of existing toilet block.	Potential to consolidate shaft and toilet block into a single structure.
Use of the TBM Southern launch site	Potential to use an area already disturbed by the TBM launch activities and to reinstate landscape and introduce new recreational facilities.	Potential to collocate park facilities with the emergency access shaft structure.

5.6.2 ALTERNATIVE DESIGN OPTIONS

Table 5-4 Benefits and opportunities associated with alternative design options

Alternative Design Options	Benefits	Opportunities
Emergency access shafts		
Option 2 – using the location of the Fawkner Park TBM launch site	Utilises existing construction work site and consolidates area of disturbance.	Potential to utilise shaft structure as part of new park recreation facilities.
Located in Tom’s Block	Located in slightly less visually sensitive location than the Queen Victoria Gardens option.	Opportunity to partially integrate with topography rising up to Linlithgow Avenue.

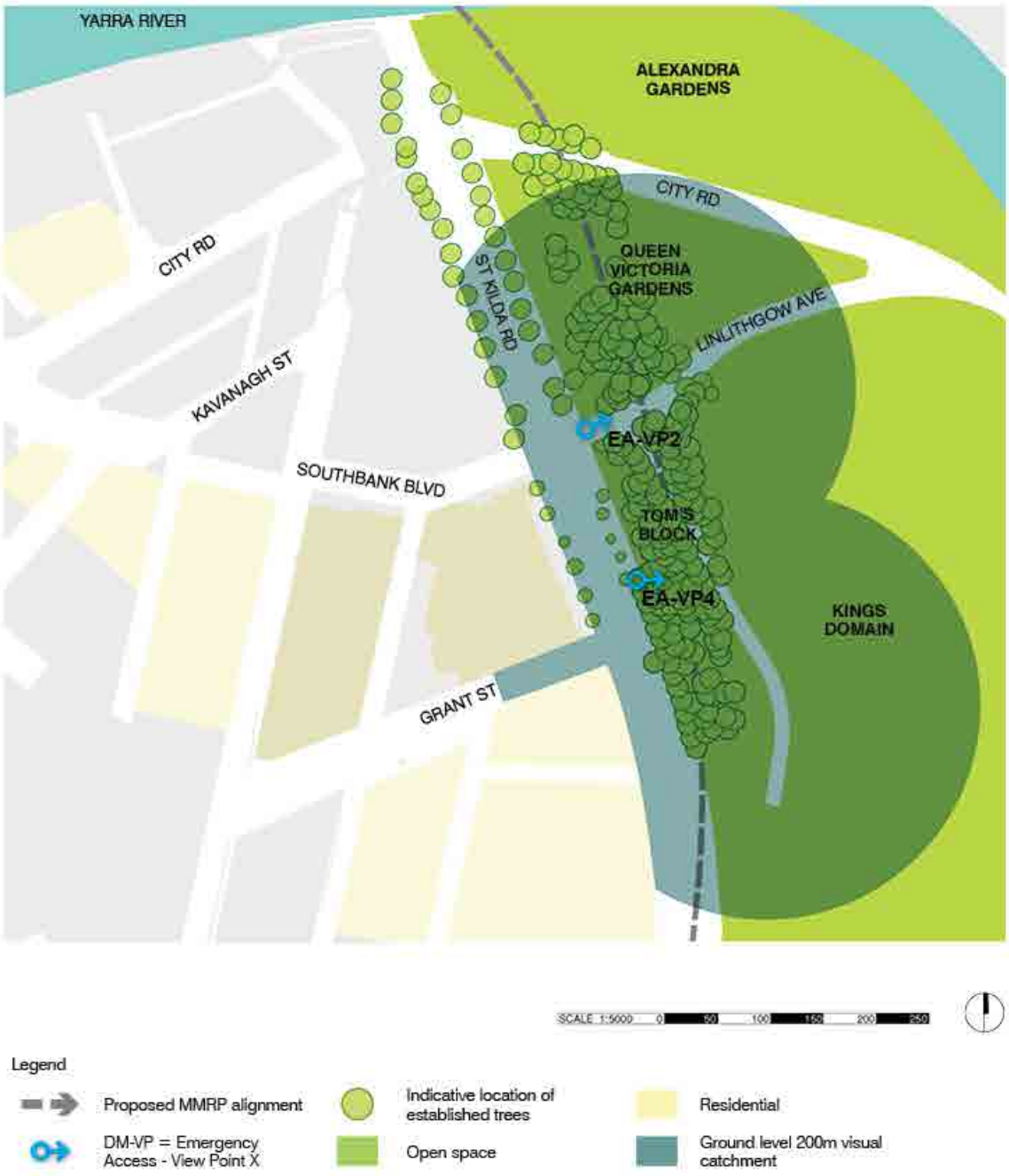

FIGURE 5-7: LINLITHGOW AVENUE AND TOM'S BLOCK – TUNNELS PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

FIGURE 5-8: TUNNELS PRECINCT – EXISTING VIEW FROM INTERSECTION OF LINLITHGOW AND BIRDWOOD AVENUES TOWARDS LOCATION OF LINLITHGOW AVENUE EMERGENCY ACCESS SHAFT - CONCEPT DESIGN

FIGURE 5-9: TUNNELS PRECINCT – VP-EA2: EXISTING VIEW TOWARDS LOCATION OF LINLITHGOW AVENUE EMERGENCY ACCESS SHAFT FROM FLORAL CLOCK – CONCEPT DESIGN

FIGURE 5-10: TUNNELS PRECINCT – VP-EA4: EXISTING VIEW TOWARDS SITE OF LINLITHGOW AVENUE EMERGENCY ACCESS SHAFT FROM ST KILDA ROAD FOOTPATH – ALTERNATIVE DESIGN OPTION TOM'S BLOCK

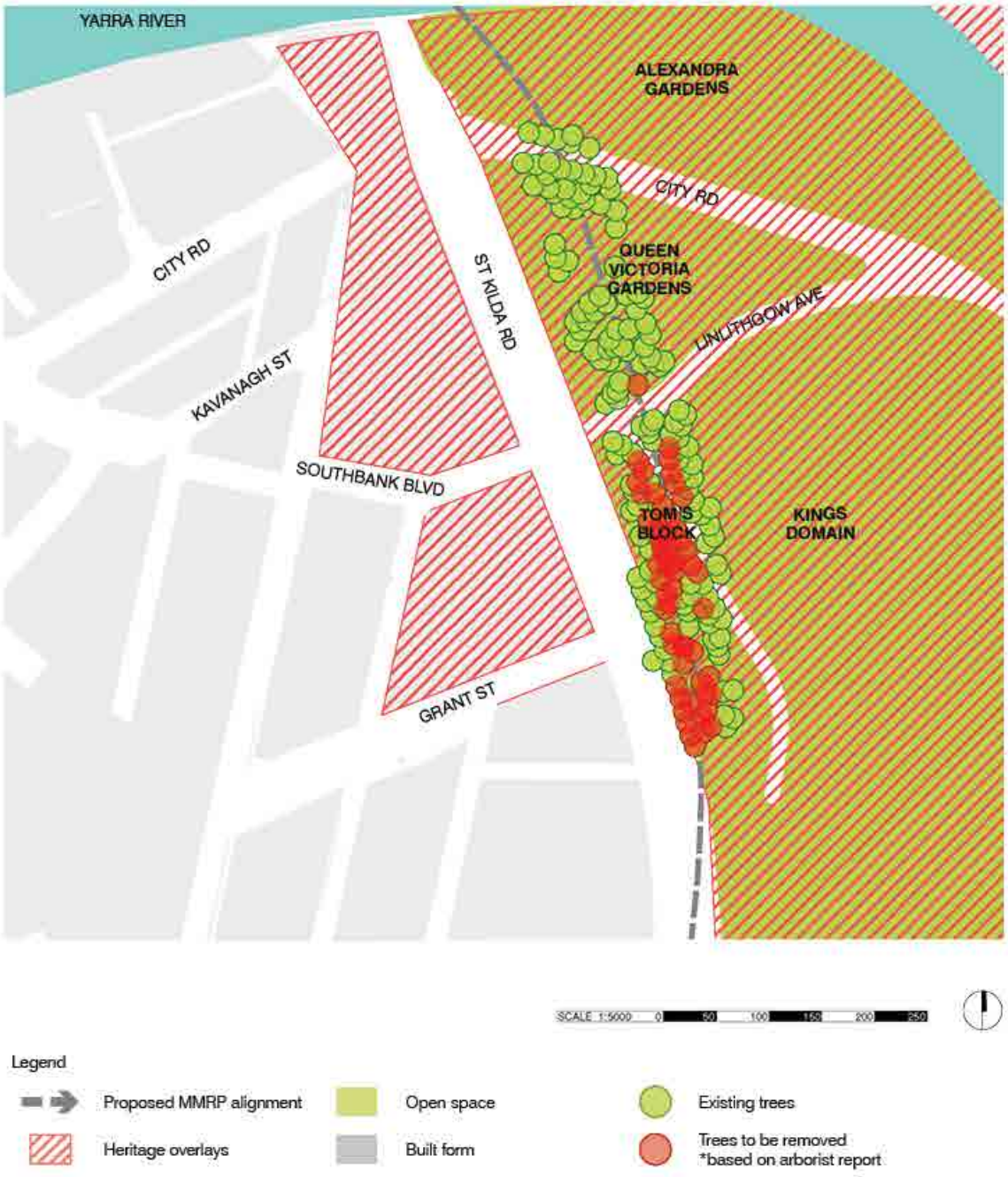

FIGURE 5-11: LINLITHGOW AVENUE AND TOM'S BLOCK - TUNNELS PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

5.7 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 5-5 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 5.5 Environmental Performance Requirements for Tunnels precinct

Asset / value	Impact	Environmental Performance Requirements	Proposed mitigation measures	Risk no.
Historic Parkland Elements – Queen Victoria Gardens, Fawkner Park	Adverse change to existing landscape setting of historic elements.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ Tunnels: Queen Victoria Gardens, Fawkner Park Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community	CONSTRUCTION - Refer to Section 3.5 Design to Help Manage Construction Impacts *Queen Victoria Gardens* Guideline 1. Create an integrated design using landform, plantings and built elements of the intervention shaft to form a recessive backdrop for the Edward VII Memorial and that complements the memorial's wider landscape setting. Guideline 2. Minimise the height and bulk of aboveground structures, in particular any elements higher than ground level adjacent to the Edward VII Memorial. *Tom's Block* Guideline 6. Respect the character of and views to existing memorials. Guideline 8. Use recessive finishes and colours to avoid distracting from nearby monuments. Guideline 9. Reinstate the existing character of gently sloping lawns with specimen trees.	LV002 LV004 LV027 LV029
Residential Areas – Adjacent to Fawkner Park and opposite the Park along Toorak Road West	Adverse impacts on views from residential viewpoints			
Open Space – Recreation – Fawkner Park	Adverse impact on users of open space.			

Asset / value	Impact	Environmental Performance Requirements	Proposed mitigation measures	Risk no.
		facilities.	*Fawkner Park* Guideline 2. Minimise the size of aboveground structures, in particular limiting the width and breadth of any element above ground level. Guideline 3. Minimise the visual impact of aboveground structures through the use of recessive materials and colours. Guideline 4. Where possible minimise the visual impact of aboveground structures with screen plantings that are consistent in character with the site, but avoid screen plantings that would themselves appear to be incongruous within the wider landscape setting.	

6 Impact Assessment - Precinct 2: Western Portal

The proposed Western Portal precinct at Kensington is located at the transition from railway and port related uses to residential, and is adjacent to JJ Holland Park. The area comprises a number of building types including industrial and residential and, includes the South Kensington station. The Maribyrnong River is located to the west of the Western Portal, outside of the area of visual influence of the project.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Western Portal precinct include:

- Minimising encroachment of new rail infrastructure into Childers Street, e.g. use vertical retaining walls to support the Melbourne Metro tracks, both where on a raised embankment and in a cutting. The design of retaining walls and screens should prioritise preservation of space for greening and for various travel modes along Childers Street over any decorative effects that increase the bulk of the structure.

- Designing walls, fencing and acoustic screens facing JJ Holland Park to be visually recessive, to present an attractive finish, and to deter graffiti.

- Providing planted screening of railway infrastructure south of Childers Street.

- Contributing to visibility of the Station entry, without dominating views from JJ Holland Park or visually overwhelming the scale of nearby houses.

- Providing canopy tree planting along the frontage to the rail corridor east of the station entry, to provide shade and visual screening.

6.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- a decline structure (Option 1) at the 50 Lloyd Street Business Estate and an associated retaining wall from the Kensington station entry, extending westwards to Kensington Road.

- A decline structure (Option 4) located to the west of South Kensington station and an associated retaining wall extending westwards to Kensington Road.

The existing South Kensington station building façade and entry forecourt are proposed to be refurbished as part of the portal works. A new pedestrian crossing from JJ Holland Park would connect to the station.

The section of Childers Street pavement adjacent to the station forecourt is to comprise a traffic calming treatment to delineate this area as a 'slow' zone. This crossing, along with the adjacent paving treatments and realignment of an existing path in JJ Holland Park, would combine to give the station entry greater visual prominence and aid pedestrian movement.

Substantial areas would be reclaimed as public space, including much of the South Kensington station forecourt and the incorporation of the southern end of Ormond Street within an expanded JJ Holland Park.

The construction period for Precinct 2 is around 5 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- Demolition of private property. Potential acquisition of a number of properties, which would be demolished for project construction, with Option 4 requiring fewer to be acquired than Option 1.

- Relocation and protection of utilities including relocation of two high voltage transmission towers from Childers Street to the south side of the existing railway lines.
- Establishment of construction work sites, including potential impacts on a number of mature trees, including removal and pruning.
- Construction of the decline structure in close proximity to the proposed Kensington station.
- Cut and cover tunnel construction to the east end of Childers Street, including an area of excavation of approx. 5,300 m^2.
- Construction of a services and relief shaft in the west corner of the 50 Lloyd Street Business Estate.
- Tunnel excavation.
- A major construction site is proposed to be located at 1-39 Hobsons Road in Kensington and includes site offices and facilities, laydown areas and materials.
- Acoustic hoarding up to 6 m in height and acoustic construction sheds. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

6.2 KEY ISSUES

The key issues associated with the Concept Design are summarised in ***Table 6-1***.

Table 6-1 Key issues associated with the Concept Design

Concept Design	Issue
50 Lloyd Street Business Estate TBM Retrieval box	Construction impacts on the visual amenity of users of JJ Holland Park and the adjacent residences in Kensington Road, Derby, Altona and Tennyson Streets.

The key issues associated with the alternative design option are summarised in ***Table 6-2***.

Table 6-2 Key issues associated with the alternative design option

Alternative design option	Issue
Rail Bridge – Kensington Road	Construction and operational impacts on the visual amenity of users and adjacent residences in Kensington Road of a widened rail bridge.
Retention of adjacent properties between Ormond Street and Lloyd Street	Retention of properties reduces the potential to achieve a buffer distance between the rail infrastructure and adjacent residences.

6.3 EXISTING CONDITIONS

6.3.1 LAND USE

Kensington is a residential and industrial suburb approximately 4 km to the north-west of Melbourne. It is bound by Racecourse Road to the north, Smithfield Road and the Maribyrnong River to the west, Dynon Road to the south and Monee Ponds Creek to the east.

To the south of the residential area are rail lines that operate heavy rail freight, V/Line services as well as Metro services on the Werribee, Sunbury and Williamstown lines. Adjoining these operating lines to the south are the Dynon Road railway yards.

The western part of the precinct is bounded by the Maribyrnong River and is comprised of a substantial floodplain.

The residential area surrounding JJ Holland Park is subject to ongoing urban regeneration with low density residential uses progressively transitioning to medium density residential development.

Figures 6-1 & 2 shows the high voltage power lines that run east west between the railway line and Childers Street at the southern boundary of JJ Holland Park.

6.3.2 BUILT FORM

Much of the building stock in the precinct and immediately surrounding area dates from the late Victorian era, with a large proportion of the housing consisting of detached weatherboard cottages on small allotments, a distinctive feature of Kensington. Along with the narrow grid blocks, the streets themselves are narrow, providing a fine grain urban pattern with a high level of urban amenity. There are a number of well-preserved heritage areas that remain from its establishment as a working class suburb in the 19th century as seen in ***Figure 6-3*** that illustrates heritage buildings in Tennyson Street.

6.3.3 LANDSCAPE CHARACTER

The streetscapes are generally of a high quality with tree densities creating interlinking canopies along and over the streets. The industrial area between McLennan Drive and Childers Streets is well screened from adjacent residences by a dense band of planting that assists in improving the streetscape amenity.

Figure 6-4 provides a view from Kensington Road to JJ Holland Park which is one of the most significant areas of open space in this area of Melbourne, providing for recreational and sporting activities. It also provides visual separation between a large proportion of the residential area and the existing rail yards.

FIGURE 6-1: WESTERN PORTAL PRECINCT: EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

FIGURE 6-2: WESTERN PORTAL: HV POWER LINES CURRENTLY FOLLOW THE SOUTHERN BOUNDARY OF CHILDERS STREET BETWEEN JJ HOLLAND PARK AND THE RAILWAY LINE

FIGURE 6-3: WESTERN PORTAL PRECINCT – HERITAGE BUILT FORM IN TENNYSON STREET CONTRIBUTES TO URBAN VISUAL AMENITY

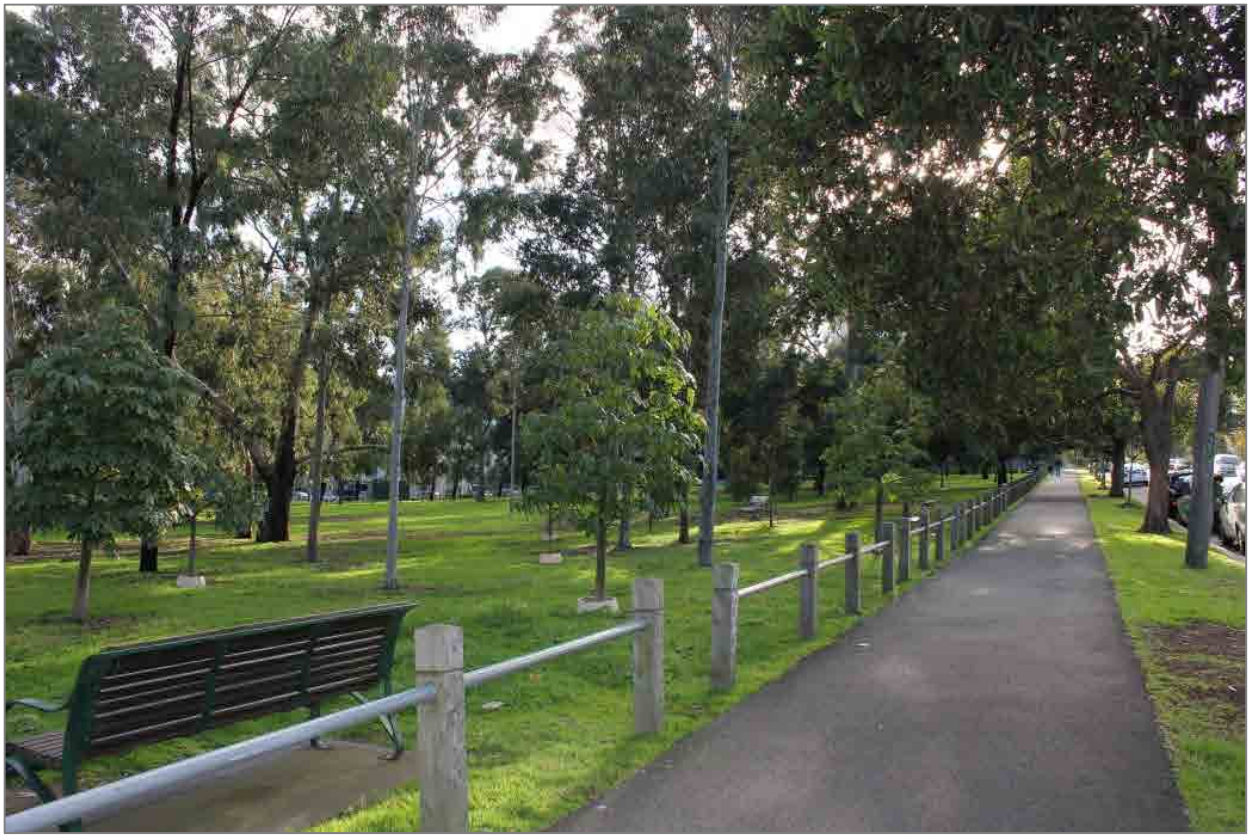

FIGURE 6-4: WESTERN PORTAL: JJ HOLLAND PARK IS THE MAIN RECREATION AND SPORTING OPEN SPACE IN THE AREA

6.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the local setting, of the project is outlined in ***Table 6-2***.

Table 6-2 Land use sensitivity

Land Use	Visual Sensitivity
Residential	High
Open Space – Sporting and Recreation	Moderate to High
Commuter Rail	Low to Moderate
Industrial	Low
Rail yards	Very Low

6.3.4.1 HIGH SENSITIVITY RECEPTORS

All sensitive receptors are located to the north of the proposed western portal. Key sensitive receptors are:

- JJ Holland Park.
- Residences adjacent to JJ Holland Park – Ormond and Altona Streets and Kensington Road.
- Residences along Tennyson Street and Hobsons Road.

6.3.5 KEY VIEWLINES

Figure 6-1 illustrates that the key views with the potential to be impacted are those from residences to the north and east of JJ Holland Park across the open space towards the railway easement and from residences on Tennyson Street and Hobsons Road south towards the project.

6.3.6 ABILITY TO ACCOMMODATE CHANGE

The sensitive viewpoints are located to the north of the proposed western portal, resulting in the majority of views towards the project being back-dropped by the existing power lines and rail infrastructure. As a result, the ability of the setting to accommodate change is high.

6.4 IMPACT ASSESSMENT – WESTERN PORTAL – CONCEPT DESIGN AND ALTERNATIVE DESIGN OPTION

For the Western Portal precinct, the Concept Design and alternative design option have been assessed.

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

6.4.1 VISUAL CATCHMENT

As seen in ***Figure 6-5***, the visual catchment is contained by built form fronting the park's northwest and northeast boundaries, the community facilities in the northern corner of the park and by the rail formation adjacent to the southern edge of Childers Street south of JJ Holland Park.

6.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment is illustrated in ***Figure 6-5*** and include:

- Users of JJ Holland Park (open space – recreation) – VP1.
- Residences adjacent to JJ Holland Park – Ormond and Altona Streets and Kensington Road – VP2.
- Residences along Tennyson Street and Hobsons Road.

Sensitivity Level: High

6.4.3 VISUAL MODIFICATION TO THE SETTING

6.4.3.1 CONSTRUCTION

The immediate setting of the construction activities is defined by existing HV power lines and rail infrastructure. As seen in ***Figure 6-2*** when viewed from sensitive viewpoints to the north, the proposed construction works would be viewed within the context of this modified setting.

The 6 m hoardings and acoustic construction sheds would be visually consistent with the existing built form within the existing railway and HV powerline setting. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

For users within JJ Holland Park, views to the construction site would be partially filtered by intervening vegetation as illustrated by ***Figure 6-6***. As the viewpoint moves to the north, away from the construction area, the presence of additional vegetation results in increased screening of views.

The proposed construction works would also be viewed in the context of an existing modified setting. As a result, the overall visual modification level for views from JJ Holland Park during construction would be moderate.

FIGURE 6-5: WESTERN PORTAL PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

The distance from the construction works of most residences on Kensington Road, Altona Street and Ormond Street, in conjunction with the screening influence of intervening trees and the construction activities being undertaken in an already modified setting, would result in an overall low to moderate visual modification level for most residential viewpoints.

Residences at the southern ends of Ormond Street, Tennyson Street, Hobsons Road and Kensington Road that are located closer to the construction activities, and do not have significant intervening vegetation to provide screening, would experience a moderate visual modification level to the setting. ***Figure 6-7*** illustrates the medium density housing that would afford elevated viewpoints to the construction works.

Visual Modification Level: Low to Moderate

6.4.3.2 OPERATION

As previously discussed, existing HV power lines are located to the south of JJ Holland Park (VP1), between Childers Street and the rail corridor. As a result of the project, the HV power lines would be relocated to the south of the rail lines consolidating industrial infrastructure which would significantly improve the visual amenity experienced from JJ Holland Park and surrounding residential housing. Combined with the South Kensington station improvements and the construction of a feature retaining wall, acoustic barrier and landscape treatments, consistent with the objectives of the recommended Environmental Performance Requirements, a low level of visual modification would result.

The screening influence of intervening trees would also contribute to overall low visual modification level for this viewpoint.

From surrounding residential areas (VP2), the distance from the project in conjunction with the screening influence of intervening trees would also result in an overall low visual modification level for surrounding residential viewpoints.

Visual Modification Level: Low

FIGURE 6-6: WESTERN PORTAL – WP-VP1: EXISTING VIEW FROM JJ HOLLAND PARK TOWARDS RAIL CORRIDOR

FIGURE 6-7: WESTERN PORTAL PRECINCT – WP-VP2: MEDIUM DENSITY HOUSING PROVIDES ELEVATED VIEWPOINTS IN ORMOND STREET

6.4.4 VISUAL IMPACT

6.4.4.1 CONSTRUCTION

Given the non-elevated viewpoints and the presence of vegetation along the southern edge of the JJ Holland Park (VP1) that provides some screening, filtered views to the project during construction would be possible. The high visual sensitivity combined with a moderate visual modification level would result in a high visual impact.

The surrounding high sensitivity of residential viewpoints and the moderate modification level resulting during construction would result in a high level of visual impact to views from Tennyson Street, Hobsons Road, Kensington Road and Ormond and Altona Streets (VP2).

The proposed construction activities are temporary (five years) and would be subject to mitigation measures such as acoustic hoarding up to 6 m in height that would screen the construction area. However, there would still be a resulting moderate to high visual impact on recreational and residential uses. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration.*

The construction lighting impacts for these viewpoints are considered to be moderate to high given views to the south would be typically of a low brightness area.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city or inner urban users are accustomed to.

Visual Impact: Moderate to High

6.4.4.2 OPERATION

As a result of the project, the HV power lines would be relocated to the south of the rail lines consolidating industrial infrastructure which would significantly improve the visual amenity experienced from JJ Holland Park and surrounding residential housing.

Post construction, paths, grassed and playing field surfaces would be returned to their pre-construction condition. The location of the proposed components of the project avoids most of the mature trees that provide the open space area with a high level of landscape amenity.

The operational residual visual impact following completion of amelioration and mitigation measures as listed in ***Table 6-3*** would be low to moderate.

The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.

The visual impacts for the Concept Design and the alternative design option would be very similar. However, the widening of the rail bridge over Kensington Road would result in rail infrastructure being located in closer proximity to residences.

Overall, for both options, there would be a visual modification level for surrounding viewpoints that would progressively reduce to low as the built form components of the project are integrated within the setting. Consequently, the level of visual impact would reduce, particularly as the canopy trees gradually mature.

Residual Visual Impact: Low

6.4.5 IMPACTS ON LANDSCAPE VALUES

JJ Holland Park is a significant area of municipal open space for the Kensington and Flemington area. ***Figure 6-8*** illustrates that tree removal in this location would be minimised as existing clearings along the rail corridor and Childers Street would be utilised for construction and operational activities. No canopy trees within JJ Holland Park would be removed.

Shrub planting along the rail embankment adjacent to the southern edge of Childers Street would be removed.

Canopy trees are the most significant contributor to landscape and public realm character and quality. Given a minimal number of trees are required to be removed and that the ground plane landscape can be replaced within a short time frame, the residual landscape impacts are anticipated to be low.

The landscape impacts for Options 1 and 4 would be very similar. However, the retention of existing buildings under Option 4 would result in slightly reduced impacts on the overall built form / streetscape amenity than Option 1.

Landscape Impacts: Low

6.5 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low residual visual impacts for both Options 1 and 4 are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the ability to soften the face of the retaining wall with fast growing climbers and shrubs in conjunction with the retention of most mature canopy trees along Childers Street.

6.6 BENEFITS AND OPPORTUNITIES

The benefits and opportunities associated with alternative design option relate to the retention of existing properties. However, the removal of the properties under Concept Design creates an opportunity to provide a buffer, or landscaped area, from the rail infrastructure to the adjacent retained residences.

The relocation of the existing HV power lines to the south of the rail lines, consolidating industrial infrastructure, would significantly improve the visual amenity experienced from JJ Holland Park and surrounding residential housing.

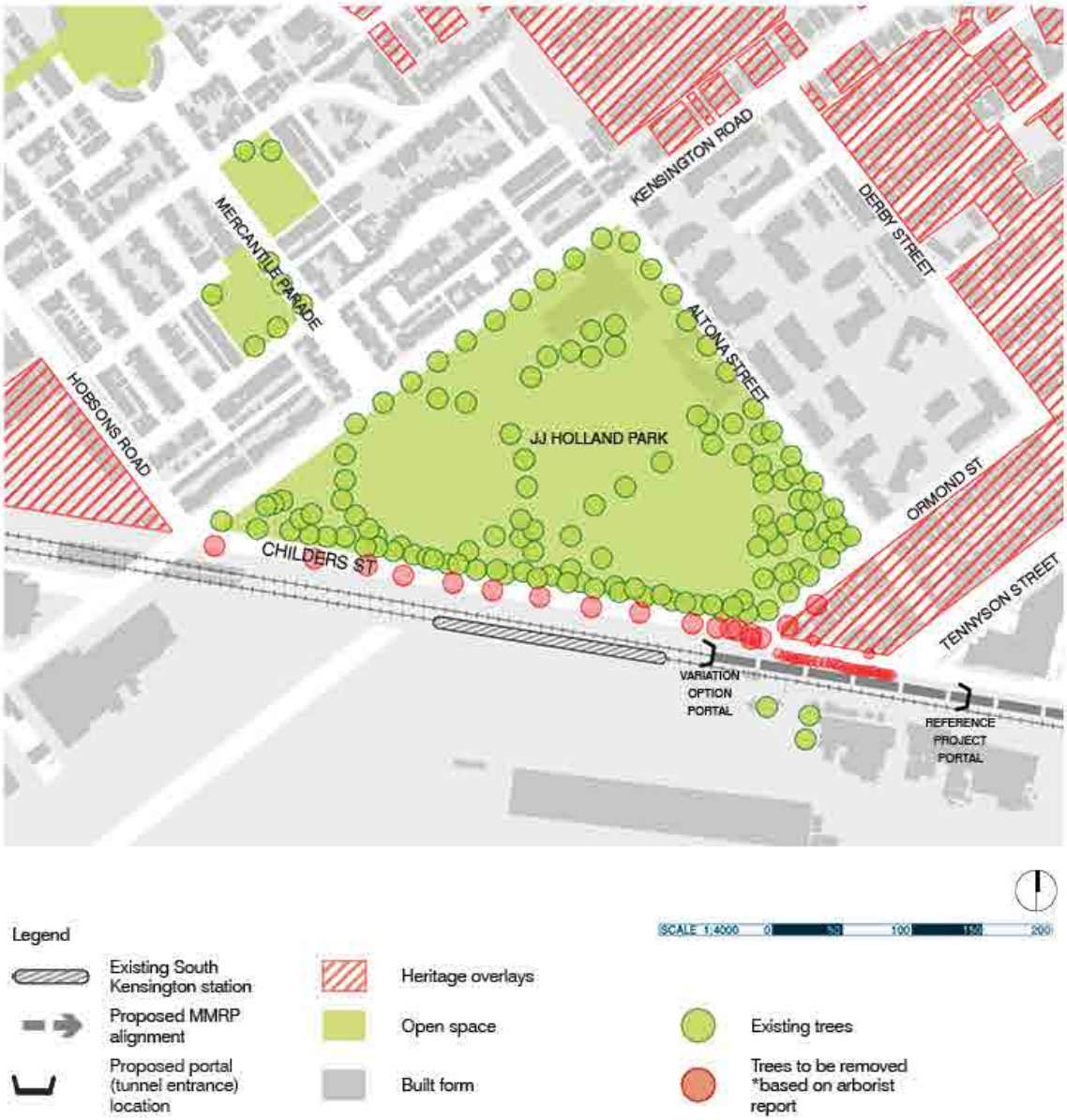

FIGURE 6-8: WESTERN PORTAL PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

6.7 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 6-3 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 6-3 Environmental Performance Requirements for the precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Open Space – JJ Holland Park	Adverse impact on open space.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ Western Portal: JJ Holland Park Develop and implement a plan in consultation the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	*JJ Holland Park Interface* Guideline 3. Design walls, fencing and acoustic screens facing Holland Park to be visually recessive, to present a high quality n attractive finish, and to deter graffiti. Guideline 4. Provide planted screening of railway infrastructure south of Childers Street. *South Kensington Station Entry* Guideline 2. Contribute to visibility of the station entry, without dominating views from Holland Park or visually overwhelming the scale of nearby houses.	Lv001 LV011 LV014 LV026 LV036 LV039
Residential Areas – Adjacent to JJ Holland Park along Kensington and Hobsons Roads, Altona, Ormond and Tennyson Streets	Adverse impact on residential amenity.			

7 Impact Assessment - Precinct 3: Arden Station

The proposed Arden station precinct is located within an industrial area of North Melbourne and is adjacent to the Moonee Ponds Creek to the west, which flows into the Yarra River at Docklands to the south, and commercial and residential areas to the east. The area comprises a number of uses and a mix of historic and contemporary industrial, residential and commercial buildings to the east.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Arden station precinct include:

- Ensuring a high degree of visual prominence for the station and its public realm to assist with wayfinding.

7.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- The station entrances including:
  - The initial station entrance on a ramp approximately 120 m south of Arden Street in line with a future southward extension of Fogarty Street.
  - A second future entrance is proposed to be located in the centre of the site currently owned by VicTrack to service future development.
  - A vent shaft.
- Substation. Two alternative design options for the substation are proposed. Option 2 would be collocated with the Melbourne Metro Trains Melbourne Traction Substation. Option 3 would be located to the south of the Arden precinct, between the rail lines to the west and Laurens Street to the east. Option 4 would be located in the existing Lloyd Street Business Estate in the eastern corner of Childers and Tennyson Streets (this is dependent upon the western portal option).

The initial station entry would be located approximately 120 m south of Arden Street and is expected to be incorporated into a new urban development as part of the overall transit orientated development of the Arden / Macaulay area. The station entry would be located above the flood inundation level. As a result, it would be elevated approximately 2 m above the existing adjacent ground level of Laurens and Barwise Streets on an extensive podium / concourse. The elevation would provide the interim station entrance with a degree of visual prominence.

It is envisaged that the proposed ventilation duct and the Option 3 substation could be designed as urban art.

The construction period for Precinct 3 is around 5 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- Establishment of the main work sites including site offices and staff amenities, fabrication sheds, acoustic hoarding up to 6 m in height, acoustic sheds, major storage areas and spoil extraction and handling facilities, a tunnel construction water treatment plant and water tanks, and a tunnel air ventilation and extraction plant. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.
- Tunnel excavation and TBM launch.
- Station architectural works.

7.2 KEY ISSUES

The key issue associated with the Concept Design of the station are summarised in ***Table 7-1***.

Table 7-1 Key issues associated with the Concept Design

Concept Design	Issue
Aligned between the alignment of Arden and Queensberry Streets, VicTrack land – Box construction	Removal of mature trees that combined with heritage buildings contributes to streetscape quality.

7.3 EXISTING CONDITIONS

7.3.1 LAND USE

The Arden-Macaulay area developed from the early twentieth century as an industrial and warehousing hub around Melbourne's port and railway facilities, processing products from the rural hinterland and providing industrial and manufacturing services to the then growing city of Melbourne.

The precinct and surrounding area has retained its industrial heritage with a substantial amount of land still used for such purposes. The area west of Macaulay Road is dominated by warehouses, workshops, small-scale manufacturing and offices. A mixture of houses, townhouses and apartments are scattered amongst light industrial uses in the precinct's south-east corner. A number of vacant lots exist throughout the west of the precinct. The subject land is located on the low lying flood plain of Moonee Ponds Creek between Laurens Street, Barwise Street, Arden Street and Moonee Ponds Creek. A shared pedestrian / bicycle trail, part of the Capital City Trail, is located along Moonee Ponds Creek and the North Melbourne Recreation Centre lies to the north. Figure 7-1 illustrates the existing attributes within Precinct 3 and highlights the extent of industrial land use immediately surrounding the proposed development.

7.3.2 BUILT FORM

The precinct's built form is low-scale with most buildings being one to three storeys in height. Some exceptions do exist, most notably the silos on Munster Terrace and the public housing towers east of Boundary Road.

The industrial heritage is represented by the surviving examples of large-scale industrial processing facilities, which were once common in the west of Melbourne. Industrial landmarks such as the iconic Weston Milling and Allied Mills silos all feature prominently in the local area. Figure 7-2 and Figure 7-6 illustrate the industrial character and milling infrastructure present in the precinct.

The Arden precinct has already commenced its renewal process with a number of existing buildings being converted to mixed use or boutique business accommodation.

7.3.3 LANDSCAPE CHARACTER

Dryburgh Street, Munster Terrace and Laurens Street run north to south, roughly following the contours. West of Dryburgh Street, the elevation of the land falls 15 m to Laurens Street. This provides elevated views to the west from the east-west aligned Queensberry Street. ***Figure 7-3*** illustrates the drop in elevation experienced between Dryburgh and Laurens Streets.

The streetscape character of the residential area to the east of Macaulay Road is typified by broad streets with street tree planting, lined by small workers cottages. A large proportion of the area immediately to the east of the precinct, but within the visual catchment, is subject to a Heritage Overlay, which applies to both residences and early industrial buildings. The heritage character contributes to the visual amenity and landscape character of parts of Munster Terrace, Dryburgh, Stawell and Laurens Streets. ***Figure 7-4*** and ***Figure 7-5*** demonstrate the industrial urban character experienced in Precinct 3 and the important open space asset to the north of the proposed development.

A dominant and detracting visual element in views to the west is the elevated section of the CityLink tollway, which is located along Moonee Ponds Creek.

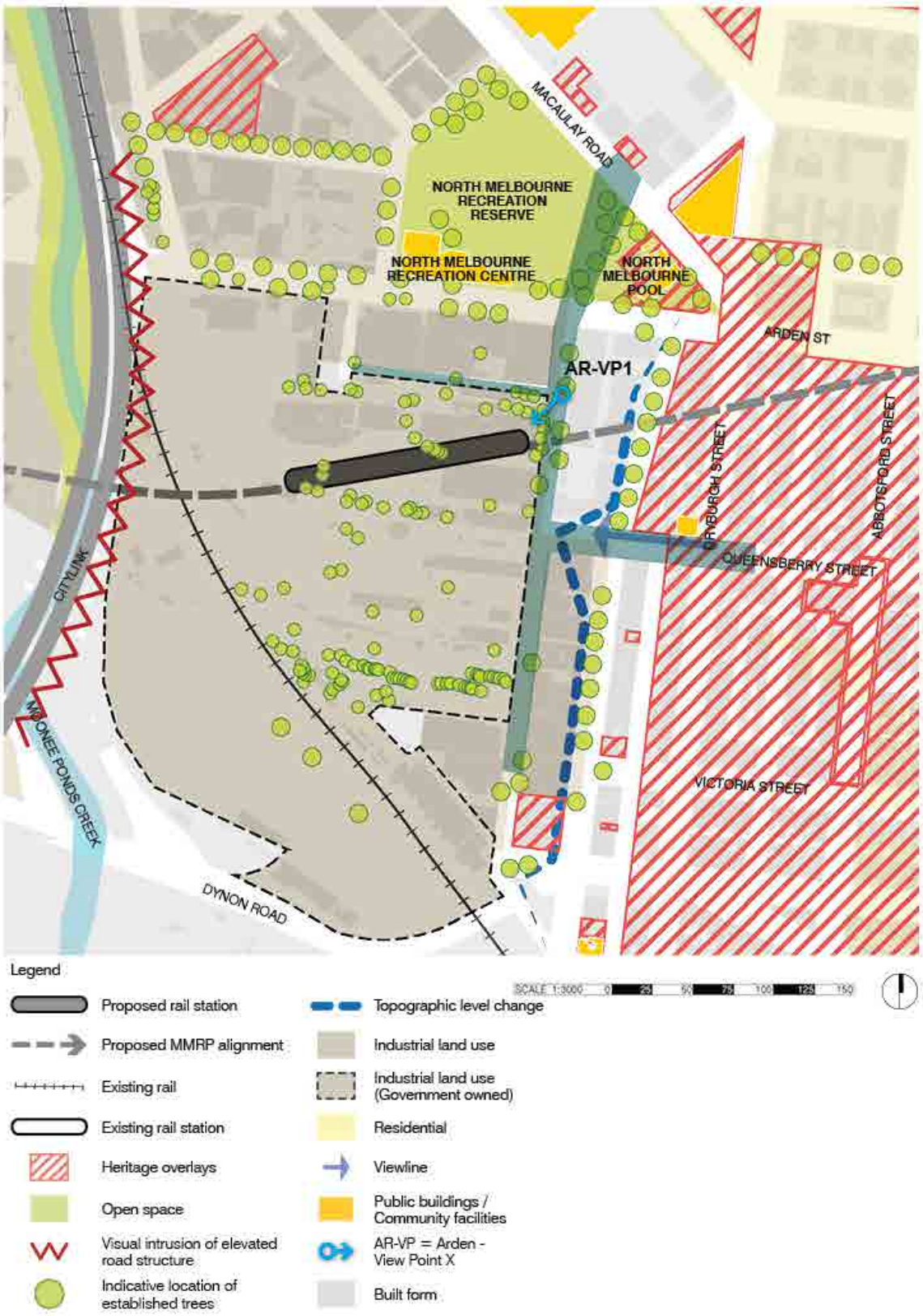

FIGURE 7-1: ARDEN PRECINCT - EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

FIGURE 7-2: ARDEN PRECINCT - EXISTING INDUSTRIAL CHARACTER OF THE GOVERNMENT OWNED LAND WEST OF LAURENS STREET

FIGURE 7-3: ARDEN PRECINCT - CHANGE IN GRADIENT BETWEEN DRYBURGH AND LAURENS STREETS, DROPPING IN ELEVATION TOWARDS THE WEST

FIGURE 7-4: ARDEN PRECINCT - OLDER INDUSTRIAL BUILDINGS CONTRIBUTE TO THE URBAN CHARACTER

FIGURE 7-5: ARDEN PRECINCT - NORTH MELBOURNE RECREATION RESERVE IS A KEY OPEN SPACE ASSET IN THE PRECINCT

FIGURE 7-6: ARDEN PRECINCT - THE PRECINCT CONTAINS BUILDINGS REPRESENTING A RANGE OF ARCHITECTURAL PERIODS

7.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the foreground, or local setting, of the project is outlined in ***Table 7-2***:

Table 7-2 Land use sensitivity

Land Use	Visual Sensitivity
Residential	High
Open Space – Sporting and Recreation.	Moderate to High
Community Facilities	High
Commercial	Moderate
Commuter Rail	Low to Moderate
Freeway / Tollway	Moderate
Industrial	Low
Rail yards	Very Low

7.3.4.1 HIGH SENSITIVITY RECEPTORS

- Residences on Munster, Dryburgh, Lothian and Queensbury Streets.
- North Melbourne Recreation Reserve and Recreation Centre.
- The Capital City Trail (along Moonee Ponds Creek). This trail is both a commuter and recreational trail.
- Residential apartments on the corner of Laurens and Queensberry Streets.

7.3.5 KEY VIEWLINES

The key viewline with the potential to be impacted during construction if government land is used as the construction staging area is:

- Westwards from the elevated section of Queensberry Street, near Dryburgh Street, towards the Moonee Ponds Creek Flood Plain occupied by government owned land.

7.3.6 ABILITY TO ACCOMMODATE CHANGE

The entire setting of the proposed station is currently an industrial character that would be subject to significant redevelopment over time. Sensitive viewpoints are located to the east of the proposed station location, resulting in the majority of views being back-dropped by the industrial uses that would progressively transition to mixed use development. As a result, the ability of the setting to accommodate change of the scale of station entries is high.

7.4 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

7.4.1 VISUAL CATCHMENT

As illustrated on ***Figure 7-7*** the visual catchment is contained by built form fronting the station precinct's eastern and northern boundaries. The area adjoining to the west and south is an existing industrial area which inhibits views experienced from these vantage points.

7.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment are limited as seen on ***Figure 7-7*** and include:

- North Melbourne Recreation Reserve and Recreation Centre.
- Residential apartments on the corner of Laurens and Queensberry Streets.

Sensitivity Level: Moderate

7.4.3 VISUAL MODIFICATION TO THE SETTING

7.4.3.1 CONSTRUCTION

The setting of the construction works is defined by existing industrial land uses as seen in ***Figure 7-2*** and ***Figure 7-8***. The proposed construction works would be viewed within this heavily modified context and the road infrastructure of CityLink. The footprint of the construction works would be more extensive than those of the operational project.

The 6 m hoardings and acoustic construction sheds would be visually consistent with the form of the existing built form within the setting. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

The screening influence of intervening buildings would result in an overall low visual modification level for this viewpoint.

Visual Modification Level: Low

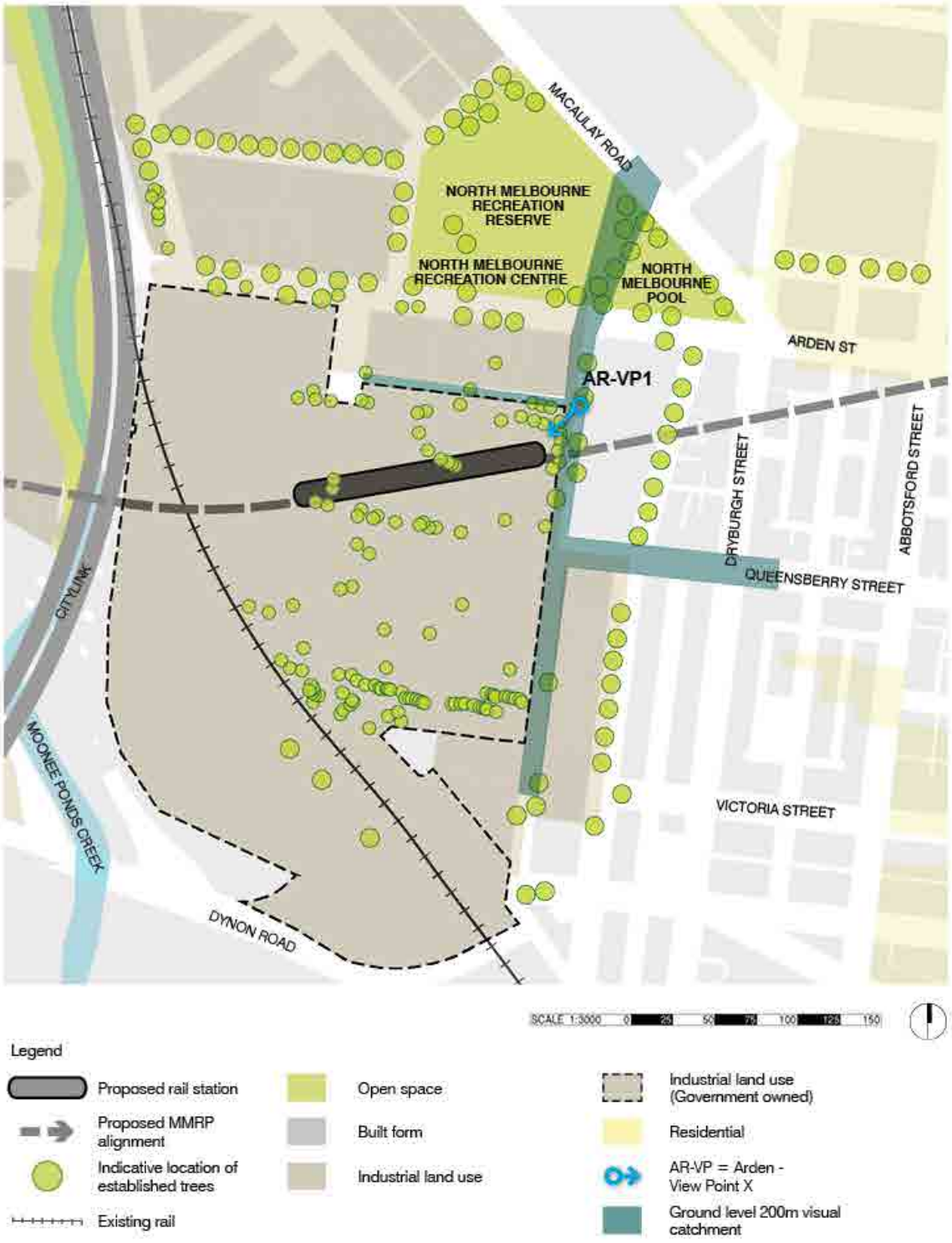

FIGURE 7-7: ARDEN PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

7.4.3.2 OPERATION

The setting of the operational project would be transformed as a result of the change in land use and the improvement to the public realm through a high quality designed station entrance and elements that complements the urban character of the area. At the time of the Station completion, the surrounding industrial uses would no longer be there and renewal is likely to have commenced.

Given the majority of the site is industrial the proposed operational elements would result in an improved visual impact to the urban landscape. As such, the visual modification level is considered to be low beneficial.

Visual Modification Level: Low beneficial

7.4.4 VISUAL IMPACT

7.4.4.1 CONSTRUCTION

Given the existing industrial character of the setting, the presence of existing built form which provides screening of views from more distant locations, the overall moderate sensitivity combined with a low level of visual prominence would result in a low visual impact.

The construction lighting impacts for this viewpoint are considered to be low given there are few sensitive land uses in close proximity with views to the construction area. However, upward light spill may result in impacts to a number of residential apartments at the corner of Laurens and Queensberry Streets.

The proposed construction activities are temporary (5.5 years) and would be subject to mitigation measures such as acoustic hoarding up to 6 m in height that would screen the construction area. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

Visual Impact: Low

7.4.4.2 OPERATION

The moderate visual sensitivity levels combined with a low visual modification level would result in a low visual impact level.

The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.

Given the majority of the site is currently industrial the proposed operational elements would result in an improved visual setting within the urban landscape.

Residual Visual Impact: Low beneficial

FIGURE 7-8: A-VP1 – EXISTING VIEW SOUTH WEST FROM LAURENS STREET, NORTH OF BARWISE STREET

7.4.5 IMPACTS ON LANDSCAPE VALUES

Approximately 120 trees would require removal from the publicly owned (VicTrack) land on the west side of Laurens Street. ***Figure 7-9*** demonstrates that a limited number of street trees would be removed as a result of the project. The landscape impacts would be confined and located within an area with a low visual prominence and away from adjacent streets with higher heritage values.

Given the majority of the site is industrial, the proposed operational elements would result in an improvement to the urban landscape.

Landscape Impacts: Low beneficial

7.4.6 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low beneficial residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the relatively small footprint of the operational components of the project and the retention of most trees along Laurens Street as seen in ***Figure 7-8***. Furthermore if compliant with the requirements of the Urban Design Strategy (Technical Appendix M), the visual elements on this precinct would be a positive contribution to the urban landscape.

7.5 BENEFITS AND OPPORTUNITIES

The benefit associated with the Concept Design relates to the area of construction disturbance being confined to an existing industrial area with impacts on vegetation and heritage built form minimised. The opportunity exists for existing vegetation and heritage built form to contribute to the character of the new station and the future redevelopment of the area by providing character and visual amenity.

With regard to the alternative design options substation 2 and 3, collocation with the existing traction substation would have reduced visual impacts over those of a stand-alone substation, due to it being consolidated with existing infrastructure as opposed to being located within a site subject to future urban

development. Substation option 4 could potentially be integrated within the built form of the existing 50 Lloyd Street Business Estate. Within this context it would have better visual fit than a stand-alone substation, resulting in a lower overall visual modification level.

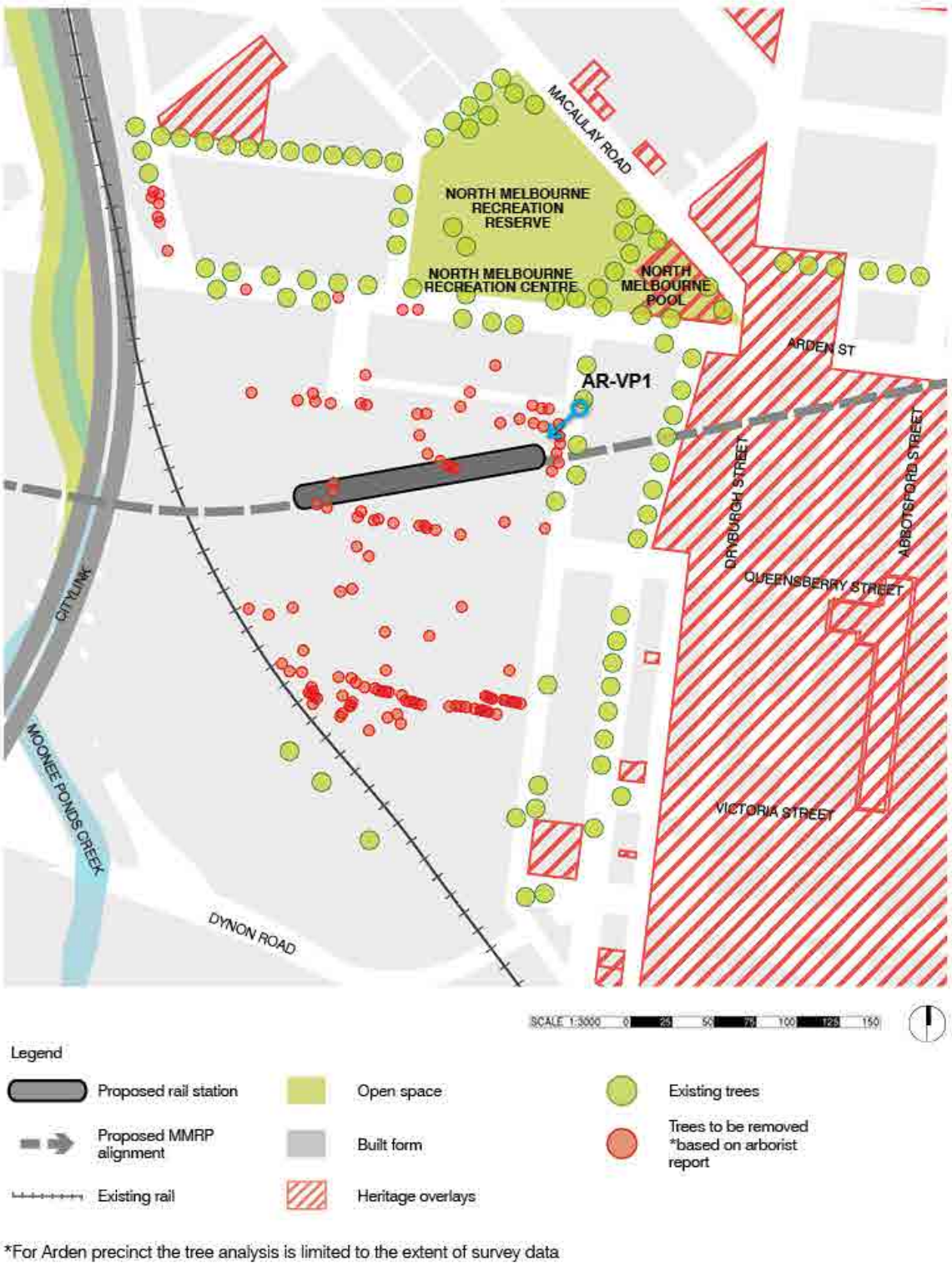

FIGURE 7-9: ARDEN STATION PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

7.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 7-3 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (***Technical Appendix M***). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 7.3 Environmental Performance Requirements for the Precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Residential Areas – Residences on Munster, Dryburgh, Lothian and Queensbury Street. Apartments on the corner of Laurens and Queensberry Streets.	Adverse impact on residential amenity.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: • Parkville station: University of Melbourne, Victorian Comprehensive Cancer Centre, Royal Melbourne Hospital, University Square. Develop and implement a plan in consultation with the Office of Victorian Government Architect, the local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	Guideline 1 Consider the use of temporary hoardings, fencings, screens and plantings of fast-growing trees to define future building sites and to shelter public spaces.	LV012 LV037
Open Space - North Melbourne Recreation Reserve and Recreation Centre - The Capital City Trail (along Moonee Ponds Creek).	Adverse impact on users of open space and community facilities.			

8 Impact Assessment - Precinct 4: Parkville Station

The proposed Parkville station precinct is located within the heart of the Parkville Education, Medical and Research sector near the intersection of Royal Parade and Grattan Street. The area comprises an eclectic mix of historic and architectural buildings.

Consistent with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Parkville station precinct include:

- New plantings of large canopy trees along Grattan Street.
- Being respectful of the historic Gatekeeper's Cottage and Vice Chancellors House, including their landscape settings.
- Retention and protection of the existing trees along Royal Parade as far as practically possible, and where tree removal is unavoidable, plant new trees in the same locations.
- Designing any aboveground Melbourne Metro structures located within Royal Parade to minimise their visual bulk or solidity, especially for elements at or above eye level.

8.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- Entrances serving the health and education organisations in the precinct as well as the main north-south pedestrian route through the University of Melbourne campus.
- Entrances serving tram stops on Royal Parade and bus stops on Grattan Street.
- Northern entrances provide connectivity to University High, northern parts of the University of Melbourne campus and to future entrances at Royal Melbourne Hospital and a new ambulatory care facility on the University of Melbourne campus.
- The entry near Gate 10 is located adjacent to Victorian Heritage Register listed buildings – the Vice-Chancellor's House and the Gatekeepers Cottage.
- Crossings beneath Royal Parade and Grattan Street. A Disability Discrimination Act (DDA) compliant tram stop with side platforms would be constructed on Royal Parade.
- Vent shafts, chiller plants and emergency access and egress structures.

Overall there would be three new station entries visible in the streetscape.

The University of Melbourne station entry located near Gate 10 (Kernot Drive) intends to reinforce this location as one of the key entries within the campus. It is envisaged that the station entry and forecourt would become a landmark meeting place and provide a direct connection to the internal circulation routes into the main campus, such as Professors' Walk.

Although there is potential loss of trees at the Royal Parade station entry, the proposed forecourt would be designed to incorporate new canopy trees to complement the existing 'greenscape' of this section of the precinct.

The Grattan Street station entry between University Square and the University of Melbourne is proposed to assist with safe pedestrian crossing movements with raised road pavements and feature traffic calming paving.

It is envisaged that the ventilation ducts, chiller plants and emergency structures would be designed to be well integrated within the public realm.

The construction period for Precinct 4 is around 5 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- Demolition of Grattan Street from property boundary to property boundary, between Royal Parade and Leicester Street to establish a construction site, including potentially impacting on a large number of mature trees.
- Station structural works and station entrance connections across Royal Parade, including an excavation area of approximately 6,700 m^2.
- Acoustic hoarding up to 6 m in height and acoustic construction sheds. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.
- Construction of underground pedestrian access between the station and Grattan Street (west of Royal Parade) is expected to be through cut and cover or mined tunnels, pending finalisation of design.

A temporary construction site (and acquisition) is proposed at 750 Elizabeth Street, currently housing the City Ford car dealership and the northern section of University Square. This site would be needed for a period of five years.

8.2 KEY ISSUES

8.2.1 CONCEPT DESIGN

The key issues associated with the Concept Design are summarised in ***Table 8-1***.

Table 8-1 Key issues associated with the Concept Design

Concept Design	Issue
New station to be located under Grattan Street, to the east of Royal Parade	Impacts on streetscape character. Impacts on views north and south along Royal Parade boulevard.

8.3 BASELINE CONDITIONS

8.3.1 LAND USE

The Parkville station precinct is Melbourne's education, health and research precinct as demonstrated by ***Figure 8-1***. It houses the University of Melbourne, the Royal Melbourne Hospital cluster, the Grattan Institute and the under construction Victorian Comprehensive Cancer Centre.

The University of Melbourne is a major landowner in the direct vicinity of the proposed Parkville station and has been progressively expanding south across Grattan Street. University Square is located to the south of Grattan Street, between Leicester Street and Barry Street. University Square encompasses an urban plaza over the top of the University's underground car park and significant open space which extends to Pelham Street. ***Figure 8-4*** and ***Figure 8-5*** show images of the existing character of Grattan Street.

8.3.2 BUILT FORM

The more recently completed, or under construction, hospitals with high quality contemporary architecture, the Royal Children's Hospital, the Victorian Comprehensive Cancer Centre and the Royal

Melbourne Hospital, sit in contrast to the campus style, classical sandstone university architecture of the University of Melbourne. However the immediate building adjacent to the subject land is the 50's style medical building. Together with the visually significant street tree plantings, the confluence of elements gives the precinct a unique urban character as illustrated by ***Figure 8-3***.

8.3.3 LANDSCAPE CHARACTER

The wide boulevards, particularly the heritage listed Royal Parade with its double avenue of mature elm trees planted in the verge and median strips, and the expansive open spaces are key contributors to the high urban and visual amenity of the area, providing links to the nineteenth century structure of early Melbourne.

Views south along Royal Parade to the Haymarket roundabout combine with the treed boulevard to create a significant northern gateway to the City of Melbourne as demonstrated in ***Figure 8-2***.

8.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the foreground, or local setting, of the project is outlined in ***Table 8-2***:

Table 8-2 Key issues associated with the Concept Design

Land Use	Visual Sensitivity
Healthcare	High
Education	High
Open Space – Recreation	High
Medical Research	Moderate
Open Space – Sporting	Moderate

8.3.4.1 HIGH SENSITIVITY RECEPTORS

- University of Melbourne – PV-VP2.
- Victorian Comprehensive Cancer Centre.
- The Royal Melbourne Hospital – PV-VP1.
- Royal Women's Hospital – PV-VP1.
- Melbourne Private Hospital.
- University Square.

8.3.5 KEY VIEWLINES

The key view with the potential to be impacted is:

- Royal Parade, particularly views south approaching Haymarket roundabout.

8.3.6 ABILITY TO ACCOMMODATE CHANGE

The landscape setting of the proposed station is highly developed and comprised of contemporary and heritage architecture set within an established streetscape setting. Sensitive viewpoints are located around the proposed station location along Grattan Street and Royal Parade.

The landscape setting has been, and is currently subject to change as a result of the development of new hospitals. Therefore, it is not immune from change and has the ability to accommodate change that is appropriately designed and managed.

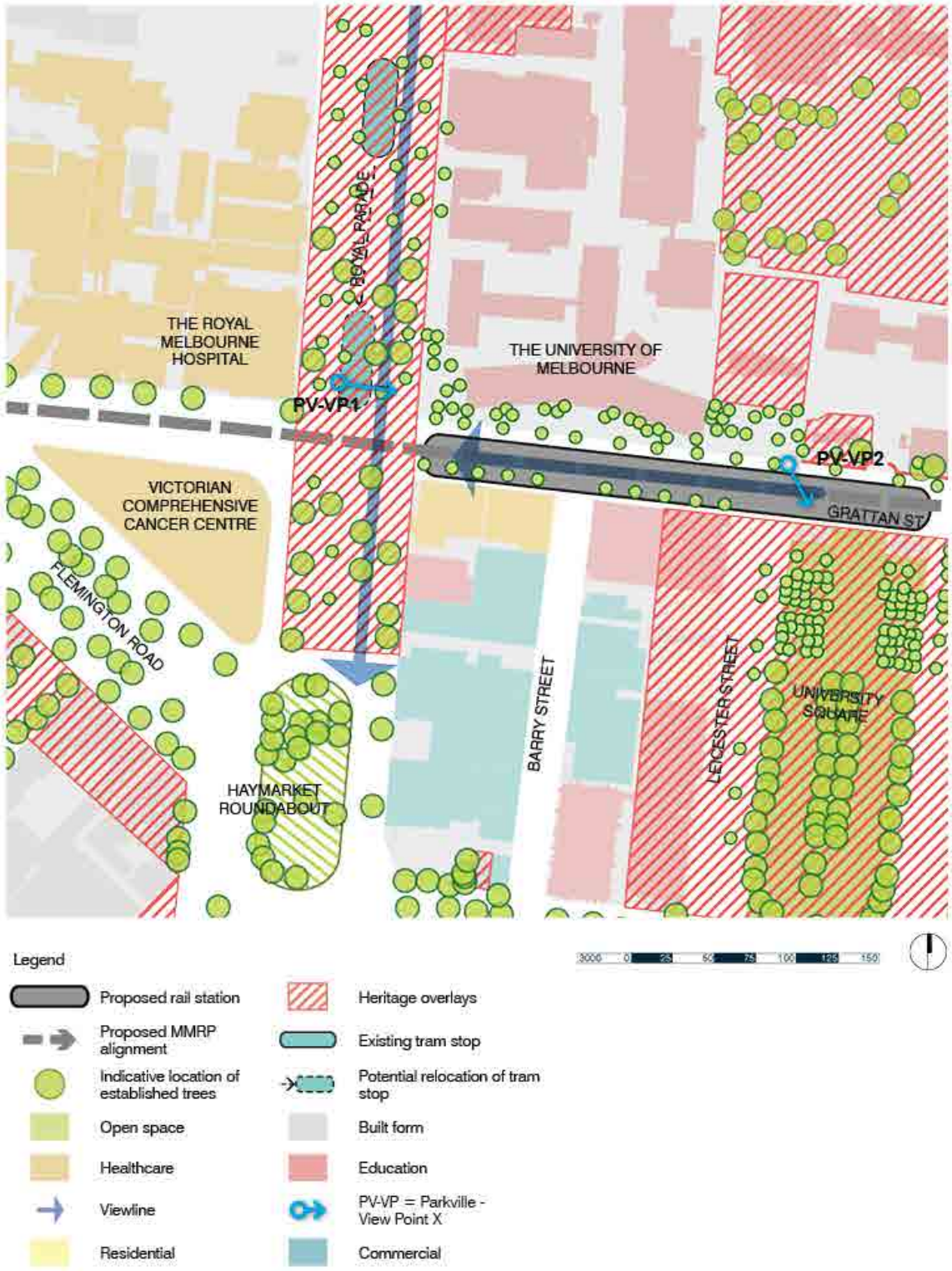

FIGURE 8-1: PARKVILLE STATION PRECINCT - EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

FIGURE 8-2: PARKVILLE PRECINCT - ROYAL PARADE, WITH ITS HERITAGE LISTED BOULEVARD, LOOKING SOUTH TOWARDS HAYMARKET ROUNDABOUT

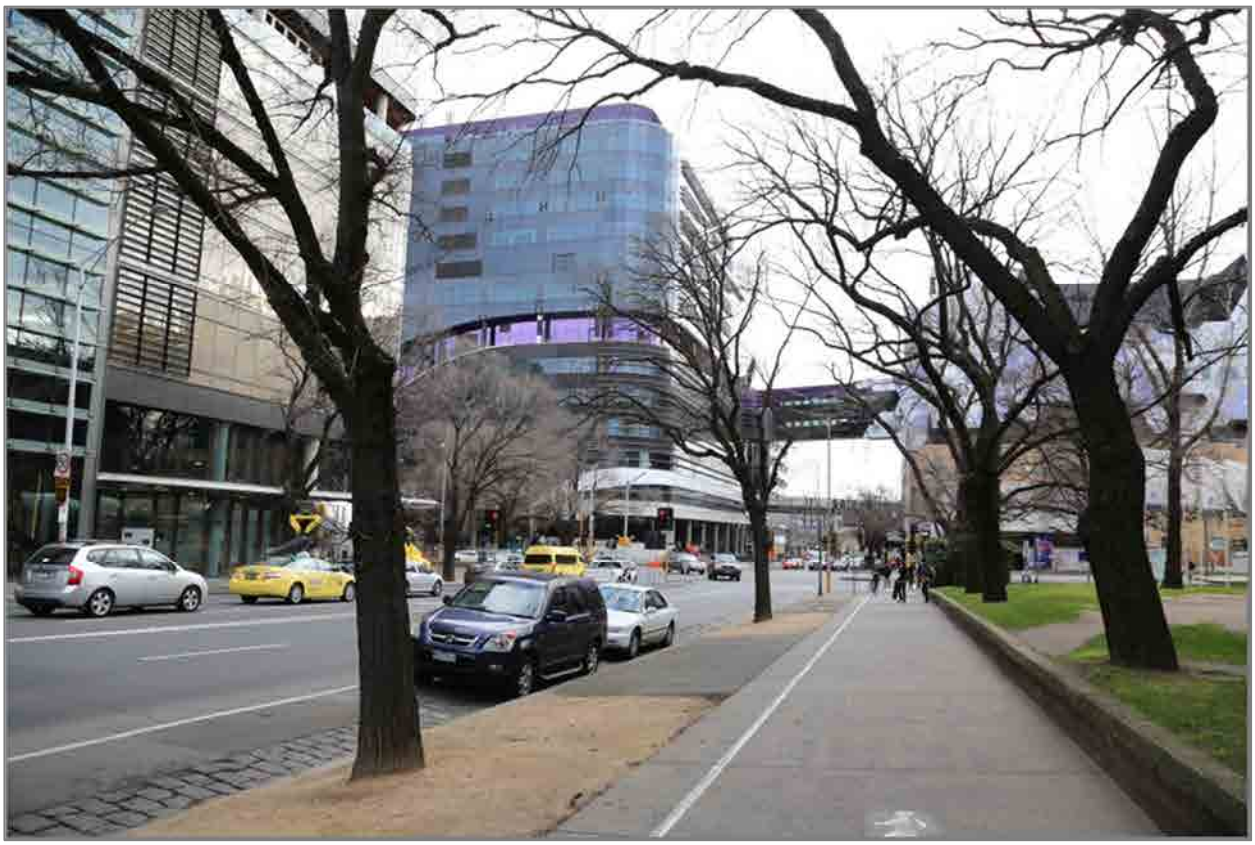

FIGURE 8-3: PARKVILLE PRECINCT - CONTEMPORARY HOSPITAL BUILDINGS ARE A FEATURE OF THE STREETSCAPE

FIGURE 8-4: PARKVILLE PRECINCT - UNIVERSITY OF MELBOURNE MEDICAL BUILDING ON GRATTAN STREET IS LIKELY TO BE PROGRESSIVELY REDEVELOPED

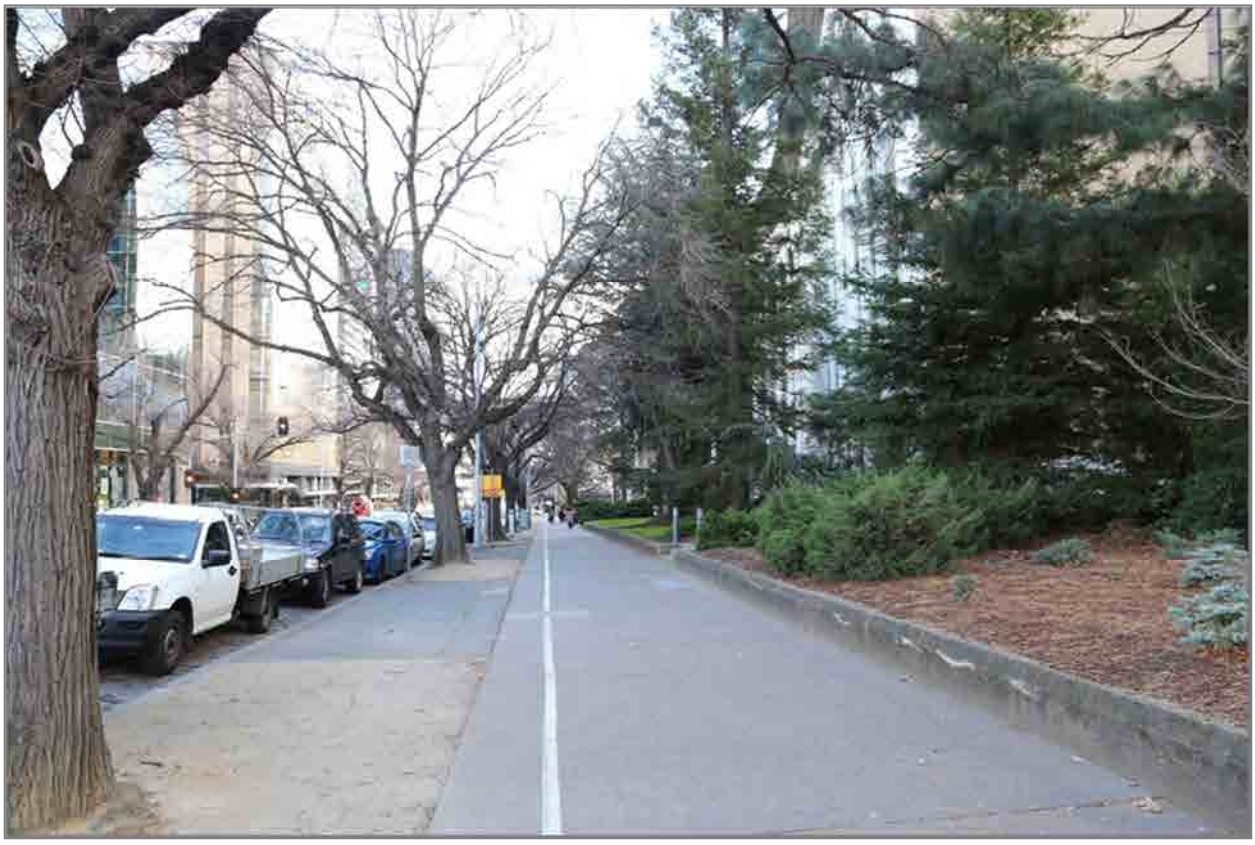

FIGURE 8-5: PARKVILLE PRECINCT - GRATTAN STREET STREETSCAPE ADJACENT TO UNIVERSITY OF MELBOURNE

8.4 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

8.4.1 VISUAL CATCHMENT

As demonstrated by ***Figure 8-6***, the visual catchment is contained by tall built form exceeding 10 levels fronting Grattan Street and Royal Parade. However, the open character of the landscape in the vicinity of the Gatekeepers House at University of Melbourne and University Square allow for views from locations away from the street edge.

8.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment are illustrated in ***Figure 8-6*** and include:

- Heath Facilities - Victorian Comprehensive Cancer Centre, Royal Melbourne Hospital, Royal Women's Hospital, Melbourne Private Hospital.
- Educational Facilities – University of Melbourne.
- Open Space – Urban Plaza - University Square.

Sensitivity Level: High

8.4.3 VISUAL MODIFICATION TO THE SETTING

8.4.3.1 CONSTRUCTION

The construction area is located in a high quality urban setting. The construction process would require the removal of many mature trees along Grattan Street that may have provided a degree of screening of the construction area from elevated viewpoints.

Hoardings up to 6 m in height and acoustic construction sheds would provide some mitigation of views to construction equipment, but would also block non elevated views. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

Overlooking of the construction area would not be possible from non-elevated streetscape viewpoints and typically only a limited extent would be possible from these locations. However, overlooking would be possible from adjacent multi-level sensitive health and educational uses.

The proximity to the construction works and the area's visibility would result in a high visual modification level for surrounding viewpoints during construction.

Visual Modification Level: High

8.4.3.2 OPERATION

The setting of the project is a high quality urban setting. It contains existing transport infrastructure, including the tram stops on Royal Parade.

The components of the project would be generally small-scale vertical forms or more expansive, low horizontal forms, which would be inserted into the streetscape and built form of the setting, such as the station entry at the corner of Royal Parade and Grattan Street, as shown in ***Figure 8-7***, and a number of vents in Grattan Street near University Square, as shown in ***Figure 8-8***.

As a result, there would be an overall low to moderate visual modification level for surrounding viewpoints during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of street tree plantings along Grattan Street.

Visual Modification Level: Low to Moderate

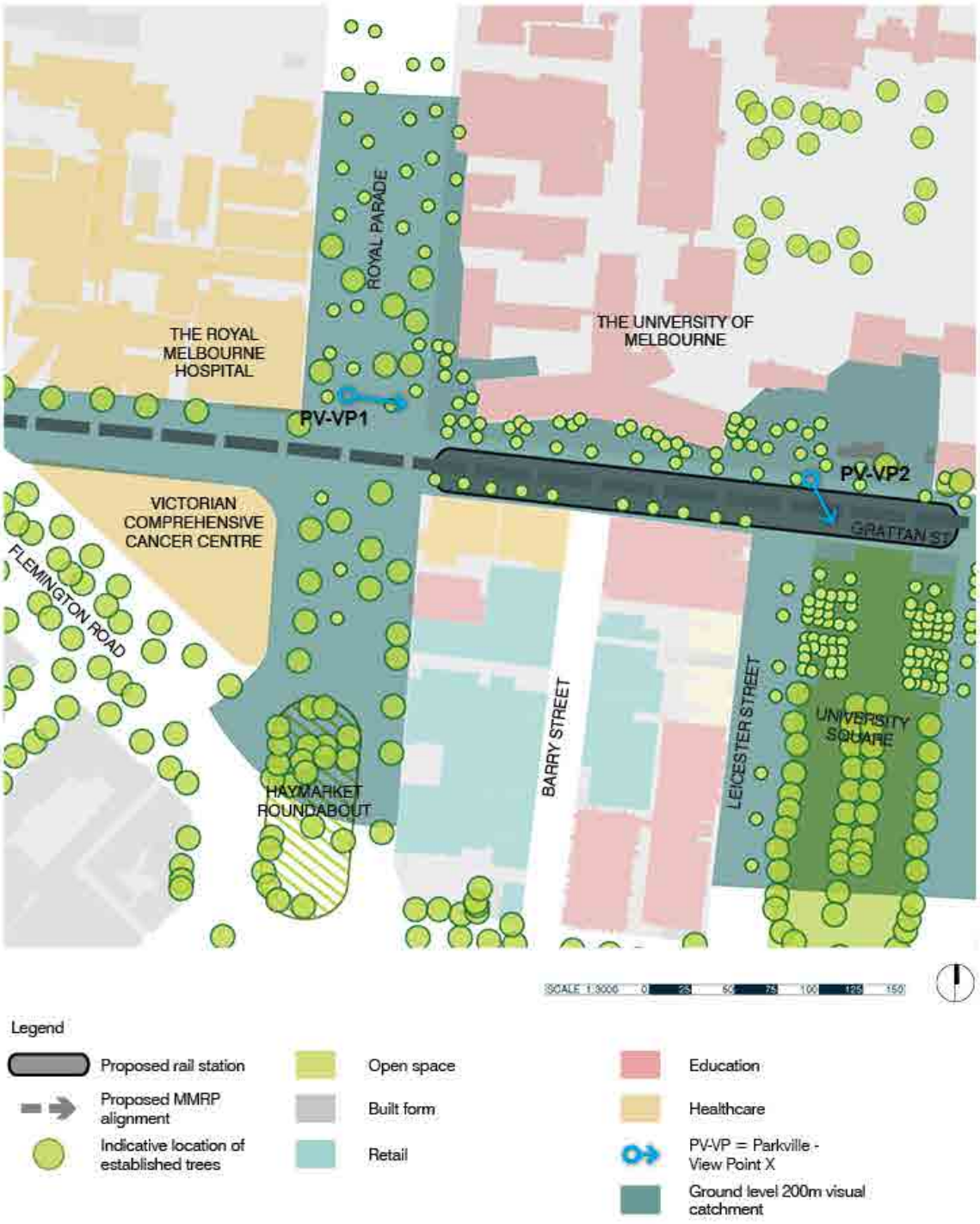

FIGURE 8-6: PARKVILLE PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS

8.4.4 VISUAL IMPACT

8.4.4.1 CONSTRUCTION

The proposed construction activities are temporary (4 years) and would be subject to mitigation measures such as acoustic hoarding up to 6 m in height that would screen the construction area. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration.*

The high sensitivity combined with a high level of visual prominence would result in a high visual impact during construction.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city users are accustomed to.

The construction lighting impacts for viewpoints are considered to be moderate given the existing lighting levels.

Visual Impact: High

8.4.4.2 OPERATION

The high visual sensitivity combined with a low to moderate modification level would result in an initial moderate to high visual impact, reducing to low over time as canopy vegetation matures.

The operational project is expected to generate lower levels of lighting than the construction phase. Therefore, the lighting impacts for viewpoints are considered to be low.

Residual Visual Impact: Low

FIGURE 8-7: PARKVILLE PRECINCT – EXISTING VIEW FROM P-VP1 – NORTH WEST CORNER OF ROYAL PARADE AND GRATTAN STREET

FIGURE 8-8: PARKVILLE PRECINCT – EXISTING VIEW FROM P-VP2 TOWARDS PROJECT – LOCATION OF PROPOSED VENT STACKS

8.4.5 IMPACTS ON LANDSCAPE VALUES

Royal Parade is a landscape of State Heritage Significance due to its wide, double boulevard forming a historically prominent gateway to the City of Melbourne. Grattan Street, although not subject to a significance rating, is a significant contributor to the overall landscape character of the precinct.

As demonstrated in ***Figure 8.9***, tree removal along Royal Parade would be minimised during the construction process. However, most trees along Grattan Street between Royal Parade and Leicester Street would require removal. However in accordance with the Urban Forest Strategy (2012) these trees have varying useful life expectancies with approximately 35 per cent requiring replacement within five years. Additionally trees lining the adjacent Barry and Leicester Streets, which contribute to local landscape character, would also require removal.

The majority of trees located on University Square would be removed. However, these are generally small and stunted specimens of low landscape value and in accordance with the Urban Forest Strategy (2012) most of these trees require replacement within five years, 10 of them within the year.

Canopy trees are the most significant contributor to landscape and public realm character and quality. Given a large number of trees are required to be removed and that the ground plane landscape is an urban streetscape with minimal ground plane planting (which can be replaced quickly), the initial landscape impacts of the project are expected to be high. Over time, as the canopy trees re-establish, the residual landscape impacts of the project are anticipated to reduce progressively to low.

Landscape Impacts: Moderate to High, reducing to low

8.4.6 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the relatively small footprint of the operational components of the project and the retention of most trees within Royal Parade.

However, as described above, the landscape and visual impacts resulting from the removal of canopy trees along Grattan Street, would take a significant length of time to meet the required objectives and criteria.

8.5 BENEFITS AND OPPORTUNITIES

Table *8-3* provides the benefits and opportunities associated with the Concept Design.

Table 8-3 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
Located under Grattan Street, to the east of Royal Parade.	Station entrances would be sensitively integrated into the urban landscape with opportunities to positively improve the public / private realm. Streetscape amenity of Grattan Street improved by increasing footpath widths.	Opportunity to upgrade the University Square. The components of the project can be located to respect key views along streets and to significant built and natural elements.

FIGURE 8-9: PARKVILLE PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

8.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 8-4 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 8-4 Environmental Performance Requirements for the precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Open Space – Recreation – University Square	Adverse impact on users of open space.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ Parkville station: University of Melbourne, Victorian Comprehensive Cancer Centre, Royal Melbourne Hospital, University Square Develop and implement a plan in consultation with the Office of Victorian Government Architect, the local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	*University of Melbourne Interface with Grattan Street* Guideline 2. Provide a design response that is respectful of the historic Gatekeeper's Cottage and Vice Chancellors House, including their landscape settings. *University Square, Leicester Street and Barry Street* Guideline 1. Integrate aboveground Melbourne Metro infrastructure with the City of Melbourne's proposed design for University Square, Barry Street and Leicester Street. *Royal Parade* Guideline 1. Retain and protect existing trees along Royal Parade. Guideline 2. Where tree removal is unavoidable, plant new trees in the same locations, creating favourable growing conditions with soil preparation throughout the anticipated root zone. Guideline 3. Design any above ground Melbourne Metro structures located within Royal Parade to minimise their visual bulk or solidity, especially for elements at or above eye level.	LV007 LV020 LV021 LV022 LV025 LV0323 LV045 LV046 LV047 LV050
Institutional - Health and Education	Adverse impacts on users of health and educational facilities			
Significant viewlines – along Royal Parade	Adverse impacts on significant viewlines			

9 Impact Assessment - Precinct 5: CBD North Station

The proposed CBD North station precinct contains the proposed station on the vibrant northern entrance to the CBD along the Swanston Street civic spine.

In accordance with the Urban Design Strategy (***Technical Appendix M***), the proposed design criteria relevant for the LVIA at the CBD North station precinct include:

- Redesigning Franklin Street to provide expanded pedestrian space for seating and other uses with enhanced amenity including plantings of new canopy trees, upgraded street lighting, etc.
- Above ground elements of the maintenance access and vent structure along A'Beckett Street between Swanston Street and Stewart Street to be:
  - Minimised in plan area and visual bulk, especially with respect to any element higher than 1 m above surrounding paving levels.
  - Considered for potential integration with other streetscape elements, such as lighting and signage, in order to minimise clutter in the street space.

9.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- La Trobe Street entrance provides a direct pedestrian link to the existing Melbourne Central station under La Trobe Street, surface connection to the existing tram lines running along Swanston and La Trobe Streets and has sufficient space to allow for possible future over-site development opportunities.
- La Trobe Street entrance footprint located across six properties at 391 Swanston Street, 200, 204, 208 and 212 La Trobe Street and 17 Little La Trobe Street which forms an 'L' shaped station entrance.
- The properties to be acquired for the La Trobe Street entrance are currently occupied by retail outlets and commercial space, with 200 La Trobe Street containing 49 residential apartments. This site and properties on Little La Trobe Street would be used to support the construction of the station within Swanston Street and to construct the station entrance and services.
- The La Trobe Street entrance requires some works in the La Trobe Street road reserve to connect to the Melbourne Central station; works are also required under Little La Trobe Street.
- An entrance is proposed to be located at Franklin Street to the east of Swanston Street.
- The Franklin Street entry is located in a cut and cover box which would provide space for an entry, egress and ventilation at surface and plant rooms, passenger circulation below ground; the design includes narrowing of Franklin Street east of Swanston Street and the retention of a lane of through traffic in each direction as well as the provision of access to RMIT and the City Baths loading bays.
- In addition to works on the east side of Franklin Street, ventilation fire egress and maintenance access would be provided in Franklin Street on the west side of Swanston Street; these works would be constructed on the south side of Franklin Street with traffic able to pass the site throughout construction.
- Additional ventilation and maintenance access would also be provided in A'Beckett Street between Stewart Street and Swanston Street. This would require surface construction.

Two new station entries and three ventilation ducts would be visible in the streetscape.

The station off Swanston Street is to be located off the main spine to maintain key views to the Shrine of Remembrance.

Swanston Street would be closed to vehicles between La Trobe and Franklin Streets which would allow for a pedestrian dominant precinct designed for refuge areas such as seating and canopy plantings in additional to maximising 'shop front' entry concourses.

The northern entry is to be located at Franklin Street and would be located within a widened southern footpath between Swanston and Victoria Streets. The space is to be designed as plaza for safe pedestrian movement and as a meeting point at this busy hub of the CBD.

The ventilation shafts would be integrated into the station entries where practical otherwise creatively designed to amalgamate into the surrounding urban landscape. These are required in A'Beckett and Franklin Streets, west of Swanston Street.

The construction period for Precinct 5 is around 5 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- Demolition of footpaths, road pavement and removal of street tress in the vicinity of the northern station entrance on Franklin Street east and the shafts and infrastructure on Franklin Street west and A'Beckett Street. Demolition of a number of buildings on the north western corner of La Trobe and Swanston Streets for the southern station entrance.
- Establishment of work sites, including 2.5 m high acoustic hoardings, potentially impacting on a number of mature trees (subject to design alternative design options) and acoustic construction sheds. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.
- Station structural works.
- Construction of station entrances and connection to Melbourne Central station, including an excavation area of approximately 6,450 m^2.
- Several areas adjacent to the station site are proposed for use as construction sites as described above for the station entry, and ventilation footprints. Where these areas are not in existing road reserves, buildings would need to be demolished prior to construction commencing.

9.2 KEY ISSUES

The key issues associated with the Concept Design are summarised in ***Table 9-1***:

Table 9-1 Key issues associated with the Concept Design

Concept Design	Issue
Station located under Swanston Street, between Franklin and La Trobe Streets	Views to the Shrine of Remembrance and city landmark buildings.
Station entrances on the east side of Franklin Street	Existing prominence of and views to City Baths along Franklin Street. Franklin Street closure due to excavation during construction. RMIT and City Baths service functionality altered.
Station entrances on the corner of Swanston and La Trobe Street	Pedestrian footpath along La Trobe Street.

Concept Design	Issue
Station connections to the underground connection to Melbourne Central station, excluding 393 Swanston Street	Melbourne Central Station functionality.
Plant room and above ground components located under Franklin Street, between Swanston and Bowen Streets	Existing prominence of and views to City Baths along Franklin Street. RMIT and City Baths service functionality altered.

9.3 EXISTING CONDITIONS

9.3.1 LAND USE

Swanston Street is the main civic spine of the city and plays a key role in the city's identity. The precinct contains a number of major city institutions and it is the northern gateway to the CBD grid, as well as a significant shopping destination as illustrated in ***Figure 9-1*****.**

It is characterised by major retail centres such as Melbourne Central, QV and the recently opened Emporium, as well as State heritage listed buildings such as the State Library of Victoria and its forecourt (1856) and the City Baths (1903). The contemporary architecture of the RMIT University combined with the heritage architecture creates a vibrant streetscape of contrasting, yet cohesive character.

9.3.2 BUILT FORM

The existing built form of Swanston Street along CBD North is predominantly low to medium scale which can be seen in ***Figure 9-4***. This includes dwellings, institutional buildings and commercial uses. Major retail uses include QV and Melbourne Central. Whilst the area is largely developed, there are numerous infill or redevelopment opportunities to increase density. A number of taller new buildings are commencing construction and a number of taller buildings up to 80 levels have recently been granted planning approval. A number of these developments are proposed student accommodation. One is located near the corner of Swanston and Little La Trobe Streets.

9.3.3 LANDSCAPE CHARACTER

The State Library forecourt is one of the most highly utilised urban spaces in the northern CBD and is seen in ***Figure 9-2***. Its major attraction is its open aspect that catches the sun for most of the day. A large proportion of its surface is grassed.

As illustrated in ***Figure 9-3***, Swanston Street is a major boulevard, with a high quality public domain, that physically and visually connects the north and south parts of the city and the Carlton and United Brewery (CUB) development site to the Shrine of Remembrance. The CUB site continues to be developed, expanding the precinct across Victoria Street.

The trees in the section of Swanston Street between La Trobe and Franklin Streets are generally immature to semi-mature and do not as yet provide effective canopy coverage or contribute significantly to the amenity of the streetscape.

Beyond Swanston Street, a finer grained network of accessible streets and public and private spaces form a vibrant, bustling part of the city for students, shoppers and visitors. These smaller east-west streets and laneways are generally devoid of tree planting. The urban character is defined by hard-edged, inner city built form.

A new DDA compliant tram stop, in conjunction with upgraded streetscape enhancements, has recently been completed near the corner of Swanston and Franklin Streets. A DDA compliant tram stop is also located near the corner of Swanston and Latrobe, between Melbourne Central and the State Library.

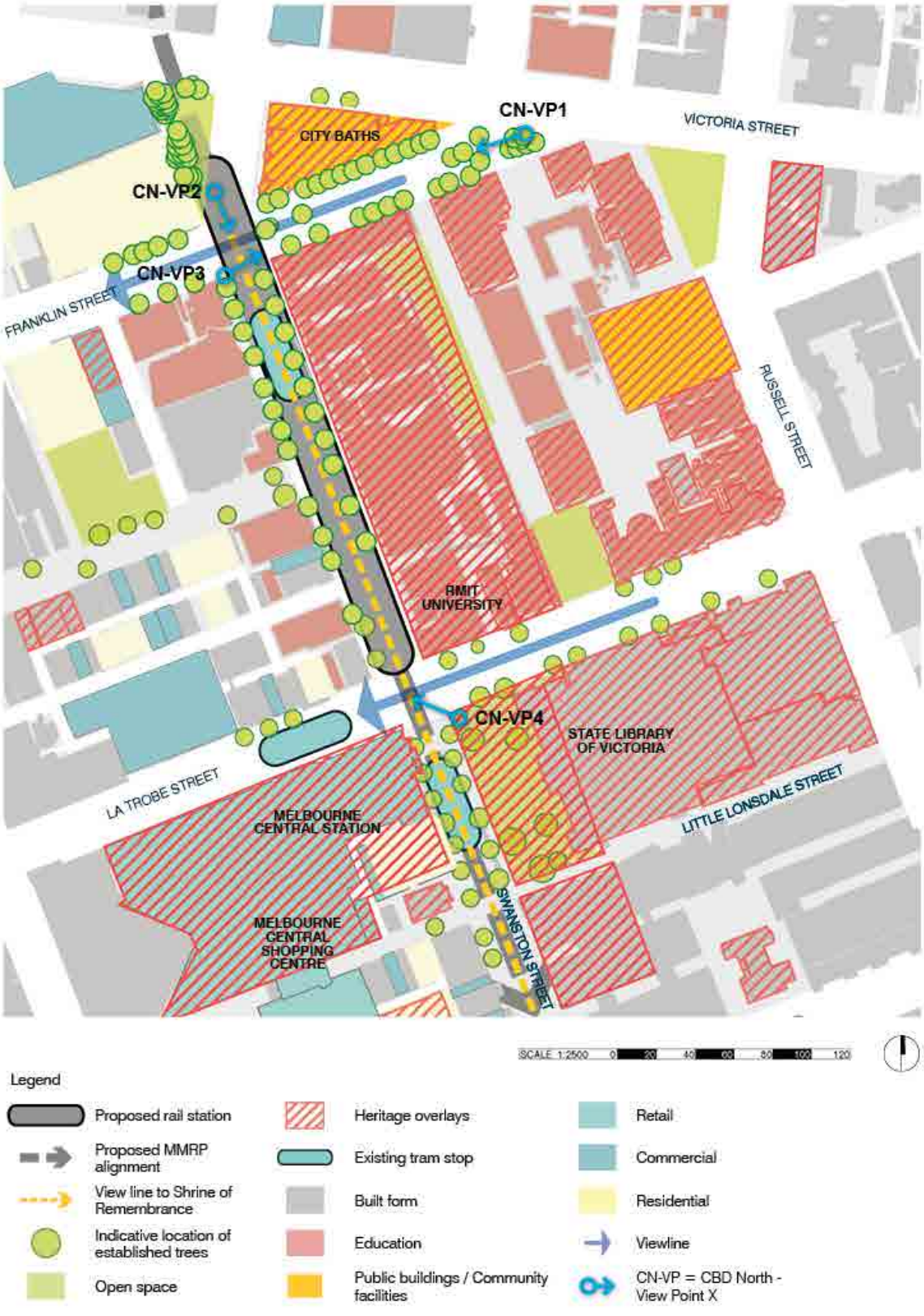

FIGURE 9-1: CBD NORTH PRECINCT - EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

FIGURE 9-2: CBD NORTH PRECINCT - THE STATE LIBRARY FORECOURT IS A MAJOR PUBLIC SPACE IN THE CITY'S NORTH

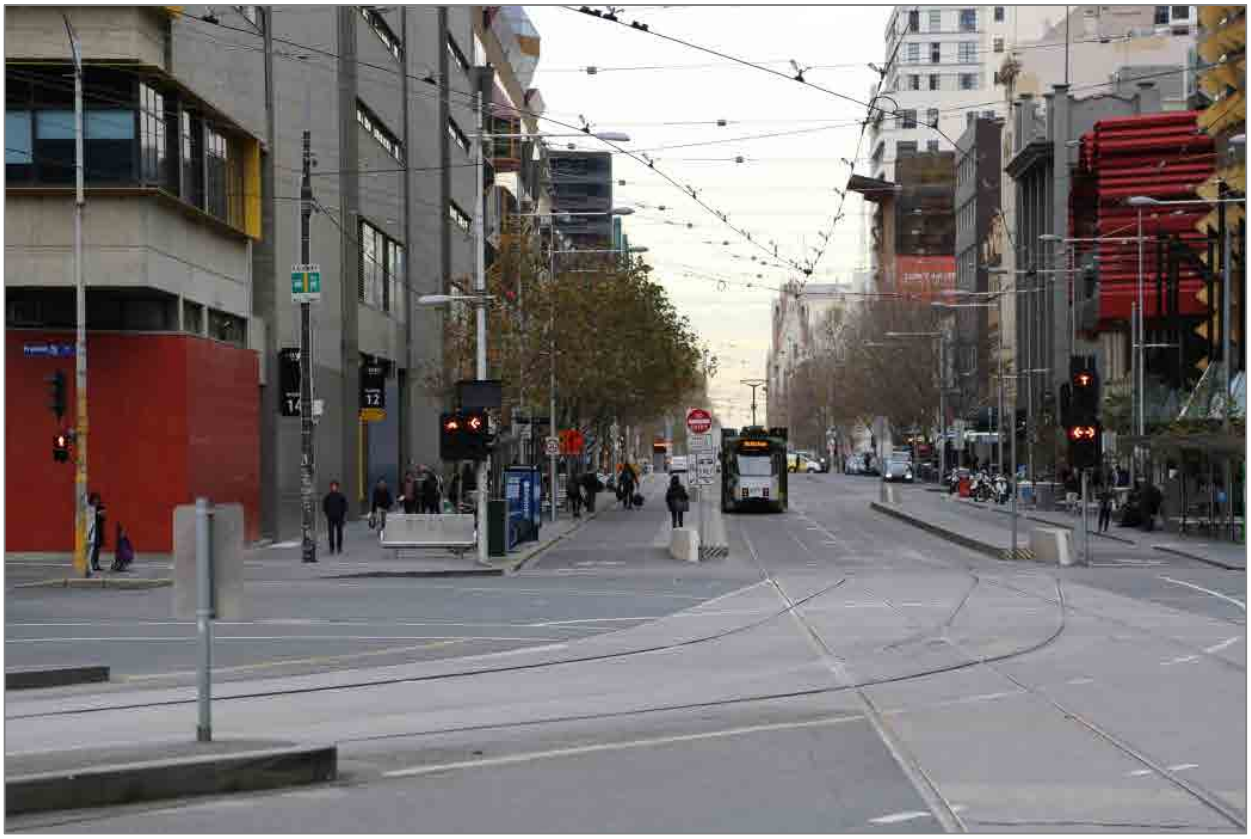

FIGURE 9-3: CBD NORTH PRECINCT - SWANSTON STREET IS A KEY MOVEMENT AND LANDSCAPE SPINE

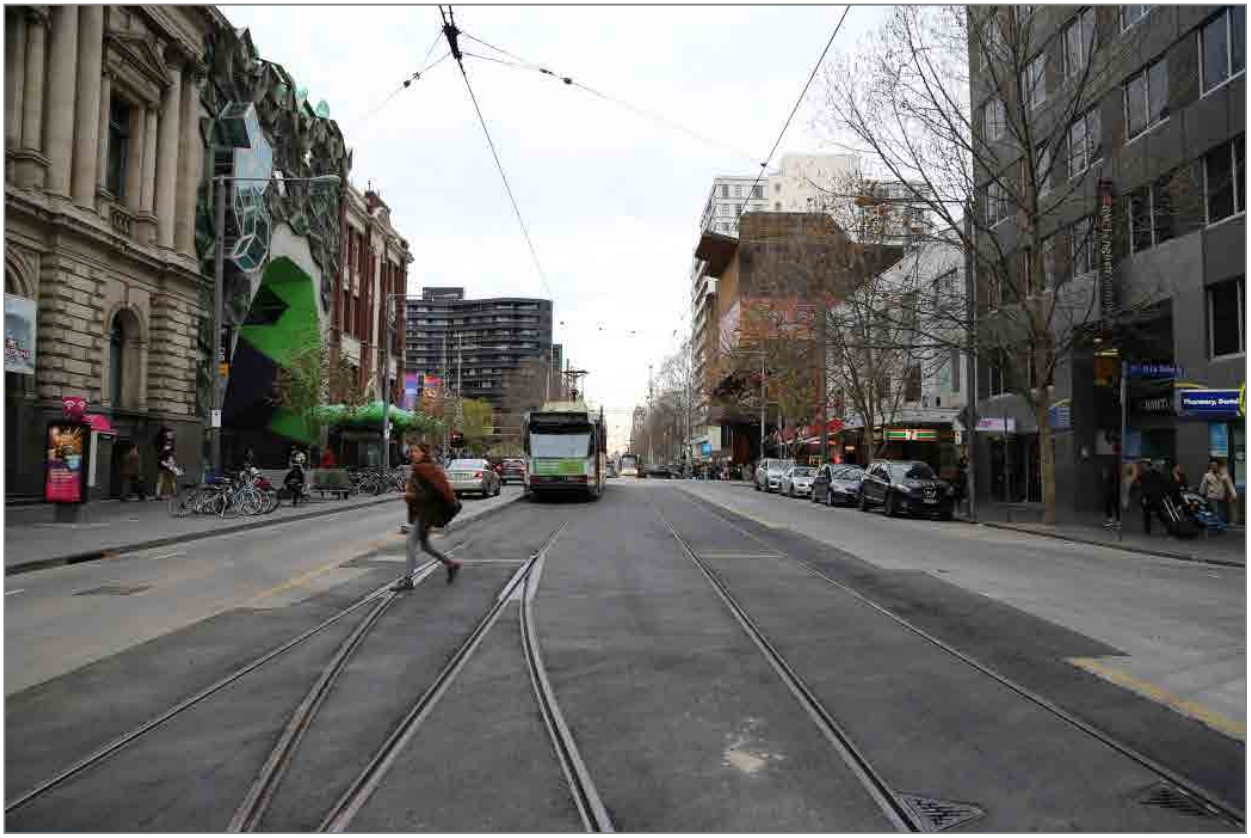

FIGURE 9-4: CBD NORTH PRECINCT - SWANSTON STREET IS ALIGNED ALONG A VISUAL AXIS TO THE SHRINE OF REMEMBRANCE AND VIEWS ARE POSSIBLE FROM NEARER THE LATROBE STREET INTERSECTION

9.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the foreground, or local setting, of the project is outlined in ***Table 9-2***:

Table 9-2 Land use sensitivity

Land Use	Visual Sensitivity
Residential / Accommodation	High.
Community Facilities	High.
Education	High.
Retail	High.
Commercial	Moderate.

9.3.4.1 HIGH SENSITIVITY RECEPTORS

- RMIT University – CN-VP1 and CN-VP3.
- State Library Forecourt – CN-VP4.
- City Baths – CN-VP2.
- Melbourne Central
- Retail – strip retail.
- Higher density residential development, including student accommodation– CN-VP2.

9.3.5 KEY VIEWLINES

The key views with the potential to be impacted are:

- The northern end of Swanston Street is slightly elevated and distant views are afforded to the south along Swanston Street and St Kilda Road to the Shrine of Remembrance, one of the most important view lines within the CBD.

- Views to the State Library façade and forecourt.

9.3.6 ABILITY TO ACCOMMODATE CHANGE

The setting of the proposed station is highly developed and comprised of contemporary and heritage architecture set within a streetscape setting that has undergone recent enhancement works. Sensitive viewpoints enclose the proposed station location.

The setting has been, and is currently subject to change as a result of the development of contemporary new buildings associated with the RMIT University and high-density apartment development. Therefore, the setting is not immune from change and it has the ability to accommodate change that is appropriately designed and managed.

9.4 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

9.4.1 VISUAL CATCHMENT

As illustrated in ***Figure 9-5***, the visual catchment is contained by built form of varied heights fronting Swanston, Franklin, A'Beckett, La Trobe and Victoria Streets.

9.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment are illustrated in ***Figure 9-5*** and include:

- Residential / Accommodation – Verve Apartments.

- Educational Facilities – RMIT.

- Open Space – Urban Plaza – State Library Forecourt.

- Retail – Melbourne Central and Swanston and LaTrobe Streets.

- Community Facility – City Baths.

Sensitivity Level: High

9.4.1 VISUAL MODIFICATION TO THE SETTING

9.4.1.1 CONSTRUCTION

The construction area is located within a highly utilised urban setting. Views of the construction areas, particularly those on Franklin Street, would be possible from both street level viewpoints as well as elevated sensitive viewpoints within RMIT and adjacent apartment buildings, as shown in ***Figure 9-7***.

A degree of visual mitigation of construction impacts for ground level viewpoints would be achieved through the use of 2.5m high hoardings and acoustic construction sheds. However, these would also block non elevated views. Visual mitigation of overlooking viewpoints would not be as effective. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

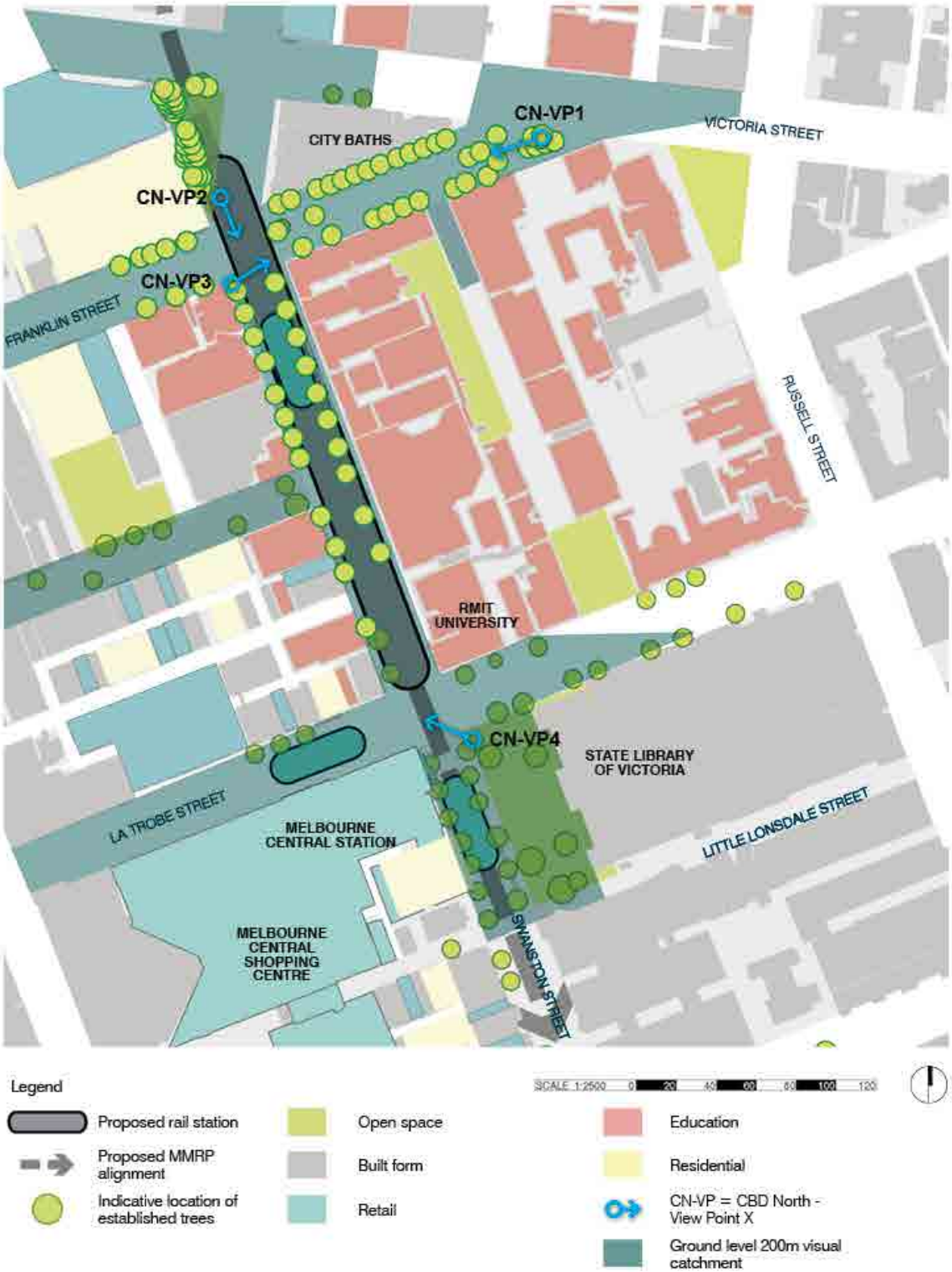

FIGURE 9-5: CBD NORTH PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

As a result, there would be an overall high visual modification level for adjacent viewpoints during construction.

Construction activities would be located outside of the Swanston Street visual axis to the Shrine of Remembrance.

Visual Modification Level: High

9.4.1.2 OPERATION

The project components are located in a well-established urban setting and views from ground level and elevated viewpoints would be possible. However, the project components in Franklin Street and A'Beckett Street would be generally of a small to medium scale and would be inserted into the fabric of the streetscape and built form of the setting (refer to ***Figure 9-6*** and ***Figure 9-8***). Associated streetscape improvement works, undertaken in conjunction with the construction of the station components, would contribute to improved physical and visual amenity. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of canopy tree plantings.

The project components at the corner of Swanston and La Trobe Streets are most visible from the State Library Forecourt, as shown in ***Figure 9-9***, would be generally like-for-like insertions into the fabric of the streetscape and built form. As a result, there would be an overall low visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.

When developed in accordance with the directions of the Urban Design Strategy (Technical Appendix M) there would be visual elements in this precinct, particularly the station entry at the corner of La Trobe and Swanston Streets, which would be a positive contribution to the urban landscape.

Visual Modification Level: Low to Low beneficial

9.4.2 VISUAL IMPACT

9.4.2.1 CONSTRUCTION

The section of Swanston Street between Victoria and La Trobe Streets is highly utilised and subsequently well lit. The construction lighting impacts for the surrounding viewpoints are considered to be low given the existing lighting levels.

The proposed construction activities are temporary (5.5 years) and would be subject to mitigation measures such as acoustic hoarding up to 2.5 m in height that would screen the construction area. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

The high visual sensitivity combined with a high visual modification level would result in a high visual impact to users within the visual catchment of this precinct.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city users are accustomed.

Visual Impact: High

9.4.2.2 OPERATION

The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for surrounding viewpoints are considered to be low.

The high sensitivity combined with a low to low beneficial modification level would result in a moderate visual impact.

Over time, as trees re-establish, the residual visual impacts of the project are anticipated to reduce progressively to low. When developed in accordance with the directions of the Urban Design Strategy (Technical Appendix M), there would be visual elements in this precinct, particularly the station entry at

the corner of La Trobe and Swanston Streets, which would be a positive contribution to the urban landscape.

Residual Visual Impact: Low to Low beneficial

FIGURE9-6: CBD NORTH PRECINCT - SETTING OF CN-VP1: EXISTING VIEW WEST ALONG FRANKLIN STREET NEAR INTERSECTION OF VICTORIA STREET

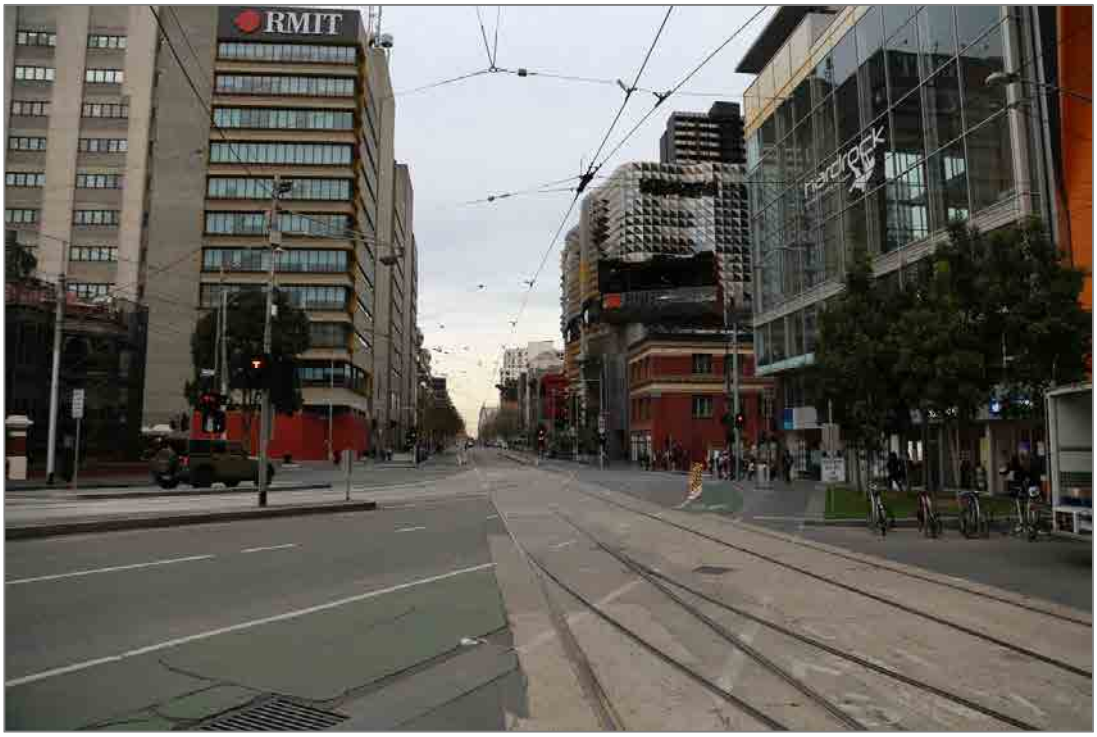

FIGURE 9-7: CBD NORTH PRECINCT – EXISTING VIEW FROM CN-VP2 SOUTH ALONG SWANSTON STREET FROM THE 'TRAMWAYS TRIANGLE' AT THE INTERSECTION OF VICTORIA STREET

FIGURE 9-8: CBD NORTH PRECINCT – EXISTING VIEW FROM CN-VP3 TOWARDS PROJECT AREA – NORTHERN STATION ENTRANCE

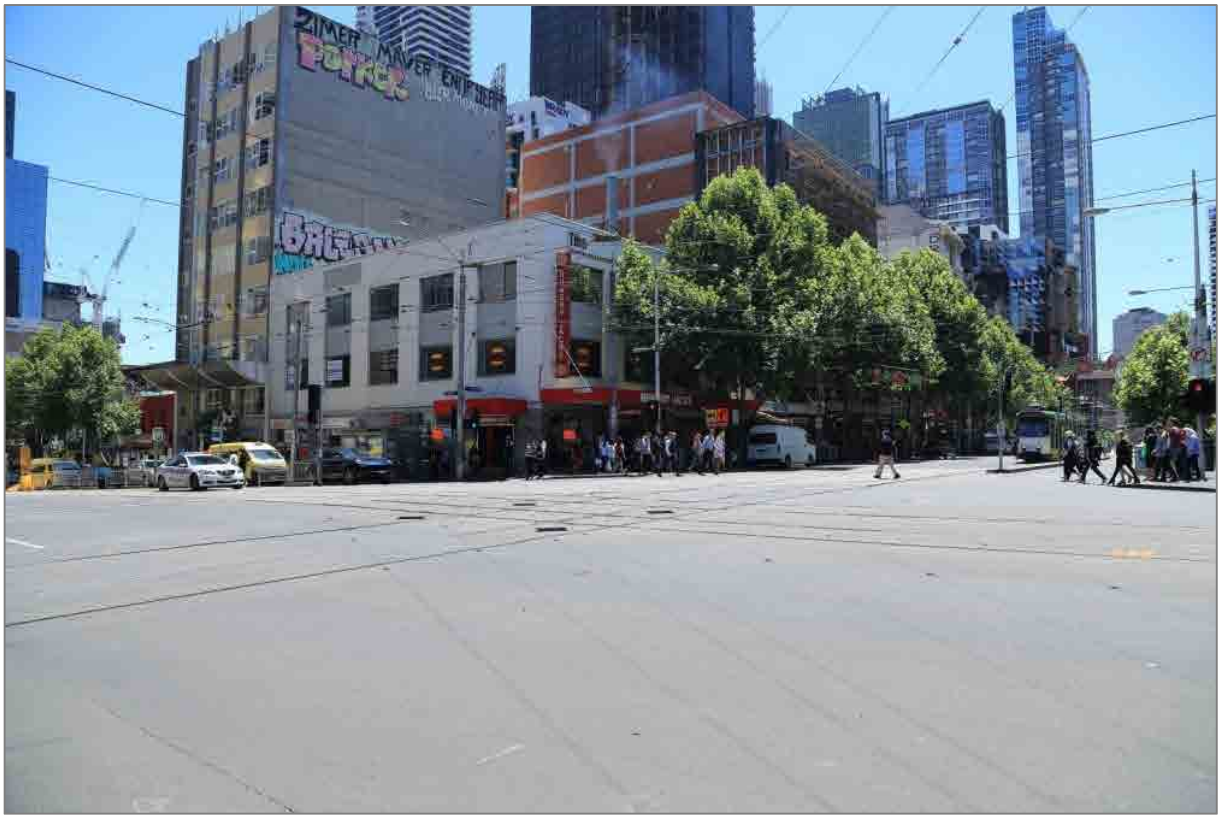

FIGURE 9-9: CBD NORTH STATION – EXISTING VIEW FROM CN-VP4, THE STATE LIBRARY, TOWARDS PROPOSED STATION ENTRY ON THE CORNER OF LA TROBE AND SWANSTON STREETS

9.4.3 IMPACTS ON LANDSCAPE VALUES

Swanston Street is one of Melbourne CBD's major boulevards and pedestrian and cyclist spines that visually connects the north and south parts of the city, as well the former Carlton and United Brewery (CUB) site to the significant axis to the Shrine of Remembrance.

As illustrated by ***Figure 9-10***, tree removal along Swanston Street would be minimised during the construction process. However, most of the semi-mature trees along Franklin Street between Swanston Street and Victoria Street would require removal. Additionally, immature trees to the south west of the Swanston and Franklin Street intersection would require removal.

Given the trees to be removed are either immature or semi mature ,and do not as yet contribute significantly to the landscape character, the initial landscape impacts of the project are expected to be low to moderate. Over time, as the canopy trees re-establish, the residual landscape impact of the project is anticipated to reduce progressively to low.

Landscape Impacts: Low to moderate, reducing to low

9.4.4 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the relatively small footprint of the operational components of the project as well as the retention of canopy trees along Swanston Street.

However, as described above, the landscape and visual impacts resulting from the removal of semi-mature trees along Franklin Street, would take time to meet the required objectives and criteria.

9.5 BENEFITS AND OPPORTUNITIES

Table 9-3 provides the benefits and opportunities associated with each part of the Concept Design.

Table 9-3 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
Station located under Swanston Street, between Franklin and La Trobe Streets.	Infrastructure is underground and not visible on the streetscape.	Ensure the components of the project are located to respect key views along streets and to significant built and natural elements.
Station entrances on the east side of Franklin Street	Entry located close to RMIT and City Baths. Streetscape amenity of Franklin Street improved by increasing footpath widths.	
Station entrances on the corner of Swanston and La Trobe Street	Entry located on prominent CBD corner. Streetscape amenity of Swanston Street improved by increasing footpath widths.	
Station connections to the underground connection to Melbourne Central station, excluding 393 Swanston Street	Subterranean connection to existing train station.	Reduce the project construction footprint by internalising within Melbourne Central station as much as possible.

Concept Design	Benefits	Opportunities
Plant room and associated above ground infrastructure located under Franklin Street, between Swanston and Bowen Streets	Plant room does not encroach on the existing ground level streetscape.	

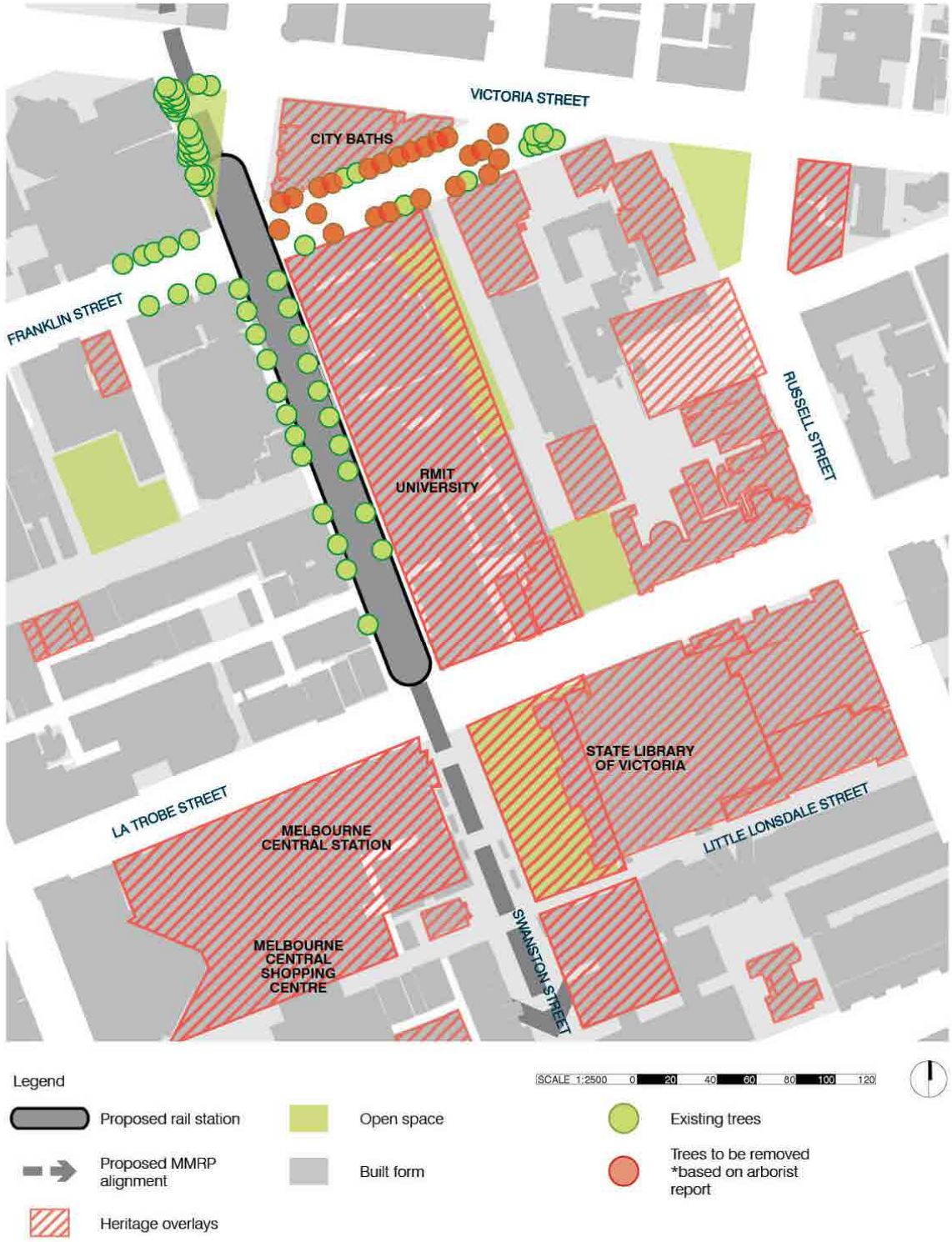

FIGURE 9-10: CBD NORTH STATION PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

9.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 9-4 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 9-4 Environmental Performance Requirements for precinct

Asset / Value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Open Space – Urban Plaza – State Library Forecourt	Adverse impact on users of open space.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ CBD North station: Royal Melbourne Institute of Technology, the State Library Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	*Franklin Street* Guideline 3. Provide expanded pedestrian space for seating and other uses with enhanced amenity including plantings of new canopy trees, upgraded street lighting, etc. *A'Beckett Street and Stewart Street* Guideline 4. Above ground elements of the maintenance access and vent structure should be located and designed to ensure optimal flexibility in use of the public open space and to minimise visual impacts: – Minimise aboveground structures' width, breadth and visual bulk, especially with respect to any element higher than 1m above surrounding paving levels. – Clad cladding materials and a high standard of architectural detailing to ensure the structures present well to nearby pedestrians, and are durable and easy to maintain in good condition. – Consider potential integration with other streetscape elements, such as lighting and signage, in order to minimise clutter in the street space.	LV008 LV015 LV019 LV023 LV024 LV033 LV040 LV044 LV048 LV049
Elevated Residential / Accommodation Areas – Swanston, Franklin and A'Beckett Streets	Adverse impacts on views from residential amenity			
Retail stores	Adverse impacts on retail users			
Significant viewlines - along Swanston Street and St Kilda Road to Shrine of Remembrance	Adverse impacts on significant viewlines			
Institutional - Education	Adverse impacts on users of educational facilities			

10 Impact Assessment - Precinct 6: CBD South Station

The proposed CBD South station precinct contains the proposed station at the southern entrance to the CBD along Swanston Street civic spine.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the CBD South Station Precinct include:

- Maintaining a respectful relationship with nearby civic buildings.
  - Minimise the size and visual prominence of the station entry, ensuring that it does not exceed the width of other civic stairs on Swanston Street (Town Hall Portico 16 m, State Library central stairs 12 m, St Pauls Cathedral 10.5 m).
  - Maintain uncluttered views to St Pauls Cathedral from within the Square, in particular to the facade fronting onto Flinders Lane and the altar window.
  - Maintain views of the Town Hall clock tower from within the Square (noting that views of the lower facade are now generally obstructed).
- Minimising any net loss and fragmentation of public open space.
  - Where possible, co-locate ventilation shafts and other aboveground infrastructure with the Station entry, within the Westin Hotel frontage, or with other aboveground structures such as the Westin Hotel car park exhaust vent.
  - Minimise aboveground elements including skylights and other optional architectural features that affect the Square's useable open space at street level.
- Creating a high quality civic open space that accommodates passive recreational use and staged events, and achieves a balance of qualities as a place of respite and a prominent and actively used civic space.
- Maintaining a double row of Plane Trees along Swanston Street.
- Minimising the extent of the existing structure occupied by station infrastructure, where possible using the lower levels and allowing for active uses near ground surface level.

10.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- A pedestrian link would run under Flinders Street directly into the main concourse at Flinders Street Station.
- The Flinders Street entrance facing both Swanston Street and Flinders Street includes direct underground connections to Flinders Street.
- An entrance with an underground connection to Melbourne Visitors Centre at Federation Square, which requires further design development.
- The southern entrance includes a direct underground connection to Flinders Street Station. It occupies allotments in Flinders Street and Swanston Street.
- Ventilation shafts and emergency access points would be required within public realm areas.

Three new station entries and three ventilation ducts would be visible in the streetscape.

The most northerly would be located at the northwest corner of the City Square near the corner of Swanston and Collins Streets. Although the City Square would be impacted, it is expected that the future

functions of the City Square would be similar to those that currently occur and the streetscape remediated including replacement of the Plane Trees along Swanston Street.

The major southern entry would be located near the northwest corner of Swanston and Flinders Streets. It is proposed to occupy the footprint of a number of buildings that adjoin Young and Jacksons and have "shop front" entries that face Flinders and Swanston Streets which can be seamlessly integrated within the existing built form fabric and would also provide opportunities to contribute to the architectural excellence of the precinct. Again the streetscape is proposed to be remediated considering opportunities to improve pedestrian movement such as footpath widening.

The second southern entry would be located within Federation Square near the corner of Flinders and Swanston Street immediately to the east of the visitor information centre. The station entry is proposed to have a minimal footprint and would be inserted within the existing ground plane of the square. Materials, particularly paving, would be consistent with that of the square.

The exits from the station are proposed to connect to a number of "dead end" lanes - Cocker Alley, Scott Alley and Royston Place - providing opportunities for activation of laneway frontages and endowing the station with a character that is typical of the fine grain of Melbourne.

The ventilation ducts would be integrated into the station entries where practical otherwise creatively designed to amalgamate into the surrounding urban landscape.

The construction period for Precinct 6 is around 4 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- Demolition of footpaths, road pavement and removal of street trees in the City Square and the removal of paving and ramps at the north western corner of Federation Square. Demolition of a number of buildings behind Young and Jacksons on the north western corner of Flinders and Swanston Streets for the south western station entrance.

- Establishment of construction work sites, including potentially impacting a number of mature trees (subject to design alternative design options).

- Establishment of site offices, materials storage and laydown, acoustic construction sheds and 2.5 m high acoustic hoardings at City Square. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration.*

- Construction of station entrances and connections to Flinders Street Station and Federation Square, including an excavation area of approximately 4,400 m^2.

- Restoration of Swanston Street post-construction.

- A construction site is proposed at City Square, currently occupied by a public plaza with retail uses and a car park in the basement below.

- The Flinders Street and potentially Federation Square connections would require a closure of Flinders Street (potentially as early works) to construct the structure under which the connection would be excavated linking Flinders Street Station to CBD South station; Advanced ground treatment works are also likely to be required in this location.

- The Flinders Street underpass is expected to be constructed using cut and cover techniques. Road closures and resulting tram infrastructure reinstatement may flow along Flinders Street to Elizabeth Street and Russell Street. Public entrance access from Federation Square to CBD South is proposed to be mined with decline structures constructed using cut and cover techniques.

10.2 KEY ISSUES

The key issues associated with the Concept Design are summarised in ***Table 10-1***.

Table 10-1 Key issues associated with the Concept Design

Concept Design	Issue
Station located under Swanston Street, between Collins and Flinders Streets.	Views to the Shrine of Remembrance and city landmark buildings. Swanston Street tree boulevard to be reinstated after construction.
Collins Street entrance at City Square	City Square site and Swanston Street disturbed during construction. St Paul's Cathedral and Westin Hotel interface to be sensitively designed and managed.
Flinders Street entrance including Port Phillip Arcade with underground connection to Flinders Street station	Port Phillip Arcade to be reconstructed. All laneway connections adjacent to the project to be sensitively managed during construction. Flinders Street Station interface to be sensitively designed and managed for underground connections.
Underground entrance connection to Federation Square	Corner intersection should allow for universal access during construction.

10.3 EXISTING CONDITIONS

10.3.1 LAND USE

Flinders Street Station, shown in ***Figure 10-2***, is Victoria's most used railway station. It connects to the main retail core of the CBD, across the Yarra River to Southbank and to the major sports facilities at Yarra Park, Melbourne Park and Olympic Park as seen in ***Figure 10.1***.

Southbank is home to the National Gallery of Victoria (NGV), Crown Casino, Eureka Tower and the Melbourne Convention Centre, as well as significant areas of high density hotel and residential use.

Federation Square and the City Square, illustrated in ***Figure 10-3*** and ***Figure 10-4*** respectively, are two of Melbourne's main civic event spaces. Federation Square in particular hosts events which draw large crowds.

10.3.2 BUILT FORM

The quality of built-form along Flinders and Swanston Streets is variable, with State-listed heritage buildings such as the Manchester Unity building, the Melbourne Town Hall, St Paul's Cathedral, Young and Jackson's Hotel, Flinders Street Station and the Nicholas building being located between buildings that do not add to the overall streetscape character.

Federation Square, with its highly contemporary built form and external plazas, provides an interesting visual counterpoint to the heritage buildings on the opposite corners. It houses a theatre, the Ian Potter Centre extension of the NGV, the Melbourne Visitor Centre and a host of bars, restaurants and event spaces. CBD South Station is also the gateway to Melbourne Park, AAMI Park Stadium and the MCG.

10.3.3 LANDSCAPE CHARACTER

As illustrated in ***Figure 10-5***, Swanston Street is the main civic spine of the city and has an important role in the city's structure and identity. A key function of the precinct's public spaces is to give people the opportunity to experience a sense of civic pride and ownership. In the future, the role of Swanston Street would be reinforced as the city's primary boulevard and connection, from Domain station to Parkville station, with distinct character differences along its alignment.

Strong physical and visual connections exist along Swanston Street, between the Shrine of Remembrance and the visual anchor point to the north of the city at the former CUB site.

The Swanston Street streetscape has been continuously upgraded over the past years, including replanting of the street trees which is seen in ***Figure 10-6***. Therefore, the tree canopy is still developing and does not provide full canopy cover as it does in streets such as Collins Street.

The City Square is a key urban space. Whilst not highly developed, its informality allows for flexible uses and together with the space around the Town Hall portico, provides visual breadth to the street.

10.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the foreground, or local setting, of the project is outlined in ***Table 10.2***:

Table 10-2 Land use sensitivity

Land Use	Visual Sensitivity
Residential / Accommodation	High.
Community Facilities	High.
Retail	High.
Open Space – Passive Recreation	High.
Commercial	Moderate.
Commuter Rail	Moderate.

10.3.4.1 HIGH SENSITIVITY RECEPTORS

- City Square – CS-VP3 and CS-VP4.
- Westin Hotel – CS-VP4.
- Federation Square – CS-VP1.
- St Paul's Cathedral – CS-VP2 and CS VP3.
- Melbourne Town Hall. CS-VP5.
- Retail.

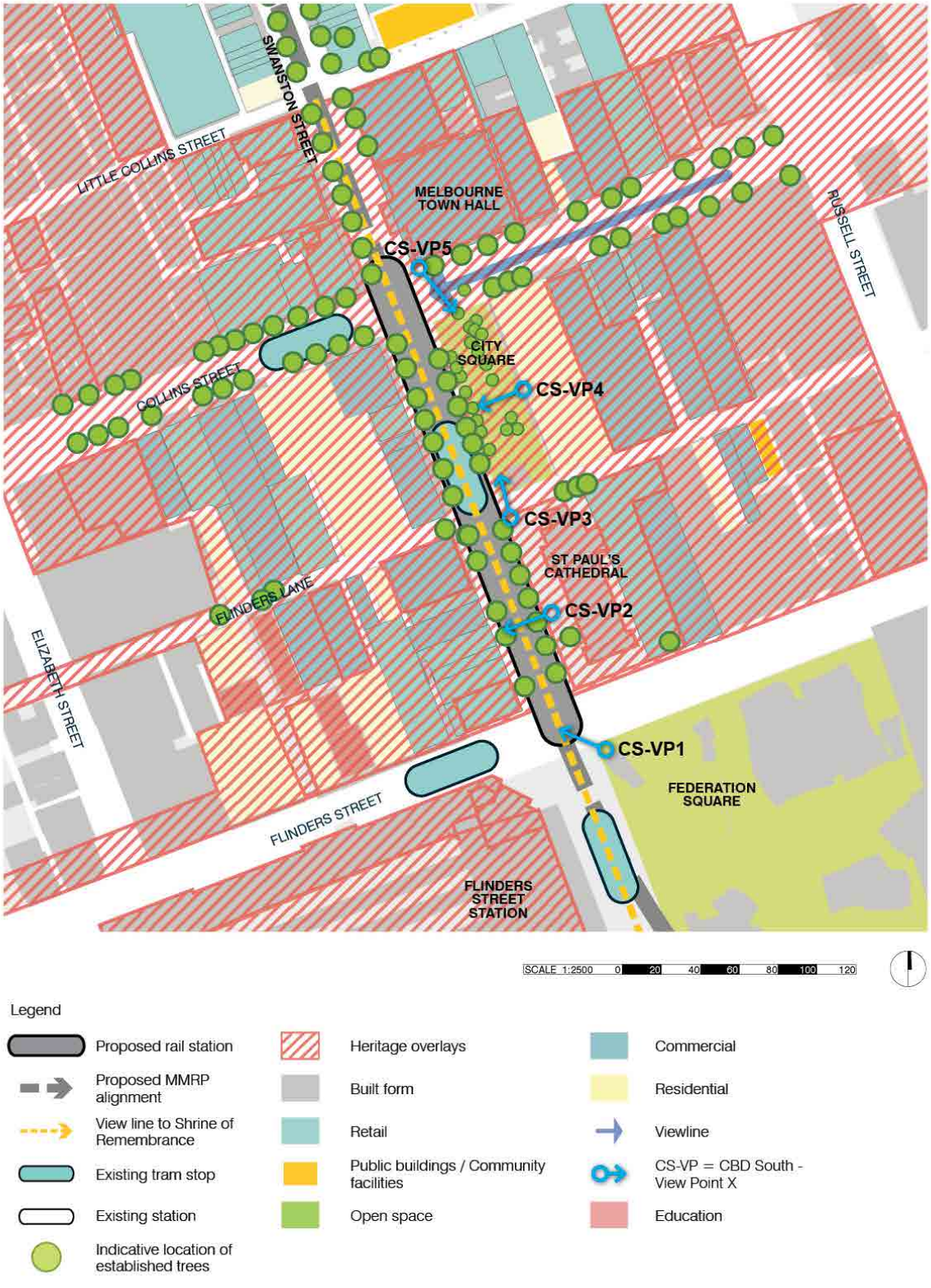

FIGURE 10-1 CBD SOUTH PRECINCT – EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

FIGURE 10-2: CBD SOUTH PRECINCT - FLINDERS STREET STATION IS A KEY LANDMARK

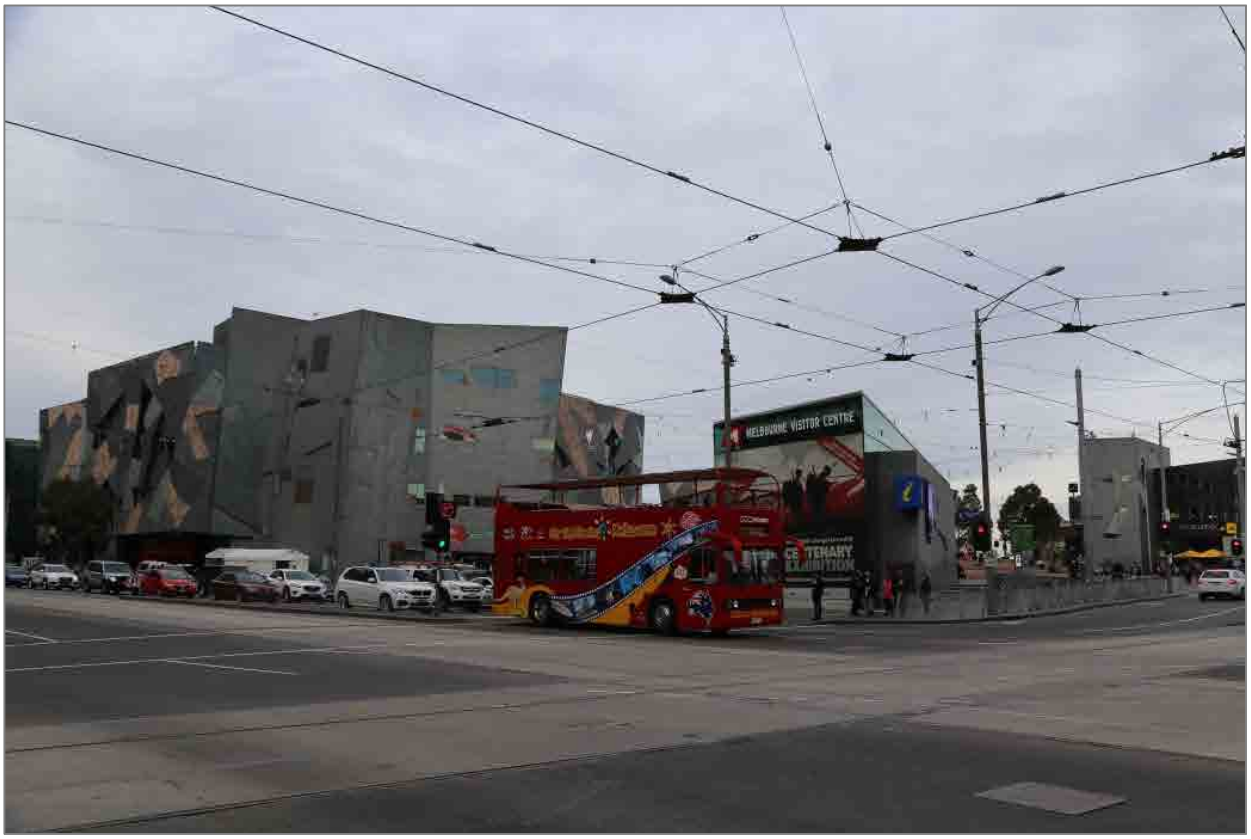

FIGURE 10-3: CBD SOUTH PRECINCT - FEDERATION SQUARE IS THE KEY URBAN SPACE WITHIN THE CITY

FIGURE 10-4: CBD SOUTH PRECINCT - THE CITY SQUARE IS A KEY LOCATION FOR MAJOR EVENTS AND FESTIVALS

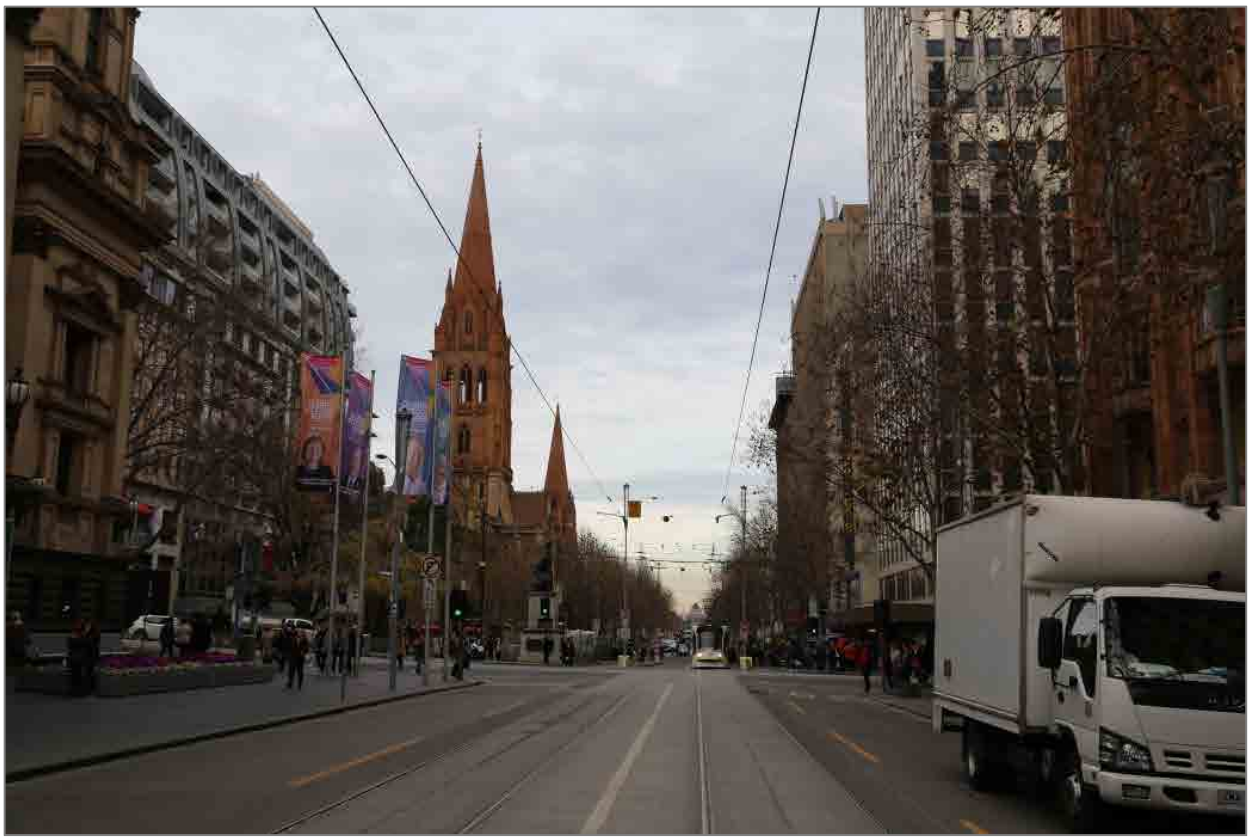

FIGURE 10-5: CBD SOUTH PRECINCT - SWANSTON STREET IS A SIGNIFICANT VISUAL CONNECTION TO THE SHRINE OF REMEMBRANCE

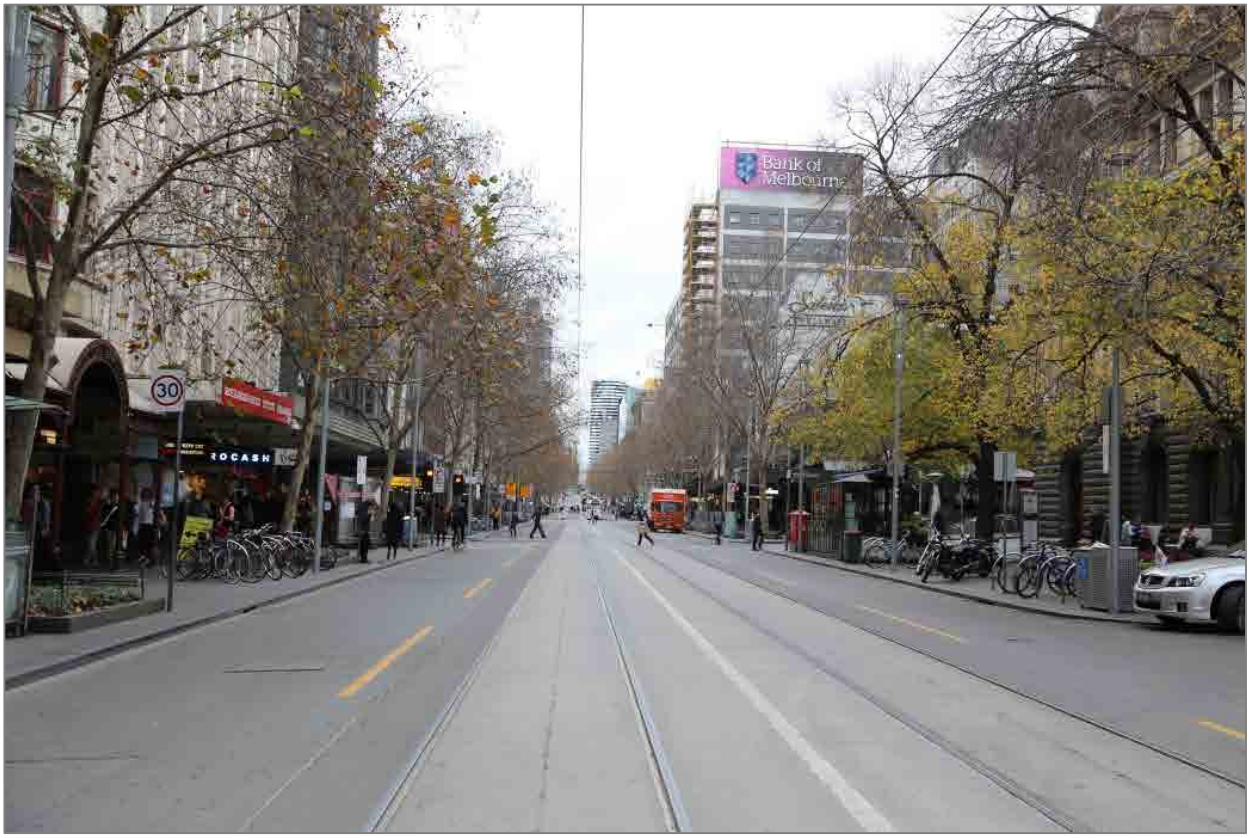

FIGURE 10-6: CBD SOUTH PRECINCT - MATURE CANOPY TREES CREATE A STRONG STREETSCAPE CHARACTER

10.3.5 KEY VIEWLINES

The key views with the potential to be impacted are:

- Views north and south along Swanston Streets and Princes Bridge / St Kilda Road.
- Elevated view west from Collins Street near Russell Street to the Swanston and Collins Street intersection.
- Views to St Paul's Cathedral from the south and also from City Square.
- Views to heritage buildings – Young and Jacksons Hotel and Nicholas building.
- Views to Flinders Street Station.
- Views to Federation Square.
- Elevated views over the project from the Westin Hotel.

10.3.6 ABILITY TO ACCOMMODATE CHANGE

The setting of the proposed station is highly developed and comprised primarily of heritage architecture set within a high quality streetscape setting. Sensitive viewpoints enclose the proposed station location.

The setting has been, and is currently subject to change as a result of the development of Federation Square and City Square. Therefore, the setting is not immune from change and it has the ability to accommodate change that is appropriately designed and managed.

10.4 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

10.4.1 VISUAL CATCHMENT

As illustrated in ***Figure 10-7***, the visual catchment is contained by built form of varied heights fronting Swanston, Flinders and Collins Streets and Flinders Lane.

10.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment is seen in ***Figure 10-7*** and include:

- Residential / Accommodation – Apartments and Westin Hotel.
- Open Space – Urban Plaza – Federation Square.
- Retail – Swanston, Collins, Flinders and Little Finders Streets.

Sensitivity Level: High

10.4.3 VISUAL MODIFICATION TO THE SETTING

10.4.3.1 CONSTRUCTION

The construction area is located within a highly utilised urban setting. Views of the construction areas, particularly those on the site of the City Square, would be possible from both street level viewpoints as well as elevated sensitive viewpoints in adjacent apartment and accommodation buildings, such as the Westin Hotel, as shown to the left of the image in ***Figure 10-11***.

Construction activities at the south western entry would be undertaken within the context of built form which has been subject to ongoing incremental change.

The south eastern entry within Federation Square would be a small scale element within the context of a high quality urban space comprised of a number of levels and dispersed built form.

A degree of visual mitigation of construction impacts for ground level viewpoints could be achieved through the use of 2.5 m high hoardings and acoustic construction sheds. However, these would also block non elevated views. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.

However, visual migration of overlooking viewpoints would not be as effective. As a result, there would be an overall moderate to high visual modification level for adjacent viewpoints during construction.

Construction activities would be located outside of the Swanston Street visual axis to the Shrine of Remembrance.

Visual Modification Level: Moderate to high

10.4.3.1 OPERATION

The project components are located in a well-established urban setting and views from ground level and elevated viewpoints would be possible. However, the project components in the City Square and along Swanston Street adjacent to the City Square, would be generally of a small scale and would be inserted into the fabric of the streetscape and built form of the setting. Associated streetscape improvement works, undertaken in conjunction with the construction of the station components, would contribute to improved physical and visual amenity. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of canopy tree plantings.

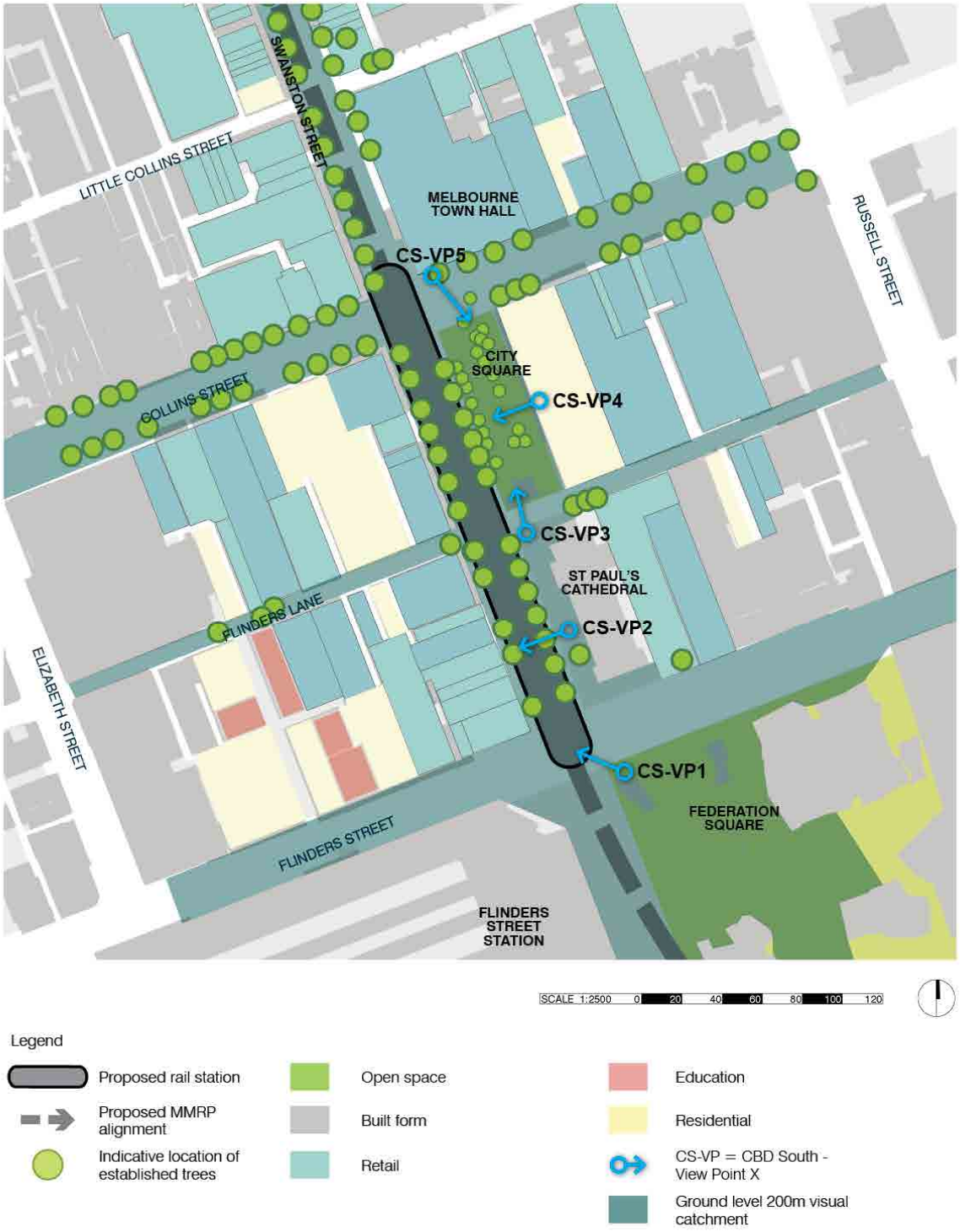

FIGURE 10-7: CBD SOUTH PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

The project components at the corner of Swanston and Flinders Streets would be most visible from Federation Square and St Pauls Cathedral, and would generally be like-for-like insertions into the fabric of the streetscape and built form. When developed in accordance with the directions of the Urban Design Strategy (Technical Appendix M), there would be visual elements in this precinct, particularly the station entry wrapping around Young and Jacksons at the corner of at the corner of Flinders and Swanston Streets, which would be a positive contribution to the urban landscape. This is shown or CS-VP1 in ***Figure 10-8***.

As a result, there would be an overall low visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.

Visual Modification Level: Low to Low beneficial

10.4.4 VISUAL IMPACT

10.4.4.1 CONSTRUCTION

The proposed construction activities are temporary (5.5 years) and would be subject to mitigation measures such as acoustic hoarding up to 2.5 m in height that would screen the construction area. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration.*

The area of Swanston Street between Flinders and Collins Streets is a highly utilised area and subsequently well lit. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.

The high visual sensitivity combined with a moderate to high visual modification level would result in a high visual impact to users within the visual catchment of this precinct.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city users are accustomed to

Visual Impact: High

10.4.4.2 OPERATION

The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.

The high sensitivity combined with a low to low beneficial visual modification level would result in a moderate visual impact.

When developed in accordance with the directions of the Urban Design Strategy (Technical Appendix M), there would be visual elements in this precinct, particularly the station entry wrapping around Young and Jacksons Hotel at the corner of at the corner of Flinders and Swanston Streets, which would be a positive contribution to the urban landscape.

Over time, as trees re-establish, the residual visual impacts of the project is anticipated to reduce progressively from low to low beneficial.

Residual Visual Impact: Low to Low beneficial

FIGURE 10-8: CBD SOUTH PRECINCT – EXISTING VIEW FROM CS-VP1 TOWARDS YOUNG AND JACKSONS HOTEL

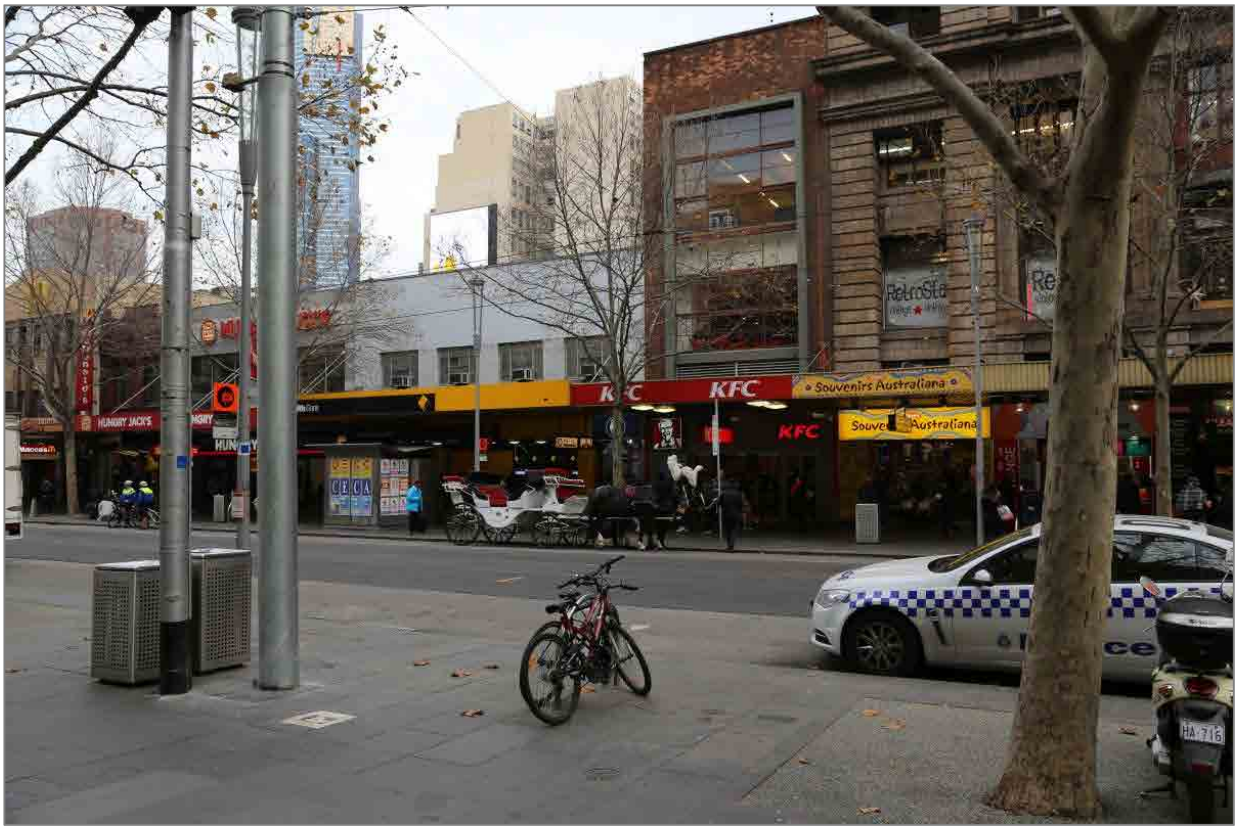

FIGURE 10-9: CBD SOUTH PRECINCT – EXISTING VIEW FROM CS-VP2 TOWARDS LOCATION OF PROPOSED STATION ENTRY

FIGURE 10-10: CBD SOUTH PRECINCT – EXISTING VIEW FROM CS-VP3 TOWARDS THE CITY SQUARE

FIGURE 10-11: CBD SOUTH PRECINCT – EXISTING VIEW FROM CS-VP5 TOWARDS PROPOSED CITY SQUARE STATION ENTRANCE

10.4.5 IMPACTS ON LANDSCAPE VALUES

Swanston Street is one of Melbourne CBD's major boulevards and pedestrian and cyclist spines that visually connects the north and south parts of the city, as well the former Carlton and United Brewery (CUB) site to the significant axis of the Shrine of Remembrance.

As illustrated in ***Figure 10-12***, tree removal along Swanston Street would be minimised during the construction process. However, most of the semi-mature trees along Collins Street adjacent to the City Square would require removal.

Given the trees to be removed are either immature or semi mature ,and do not as yet contribute significantly to the landscape character, the initial landscape impacts of the project are expected to be low to moderate. Furthermore, the Urban Forest Strategy (2012) assessed these trees as having varying useful life expectancies between 6 and 60 years. Over time, as the canopy trees re-establish in a consistent way, the residual landscape impacts of the project are anticipated to reduce progressively to low.

Landscape Impacts: Low to moderate, reducing to low

10.4.6 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The low residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the relatively small footprints of the operational components of the project and retention of many significant street trees along Collins and Swanston Streets.

However, the replacement of trees immediately adjacent to the City Square would take between seven and ten years to achieve a low residual impact.

10.5 BENEFITS AND OPPORTUNITIES

Table 10-3 provides the benefits and opportunities associated with each part of the Concept Design.

Table 10-3 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
Station located under Swanston Street, between Collins and Flinders Streets.	Underground connection to existing Flinders Street Station.	Ensure the components of the project are located to respect key views along streets and to significant built and natural elements.
Collins Street entrance at City Square.	Entry located close to Collins Street tram superstop.	Improve amenity and design of City Square including the interface along Collins Street.
Flinders Street entrance including Port Phillip Arcade with underground connection to Flinders Street station.	Underground connection to existing Flinders Street Station. Entry located on prominent CBD corner.	Widen footpath – improve amenity of streetscape, laneway and arcades.
Underground entrance connection to Federation Square.	Subterranean connection to existing train station.	Reduce the project construction footprint within Flinders Street Station.

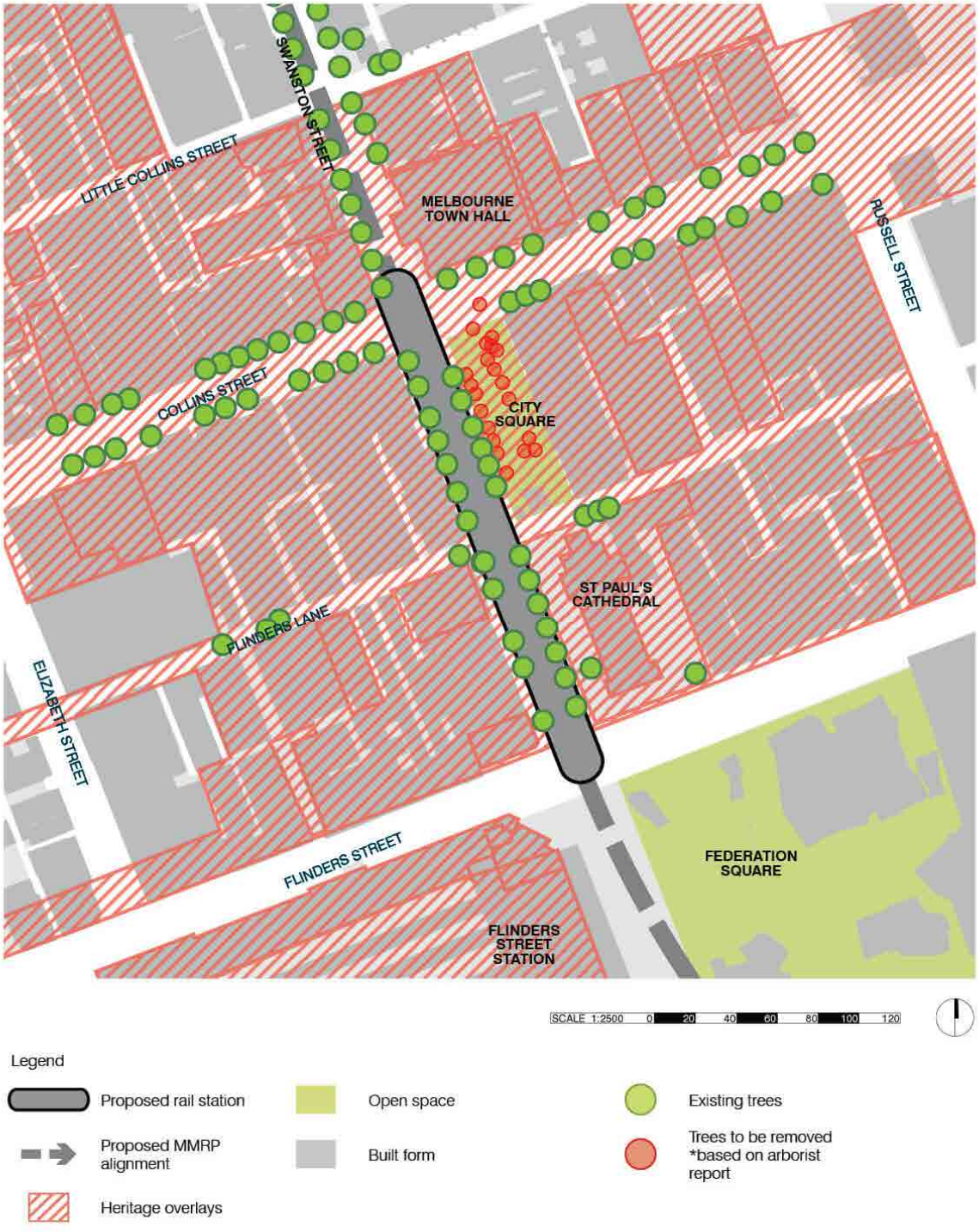

FIGURE 10-12: CBD SOUTH STATION PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

10.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 10-4 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (***Technical Appendix M***). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 10.4 Environmental Performance Requirements for the Precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Open Space – Urban Plaza – Federation Square, City Square	Adverse impact on users of open space.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ CBD South station: St Paul's Cathedral, Federation Square, City Square and Flinders Street Station Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community	*Cocker Alley Sub-Precinct* Guideline 4. Integrate over site development with the station and associated infrastructure. *Federation Square / St Pauls Court* Guideline 1. Maintain Federation Square's inter-relationships with Flinders Street, Swanston Street and St Paul's Cathedral: – Protect the framed vista from Federation Square to St Paul's Cathedral from intrusive or disruptive structures. Ensure that no structure between the shards is above balustrade height. – Ensure permeability, visual links and pedestrian accessibility between the Flinders Street footpath and Federation Square. *City Square* Guideline 1. Maintain a respectful relationship with nearby civic buildings: – Minimise the size and visual prominence of the station entry, so that it does not appear to be disproportionately grand in relation to other civic stairs on Swanston Street. – Maintain uncluttered views to St Paul's Cathedral from the Square, in particular to the facade and altar window facing Flinders Lane. Mirror the offset of the Westin Hotel facade	LV009 LV010 LV015 LV016 LV019 LV024 LV034 LV035 LV040 LV041 LV044 LV049
Elevated Residential / Accommodation Areas – Westin Hotel	Adverse impacts on views from accommodation			
Retail stores	Adverse impacts on retail users			
Significant viewlines –to historic buildings	Adverse impacts on significant viewlines			
Historic elements	Adverse impacts on historic buildings			

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
		facilities.	from the Cathedral's central axis to define a view corridor along the axis, and avoid locating aboveground infrastructure within this corridor if possible. – Maintain views of the Town Hall clock tower from the Square.	

11 Impact Assessment - Precinct 7: Domain Station

The proposed Domain station precinct is located at the interface between the St Kilda Road commercial and residential precinct and the Domain Parklands. It lies adjacent to the Domain tram interchange and is in close proximity to the Shrine of Remembrance and Albert Park commercial area.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Domain station precinct include:

- Complementing St Kilda Road's formal boulevard character, with:
  - Multiple rows of large canopy trees.
  - Tram overheads arranged to minimise visual clutter and to allow for tree planting.
- Locating and designing vent shafts to:
  - Minimise impacts on important views.
  - Complement the formal design character of St Kilda Road.
- Avoiding encroachment into the Shrine of Remembrance Reserve. Where this is unavoidable the extent of Shrine of Remembrance land used should be minimised.
- Keeping the vista to the Shrine from St Kilda Road between Domain Road and Park Street as clear of structures as possible, and minimise any new structures that may detract from or compete with views of existing monuments including the MacPherson Robertson Fountain and Cobbers Memorial.
- Minimising the loss of significant trees at the Albert Road Reserve and Albert Road.
- Maintaining a strong formal visual link between the Albert Road Reserve and St Kilda Road.
- Providing ease of access to the Melbourne Metro station while avoiding fragmentation of useable open spaces with busy pedestrian routes.
- Creating spaces and facilities to support passive and social recreational activities for local residents and office workers.
- Increasing green open space and planting to enhance local amenity and to contribute to a sense of continuity between Albert Park and the Shrine Reserve.
- Locating and designing chiller plant and other aboveground Melbourne Metro infrastructure to minimise visual impacts.

11.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- The footprint of Domain station box is 320 m long and 22 m wide – with three station entrances – one to the east into the Shrine Parklands, one to the west into the triangular park located on the corner of Albert Road and St Kilda Road, and one entrance to the Domain tram interchange in the centre of St Kilda Road
- A connection under St Kilda Road linking both sides
- The St Kilda Road functional layout including number of traffic lanes (two versus three lanes) in the post-construction arrangement is still being worked through with stakeholders. The numbers of lanes would determine the available space for replacement boulevard planting in St Kilda Road.

Three new station entries, two ventilation ducts, one chiller and a super tram stop would be visible in the streetscape.

The public realm surrounding the Shrine of Remembrance entry is proposed to be well integrated into the parkland landscape and have particular sensitivity to the adjacent MacPherson Robertson Fountain, Cobbers Memorial and the Shrine of Remembrance Reserve.

The western entry is to be located adjacent to the St Kilda Road side of South African Soldiers Memorial Reserve. The space is to be designed to ensure that visual exposure and light penetration to the underpass is achieved and that the existing memorial can be appropriately accommodated.

The relocation of the tram superstop is to be undertaken in conjunction with the addition of a tram service along Domain Road. The resulting track alignment, in conjunction with a reduction in the number of traffic lanes and extent of parking, would allow for the establishment of widened sections of median that would cater for the reestablishment of a double row of large canopy trees.

The overall design concept for the public realm is to be influenced by the parkland character of the precinct. Forecourts are designed as grassed amphitheatres with soft landscaping at ground plane level to connect with the surrounding green corridors.

The construction period for Precinct 7 is around 4 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- Relocation of the South African Soldiers Memorial.
- Establishment of two construction work sites for site offices, amenities, equipment storage and materials laydown, including potentially impacting a large number of mature trees (refer to Technical Appendix R *Arboriculture).*
- Relocation and removal of traffic islands, trams stops and car parking spaces along St Kilda Road.
- Establishment of site compounds at the Edmund Herring Oval and Albert Road Reserve.
- Acoustic hoarding up to 6 m in height and acoustic construction sheds. For details on acoustic mitigation requirements (refer to Technical Appendix I *Noise and Vibration*).
- Removal of trees and protection of others (refer to Technical Appendix R and S *Arboriculture*).
- Domain TBM Launch operations.
- Station structural works, including an excavation area of approximately 19,400 m^2.
- Installation of a temporary above ground substation, (approximately 5 m x 5 m and 3 m height) with access to adjacent power lines.
- Restoration of St Kilda Road and parklands.

11.2 KEY ISSUES

The key issues associated with the Concept Design are summarised in ***Table 11-1***.

Table 11-1 Key issues associated with the Concept Design

Concept Design	Issue
Station located under St Kilda Road, adjacent to Albert Road	Views from the Shrine of Remembrance and on its landscape setting. Views from the Shrine Forecourt to the Cenotaph and Eternal Flame. Significant trees that contribute to the landscape amenity. Protection of the visual setting of the South African Soldiers Memorial. Views from residential apartments.

11.3 EXISTING CONDITIONS

11.3.1 LAND USE

As illustrated in ***Figure 11-1***, Domain station would be partially located on the current location of the Albert Park Reserve, an area of open space within the intersection of Albert Road, Domain Road and St Kilda Road. It is flanked on the north by the Domain Parklands including the Royal Botanic Gardens and the Shrine of Remembrance. Fawkner Park to the east and Albert Park to the west comprise some of Melbourne's most significant and recognisable green spaces. The proposed Domain station site is located within the municipalities of Melbourne and Port Phillip.

The Shrine of Remembrance, which is of state significance, is located on higher ground immediately to the east within the Domain Parklands.

The existing Domain tram interchange is one of the busiest interchanges on the system, being used by nine tram routes.

11.3.2 BUILT FORM

In recent years, major developments have taken place around Albert Road. The area is now a high-density mix of residential and commercial multi-storey buildings to approximately 20 storeys. To its east, St Kilda Road is flanked by a mix of commercial, residential and mixed-use towers, with many of the newer buildings displaying contemporary architecture.

The Shrine of Remembrance is the main building within the Domain Parklands, its isolation giving it a strong sense of presence. Its orientation is towards the city and the Swanston Street spine and its flank is towards the project area. Planning controls, particularly relating to adjacent building height and overshadowing, exist to protect the Shrine's setting.

The buildings of Melbourne Grammar School on the south-east corner of Domain and St Kilda Roads are generally low scale and blend with the character of the streetscape.

11.3.3 LANDSCAPE CHARACTER

The precinct is characterised by wide streets that provide views, particularly along the tree-lined St Kilda Road boulevard. Contributing elements to the precinct's high quality landscape character include the double boulevard planting of trees, grassed medians and verges, landscaped building forecourts and a variety of buildings of differing styles and era.

Albert Park Reserve is surrounded by mature elms. It also contains a visually prominent monument commemorating the Boer War. The grass and shade provided by the open space attracts workers in adjacent office buildings during lunchtimes and breaks.

St Kilda Road and Swanston Street form the city's major civic spine with the Shrine of Remembrance terminating at the southern vista and the former CUB site at the northern vista, forming landmarks connected by uninterrupted views along the spine.

The Shrine does not have a strong visual relationship to the South African Soldiers Memorial or Albert Park further to the west, as relatively dense, informal canopy plantings within the Shrine Reserve, to the west of the Shrine, contain views from the Shrine and serve to reinforce views to the north along the Swanston Street visual axis.

11.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the foreground, or local setting, of the project is outlined in ***Table 11-1***:

Table 11-1 Land Use Sensitivity

Land Use	Visual Sensitivity
Residential / Accommodation	High
Open Space – Recreation.	High
Education	High
Commercial	Moderate

11.3.4.1 HIGH SENSITIVITY RECEPTORS

- Shrine of Remembrance – D-VP1.
- Cenotaph and Eternal Flame.
- Albert Road Reserve.
- Domain Parklands, including Edmund Herring Oval – D-VP2.
- High Density Residential / Apartments – D-VP4 and D-VP5.
- Melbourne Grammar School – D-VP3.

11.3.5 KEY VIEWLINES

The key views with the potential to be impacted are:

- From St Kilda Road north to the city.
- From the Shrine of Remembrance north towards the city along St Kilda Road and south to St Kilda Road.
- St Kilda Road as a backdrop viewed from the Cenotaph and Eternal Flame.
- Filtered views from St Kilda Road and from Albert Road to the Shrine of Remembrance, located on its high point within Domain Parklands.
- Overlooking from elevated residential apartments on St Kilda Road and Albert Road.

11.3.6 ABILITY TO ACCOMMODATE CHANGE

The setting of the proposed station is a high quality streetscape / parkland. Progressive change has been occurring along one aspect of the proposed station, comprised of high rise residential and commercial development. The ground plane, including the Domain Parklands and the Shrine of Remembrance, has not been subject to change.

Therefore, the setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.

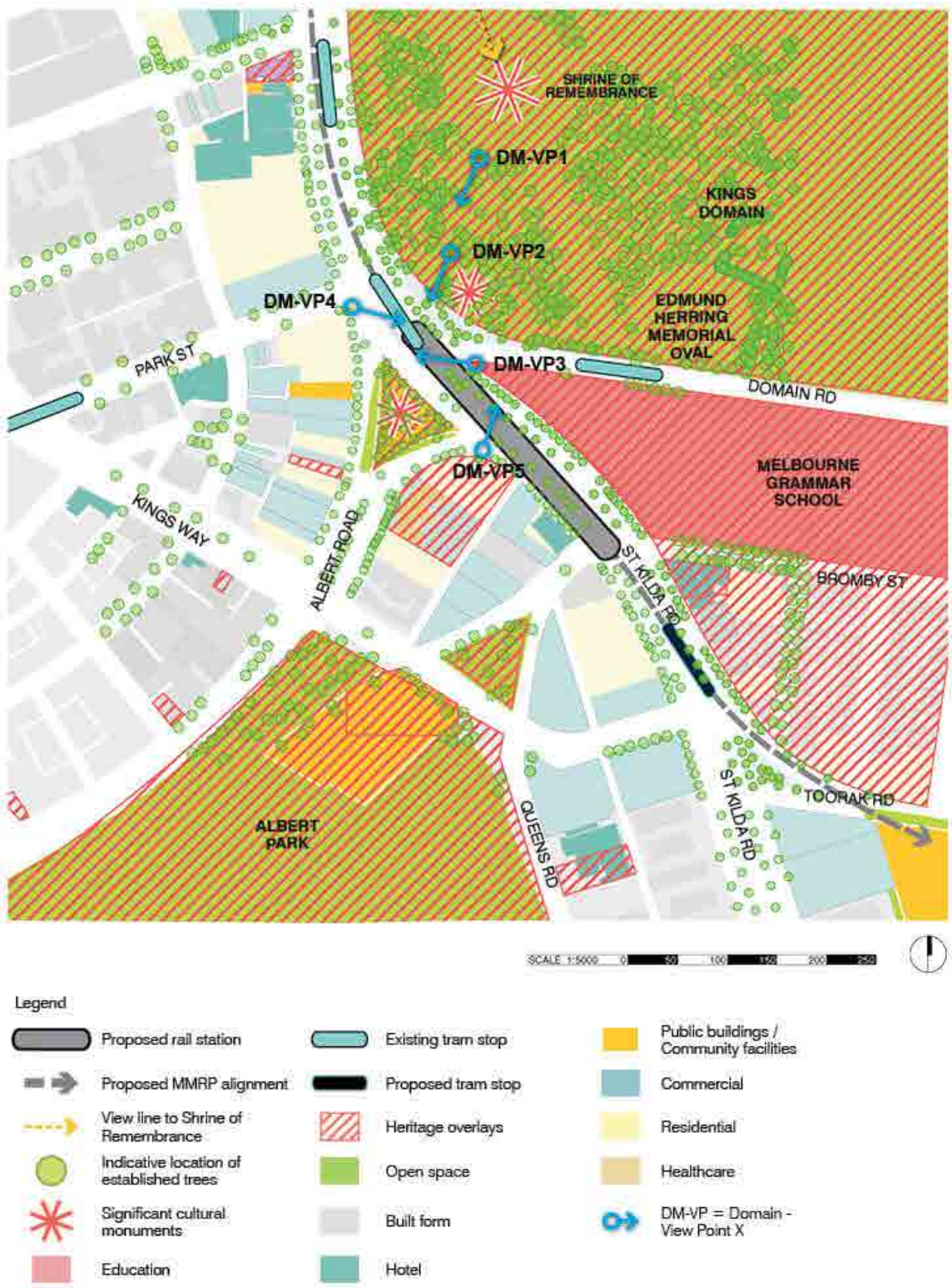

FIGURE 11-1: DOMAIN PRECINCT – EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

11.4 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

11.4.1 VISUAL CATCHMENT

As illustrated in ***Figure 11-2***, the visual catchment is contained to the west by tall built form exceeding ten levels fronting St Kilda Road. The lower buildings and fences of Melbourne Grammar School contain the visual catchment to the southeast of the St Kilda and Domain Roads intersection. However, the open character of the landscape of the Domain Parklands / Shrine of Remembrance Reserve and the Albert Road Reserve allow for filtered views through vegetation outwards from the site.

11.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment are illustrated in ***Figure 11-2*** and include:

- Shrine of Remembrance and Forecourt.
- Open Space – Recreation – Albert Park Reserve, Domain Parklands, Edmund Herring Oval.
- Education – Melbourne Grammar School.
- Residential / Accommodation – Domain Towers, Hallmark Apartments.

Sensitivity Level: High

11.4.3 VISUAL MODIFICATION TO THE SETTING

11.4.3.1 CONSTRUCTION

The construction area is located in a high quality urban and parkland setting. The construction process would require the removal of a large number of mature trees along St Kilda Road, between Park Street and Toorak Road, which may have provided a degree of screening of the construction area. The construction process would also require the removal of Albert Park Reserve and its vegetation.

Views of the construction area would extend from Edmund Herring Oval, located to the north east of St Kilda and Domain Roads, to the western side of St Kilda Road and South African Soldiers Memorial Reserve to the west.

For views from the Shrine of Remembrance, intervening deciduous trees would partially assist with the screening of views to the construction area. However, the elevated viewpoint would allow for some overlooking of the construction area through the vegetation, particularly during winter (refer to ***Figure 11-3***).

The Shrine Forecourt is a large levelled area, slightly elevated above St Kilda Road. Views to the construction activities on the western side of St Kilda Road would be possible from the forecourt, particularly from viewpoints in close proximity to the Cenotaph and Eternal flame. Views from locations closer to the centre of the Shrine Forecourt would be generally screened by the western edge of the forecourt.

Elevated views of the construction area, as shown in ***Figure 11-6*** and ***Figure 11-7***, would also be possible from the upper levels of Domain Towers and Hallmark Apartments. This would result in a high visual modification level for these elevated viewpoints.

From non-elevated viewpoints around the adjacent perimeter of Melbourne Grammar School, as shown in ***Figure 11-5***, overlooking of the ground plane of construction area would not be possible, particularly with the proposed 6 m high hoardings. Acoustic construction sheds would also be highly visible and block non elevated views. For details on acoustic mitigation requirements refer to Technical Appendix I *Noise and Vibration*.

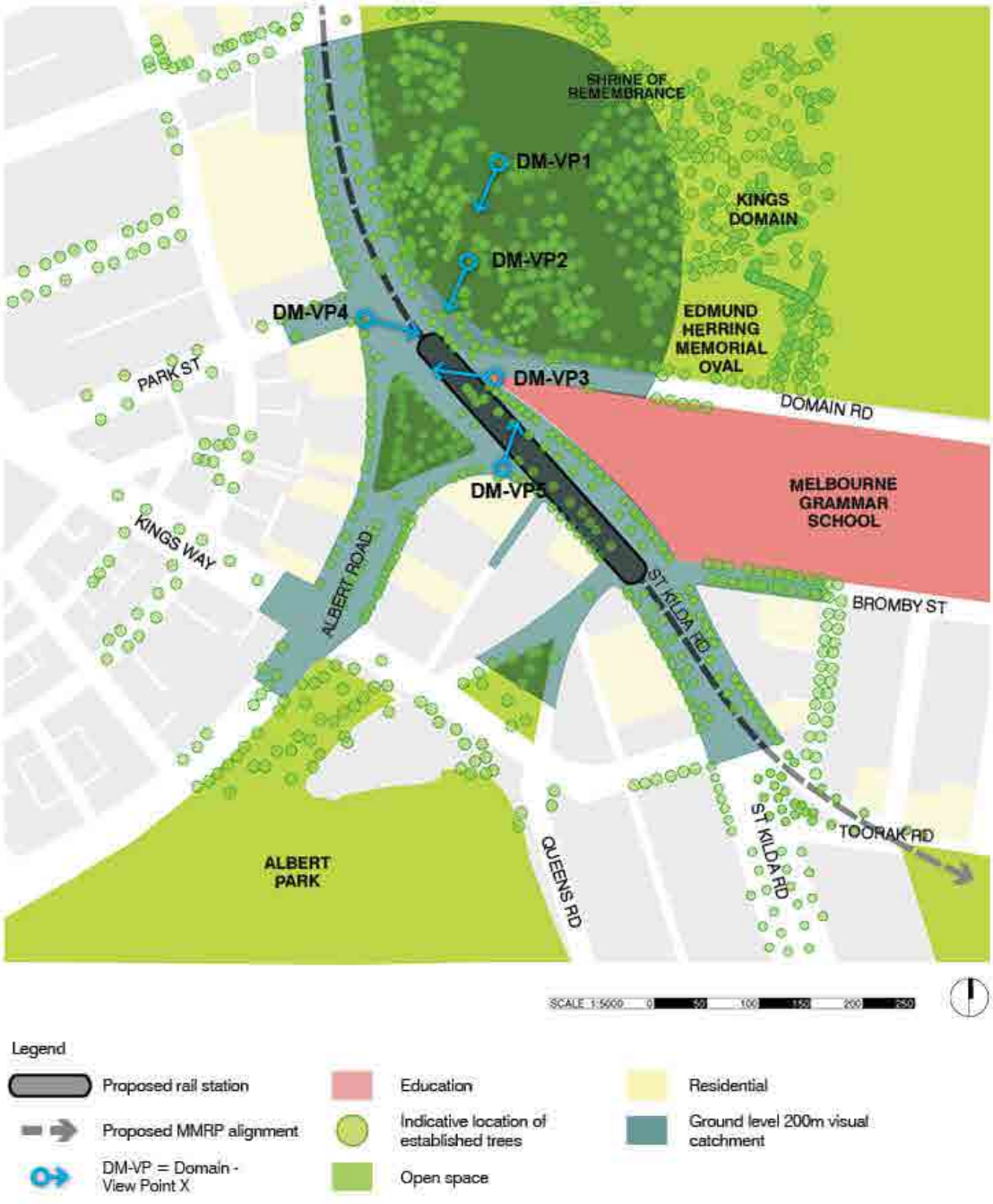

FIGURE 11-2: DOMAIN PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

The proximity to the construction works and the area's visibility would result in an overall high visual modification level for surrounding viewpoints during construction.

Visual Modification Level: High

11.4.3.2 OPERATION

The setting of the project is a high quality urban and parkland setting with existing tram infrastructure, including the tram super-stops at the Domain tram interchange (refer to ***Figure 11-4***).

The project components would be generally small-scale or similar in character to the components being replaced, such as the tram super-stops, and would be inserted into the fabric of the streetscape and built form of the setting.

As a result, there would be an overall moderate visual modification level for viewpoints within the visual catchment during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings along St Kilda Road and the re-establishment of vegetation in Albert Road Reserve and the edge of Shrine of Remembrance Reserve.

Visual Modification Level: Moderate

11.4.4 VISUAL IMPACT

11.4.4.1 CONSTRUCTION

The proposed construction activities are temporary (4.5 years) and would be subject to mitigation measures such as acoustic hoarding up to 6 m in height that would screen the construction area. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration.*

The construction lighting impacts for surrounding viewpoints are considered to be moderate given the existing lighting levels.

The high sensitivity combined with a high visual modification level would result in a high visual impact.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city users are accustomed.

Visual Impact: High

11.4.4.2 OPERATION

The operational project is expected to generate lower levels of lighting than the construction phase. Therefore, the lighting impacts for surrounding viewpoints are considered to be low.

The high visual sensitivity combined with a moderate modification level would result in an initial moderate to high visual impact, reducing to low over time as canopy vegetation matures.

Residual Visual Impact: Low

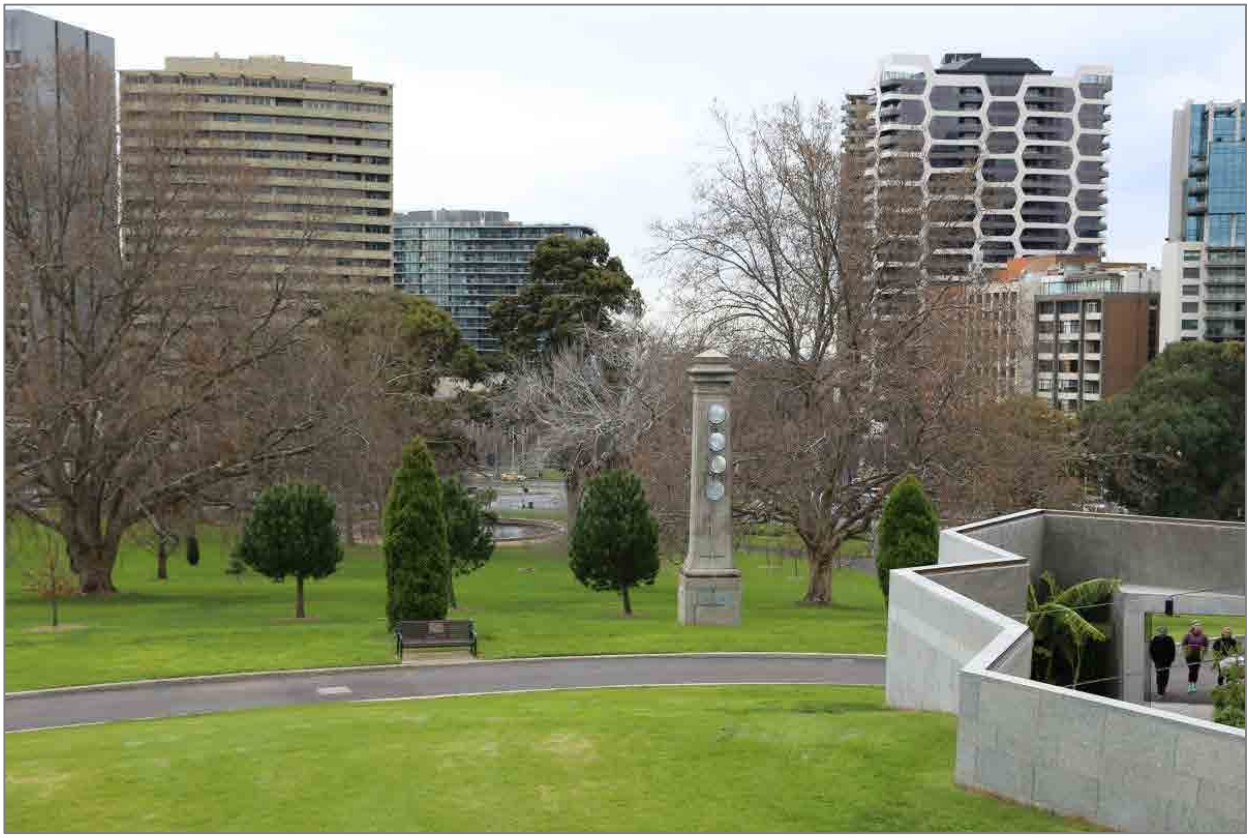

FIGURE 11-3: DOMAIN PRECINCT – EXISTING VIEW FROM D-VP1 SHRINE OF REMEMBRANCE TO PROJECT AREA

FIGURE 11-4: DOMAIN PRECINCT – EXISTING VIEW FROM D-VP2 – PATHWAY FROM SHRINE OF REMEMBRANCE NEAR WESTERN EDGE OF DOMAIN PARKLANDS TOWARDS PROJECT AREA.

FIGURE 11-5: DOMAIN PRECINCT – EXISTING VIEW FROM D-VP3 TOWARDS PROPOSED WESTERN STATION ENTRANCE AND TRAM SUPER STOP

The following viewpoint (***Viewpoint D-VP4***) is representative of ground level views from the entries to adjacent apartment buildings, such as Domain Towers and the Hallmark Apartments, as well as views for tourists using the St Kilda Road footpaths.

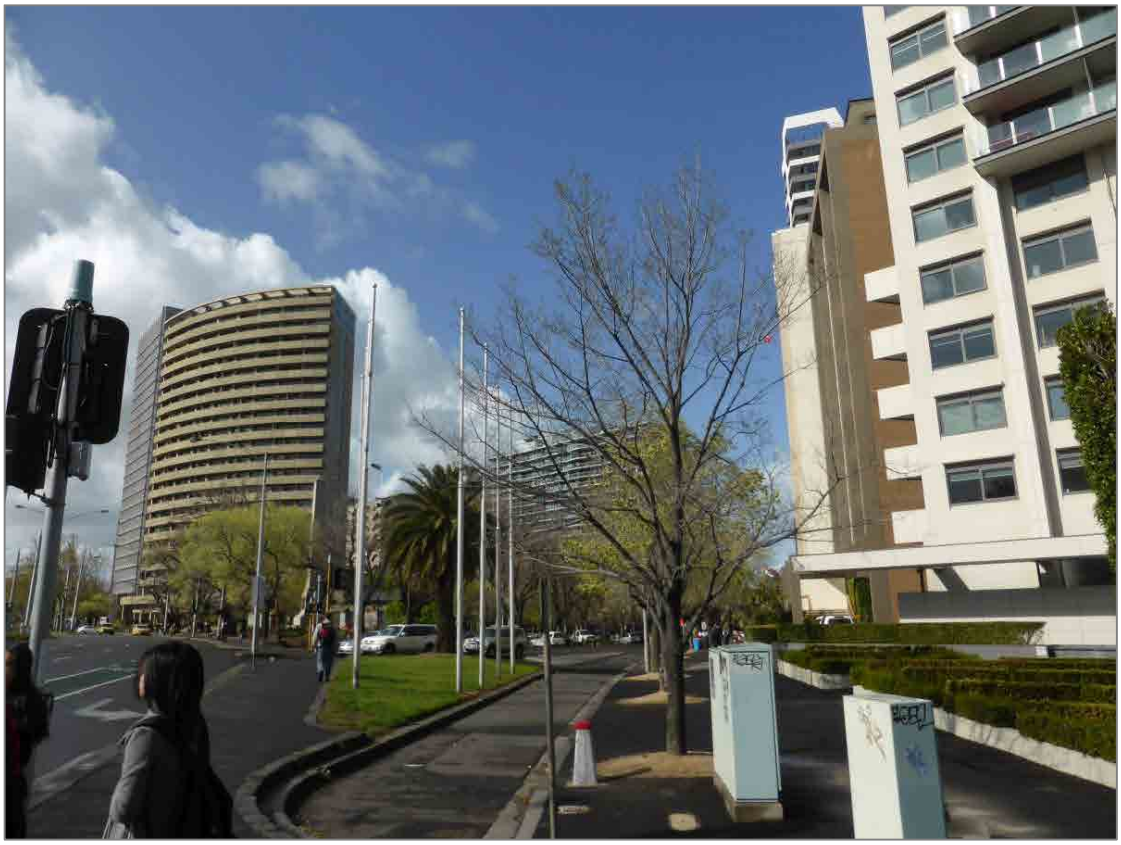

FIGURE 11-6: DOMAIN PRECINCT – EXISTING VIEW FROM D-VP4 TOWARDS PROPOSED WESTERN STATION ENTRANCE

The residential / apartment viewpoint (***Viewpoint D-VP5***) is representative of elevated views from adjacent apartment buildings such as Domain Towers (38-50 Albert Road) and the Hallmark Apartments (305 Albert Road) (refer to ***Appendix F - Detailed Representative Viewpoint Assessment***).

FIGURE 11-7: DOMAIN PRECINCT – EXISTING VIEW FROM D-VP5 TOWARDS PROPOSED WESTERN STATION ENTRANCE

11.4.5 IMPACTS ON LANDSCAPE VALUES

St Kilda Road and the Shrine Reserve are some of Victoria's most significant landscapes. The double boulevard of St Kilda Road forms a prominent southern gateway to the city of Melbourne. The trees along Domain and Albert Roads are also significant contributors to the overall landscape character of the precinct.

As illustrated in ***Figure 11-8***, a large number of trees would be removed along St Kilda Road between Park Street and Toorak Road, as well as on Albert Road between St Kilda Road and Kings Way, including the trees within the South African Soldiers Memorial Reserve. However in accordance with the Urban Forestry Strategy (2012) these trees have varying useful life expectancies with a number of these trees requiring replacement within 5 years.

Trees at the western edge of the Shrine of Remembrance Reserve would also be removed.

Canopy trees are the most significant contributor to landscape and public realm character and quality. Given a large number of trees are required to be removed and that the ground plane landscape is of St Kilda Road is primarily an urban streetscape with minimal ground plane planting (which can be replaced quickly), the initial landscape impacts of the project are expected to be high. Over time, as the canopy trees re-establish in a consistent way, the residual landscape impacts of the project are anticipated to reduce progressively to low. This is anticipated to take approximately seven to ten years following construction.

Landscape Impacts: Moderate, reducing to low

11.4.6 EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria due to the relatively small footprint of the operational components of the project.

However, as described above, the landscape and visual impacts resulting from the removal of canopy trees along St Kilda Road and Albert Road, and within South African Soldiers Memorial Reserve, would take time to meet the required objectives and criteria.

11.5 BENEFITS AND OPPORTUNITIES

Table 11-3 below provides the benefits and opportunities associated with each part of the Concept Design.

Table 11-3 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
Located under St Kilda Road, adjacent to Albert Road	Infrastructure is mostly underground which reduces the visibility of components within the streetscape.	Ensure the components of the project are located to respect key views along streets and to significant built and natural elements. Reduce the project construction footprint as much as possible. Enhance the setting of the South African War Memorial and create high quality public space. Reduce area of trafficable surfacing to allow for increased tree densities in the Albert Road north and south reservations.
Domain TBM launch	The locating of the TBM activities at Domain reduces TBM construction impacts within Fawkner Park.	

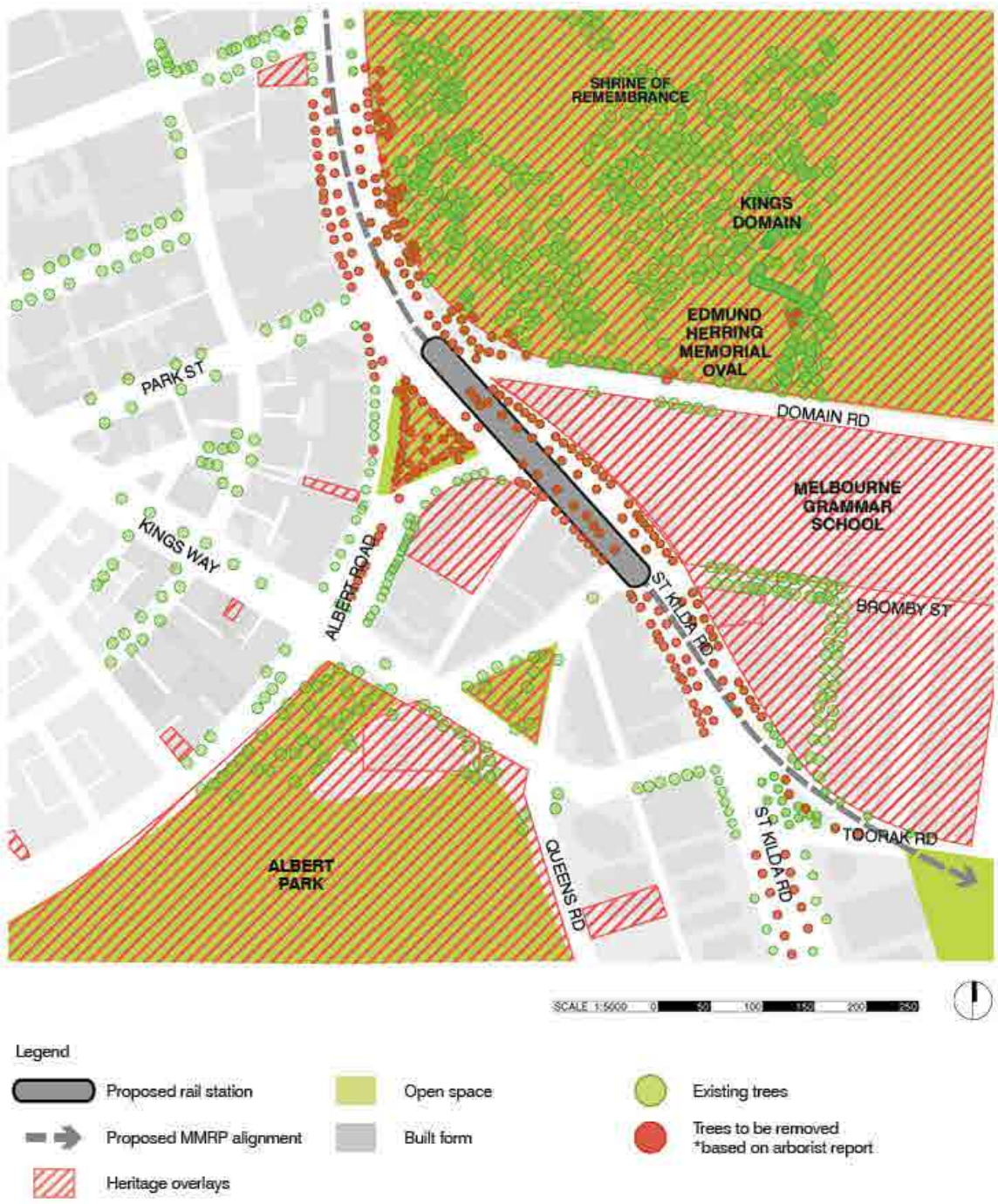

FIGURE 11-8: DOMAIN STATION PRECINCT: LANDSCAPE IMPACTS – VEGETATION COVER AND HERITAGE

11.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 11-4 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 11-4 Environmental Performance Requirements for the precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Historic Parkland Elements – Albert Road Reserve and Kings Domain / Shrine Reserve	Adverse change to existing landscape setting of historic elements.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ Domain station: The Shrine of Remembrance, Albert Road Reserve, Domain Parklands Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture.	*St Kilda Road* Guideline 4. Complement St Kilda Road's formal boulevard character: – Maintain or recreate a generally symmetrically balanced layout, with regular kerb alignments typically set parallel to the road's centreline, and four rows of large canopy trees. – Arrange tram overheads to minimise visual clutter and to allow for tree planting. – Minimise commercial advertising except as allowed under current Public Transport Victoria contracts with providers of tram shelters. Guideline 6. Locate and design vent shafts to minimise their visual impacts: – Minimise impacts on important views, in particular the Shrine of Remembrance.	LV003 LV006 LV017 LV018 LV028 LV031 LV042 LV043
Elevated Residential / Accommodation Areas – Albert and St Kilda Road	Adverse impacts on views from residential amenity			

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Education facilities **Significant view lines –to Shrine of Remembrance**	Adverse impacts on educational elements Adverse impacts on significant views	Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	*Shrine Reserve and Kings Domain Construction Area* Guideline 1. Avoid encroachment into the Shrine of Remembrance Reserve; where unavoidable, the extent of Shrine Reserve land used should be minimised. Guideline 2. Maintain the vista to the Shrine from St Kilda Road between Domain Road and Park Street as clear of structures as possible, and minimise any new structures that may detract from or compete with views or the experience of existing monuments including the MacPherson Robertson Fountain and Cobbers Memorial: – Locate aboveground structures along Domain Road rather than along the St Kilda Road frontage of the Shrine Reserve if possible. – Locate the entry as low on the slope as possible, i.e. adjoining and parallel to the street. – Use glazed or open sided structures. – Minimise any structure above balustrade height. Guideline 3. Minimise impacts on views from within the Shrine Reserve, especially from the forecourts and steps, rooftop viewing terrace, and the ”ring road’ at the	

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
			base of the Shrine: – Minimise visibility of Melbourne Metro structures within the Shrine Reserve. – Minimise advertising visible from the Shrine. Guideline 4. Minimise impacts on culturally significant features and fabric: – Retain or replace significant trees. Guideline 6. After construction, reinstate the construction work site(s) to existing or improved conditions, including works generally as illustrated in 'Edmund Herring Oval — Kings Domain Parklands,' City of Melbourne City Projects Division, Project No. 903411, Drawing no. LA01, November 2015. *Albert Road Reserve* Guideline 2. Minimise the loss of trees and replant where appropriate in order to: – Enhance local amenity. – Reinforce the geometry of the street layout. – Contribute to a green link between the Shrine Reserve and Albert Park. Guideline 3. Minimise impacts on culturally significant features and fabric: – Maintain the South African War Memorial's formal visual links to St Kilda Road and the Shrine of Remembrance. – Sensitively reinstate or relocate other existing memorials as required. – Retain or replace significant trees.	

12 Impact Assessment - Precinct 8: Eastern Portal (South Yarra)

The proposed Eastern Portal precinct at South Yarra is located immediately to the south of Toorak Road, near South Yarra station. The area to the east of the precinct is primarily low to medium density residential. The Forrest Hill precinct is located to the north east and is comprised of high density mixed use development. It is subject to significant and ongoing change due to planning controls which allows for maximum heights in the order of 180 m.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Eastern Portal precinct include:

- Minimise any net loss of accessible and usable public open space in the precinct, and if possible make more accessible space than exists at present.
- Construct vertical retaining walls along the rail corridor at alignments and to heights that allow the South Yarra Siding Reserve and areas along Lovers Walk to be brought to a more level and usable surface grade.
- Design retaining walls and backfill to provide generous soil depths to support the growth of trees.
- Design all structures required for and in association with the project as part of an integrated architectural concept for the South Yarra Siding and Osborne Street Reserves
- Ameliorate the impact of structures with planting where appropriate.
- Provide a high quality architectural and landscape architectural response to all sensitive interfaces.
- Consider the forms, locations, materials and detailing of noise abatement screens to maximise views into, through and between pedestrian routes and open spaces.
- Locate and design the construction bridge over the Sandringham line to maximise its value for access to the open spaces at completion of the Melbourne Metro.

12.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- Cut and cover structure and a decline structure (open to air), which brings the Melbourne Metro tracks to the same vertical level as the existing rail corridor.
- Permanent realignment of the existing Cranbourne / Pakenham and Frankston line tracks between Toorak Road and Chapel Street.
- A tunnel ventilation shaft, emergency access shaft and an underground substation.
- Acquisition of six properties/titles and street addresses, which would be demolished as part of construction activities.
- Installation of permanent noise barriers, 50 m and 70 m in length ranging from 2.5 m to 3 m above ground height

The eastern portal is proposed to comprise of a twin tunnel portal and associated emergency access, ventilation duct, maintenance shaft and pedestrian bridge.

Vertical retaining walls are proposed to replace the existing layback wall on the eastern side of the railway lines which would result in improved open space amenity by creating a more usable surface at South Yarra Siding Reserve.

The emergency access and maintenance shafts are located on the east side of Osborne Street, immediately adjacent to a recently completed commercial development. They are to be treated as podium landscapes for passive recreation contained by low retaining walls and perimeter shrub planting to enclose a grassed area with seating.

The Osborne Street construction bridge would be retained at the completion of the project, providing a connection from the west that currently does not exist and allowing for improved circulation through the reserve.

The construction period for Precinct 8 is around 6 years.

Construction activities relevant for consideration are included in the ***EES Map Book*** and are comprised of:

- A TBM retrieval box located in the rail reserve adjacent to Osborne Street.
- Private property acquisition and demolition.
- Relocation of utilities.
- Establishment of work sites, including potentially impacting on 218 trees.
- Acoustic hoardings up to 6 m in height and acoustic construction sheds. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration*.
- Cut and cover excavation of the tunnel box, including an excavation area of approximately 720 m^2.
- Widening of the existing rail corridor and construction of retaining walls.
- Construction of ventilation shaft, emergency access shaft and substation in Osborne Street Reserve.
- Retrieval of the TBMs from Osborne Street and the adjoining rail reserve.
- Track works and installation of rail systems.
- Reinstatement of William Street bridge.
- Reinstatement of South Yarra Sidings Reserve and Lovers Walk.

12.2 KEY ISSUES

The key issues associated with the Concept Design are identified in ***Table 12-1***.

Table 12-1 Key issues associated with the Concept Design

Concept Design	Issue
TBM Shaft, vent stack and substations in the rail reserve between Osborne Street and the existing Sandringham line	The amenity of users of Osborne Street Reserve and of surrounding residents with views towards the construction area.
The portal and decline structure would require a new bridge at William Street and retaining walls	The amenity of users of Lovers Walk and of surrounding residents with views towards the construction area.

Concept Design	Issue
The construction process would require an access bridge off Osborne Street.	The amenity of surrounding residents with views towards the construction area
Temporary use of South Yarra Siding Reserve for construction.	The amenity of users of South Yarra Siding Reserve and of surrounding residents with views towards the construction area.

12.3 EXISTING CONDITIONS

12.3.1 LAND USE

South Yarra extends from St Kilda Road to Williams Road, Toorak. It is bordered on the north by the Domain Parklands and Royal Botanic Gardens, and the Yarra River, and on the south by Commercial Road, Prahran. South Yarra station, about 3 km from Melbourne CBD, sits centrally within the suburb. Punt Road divides the City of Melbourne and the City of Stonnington.

The immediate area of the precinct is generally characterised by a fine grain urban pattern of residential land use which is seen in ***Figure 12-1*** that is generally low rise, with areas of high rise residential and mixed use around South Yarra station and in the area towards the Yarra River to the north of the precinct. These areas are being progressively transformed with numerous mixed use, high density developments approved.

Toorak Road Neighbourhood Activity Centre is located within close proximity to the Prahran/South Yarra Principal Activity Centre. Toorak Road connects the suburbs of South Yarra and Toorak with the city.

A Heritage Overlay affects Toorak Road in the vicinity of the precinct, protecting the street view and the shop facades including the facades on either side of the station.

12.3.2 BUILT FORM

A gridded street pattern and lower rise buildings predominate. The precinct also has numerous higher rise residential and commercial buildings to the east of the railway line and north of Toorak Road within the Forrest Hill precinct.

12.3.3 LANDSCAPE CHARACTER

The street trees and residential context provide a high quality public realm in almost all the streets, with only some streets still undergoing transformation from previous industrial uses. South Yarra Siding Reserve is included in the Heritage Overlay of the Stonnington Planning Scheme as part of the broader Toorak Road (west of William and Claremont Streets) Precinct. It is located within the centre of the precinct. It is has limited access from adjacent residential areas.

Osborne Street Reserve, a narrow but well treed lineal park, is located to the west of South Yarra Siding Reserve.

Lovers Walk, a local walking path, is located to the east of South Yarra Siding Reserve, positioned between the top of the rail cutting and the rear of abutting properties. The cutting embankment is heavily vegetated, providing a green backdrop to views from the reserve as well as providing physical and visual amenity to path users.

12.3.4 SENSITIVITY OF PRIMARY LAND USES

The sensitivity of primary land uses within the foreground, or local setting, of the project is outlined in ***Table 12-2***.

Table 12-2 Land Use Sensitivity

Land Use	Visual Sensitivity
Residential	High.
Retail	High.
Open Space – Recreation.	High.
Commercial	Moderate.
Commuter Rail	Moderate.

12.3.5 HIGH SENSITIVITY RECEPTORS

- Residences on Osborne, Arthur and William Streets adjacent to the portal – EP-VP2, EP-VP3 and EP-VP4.
- Users of South Yarra Siding Reserve, Osborne Street Reserve and Lovers Walk – EP-VP3.
- Retail and residential uses on Toorak Road and Chapel Street with views along the rail alignment – EP-VP1.

12.3.5.1 KEY VIEWLINES

Viewlines in proximity to the project are generally confined. From Toorak Road southwards, extensive views into the construction area are afforded. From the William Street Bridge, views are of the railway corridor and its heavily modified landscape. Views from the Chapel Street bridge to the modified cutting east of the portal would not be possible due to the presence of built- form on the rail bridge.

12.3.5.2 ABILITY TO ACCOMMODATE CHANGE

The setting of the proposed portal is relatively undeveloped parkland. The residential interfaces surrounding the project have been subject to minimal change while further change has occurred in the neighbouring Prahran/South Yarra Activity Centre and the Toorak Road Neighbourhood Activity Centre mixed use areas including Toorak Road, Chapel Street and the Forrest Hill Precinct.

While the broader setting is subject to ongoing change, the immediate setting is very sensitive to change and the ability to accommodate change is limited. However, the undeveloped nature of the parkland provides opportunities for post construction enhancement.

12.4 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria are relevant to this assessment are outlined in ***Table 3-5***.

12.4.1 VISUAL CATCHMENT

As illustrated in ***Figure 12-2***, the visual catchment is contained to the west by residences fronting Osborne Street, to the south by residences siding of backing onto South Yarra Siding Reserve and to the east by residences on William Street that either fronting or backing the street. The visual catchment extends to the north side of Toorak Road.

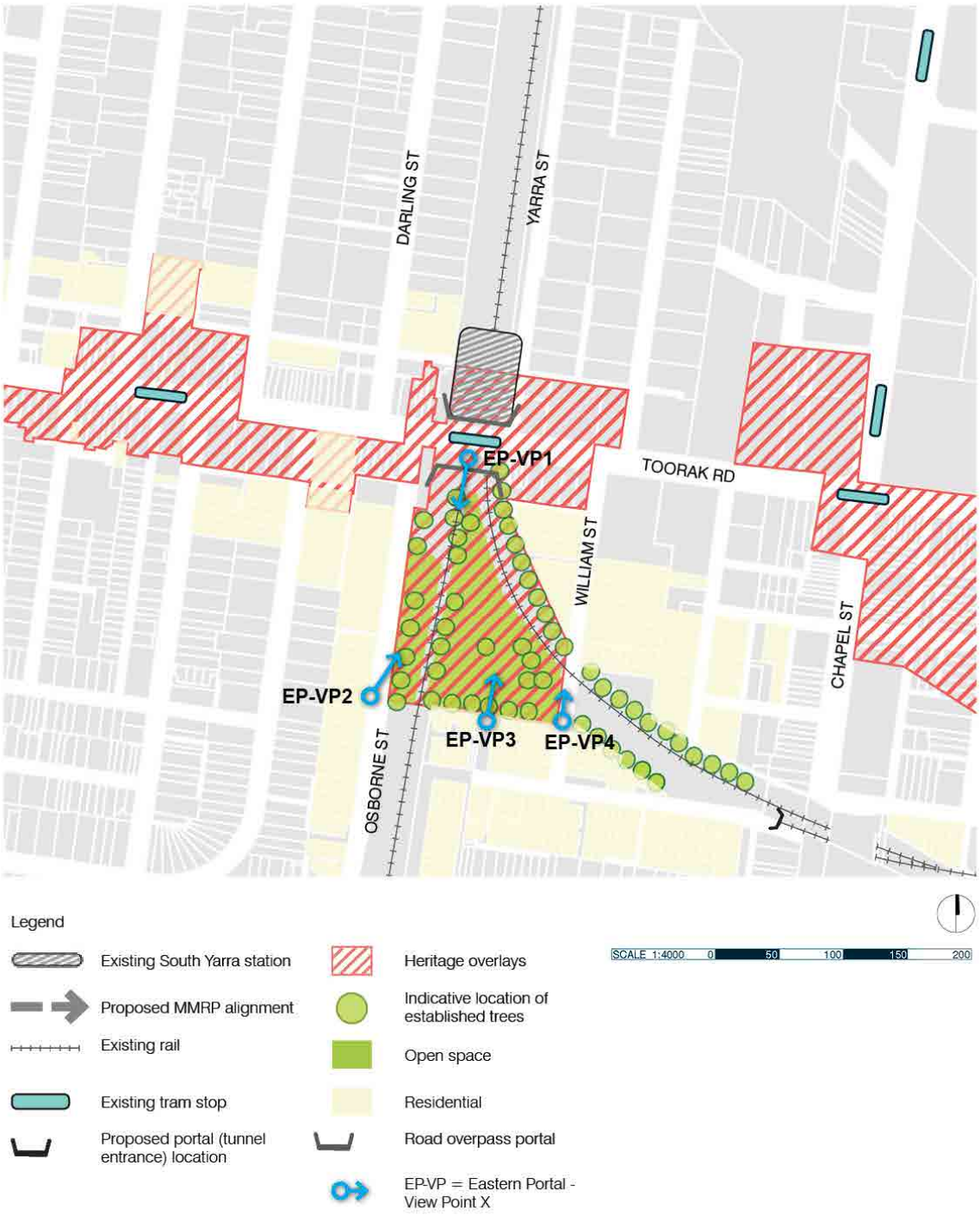

FIGURE 12-1: EASTERN PORTAL PRECINCT – EXISTING ATTRIBUTES AND REPRESENTATIVE SENSITIVE VIEWPOINTS

FIGURE 12-2: EASTERN PORTAL PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

12.4.2 VISUAL SENSITIVITY OF USERS

Key high sensitivity users and viewing locations within the visual catchment are illustrated in ***Figure 12-2*** and include:

- Open Space – South Yarra Siding Reserve (note that this view point would not be accessible during the construction process.
- Residential / Accommodation – Residences on Osborne and William Street and those backing onto South Yarra Siding Reserve.
- Retail – Toorak Road.

Sensitivity Level: High

12.4.3 VISUAL MODIFICATION TO THE SETTING

12.4.3.1 CONSTRUCTION

Views of the construction area from Toorak Road would be confined to a relatively limited area where the road bridge crosses the rail cutting, as shown in ***Figure 12-3***. In other areas, views from Toorak Road would be screened by buildings.

As shown in ***Figure 12-6***, the setting of the proposed portal is primarily relatively undeveloped parkland. However, the surrounding residential and mixed used interfaces have been subject to minimal change and any change to the setting would result in a modification to the setting (refer to ***Figure 12-5***).

The construction process would require the removal of scattered mature trees within the reserve as well as along the rail cutting (refer to ***Figure 12-4***).

6 m high hoardings and acoustic construction sheds would assist in screening of construction activities. However, these would also block non elevated views. For details on acoustic mitigation requirements, refer to ***Technical Appendix I Noise and Vibration***.

The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.

Visual Modification Level: High

12.4.3.2 OPERATION

On completion of the project, the parkland would be returned to a condition that is better than the existing condition and would be a positive contribution to the precinct. The emergency access and maintenance shafts are to be sensitively integrated into the setting via podium landscapes for passive recreation contained by low retaining walls and perimeter shrub planting to enclose a grassed area with seating.

As a result, the visual modification level is considered to be moderate beneficial.

Visual Modification Level: Moderate beneficial

12.4.4 VISUAL IMPACT

12.4.4.1 CONSTRUCTION

The proposed construction activities are temporary (5 years) and would be subject to mitigation measures such as acoustic hoarding up to 6 m in height that would screen the construction area. For details on acoustic mitigation requirements, refer to Technical Appendix I *Noise and Vibration.*

The construction lighting impacts for surrounding viewpoints are considered to be moderate given the existing lighting levels.

The high visual sensitivity combined with a high visual modification level would result in a high visual impact.

However, these impacts must be considered in the context of construction activities being part of the visual experience of Melbourne and something city users are accustomed.

Visual Impact: High

12.4.4.2 OPERATION

The high visual sensitivity combined with a low visual modification level would result in a moderate visual impact.

The visible operational elements would include a pedestrian bridge over Sandringham railway line, vertical retaining walls and a ventilation/maintenance shaft of up to 3m in height. These elements would be sensitively designed into the landscape and the architectural elements would be softened by canopy vegetation. On completion of the project, the parkland would be returned to a condition that is better than the existing condition and would result in an improved visual impact to the urban landscape.

As such, the visual modification level is considered to be moderate beneficial.

As a result, there would be a visual modification level for this viewpoint that would progressively reduce from moderate to low beneficial as the replacement landscape establishes.

Residual Visual Impact: Moderate reducing to moderate beneficial

FIGURE 12-3: EASTERN PORTAL PRECINCT – EXISTING VIEW FROM EP-VP1 TOWARDS SOUTH YARRA SIDING RESERVE

FIGURE 12-4: EASTERN PORTAL PRECINCT – EXISTING VIEW FROM EP-VP2 TOWARDS OSBORNE STREET RESERVE, WITH SOUTH YARRA SIDING RESERVE LOCATED ON OTHER SIDE OF RAIL CORRIDOR

FIGURE 12-5: EASTERN PORTAL PRECINCT – EXISTING VIEW FROM EP-VP2 NORTH ALONG OSBORNE STREET RESERVE TO SHAFT INFRASTRUCTURE AREA.

FIGURE 12-6: EASTERN PORTAL PRECINCT – EXISTING VIEW FROM EP-VP3 TOWARDS PROJECT AREA IN SOUTH YARRA SIDING RESERVE

FIGURE 12-7: EASTERN PORTAL PRECINCT – EXISTING VIEW FROM EP-VP4 TOWARDS THE PROJECT AREA AT SOUTH YARRA SIDING RESERVE

12.4.5 IMPACTS ON LANDSCAPE VALUES

South Yarra Siding Reserve is relatively undeveloped and of low quality, with an open central area, framed by trees around its perimeter. The linear reserve between Osborne Street and the Sandringham line is well treed, providing visual amenity to residences on Osborne Street.

All trees within the project construction area, including the Osborne Street reserve, would be removed during the construction process.

Canopy trees are the most significant contributor to landscape and public realm character and quality. Given a large number of trees are required to be removed, the residual landscape impacts to the Osborne Street residential area would be high immediately following construction, reducing to low over a period of between seven and ten years.

The generally open landscape character of South Yarra Siding Reserve could be ameliorated within a short period of time through the establishment of the ground plane landscape. The residual landscape impacts are anticipated to be moderate, reducing to low over a period of one to three years.

Landscape Impacts: Moderate (overall) reducing to low.

12.4.6 DRAFT EES EVALUATION OBJECTIVES AND ASSESSMENT CRITERIA

The eventual low residual visual impacts are considered to be consistent with the draft EES evaluation objectives and assessment criteria.

Although, the landscape and visual impacts resulting from the removal of canopy trees along Osborne Street and around the perimeter of the Reserve would take a significant length of time to meet the required objectives and criteria, on completion of the project the parkland would be returned to a condition that is better than the existing condition and would be a positive contribution to the urban landscape.

12.5 BENEFITS AND OPPORTUNITIES

Table 12-3 below provides the benefits and opportunities associated with each part of the Concept Design.

Table 12-3 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
TBM Shaft in the rail reserve between Osborne Street and the existing Sandringham line	Reduces the impacts on the Urban character by avoiding demolishing existing buildings.	Potential to improve the amenity of the South Yarra Siding Reserve.
The portal and decline structure would require a new bridge at William Street and retaining walls	Vertical walls reduce the footprint of the works, replacing current batter slopes.	Opportunity to increase the width of Lovers Walk reserve. Opportunity to build higher retaining walls along South Yarra Siding Reserve side to allow for levelling of the park surface.
The construction process would require an access bridge off Osborne Street.	-	Opportunity to retain the bridge, post construction, to improve east to west movement through South Yarra Siding Reserve.
Temporary use of South Yarra Siding Reserve for construction.	-	Opportunity to improve the quality of the park at the completion of the construction phase.

12.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 12-4 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 12-4 Environmental Performance Requirements for the precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Open Space – Recreation – South Yarra Siding Reserve	Adverse impact on users of open space.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: ▪ Eastern portal: South Yarra Siding Reserve Develop and implement a plan in consultation with the Office of Victorian Government Architect, the local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	Guideline 4. Design all structures required for and in association with the project as part of an integrated architectural concept for the South Yarra Siding and Osborne Street Reserves, including: – Emergency access and ventilation structures – Retaining walls – Bridges – Balustrades and vehicular crash barriers on and near bridges – Acoustic screens and noise abatement walls – Security fences and privacy screens to nearby properties – Screens to prevent objects being dropped onto areas below bridges. Guideline 5. Ameliorate the impact of structures with planting where appropriate. Guideline 6. Provide a high quality architectural and landscape architectural response to all sensitive interfaces. Guideline 7. Consider acoustic treatments of all surfaces, structures and equipment associated with the	LV005 LV013 LV030 LV038
Residential Areas – Adjacent to Osborne and Williams Street	Adverse impact on residential amenity.			
Retail stores	Adverse impacts on retail users.			

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
			project to minimise requirements for conspicuous noise abatement screens. Guideline 8. Consider the forms, locations, materials and detailing of noise abatement screens, fences and other structures to: – Maximise views into, through and between pedestrian routes and open spaces – Minimise opportunities for, and likely damage from, graffiti and vandalism.	

13 Impact Assessment - Precinct 9: Western Turnback

The Western Turnback is located within an existing rail corridor at West Footscray. Surrounding land uses include commercial, industrial and residential.

In accordance with the Urban Design Strategy (Technical Appendix M), the proposed design criteria relevant for the LVIA at the Eastern Portal precinct include:

- Providing design integration of the new passenger platform and access ways with West Footscray Station with treatments of retaining walls, balustrades and screens.

13.1 PROPOSED COMPONENTS LIKELY TO AFFECT THE LANDSCAPE AND VISUAL VALUES

The proposed visible operational structures of relevance are included in the ***EES Map Book*** and are comprised of:

- Construction of a third platform and track.
- Modifications to the existing concourse.
- Realignment of regional, suburban and freight lines.
- Construction of new track and turnouts.

Construction activities relevant for consideration include:

- A site area of approximately 15,000 m2 within the VicTrack property boundary.

13.2 ACOUSTIC HOARDING UP TO 2.5 M IN HEIGHT.KEY ISSUES

The key issues associated with the Concept Design are summarised in ***Table 13-1***:

Table 13-1 Key issues associated with the Concept Design

Concept Design	Issue
West Footscray – a third platform and track at Footscray station, with modifications to existing concourse (Option 1A)	Potential impacts on adjacent residences to the north.

13.3 EXISTING CONDITIONS

The works location is adjacent to a commercial and industrial area to the south and residential areas and recreation facilities (including the Whitten Oval) to the north. The character of the setting is dominated by the existing rail infrastructure.

13.4 BENEFITS AND OPPORTUNITIES

Table ***13-2*** provides the benefits and opportunities associated with each part of the Concept Design.

Table 13-2 Benefits and opportunities associated with the Concept Design

Concept Design	Benefits	Opportunities
West Footscray – a third platform and track at Footscray station, with modifications to existing concourse (Option 1A)	Located within the context of an existing station and rail infrastructure.	Opportunity to integrate the components of the project with existing infrastructure.

13.5 IMPACT ASSESSMENT

The draft EES evaluation objectives and assessment criteria relevant to this assessment are outlined in ***Table 3-5.***

The proposed works are contained within an existing rail reservation. Although there are adjacent sensitive residential viewpoints, the visual modification level of the activities are considered to be low. Therefore the visual impacts are also considered to be low and consistent with the draft EES Evaluation objectives.

13.6 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Table 13-5 provides the recommended Environmental Performance Requirements for the precinct, which are consistent with amelioration treatments for construction and operation as recommended in the Urban Design Strategy (Technical Appendix M). Assets that have been identified as high sensitive receptors and significant viewlines have been assessed against the recommended Environmental Performance Requirements following the implementation of the amelioration treatments.

Table 13-5 Environmental Performance Requirements for the precinct

Asset / value	Impact	Environmental Performance Requirements	Possible mitigation measures	Risk no.
Residential Areas – Adjacent to north	Adverse impact on residential amenity.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values. Develop and implement a plan in consultation with the Office of Victorian Government Architect, the local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture. Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	*West Footscray station Option* Guideline 1. Integrate the new passenger platform and access ways with West Footscray station. Albion station Option Guideline 2. Integrate the new passenger platform and access ways with Albion station. Guideline 3. Replace the shared path overpass of Anderson Street: – Provide design integration with treatments of retaining walls, balustrades and screens.	

14 Environmental Performance Requirements

This section provides a comprehensive list of the recommended Environmental Performance Requirements identified as a result of this impact assessment. The table below provides the recommended Environmental Performance Requirements, which apply across the project and on a precinct basis that are consistent with the draft EES evaluation objective. Proposed mitigation measures are drawn directly from the Urban Design Strategy (Technical Appendix M).

Table 14-1 Environmental Performance Requirements

Asset / Value	Impact	Environmental Performance Requirements	Risk no.
Historic Parkland Elements and buildings **Residential / Accommodation Areas** **Significant Viewlines** **Open Space – Recreation – Plaza** **Retail stores**	Adverse change to existing landscape setting of historic elements. Adverse impacts on views from residential viewpoints Adverse impacts on significant viewlines Adverse impact on users of open space. Adverse impacts on retail users.	Design permanent and temporary works in consultation with local councils and the Office of Victorian Government Architect to comply with the MMRA Urban Design Strategy. The design shall avoid or minimise visual impacts on sensitive receptors and maintain broader landscape character values, particularly in relation to: • Tunnels: Queen Victoria Gardens, Fawkner Park • Western portal: JJ Holland Park • Parkville station: University of Melbourne, Victorian Comprehensive Cancer Centre, Royal Melbourne Hospital, University Square • CBD North station: Royal Melbourne Institute of Technology, the State Library • CBD South station: St Paul's Cathedral, Federation Square, City Square and Flinders Street Station • Domain station: The Shrine of Remembrance, South African Soldiers Memorial Reserve, Domain Parklands • Eastern portal: South Yarra Siding Reserve.	LV001 – LV050
		Develop and implement a plan in consultation with the Office of Victorian Government Architect, local councils and other land managers to comply with the Melbourne Metro Urban Design Strategy to re-establish public open space, recreation reserves and other valued places disturbed by temporary works. The plan must include, but not be limited to a methodology for storage, reinstatement or replacement of existing public art, monuments and public infrastructure such as poles, bins, and other street furniture.	LV001 – LV050
		Develop and implement measures to minimise light spillage during construction to protect the amenity of adjacent neighbourhoods, parks and community facilities.	LV001 – LV025

The LVIA recognises that there are a number of inter-related Environmental Performance Requirements that will contribute to the landscape and visual objective. These are outlined in ***Table 14-2***.

Table 14-2 Environmental Performance Requirements from interrelated disciplines which will support the Landscape draft EES evaluation objective

Environmental Performance Requirements	Discipline	EPR Number
Develop and implement measures for construction and operation of Melbourne Metro that aim to minimise impacts to the development and/or operation of existing land uses, including: • Limiting the permanent change of use within existing public open space • Minimising footprints of construction sites and permanent infrastructure on public land • Minimising impacts to existing public open spaces and recreational facilities and the users of these facilities, including but not limited, to JJ Holland Park, University Square, City Baths, City Square, Federation Square, the Shrine of Remembrance and the Shrine Reserve, Domain Parklands, Edmund Herring Oval, Fawkner Park and the Albert Road Reserve. Such measures must be developed in consultation with affected land managers for public land.	Land Use and Planning	LU1
Development of the project should have regard to the relevant Open Space Master Plans (including but not limited to, the Domain Parklands and Fawkner Park Master Plans) in designing and constructing above-ground infrastructure for the tunnels. Consultation must occur with land managers and / or agencies responsible for the implementation of the relevant Open Space Master Plans.	Land Use and Planning	LU2
Design and construction of Arden station: • must consider the ongoing strategic planning of the Arden-Macaulay Urban Renewal Area, and include consultation with the Metropolitan Planning Authority, City of Melbourne and any other relevant agencies	Land Use and Planning	LU3
Prior to the development of the detailed design of all permanent structures, prepare and implement strategies in accordance with the Urban Design Strategy and relevant planning schemes that cover: • Public arts and cultural strategy • Wayfinding, signage and advertising The strategy must be developed in consultation with relevant local councils and land managers.	Land Use and Planning	LU4
To the satisfaction of Heritage Victoria and the responsible authority (as applicable), ensure new development is responsive to heritage places in terms of height, massing, form, façade articulation and materials.	Historical Cultural Heritage	CH9
To the satisfaction of Heritage Victoria and the responsible authority, replace removed Elm trees in Royal Parade as part of project delivery using appropriate species and re-establish the boulevard formation. Provide suitable soil conditions to facilitate the growth of new trees to reach the size of the existing mature trees in the boulevard.	Historical Cultural Heritage	CH12
To the satisfaction of Heritage Victoria, review the siting and design of the eastern Domain station entry in detailed design to ensure it is as recessive as possible in this location and has only a limited presence on the edge of the Reserve. The design needs to allow for the maintenance of an appropriate setting to the Macpherson Robertson Memorial Fountain.	Historical Cultural Heritage	CH18
To the satisfaction of Heritage Victoria, review the siting and design of the western Domain station entry in detailed design to ensure the South African	Historical Cultural	CH19

Environmental Performance Requirements	Discipline	EPR Number
Soldiers Memorial has an appropriate landscaped setting if relocated on this site. If no appropriate setting can be established, consider options for relocation of the memorial to an alternative site.	Heritage	
Replace removed trees as part of project delivery in accordance with any relevant policy documents and to re-establish valued landscape character and in consultation with the City of Melbourne, the City of Port Phillip, the Shrine of Remembrance and Shrine Trustees and Heritage Victoria as applicable. Policy documents are as follows: • Domain Parklands: Domain Parklands CMP (in preparation, context, draft 2015-16) and the Domain Parklands Masterplan (in preparation) • Shrine of Remembrance: Shrine of Remembrance CMP (Lovell Chen, 2010) or any future review and the Shrine of Remembrance Landscape Improvement Plan (rush Wright Associates, 2010) • South African Soldiers Memorial Reserve: Any relevant CMP for the South African Soldiers Memorial • Fawkner Park: Fawkner Park Conservation Analysis (Hassell, 2002) and the Fawkner Park Masterplan (City of Melbourne, 2005).	Historical Cultural Heritage	CH17
To the satisfaction of the City of Melbourne, City of Port Phillip and/or the responsible authority, as applicable replace removed trees in St Kilda Road to re-stablish the boulevard formation.	Historical Cultural Heritage	CH20
During detailed design, review potential tree impacts and provide for maximum tree retention where possible. Prior to construction of main works or shafts, develop and implement a plan in consultation with the relevant local council that identifies all trees in the project area which covers: • Trees to be removed or retained • Condition of the trees to be removed • Options for temporary re-location of palms and reinstatement at their former location or another suitable location.	Arboriculture	AR1
Reinstate quality soils to sufficient volumes to support long-term viable growth of replacement trees.	Arboriculture	AR2
Re-establish trees to replace loss of canopy cover and achieve canopy size equal to (or greater than) healthy, mature examples of the species in Melbourne. Consult with the City of Melbourne, the City of Port Phillip, the City of Stonnington, the Shrine of Remembrance and Shrine Trustees and Heritage Victoria as applicable. Policy documents that must be followed to re-establish trees and valued landscape character include: • The City of Melbourne's Tree Retention and Removal Policy and Urban Forest Strategy • The City of Port Phillip's Community Amenity Local Law No. 1 and Greening Port Phillip - An Urban Forest Approach • The City of Stonnington's General Local Law 2008 (No 1) and City of Stonnington Street Tree Strategy • Any associated precinct plans • Specific policies of the Domain Parklands Conservation Management Plan (CMP), for trees within Domain Parklands • Shrine of Remembrance: Shrine of Remembrance CMP (Lovell Chen, 2010) or any future review and the Shrine of Remembrance Landscape Improvement Plan (rush Wright Associates, 2010) • South African Soldiers Memorial: Any relevant CMP for the South African Soldiers Memorial • Fawkner Park Conservation Analysis (Hassell, 2002) and the Fawkner	Arboriculture	AR3

Environmental Performance Requirements	Discipline	EPR Number
Park Masterplan (City of Melbourne, 2005) • The preferred future character of the University of Melbourne, for trees in the grounds of the University of Melbourne.		
Prior to construction commencing of main works or shafts in affected areas, prepare and implement Tree Protection Plans for each Precinct in accordance with AS4970-2009 Protection of Trees on Development Sites, addressing the detailed design and construction methodology of the project. Within precincts 1, 4 and 7, a Tree Protection Plan must be developed for each heritage place as relevant to the satisfaction of Heritage Victoria or the responsible authority.	Arboriculture	AR4
Where 'unavoidable' native vegetation (as defined under relevant policy) needs to be removed, meet the requirements of the *Permitted Clearing of Native Vegetation – Biodiversity Assessment Guidelines*.	Terrestrial flora and fauna	FF1

15 Conclusion

This report documents the outcomes of an assessment of the risks to landscape and visual values from activities associated with construction and operation of the proposed Melbourne Metro.

The focus for the assessment was the risk that visual impacts would reduce the amenity of the public realm.

15.1 RELEVANT DRAFT EES OBJECTIVES

The following draft EES evaluation objectives and assessment criteria (and indicators where relevant) are relevant to this assessment.

Draft EES Evaluation Objectives	Assessment Criteria
Landscape, visual and recreational values: To avoid or minimise adverse effects on landscape, visual amenity and recreational values as far as practicable.	Sensitive receptors initially identified as experiencing a high, or moderate visual impact are to be assessed as having a low impact at operation as a maximum after mitigation measures are implemented. At operation, the broader landscape values created are consistent with applicable state and local government landscape character policy documents.
	Valued places and activities of special interest, attraction and value to the community, including public open spaces and recreation reserves initially identified as experiencing a high, or moderate visual impact and/or landscape modification, to be assessed as having a low impact at operation as a maximum after mitigation measures are implemented. At operation, the recreational values created are consistent with applicable state and local government open space policy documents.

15.2 IMPACT ASSESSMENT SUMMARY

This assessment addresses the specified EES Scoping Requirements and specifically evaluates potential landscape and visual impacts from the project's construction and operation, based on the assessment criteria.

The methodology was adopted that identified potential landscape and visual impacts. Where possible, mitigation measures were identified to reduce impacts.

Most of the impacts relate to the construction of the project, when trees and vegetation would be removed at construction sites and when construction activities would be visible.

Once operating, the project's above-ground infrastructure and operations would be minimal and its impacts on landscape and visual values were assessed as low.

15.2.1 CONSTRUCTION

The project would have a significant, construction footprint. During the construction phase, high-level visual impacts would result to sensitive viewpoints within close proximity to the construction zone. While temporary, these are acknowledged as medium to high-level impacts during the project's construction.

Although it is recognised that those who live, work study and visit Melbourne, particularly its inner suburbs and the CBD, may prefer views that do not include construction sites, it is acknowledged that construction activity has been, and will continue to be, a noticeable component of Melbourne's urban landscape. It is

common for appropriately hoarded and mitigated construction sites, as well as tall cranes and other structures, to be encountered on a daily basis.

Therefore, the visual sensitivity to the visual impacts of construction sites is tempered by these common and recurring experiences. On this basis, it is considered that visual sensitivity is reduced somewhat, compared to what would be expected in more pristine settings.

Construction impacts can be mitigated through a range of management measures implemented during the construction process, particularly through well considered approaches as outlined in ***Section 4.6*** of the Urban Design Strategy (Technical Appendix M).

Mitigation treatments such as hoardings and sheds to screen construction activities could help reduce visual impacts from non-elevated viewpoints. Views from sensitive elevated locations (such as residential apartment towers) where overlooking of construction activities would be possible, would be more difficult to mitigate.

The primary residential areas of detached housing and medium density apartments are located at the western and eastern portals on the central city fringe. While overlooking would generally not be possible, construction activities would be visible, often within close proximity to non-elevated locations, resulting in high impacts. The slightly elevated topography of the construction area at South Yarra Siding Reserve would increase potential for views to construction activities. Hoardings and construction sheds may effectively mitigate visual impacts at these locations.

Views from sensitive elevated locations, where overlooking of construction activities would be possible, would be more difficult to screen.

However, for many of the more elevated apartments/rooms, the area of construction site or operational components visible from further back within the apartment/room would progressively decrease with increasing elevation.

With increased elevation, one would only be able to obtain the view of the construction site by standing directly at the window [or on the balcony] and looking down.

Further, any downward looking views would also include rooftops of other buildings below the viewer which, although they might present an interesting view, may not be as desirable compared to outward looking vistas of the CBD skyline and beyond that may also be possible from these elevations. Users of the retail spine of the city along Swanston Street, particularly tourists and visitors, would experience a high visual impact during construction, particularly with views along Swanston Street to St Kilda Road and the Shrine of Remembrance potentially being blocked by construction activities.

There would be high impacts for users of open space and civic spaces during construction at parks, gardens and open spaces as well as at education and health facilities.

The project construction method and station design would ensure retention of significant vegetation at key locations such as Parkville (Royal Parade), Swanston Street, St Kilda Road (Tunnels Precinct works north and south of Domain Station), Domain Parklands and Fawkner Park.

With the implementation of these mitigation measures, the project meets the scoping objectives of the draft EES during the construction phase.

15.2.2 OPERATIONAL IMPACTS

The project meets the scoping objectives of the draft EES during the operational phase.

The residual impacts of the project once operating were determined based on the expectation of the delivery of an outcome that is consistent with the directions of the Melbourne Metro Urban Design Strategy (Technical Appendix M), the Project Construction Management Plan (CMP), the Project Principal Requirements (PPR) and Infrastructure Sustainability Council of Australia (ISCA) requirements.

The architectural and public realm components of the project would be new elements within the fabric of the city, but would be of a form and scale similar to those that regularly appear as part of new buildings or public realm and streetscape upgrades.

The operational impacts are considered in the visual context of a modern and dynamic city for which change is commonplace.

However, the historical fabric and key viewlines must be respected. The Urban Design Strategy (Technical Appendix M) provides recommendations for these key attributes, and others so the project does not detract from the vibrancy, liveability or history of Melbourne.

The Swanston Street to the Shrine of Remembrance visual axis would not be impacted by the project once operational.

References

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United States Department of Agriculture Forest Service (1974) National Forest Landscape Management, Volume 2, Chapter 1, the Visual Management System. Agricultural Handbook No. 462.

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Appendix A Summary of Stakeholder Engagement

As part of this assessment, the following specific engagement with stakeholders was undertaken relating to landscape and visual issues ***Table 4-10***:

Table A1 Summary of Stakeholder Engagement

Activity / Precinct	Stakeholder	When	Matters discussed/ issues raised	Consultation outcomes
Parkville	University of Melbourne	14th August 2015.	Protection of significant street trees. Protection of the high quality amenity of the University of Melbourne and the precinct. Heritage significance of the setting of the entry opposite University Square. Management of construction impacts would be crucial.	To be considered under the identification of Environmental Performance Requirements. Addressed within the Urban Design Strategy (Technical Appendix M).
	University of Melbourne	21st September 2015.	Reconfirmation of the above.	To be considered under the identification of Environmental Performance Requirements. Addressed within the Urban Design Strategy (Technical Appendix M).
	Department of Health and Hospital Representatives	21st September 2015.	Protection of significant street trees. Management of construction activities to reduce impacts.	To be considered under the identification of Environmental Performance Requirements. Addressed within the Urban Design Strategy (Technical Appendix M).
Western Portal, Arden, Parkville, CBD North, CBD South, Domain	City of Melbourne	11th August 2015 (CBD South).	Significance of City Square, streetscape and built form quality.	Addressed within the Urban Design Strategy (Technical Appendix M).
	City of Melbourne	20th August 2015 (CBD North).	Significance of State Library Forecourt. Opportunities for streetscape enhancement works.	Addressed within the Urban Design Strategy (Technical Appendix M). To be considered under the identification of Environmental Performance Requirements.
	City of Melbourne	21st August 2015 (Parkville and Arden).	Significance of Royal Parade boulevard. Opportunities for enhancement streetscape works to Barry Street and University Square.	Addressed within the Urban Design Strategy (Technical Appendix M). To be considered under the identification of Environmental Performance Requirements.

Activity / Precinct	Stakeholder	When	Matters discussed/ issues raised	Consultation outcomes
	City of Melbourne	24th August 2015 (Parkville and Arden.)	Significance of Royal Parade Boulevard. Opportunities for enhancement streetscape works to Barry Street and University Square. Significance of the historical built from of the Milling and Biscuit Making Precinct. The significance of wide streets and existing street tree planting. The opportunity for Arden Station to improve the visual amenity of the Precinct	Addressed within the Urban Design Strategy (Technical Appendix M). To be considered under the identification of Environmental Performance Requirements. Addressed within the Urban Design Strategy (Technical Appendix M). Addressed within the Urban Design Strategy (Technical Appendix M). Addressed within the Urban Design Strategy (Technical Appendix M).
	City of Melbourne	21st September 2015.	Retention of street trees where possible or replacement to ensure the character of the setting is retained.	Addressed within the Urban Design Strategy (Technical Appendix M).
	City of Melbourne	1st October 2015 (CBD North and South).	Significance of City Square, streetscape and built form quality. Significance of State Library Forecourt.	Addressed within the Urban Design Strategy (Technical Appendix M).
Domain	City of Port Phillip.	21st September 2015.	Significance of the trees and parkland that contribute to the setting of St Kilda Road and South African Soldiers Memorial Reserve. The significance of the South African Soldiers Memorial in its setting.	Addressed within the Urban Design Strategy (Technical Appendix M). To be considered under the identification of Environmental Performance Requirements.
Eastern Portal	City of Stonnington.	24th September 2015.	Importance of South Yarra Siding Reserve to local residents. Sensitivity of residential areas to any change to the setting. Potential for legacy projects such as plaza on deck over rail lines adjacent to Toorak Road.	Addressed within the Urban Design Strategy (Technical Appendix M) To be considered under the identification of Environmental Performance Requirements.
All Precincts	Office of the Victorian Government Architect (OGVA)	21st August 2015. 21st September 2015. 24th September 2015. 1st October 2015.	The need to ensure “design excellence” with regard design and materiality. Ensuring that construction activities are mitigated to reduce impacts on residents and visitors to the city.	To be considered under the identification of Environmental Performance Requirements.

Activity / Precinct	Stakeholder	When	Matters discussed/ issues raised	Consultation outcomes
	City of Port Phillip.	21st September 2015.	The sensitivities and heritage values requiring protection in Fawkner Park and Queen Victoria Gardens	Site selection to be considered in the draft EES and design responses to be addressed in the Urban Design Strategy (Technical Appendix M).
	Metropolitan Planning Authority (MPA).	21st August 2015. 21st September 2015. 24th September 2015. 1st October 2015.	Importance of the Arden station development to be a catalyst for positive change in the Precinct.	Addressed within the Urban Design Strategy (Technical Appendix M).
	Heritage Victoria.	21st September 2015.	Protection of heritage elements to ensure the existing urban / landscape character is retained and that views to the same are not compromised in operational configurations.	Addressed within the Urban Design Strategy (Technical Appendix M). To be considered under the identification of Environmental Performance Requirements.
	Bicycle Network Victoria.	21st August 2015. 21st September 2015. 24th September 2015. 1st October 2015.	The importance of the green, leafy character of Melbourne with regard to cyclist amenity.	To be considered under the identification of Environmental Performance Requirements.
	VicRoads.	21st August 2015. 21st September 2015. 24th September 2015. 1st October 2015.	Retention of street trees where possible or replacement to ensure the character of the setting is retained.	To be considered under the identification of Environmental Performance Requirements.

In addition to the specific agency and TRG engagement and the engagement listed in the table above, general engagement and consultation with the community was also conducted as part of this assessment. Written feedback was obtained through feedback forms and the online engagement platform, and face-to-face consultation occurred at the drop-in sessions (refer to *EES* Technical Appendix C *Community and Stakeholder Feedback Summary Report* for further information).

Feedback and concerns from the community in regards to landscape and visual impacts related to broad project elements, like the placement, height and potential permanency of noise walls. In line with these concerns, the Melbourne Metro Urban Design Strategy (refer to Technical Appendix M) outlines a range of measures that incorporate local considerations and precinct specific guidance for the design of project elements.

Appendix B Risk Assessment

B.1 OVERVIEW

An Environmental Risk Assessment has been completed for Melbourne Metro. The risk-based approach is integral to the EES as required by Section 3.1 of the Scoping Requirements for the EES. Importantly, an environmental risk is different from an environmental impact. Risk is a function of the likelihood of an adverse event occurring and the consequence of the event. Impact relates to the outcome of an action in relation to values of a resource or sensitivity of a receptor. Benefits are considered in impact assessment but not in risk assessment. Impact assessment must be informed by risk assessment so that the level of action to manage an impact relates to the likelihood of an adverse impact occurring.

The overall risk assessment process adopted was based on AS/NZS ISO 31000:2009, as illustrated in ***Figure B-1.***

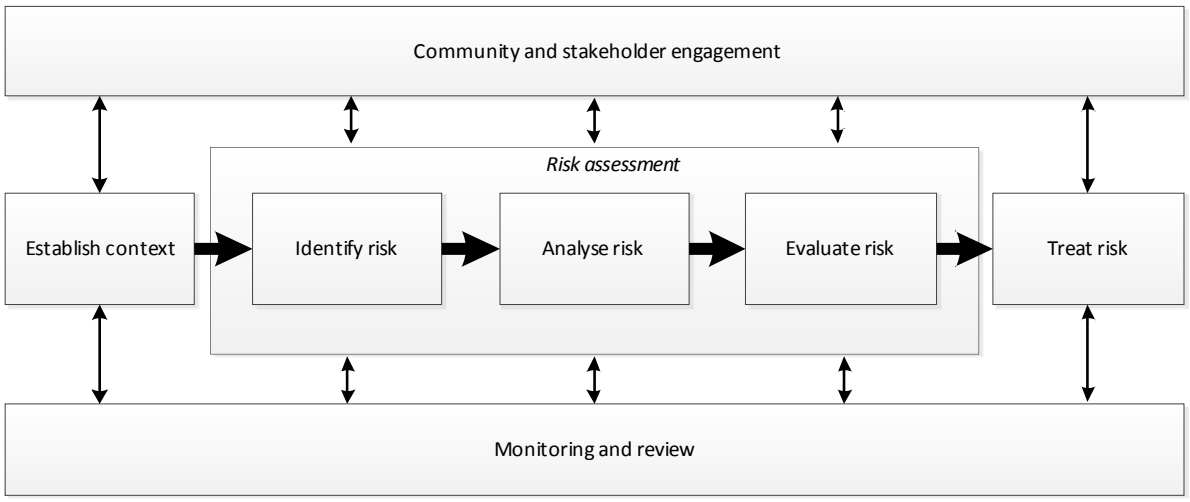


FIGURE B -1 OVERVIEW OF AS/NZS ISO 31000-2009 RISK PROCESS

The following tasks were undertaken to determine the impact pathways and assess the risks:

- Setting of the context for the environmental risk assessment.
- Development of consequence and likelihood frameworks and the risk assessment matrix.
- Review of project description and identification of impact assessment pathways by specialists in each relevant discipline area.
- Allocation of consequence and likelihood categories and determination of preliminary initial risks.
- Workshops with specialist team members from different yet related discipline areas and focussing on very high, high and moderate initial risks to ensure a consistent approach to risk assessment and to identify possible interactions between discipline areas.
- Follow-up liaison with specialist team members and consolidation of the risk register.

The table below presents the landscape and visual risks associated with the project, based on a precinct basis. The environmental risk assessment methodology is outlined in ***Section 4.1***.

Existing performance requirements were identified to inform the assessment of initial risk ratings. These existing performance requirements are based on standard requirements that are typically incorporated into construction contracts for rail projects.

As a result of the risk assessment and impact assessment, project-specific performance requirements ('Environmental Performance Requirements') have been proposed to reduce the impacts of risks rated as medium or high.

The incorporation of the measures outlined in the Environmental Performance Requirements', and their subsequent mitigation influences, are reflected in the 'Residual Risk Rating' within the LVIA.

The Environmental Performance Requirements are outlined in the following sections of the impact assessment and collated in ***Section 15***. All Environmental Performance Requirements are incorporated into the Environmental Management Framework for the project (***Chapter 23***).

For further details refer to Technical Appendix B *Environmental Risk Assessment Report* which includes the full Risk Register, with existing performance requirements and Environmental Performance Requirements assigned to each risk.

Table B-1 - Risk register for impact assessment

Hazard		Precinct	Initial Risk (unmitigated)			Residual Risk Rating (mitigated)			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
Construction									
Construction activities - non-elevated Parks - Recreation	Potential for impact on landscape and visual values - Parks - Recreation uses – JJ Holland Park	2 – Western portal	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV001
	Potential for impact on visual and landscape values -- Parks - Recreation uses – Queen Victoria Gardens	1 - Tunnels	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV002
	Potential for impact on visual and landscape values - Parks - Recreation uses – Domain Parklands and the outer perimeter of the Shrine Reserve	7 – Domain	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV003
	Potential for impact on visual and landscape values from Parks - Recreation uses – Fawkner Park	1 – Tunnels	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV004
Construction activities - elevated Park - Recreation	Potential for impact on visual and landscape values - Parks - Recreation uses - the Shrine of Remembrance	7 - Domain	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV006
	Potential for impact on visual and landscape values - Parks - Recreation uses – South Yarra Siding Reserve	8 – Eastern portal	Moderate	Almost certain	High	Moderate	Almost certain	High	LV005

Hazard		Precinct	Initial Risk (unmitigated)			Residual Risk Rating (mitigated)			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
Construction activities - Parks - Urban Plazas	Potential for impact on visual and landscape values - Parks - Urban Plaza uses – University Square (Southern section)	4 – Parkville	Moderate	Almost certain	High	Moderate	Almost certain	High	LV007
	Potential for impact on visual and landscape values - Parks - Urban Plazas uses – State Library Forecourt	5 – CBD North	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV008
	Potential for impact on visual and landscape values - Parks - Urban Plazas uses – Federation Square	6 – CBD South	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV009
	Potential for impact on visual and landscape values - Parks - Urban Plaza uses – City Square	6 – CBD South	Moderate	Almost certain	High	Moderate	Almost certain	High	LV010
Construction activities - non-elevated residential / accommodation	Potential for impact on visual and landscape values - Residential / Accommodation uses – Residences in Kensington	2 – Western portal	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV011
	Potential for impact on visual and landscape values - Residential / Accommodation uses – Residences in Queensberry Street	3 – Arden	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV012
	Potential for impact on visual and landscape values - Residential / Accommodation uses – Residences in William and Osborne Streets	8 - Eastern portal	Moderate	Almost certain	High	Moderate	Almost certain	High	LV013

Hazard		Precinct	Initial Risk (unmitigated)			Residual Risk Rating (mitigated)			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
Construction activities - mid-level elevated residential/accommodation (Levels 2 and above)	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Apartments in Kensington	2 – Western portal	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV014
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Apartments and Hotels in Swanston Street	5 – CBD North 6 – CBD South	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV015
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses –Westin Hotel	6 – CBD South	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV016
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses –Domain Towers	7 – Domain	Moderate	Almost certain	High	Moderate	Almost certain	High	LV017
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Hallmark Apartments.	7 – Domain	Moderate	Almost certain	High	Moderate	Almost certain	High	LV018
Construction activities - retail uses (assumes primarily non-elevated)	Potential for impact on visual and landscape values - Retail uses – Melbourne Central, Swanston Street	5 – CBD North 6 – CBD South	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV019

Hazard		Precinct	Initial Risk (unmitigated)			Residual Risk Rating (mitigated)			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
Construction activities - health, education and community facility uses (assumes primarily elevated)	Potential for overlooking impact on visual and landscape values - Health and Educational uses – LVictorian Comprehensive Cancer Centre	4 – Parkville	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV020
	Potential for overlooking impact on visual and landscape values - Health and Educational uses – Royal Melbourne Hospital	4 – Parkville	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV021
	Potential for overlooking impact on visual and landscape values - Health and Educational uses – University of Melbourne	4 – Parkville	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV022
	Potential for overlooking impact on visual and landscape values - Health and Educational uses – RMIT	5 – CBD North	Minor	Almost certain	Medium	Minor	Almost certain	Medium	LV023
Construction activities - Swanston Street to the Shrine of Remembrance	Potential for impact on visual and landscape values - along the Swanston Street visual axis to the Shrine of Remembrance	5 – CBD North 6 – CBD South	Minor	Possible	Low	Minor	Possible	Low	LV024
Construction activities - Royal Parade	Potential for impact on visual and landscape values - along the Royal Parade Boulevard	4 – Parkville	Moderate	Almost certain	High	Moderate	Almost certain	High	LV025

Hazard		Precincts	Initial Risk (unmitigated)			Residual Risk Rating *(10 years post mitigation implementation)*			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
Operation									
Project components - Parks - Recreation	Potential for impact on visual and landscape values - Parks - Recreation uses – JJ Holland Park	2 – Western portal	Minor	Likely	Medium	Minor	Unlikely	Low	LV026
	Potential for impact on visual and landscape values - Parks - Recreation uses – Queen LVictoria Gardens	1 - Tunnels	Minor	Likely	Medium	Minor	Unlikely	Low	LV027
	Potential for impact on visual and landscape values - Parks - Recreation uses – Domain Parklands and the outer perimeter of the Shrine Reserve	7 – Domain	Minor	Likely	Medium	Minor	Unlikely	Low	LV028
	Potential for impact on visual and landscape values - Parks - Recreation uses – Fawkner Park	1 - Tunnels	Minor	Likely	Medium	Minor	Unlikely	Low	LV029
	Potential for impact on visual and landscape values - Parks - Recreation uses – South Yarra Siding Reserve	8 – Eastern portal	Moderate	Almost Certain	High	Minor	Unlikely	Low	LV030
Project components - elevated Park - Recreation (Shrine of Remembrance)	Potential for impact on visual and landscape values - Parks - Recreation uses (the Shrine of Remembrance surrounds)	7 - Domain	Minor	Likely	Medium	Minor	Possible	Low	LV031

Hazard		Precincts	Initial Risk (unmitigated)			Residual Risk Rating *(10 years post mitigation implementation)*			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
Project components - Parks - Urban Plazas	Potential for impact on visual and landscape values - Parks - Urban Plaza uses – University Square (Southern section)	4 – Parkville	Minor	Likely	Medium	Minor	Unlikely	Low	LV032
	Potential for impact on visual and landscape values - Parks - Urban Plazas uses –, State Library Forecourt	5 – CBD North	Negligible	Likely	Low	Negligible	Unlikely	Very Low	LV033
	Potential for impact on visual and landscape values - Parks - Urban Plazas uses –Federation Square	6 – CBD South	Negligible	Likely	Low	Negligible	Unlikely	Very Low	LV034
	Potential for impact on visual and landscape values - Parks - Urban Plazas uses –City Square	6 – CBD South	Minor	Likely	Medium	Minor	Possible	Low	LV035
Project components - non-elevated residential/accommodation	Potential for impact on visual and landscape values - Residential / Accommodation uses – Residences in Kensington	2 – Western Portal	Minor	Likely	Medium	Negligible	Unlikely	Low	LV036
	Potential for impact on visual and landscape values - Residential / Accommodation uses – Residences in Queensberry Street	3 – Arden	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV037

Hazard		Precincts	Initial Risk (unmitigated)			Residual Risk Rating *(10 years post mitigation implementation)*			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
	Potential for impact on visual and landscape values - Residential / Accommodation uses – Residences in William and Osborne Streets	8 - Eastern portal	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV038
Project components - mid-level elevated residential/accommodation (Levels 2 and above)	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Apartments in Kensington	2 – Western portal	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV039
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Apartments and Hotels in Swanston Street	5 – CBD North 6 – CBD South	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV040
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Westin Hotel	6 – CBD South	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV041
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Domain Towers	7 – Domain	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV042

Hazard		Precincts	Initial Risk (unmitigated)			Residual Risk Rating *(10 years post mitigation implementation)*			Risk No.
Category	Event		Consequence	Likelihood	Risk	Consequence	Likelihood	Risk	
	Potential for overlooking impact on visual and landscape values - Residential / Accommodation uses – Hallmark Apartments.	7 – Domain	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV043
Project components - retail uses (assumes primarily non-elevated)	Potential for impact on visual and landscape values - Retail uses – Melbourne Central, Swanston Street	5 – CBD North 6 – CBD South	Negligible	Likely	Low	Negligible	Unlikely	Very Low	LV044
Project components - health, education and community facility uses (assumes primarily elevated)	Potential for overlooking impact on visual and landscape values - Health and Educational uses – Victorian Comprehensive Cancer Centre	4 – Parkville	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV045
	Potential for overlooking impact on visual and landscape values - Health and Educational uses – Royal Melbourne Hospital	4 – Parkville	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV046
	Potential for overlooking impact on visual and landscape values - Health and Educational uses – University of Melbourne	4 – Parkville	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV047
	Potential for overlooking impact on visual and landscape values - Health and Educational uses – RMIT	5 – CBD North	Minor	Likely	Medium	Negligible	Unlikely	Very Low	LV048

Hazard		Precincts	Initial Risk (unmitigated)			Residual Risk Rating *(10 years post mitigation implementation)*			Risk No.
Category	**Event**		**Consequence**	**Likelihood**	**Risk**	**Consequence**	**Likelihood**	**Risk**	
Project components - Swanston Street spine to the Shrine of Remembrance	Potential for impact on visual and landscape values - along the Swanston Street visual axis to the Shrine of Remembrance	5 – CBD North 6 – CBD	Negligible	Unlikely	Very low	Negligible	Unlikely	Very low	LV049
Project components - Royal Parade	Potential for impact on visual and landscape values - along the Swanston Street visual axis to the Shrine of Remembrance	4 – Parkville	Negligible	Unlikely	Very Low	Negligible	Unlikely	Very Low	LV050

Appendix C LVIA Methodology

C.1 LVIA METHODOLOGY

The urban viewshed assessed is primarily the area where highest impacts are likely to occur. In the context of low-rise built-form in an urban context, this is typically within 500 m of the components of the project and would mainly occur where views are possible along roads and other visually open corridors. Within high-density urban areas with tall built form, the ground level viewshed is likely to be reduced due to the screening provided by buildings. However, views from sensitive elevated locations would be possible that may extend up to 1,000 m from the project.

The critical issues considered for this LVIA were:

- The number of sensitive viewing locations.
- The degree to which the proposed works are visible.

The study area for this LVIA extends beyond the boundaries of the project's proposed Precincts to include all sensitive land use areas within its visual catchment.

The assessment method assumed that if the works would not be seen, there is no impact.

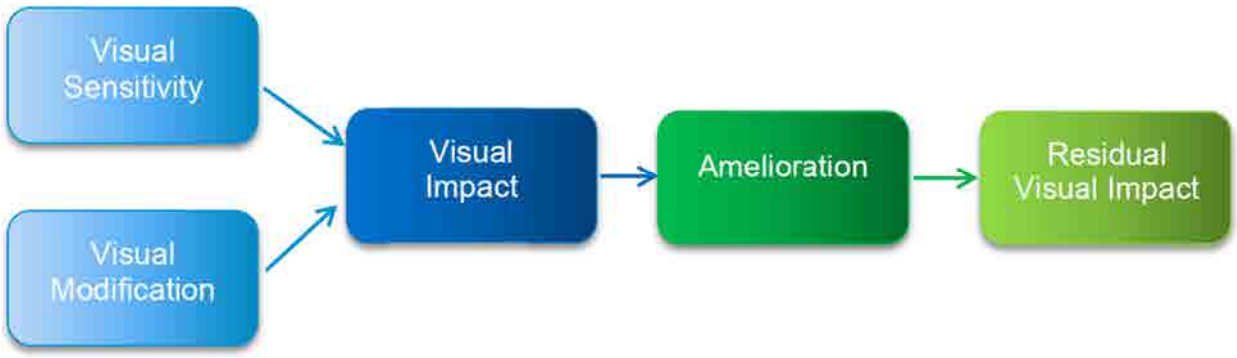


FIGURE B-1 LVIA METHODOLOGY PROCESS

C.1.1 VISUAL SENSITIVITY

Visual sensitivity is a measure of how critically a change to the existing landscape would be viewed from various use areas (Brush and Shafer, 1975). Different activities undertaken within the landscape setting have different sensitivity levels. For example, tourists who are using the surrounding landscape as a part of the holiday experience would generally view built form interventions within the landscape setting more critically than workers in an industrial setting. Similarly, individuals would view changes to the visual setting of their residence more critically than changes to the visual setting of the broader setting in which they travel or work. Pedestrians in a particular sensitive land use area are considered to have the same level of sensitivity as the land use.

The visual sensitivity of a development depends on a range of viewer characteristics. The primary characteristics used in this study are:

- Land use and the expectation of the viewer of a particular visual experience.
- Distance of the development from viewers – Local, Sub-Regional and Regional.

The potential visual sensitivity of land uses were identified to assist in the determination of the visual impact of the development. As distance from the viewer to the proposed development increases, the level of sensitivity reduces.

Typical levels of viewer sensitivity for the assessed visual setting of the Project are based on a process of defining levels of visual sensitivity, which relate to a viewer's expectation of what they would typically

expect within a particular setting. This approach is consistent with the Visual Management System (United States Department of Agriculture Forest Service, 1995). The typical viewer sensitivity levels relating to land use activities within the area are outlined in ***Table B-1***.

Table B-1 Typical visual (viewer) sensitivity

VISUAL USE AREA	LOCAL VISUAL SETTING		SUB- REGIONAL VISUAL SETTING		REGIONAL VISUAL SETTING
	0 – 0.20 km	0.2 - 0.5 km	0.5 - 1 km	1 - 2 km	> 2 km
Residential / Accommodation	**H**	**H**	**H**	**M**	**L**
Parks – Recreation/Urban Plazas	**H**	**H**	**H**	**M**	
Hospitals / Health Care	**H**	**M**	**M**	**L**	**L**
Educational / Facilities	**H**	**M**	**M**	**L**	**L**
Community Facilities	**H**	**M**	**M**	**L**	**L**
Retail	**H**	**M**	**M**	**L**	**L**
Commercial / Research	**M**	**M**	**L**	**L**	**VL**
Parks – Sporting	**M**	**M**	**L**	**L**	**VL**
Freeway / Tollway	**M**	**M**	**L**	**L**	**VL**
Rail -– Commuter	**L-M**	**L-M**	**L**	**L**	**VL**
Industrial Areas	**L**	**L**	**L**	**VL**	**VL**
Rail Yards / Port Areas	**VL**	**VL**	**VL**	**VL**	**VL**
Legend - H = High, M = Moderate, L = Low, VL = Very Low					

As previously discussed, the visual sensitively levels vary according to the expectation of the viewer within the visual setting. With regard to the parks' visual use area, a difference in the level of sensitivity exists between recreation and sporting uses due to recreation being associated with typically leisure and relaxation activities where visual quality of the setting has a direct relationship to the user expectation. Sporting activities require appropriate functional facilities but are not as dependent on the visual quality of the setting. It is noted that in the central city and inner urban areas, sporting fields are used by recreational users due to the lack of recreational open space.

Retail uses have a high level of sensitivity as many shoppers within the CBD and Chapel Street and Toorak Road areas are tourists or people involved in visiting the city as part of a leisure activity. Workers in commercial uses have a primary function relating to productive work, and while the quality of the internal work environment is important, the quality of the external environment, where they would spend relatively little time per day, is less critical.

Health uses are considered sensitive as their primary role is the care of patients. A setting that is aesthetically pleasing is recognised as being beneficial to recovery[2].

Educational uses are also considered sensitive. This is based on the efforts made by the primary institutions within the project study area, RMIT University and University of Melbourne, to provide exemplar new buildings and external spaces, as well as maintain historic buildings. Additionally, the amount of time students spend outdoors is also a consideration.

[2] Ampt A, Harris P, Maxwell M. 2008. The Health Impacts of the Design of Hospital Facilities on Patient Recovery and Wellbeing, and Staff Wellbeing: A Review of the Literature. Centre for Primary Health Care and Equity, University of New South Wales: Sydney.

Road and rail users within the city environment consist primarily of commuters, with a limited number being tourists. Although recent road projects have placed significant emphasis on the quality of the driver's experience, transport routes are infrastructure corridors and there is no direct correlation between the need to commute and the need for a high quality visual setting. The visual sensitivity level of these users is therefore low to moderate, rather than high.

C.1.2 VISUAL MODIFICATION

The visual modification level of a proposed development can be best measured as an expression of the visual interaction, or the level of visual contrast between the development and the existing visual environment (Zube *et al.,* 1976). Throughout the visual catchment, the level of visual modification generally decreases as the distance from the development to various viewpoint locations increases and views are unobstructed by vegetation, topography or built form.

The assessment of visual modification also considers the level of visual compatibility of a project with the existing visual landscape. An example of low visual modification would be a black and white cow in a rural setting. It is an expected element within its visual setting. An example of a high visual modification level would be a red cow in the same setting. Although of a form which would typically exist within the setting, its colour makes it a contrasting element which would be highly noticeable.

Impacts to the landscape, primary through the removal of canopy vegetation, are considered in the determination of visual modification.

The form of impact when assessing the visual modification or the change in the fabric, character and quality of the landscape as a result of development can be adverse, neutral or beneficial.

Adverse – Impacts that would result in detrimental changes to landscape character and visual quality.

Neutral – Impacts that would result in no significant change to landscape character and visual quality.

Beneficial – Impacts that would result in an improvement to landscape character and visual quality.

C.1.3 QUANTITATIVE ASSESSMENT

C.1.3.1 VISUAL CATCHMENT

The visual catchment, or the area from which views to a proposed development may be possible, is defined by elements that screen or filter views, such as vegetation, and elements that block views, such as built form or topography.

Within the context of an inner city landscape setting, the visual catchment for ground level views of a generally horizontal proposed development would primarily be defined by the built form along street edges. Additional elements that provide screening or blocking of views within the streetscape setting include permanent elements such as street trees and street furniture and temporary elements such as parked and moving vehicles. Given the above, the primary visual catchment within which views from high sensitivity locations would be possible is approximately 200 m.

Views would be possible from elevated locations above ground level. Within the context of the city, viewing locations between levels two to four would have views screened by street trees, generally located in close proximity to the view point. Above level four, views over the street trees would be possible. However, the street trees would provide partial screening / filtered views to the ground plane.

Views from taller buildings outside of the 200 m ground plane visual catchment may be possible where they overlook the buildings which define the street edges.

C.1.3.2 VISUAL PROMINENCE AND RELATIONSHIP WITH VIEWSHEDS

The methodology is based on the reduction of impact with an increase in distance between a given viewpoint and the project. The potential visual impact of the project would also, to a large extent, depend on how much of the central field of vision it occupies (***Appendix C***).

Throughout the visual catchment, the degree of visual prominence would generally decrease as the distance from the development site to various viewing locations increases.

The quantitative assessment of visual prominence, i.e., how much is potentially visible, is intertwined with the distribution, the presence of built form and the height and density of vegetation as well as topography throughout the visual catchment, elements which can screen views of a development from a particular viewpoint. Visual prominence helps inform the process of determining the visual modification level as previously outlined in the section above.

The quantification of vertical angle is based on the height of the tallest elements of the project. The quantification of vertical and horizontal prominence is considered in the determination of visual modification for viewpoints assessed as part of the qualitative assessment process. However, it does not take into account aspects such as visual contrast or visual integration, which are assessed as part of the qualitative assessment process.

To determine the overall potential level of visual prominence, the values from the vertical and horizontal prominence calculations are combined. Refer to ***Table B-3*** below.

Table B-3 Determination of visual prominence

		Vertical Angle		
		H	**M**	**L**
Horizontal Angle	**H**	H	H	M
	M	H	M	L
	L	H	M	L

L = Low (Insignificant)
M = Moderate (Potentially Noticeable)
H = High (Potentially Dominant)

Level of Visual Prominence

C.1.4 APPROACH TO IMPACT DETERMINATION

The basis of the methodology is that the initial visual impact of a proposed development is determined by evaluating the degree of visual modification/fit of the development within the context of the visual sensitivity of surrounding land use areas from which a proposed development may be visible. The visual initial impact (the impact prior to amelioration) resulting from the combination of visual modification and visual sensitivity, or viewer sensitivity, is illustrated in *Table 2*. The residual impact is the impact following the incorporation of the recommended amelioration measures. In the case of grass and shrub planting, the duration is typically short, i.e., one to three years. In the context of canopy trees, seven to ten years is typical.

Table B-4 Visual impact determination matrix

Horizontal Angle \ *Vertical Angle*	**H**	**M**	**L**
H	H	H	M
M	H	M	L
L	H	M	L

L = Low (Insignificant)
M = Moderate (Potentially Noticeable)
H = High (Potentially Dominant)

Level of Visual Prominence

**Adverse, Neutral or Beneficial*

C.1.5 VISUAL IMPACT – PRIMARY REPRESENTATIVE VIEWPOINTS

Analysis was undertaken to identify a range of typical representative sensitive viewpoints within the visual setting of the project. For sub-regional and local settings (based on proximity to the project), the assessment has been undertaken for a typical sensitive viewpoint representative of other similar viewpoints within a particular setting (refer to ***Appendix E***).

Distances expressed in the quantitative assessment are based on those from the viewpoint to the closest, most visible components of the project.

C.1.6 IMPACTS OF NIGHT-LIGHTING

Australia does not have standards for the assessment of lighting impacts; therefore, the assessment of the impacts of lighting at night-time has been based on the UK's *Guidance Notes for the Reduction of Obtrusive Light* (***Appendix D***). However, Australian Standards[3] do exist for the minimisation of light spill. Regardless of the existing brightness of a particular setting, it is a widely accepted principal that light spill, particularly upward light spill, be minimised wherever possible.

C.1.7 AMELIORATION AND MITIGATION MEASURES

Amelioration and/or mitigation measures are recommended for each assessed viewpoint. The measures are derived from Melbourne Metro Urban Design Strategy (Technical Appendix M) and the requirements of relevant planning policy. Amelioration and/or mitigation for construction and operation would also be guided by the recommended Environmental Performance Requirements.

[3] Standard AS 4282 - 1997 Control of the obtrusive effects of outdoor lighting

Appendix D Visual Prominence Rational

VISIBILITY – RELATIONSHIP WITH VIEWSHEDS

The report defines a number of viewsheds based on distance from the development for the purposes of assessment. The methodology is based on the reduction of impact with an increase in distance between a given viewpoint and the development. These viewsheds or settings are:

Local Setting – up to 0.5 km from the development.

Sub-regional Setting – between 0.5 km and 2 km from the development.

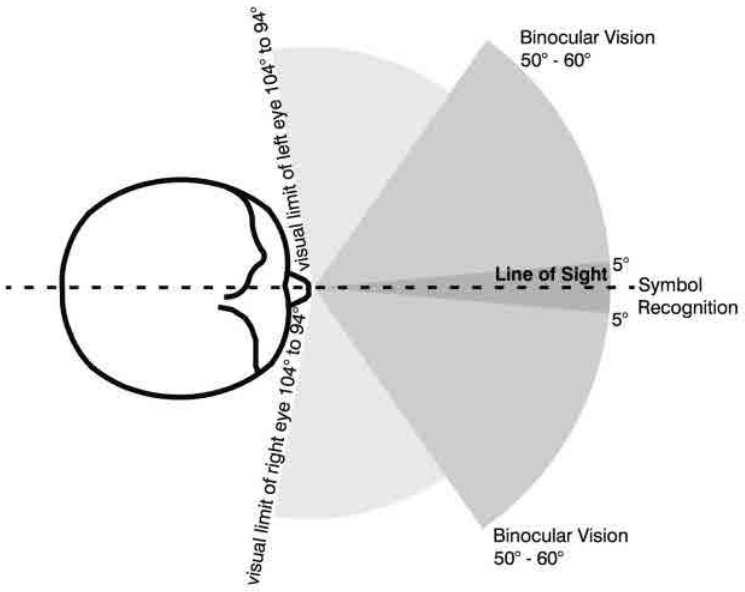
Regional Setting – beyond 2 km of the development.

These distances have been established based on previous studies undertaken by Urbis. They are based on the reduction of visibility of objects in the distance as the field of view reduces.

HORIZONTAL LINE OF SIGHT

It is generally accepted that the central field of vision for the human eye covers a horizontal angle of approximately 50 degrees to 60 degrees. Given both eyes see simultaneously and that there is a degree of overlap, a central field of view results in a person looking straight ahead (Figure A.1).

HORIZONTAL LINE OF SIGHT FIGURE A.1



In the production of visual simulations, a 50 mm lens on a 35 mm film format is most widely used as it captures a field of view of approximately 46 degrees, similar to that of the view from one eye. Two photos taken with a 50 mm lens produced as a panorama, with a degree of central overlap, capture the central field of view in a similar way to that of the human binocular view (binocular field).

Within the central field of vision, the viewed image is sharp, colours are separately defined and depth perception occurs.

VISUAL IMPACT/VISUAL PROMINENCE

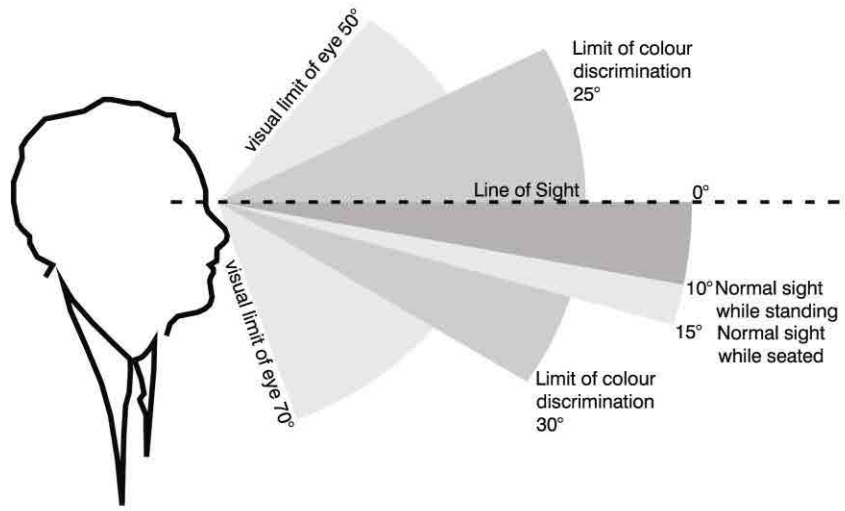
The potential visual impact of a development would, to a large extent, depend on how much of the central field of vision that it occupies. In relation to the assessment of mining sites that often extend across the landscape, the calculation of horizontal view angle is not the only factor to be considered.

DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – HORIZONTAL FIELD OF VIEW
Less than 5^o	**Insignificant** The development would not be highly visible in the view, unless it contrasts strongly with the background.
5^o – 30^o	**Potentially Noticeable** The development may be noticeable. The degree that it intrudes on the view would be dependent on how well it integrates with the landscape setting.
Greater than 30^o	**Potentially Dominant** The development would be highly noticeable.

VERTICAL LINE OF SIGHT

As for the horizontal line of sight, there is also a vertical central field of view. If we assume that the horizon is 0^o then the eye clearly defines colour, field of view and has image sharpness for an angle of approximately 25^o upwards and 30^o downwards. However, in reality, the typical line of sight for a standing person at ground level is approximately 10^o below the horizon line (Figure A.2).

VERTICAL LINE OF SIGHT FIGURE A.2



VISUAL IMPACT / VISUAL PROMINENCE

Objects that occupy a small proportion of the vertical field of view are visible but not dominant, particularly when they occur within landscapes that have been modified by human activity.

DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – HORIZONTAL FIELD OF VIEW
Less than 0.5^{o}	**Insignificant** A small thin line in the landscape.
0.5^{o} – 2.5^{o}	**Potentially Noticeable** The development may be noticeable. The degree that it intrudes on the view would be dependent on how well it integrates with the landscape setting.
Greater than 2.5^{o}	**Potentially Dominant** The development would be highly noticeable, although the degree of visual intrusion would depend on the landscape setting and the width / thickness of the object.

VISUAL PROMINENCE IN RELATION TO DISTANCE AND VIEWSHED SETTINGS

The following distances relating to visual prominence are based on the previous field of view exercises. The distances also relate to the distances for the setting types in the visual assessment methodology.

DEGREES OF FIELD OF VIEW OCCUPIED	POTENTIAL VISUAL PROMINENCE – HORIZONTAL FIELD OF VIEW
5000 metres	**Insignificant** Visually insignificant.
1000 – 5000 metres	**Potentially Noticeable** The development may be noticeable. The degree that it intrudes on the view would increase as distance reduces.
Less than 1000 metres	**Potentially Dominant** The development would be highly noticeable.

Appendix E

Guidance Notes for the Reduction of Obtrusive Light

GUIDELINES PREPARED BY THE INSTITUTION OF LIGHTING ENGINEERS, UK

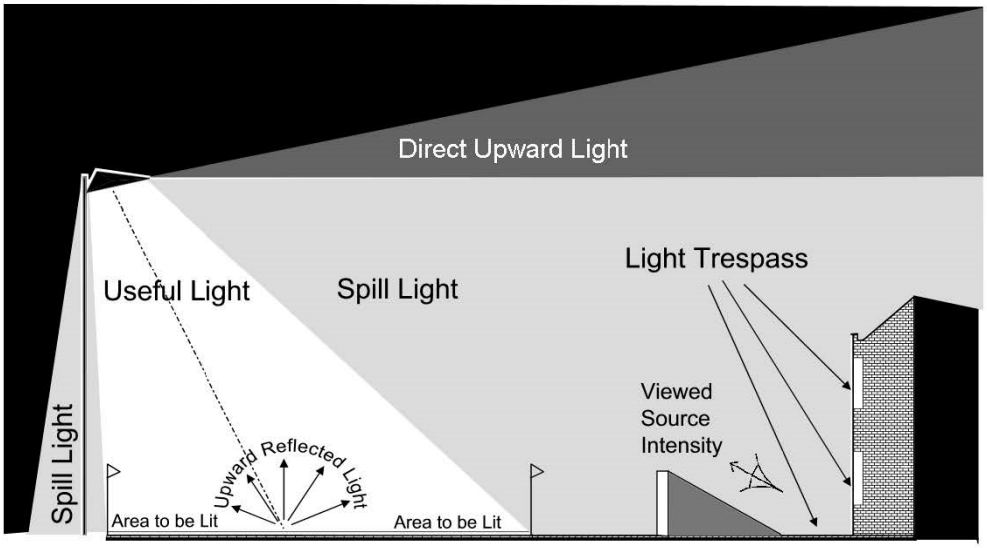
The Institution of Lighting Engineers
E-mail ile@ile.org.uk Website www.ile.org.uk

GUIDANCE NOTES FOR THE REDUCTION OF OBTRUSIVE LIGHT

ALL LIVING THINGS adjust their behaviour according to natural light. Man's invention of artificial light has done much to enhance our night-time environment but, if not properly controlled, obtrusive light (commonly referred to as light pollution) can present serious physiological and ecological problems.

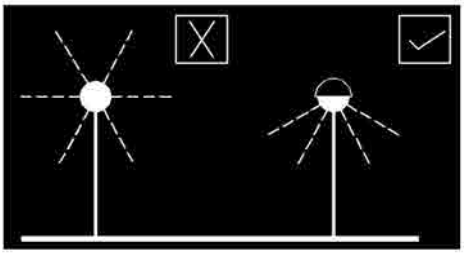
Obtrusive Light, whether it keeps you awake through a bedroom window or impedes your view of the night sky, is a form of pollution and can be substantially reduced without detriment to the lighting task.

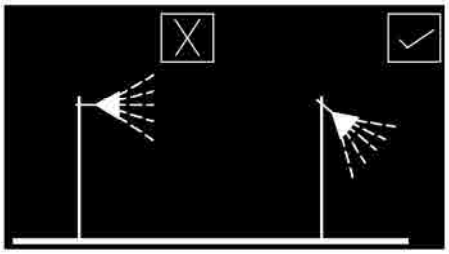
Sky glow, the brightening of the night sky above our towns, cities and countryside, Glare the uncomfortable brightness of a light source when viewed against a dark background, and Light Trespass, the spilling of light beyond the boundary of the property or area being lit, are all forms of obtrusive light which may cause nuisance to others, waste money and electricity and result in the unnecessary emissions of greenhouse gases. Think before you light. Is it necessary? What effect will it have on others? Will it cause a nuisance? How can I minimise the problem?



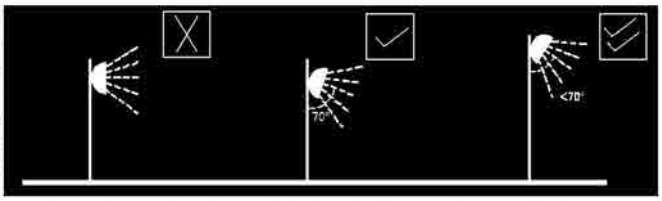
Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light. Organisations from which full details of these standards can be obtained are given on the last page of this leaflet.

Dim or switch off lights when the task is finished. Generally a lower level of lighting will suffice to enhance the night time scene than that required for safety and security.



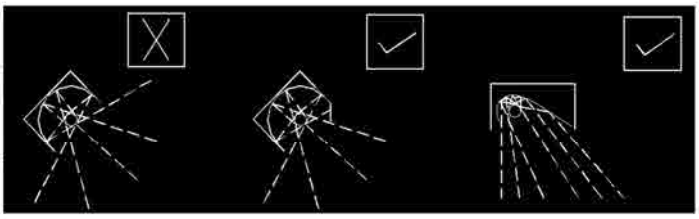


Use specifically designed lighting equipment that minimises the upward spread of light near to and above the horizontal. Care should be taken when selecting luminaires to ensure that appropriate units are chosen and that their location will reduce spill light and glare to a minimum. Remember that lamp light output in LUMENS is not the same as lamp wattage and that it is the former that is important in combating the problems of obtrusive light

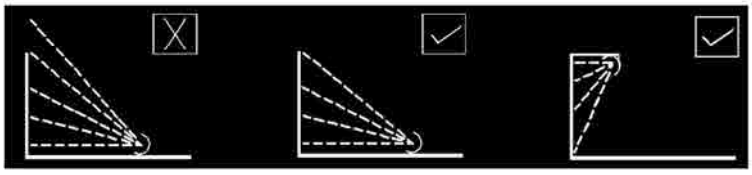


Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70°. Higher mounting heights allow lower main beam angles, which can assist in reducing glare. In areas with low ambient lighting levels, glare can be very obtrusive and extra care should be taken when positioning and aiming lighting equipment. With regard to domestic security lighting the ILE produces an information leaflet GN02 that is freely available from its web site.

The UK Government will be providing an annex to PPS23 Planning and Pollution Control, specifically on obtrusive light. However many Local Planning Authorities (LPA's) have already produced, or are producing, policies that within the new planning system will become part of the local development framework. For new developments there is an opportunity for LPA's to impose planning conditions related to external lighting, including curfew hours.



For sports lighting installations (see also design standards listed on Page 4) the use of luminaires with double-asymmetric beams designed so that the front glazing is kept at or near parallel to the surface being lit should, if correctly aimed, ensure minimum obtrusive light. In most cases it will also be beneficial to use as high a mounting height as possible, giving due regard to the daytime appearance of the installation. The requirements to control glare for the safety of road users are given in Table 2.



When lighting vertical structures such as advertising signs direct light downwards, wherever possible. If there is no alternative to up-lighting, as with much decorative lighting of buildings, then the use of shields, baffles and louvres will help reduce spill light around and over the structure to a minimum.

For road and amenity lighting installations, (see also design standards listed on Page 4) light near to and above the horizontal should normally be minimised to reduce glare and sky glow (Note ULRs in Table 1). In sensitive rural areas the use of full horizontal cut off luminaires installed at 0° uplift will, in addition to reducing sky glow, also help to minimise visual intrusion within the open landscape. However in many urban locations, luminaires fitted with a more decorative bowl and good optical control of light should be acceptable and may be more appropriate.

ENVIRONMENTAL ZONES:

It is recommended that Local Planning Authorities specify the following environmental zones for exterior lighting control within their Development Plans.

Category	Examples	
E1:	**Intrinsically dark landscapes**	National Parks, Areas of Outstanding Natural Beauty, etc
E2:	**Low district brightness areas**	Rural, small village, or relatively dark urban locations
E3:	**Medium district brightness areas**	Small town centres or urban locations
E4:	**High district brightness areas**	Town/city centres with high levels of night-time activity

Where an area to be lit lies on the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone.

DESIGN GUIDANCE

The following limitations may be supplemented or replaced by a LPA's own planning guidance for exterior lighting installations. As lighting design is not as simple as it may seem, you are advised to consult and/or work with a professional lighting designer before installing any exterior lighting.

Table 1 – Obtrusive Light Limitations for Exterior Lighting Installations

Environmental Zone	Sky Glow ULR [Max %] (1)	Light Trespass (into Windows) Ev [Lux] (2)		Source Intensity I [kcd] (3)		Building Luminance Pre-curfew (4)
		Pre- curfew	Post- curfew	Pre- curfew	Post- curfew	Average, L [cd/m2]
E1	0	2	1*	2.5	0	0
E2	2.5	5	1	7.5	0.5	5
E3	5.0	10	2	10	1.0	10
E4	15.0	25	5	25	2.5	25

ULR = **Upward Light Ratio of the Installation** is the maximum permitted percentage of luminaire flux for the total installation that goes directly into the sky.

Ev = **Vertical Illuminance in Lux** and is measured flat on the glazing at the centre of the window

I = **Light Intensity in Cd**

L = **Luminance in Cd/m2**

Curfew = **The time after which stricter requirements (for the control of obtrusive light) will apply**; often a condition of use of lighting applied by the local planning authority. If not otherwise stated - 23.00hrs is suggested.

* = From Public road lighting installations only

(1) **Upward Light Ratio** – Some lighting schemes will require the deliberate and careful use of upward light – e.g. ground recessed luminaires, ground mounted floodlights, festive lighting – to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.

(2) **Light Trespass (into Windows)** – These values are suggested maxima and need to take account of existing light trespass at the point of measurement. In the case of road lighting on public highways where building facades are adjacent to the lit highway, these levels may not be obtainable. In such cases where a specific complaint has been received, the Highway Authority should endeavour to reduce the light trespass into the window down to the after curfew value by fitting a shield, replacing the luminaire, or by varying the lighting level.

(3) **Source Intensity** – This applies to each source in the potentially obtrusive direction, outside of the area being lit. The figures given are for general guidance only and for some sports lighting applications with limited mounting heights, may be difficult to achieve.

(4) **Building Luminance** – This should be limited to avoid over lighting, and related to the general district brightness. In this reference building luminance is applicable to buildings directly illuminated as a night-time feature as against the illumination of a building caused by spill light from adjacent luminaires or luminaires fixed to the building but used to light an adjacent area.

Table 2 – Maximum Values of Threshold Increment from Non-Road Lighting Installations				
Light Technical Parameter TI	Road Classification [5]			
	No road lighting	ME5	ME4/ ME3	ME2 / ME1
	15% based on adaptation luminance of 0.1cd/m^2	15% based on adaptation luminance of 1cd/m^2	15% based on adaptation luminance of 2 cd/m^2	15% based on adaptation luminance of 5 cd/m^2

TI = Threshold Increment is a measure of the loss of visibility caused by the disability glare from the obtrusive light installation

(5) Road Classifications as given in BS EN 13201 - 2: 2003 Road lighting Performance requirements
Limits apply where users of transport systems are subject to a reduction in the ability to see essential information. Values given are for relevant positions and for viewing directions in path of travel. See CIE Publication 150:2003, Section 5.4 for methods of determination. For a more detailed description and methods for calculating and measuring the above parameters see CIE Publication 150:2003.

RELEVANT PUBLICATIONS AND STANDARDS:

British Standards: www.bsi.org.uk	BS 5489-1: 2003 Code of practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas BS EN 13201-2:2003 Road lighting – Part 2: Performance requirements BS EN 13201-3:2003 Road lighting – Part 3: Calculation of performance BS EN 13201-4:2003 Road lighting – Part 4: Methods of measuring lighting performance. BS EN 12193: 2003 Light and lighting – Sports lighting	
Countryside Commission/DOE www.odpm.gov.uk	Lighting in the Countryside: Towards good practice (1997) *(Out of Print)*	
CIBSE/SLL Publications: www.cibse.org	CoL	Code for Lighting (2002)
	LG1	The Industrial Environment (1989)
	LG4	Sports (1990+Addendum 2000)
	LG6	The Exterior Environment (1992)
	FF7	Environmental Considerations for Exterior Lighting (2003)
CIE Publications: www.cie.co.at	01	Guide lines for minimizing Urban Sky Glow near Astronomical Observatories (1980)
	83	Guide for the lighting of sports events for colour television and film systems (1989)
	92	Guide for floodlighting (1992)
	115	Recommendations for the lighting of roads for motor and pedestrian traffic (1995)
	126	Guidelines for minimizing Sky glow (1997)
	129	Guide for lighting exterior work areas (1998)
	136	Guide to the lighting of urban areas (2000)
	150	Guide on the limitations of the effect of obtrusive light from outdoor lighting installations (2003)
	154	The Maintenance of outdoor lighting systems (2003)
Department of Transport www.defra.gov.uk		Road Lighting and the Environment (1993) (Out of Print)
ILE Publications: www.ile.org	TR 5	Brightness of Illuminated Advertisements (2001)
	TR24	A Practical Guide to the Development of a Public Lighting Policy for Local Authorities (1999)
	GN02	Domestic Security Lighting, Friend or Foe
ILE/CIBSE Joint Publications		Lighting the Environment - A guide to good urban lighting (1995)
ILE/CSS Joint Publications		Seasonal Decorations – Code of Practice (2005)
Campaign for Dark Skies (CfDS) www.dark-skies.org		

NB: These notes are intended as guidance only and the application of the values given in Tables 1 & 2 should be given due consideration along with all other factors in the lighting design. Lighting is a complex subject with both objective and subjective criteria to be considered. The notes are therefore no substitute for professionally assessed and designed lighting, where the various and maybe conflicting visual requirements need to be balanced.

Appendix F Detailed Representative Viewpoint Assessment

F.1 PRECINCT 1: TUNNELS

F.1.1 FAWKNER PARK – CONCEPT DESIGN

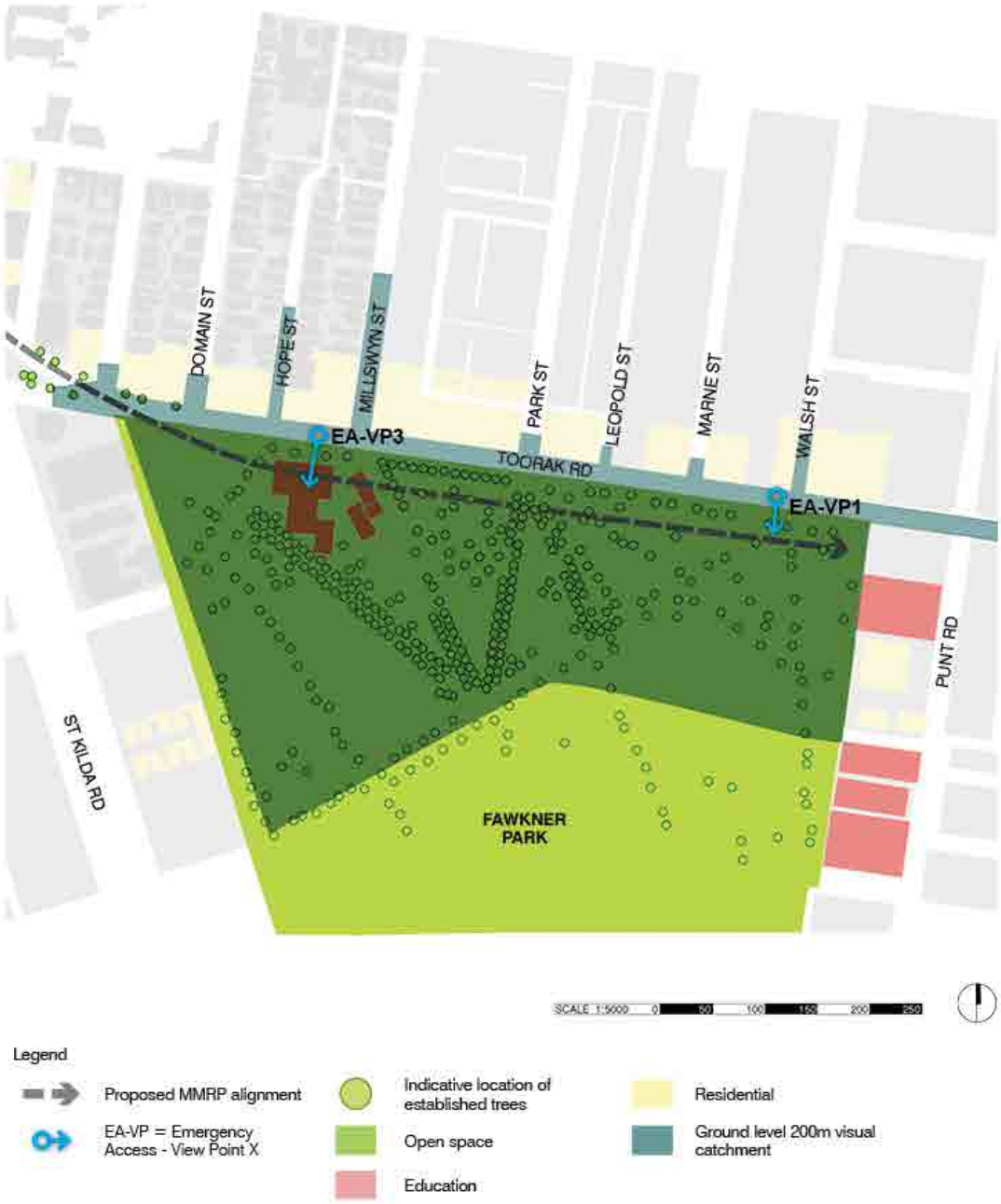


FIGURE A-2: FAWKNER PARK – TUNNELS PRECINCT: VISUAL CATCHMENT, REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT EA–VP1 Fawkner Park – Toorak Road	
Viewing Situation	Toorak Road adjacent to Fawkner Park.
Viewing Distance (To Most Prominent Object)	10 m (construction area) 15 m (Emergency access shaft).
Relative Elevation of Viewpoint	Ground Level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by the expansive and well treed Fawkner Park as well as the wide, tree-lined streetscape of Toorak Road. The northern side of Toorak Road is a mix of medium density residential buildings.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Parks – Recreation and Residential.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	3 years (Emergency Access Shaft)
Visual Modification	From non-elevated and second storey viewpoints at the northern edge of Fawkner Park, overlooking of the ground plane of the relatively confined construction area would not be possible. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 100 deg. Vertical angle – Potentially Dominant (High) 22 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area – Fawkner Park. Environmental Zone E3: Medium district brightness area – Toorak Road. Although Fawkner Park is a low brightness area, the adjacent area along Toorak Road where the construction would take place, is a medium district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as the residences. The construction lighting impacts for this viewpoint are considered to be moderate given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high
Operation Impacts – Long Term	
Visual Modification	The setting of the project is quality urban parkland with existing tram infrastructure along Toorak Road.

VIEWPOINT EA–VP1 Fawkner Park – Toorak Road	
	The project components would be generally small-scale and similar in massing to the existing toilet. As a result, there would be an overall low visual modification level for this viewpoint.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 28 deg. Vertical angle – Potentially Dominant (High) 11 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E3: Medium district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

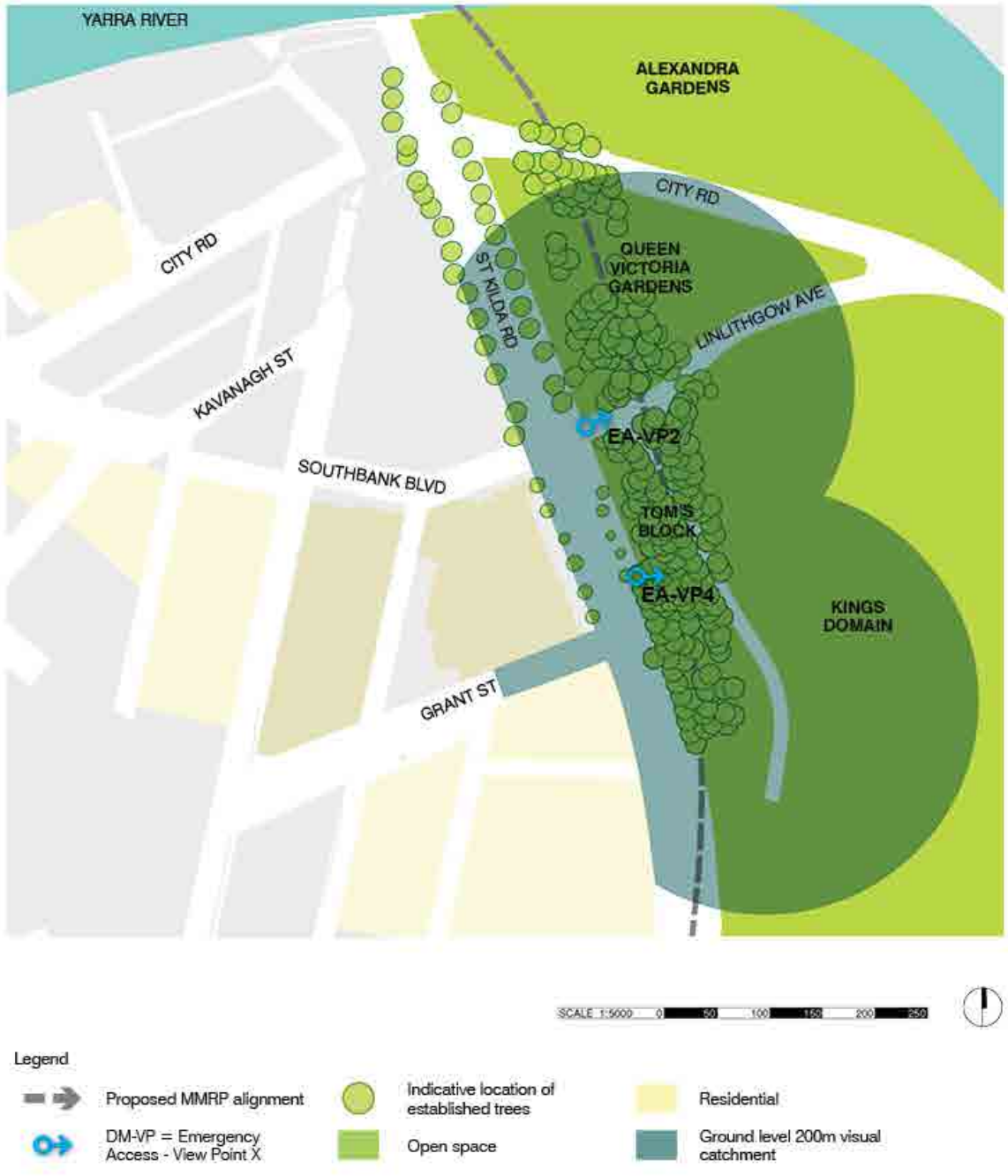


FIGURE A-3: LINLITHGOW AVENUE – TUNNELS PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT EA–VP2 Linlithgow Avenue – Queen Victoria Gardens	
Viewing Situation	Queen Victoria Gardens to the west of the Floral Clock.
Viewing Distance (To Most Prominent Object)	35 m (construction area) 40 m (emergency access shaft).
Relative Elevation of Viewpoint	Ground Level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by the expansive and well treed Queen Victoria Gardens as well as the wide, tree-lined boulevard of St Kilda Road. The western side of St Kilda Road comprises the arts and tourism precinct.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Parks – Recreation and Tourism.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	3 years
Visual Modification	From the surrounding non-elevated viewpoints overlooking of the ground plane of the relatively confined construction area would not be possible. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Noticeable (Moderate) 20 deg. Vertical angle – Potentially Dominant (High) 13 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area – Queen Victoria Gardens. Environmental Zone E4: high district brightness area – St Kilda Road. Although Queen Victoria Gardens is a low brightness area, the adjacent area along St Kilda Road is a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is high quality urban parkland.

VIEWPOINT EA–VP2 Linlithgow Avenue – Queen Victoria Gardens	
	The project components would be generally small-scale and similar in massing to the existing toilet. As a result, there would be an overall low to moderate visual modification level for this viewpoint.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 18 deg. Vertical angle – Potentially Dominant (High) 11 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

F.1.2 FAWKNER PARK OPTION 2 – USING THE LOCATION OF FAWKNER PARK TBM LAUNCH SITE

VIEWPOINT EA–VP3 Fawkner Park – Toorak Road Footpath	
Viewing Situation	Toorak Road footpath adjacent to Fawkner Park.
Viewing Distance (To Most Prominent Object)	40 m (construction area) 35 m (Emergency access shaft).
Relative Elevation of Viewpoint	Ground Level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by the expansive and well treed Fawkner Park as well as the tree-lined streetscape of Toorak Road. The northern side of Toorak Road is a mix of medium density residential buildings. The shaft would be located in an area that is currently a tennis complex with associated buildings. These would be removed as a result of the construction activities associated with the TBM launch.
Setting Absorptive Capability	The surrounding parkland setting is very sensitive to change. However the setting of the tennis courts has been subject to change over the years. The immediate setting has the ability to accommodate localised change. The surrounding parkland has a limited ability to handle change. Any change within the setting needs to be well considered in its design response.
Land Use	Parks – Recreation.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	3 years (Emergency Access Shaft); 5 years (TBM).
Visual Modification	Overlooking of the ground plane of the relatively confined construction area would not be possible. Considered in isolation, the proximity to the shaft construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction. However, in the context of the TBM launch activities, the visual modification level would be low.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Noticeable (Moderate) 10 deg. Vertical angle – Potentially Dominant (High) 13 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area – Fawkner Park. Environmental Zone E3: Medium district brightness area – Toorak Road. Although Fawkner Park is a low brightness area, the adjacent area along Toorak Road where the construction would take place, is a medium district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as the Shrine. The construction lighting impacts for this viewpoint are considered to be moderate given the existing lighting levels.
Potential Visual Impact	Moderate. The high sensitivity combined with a low visual modification level would

VIEWPOINT EA–VP3 Fawkner Park – Toorak Road Footpath	
	result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is quality urban parkland with existing tram infrastructure along Toorak Road. The project components would be generally small-scale and similar in massing to a number of existing park structures. As a result, there would be an overall low visual modification level for this viewpoint.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 28 deg. Vertical angle – Potentially Dominant (High) 11 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

F.1.3 LINLITHGOW AVENUE ALTERNATIVE DESIGN OPTION 3 - TOMS BLOCK

VIEWPOINT EA–VP4 Linlithgow Avenue – Tom's Block Option	
Viewing Situation	Footpath on St Kilda Road adjacent to parkland.
Viewing Distance (To Most Prominent Object)	35 m (construction area) 40 m (emergency access shaft).
Relative Elevation of Viewpoint	Ground Level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by the expansive and well treed Domain Parklands, of which Tom's Block is one of a number of island parks surrounded by roads, as well as the wide, tree-lined boulevard of St Kilda Road. The Police Memorial is located in close proximity to the shaft. The western side of St Kilda Road comprises the arts and tourism precinct and educational uses such as the Victorian College of the Arts.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Parks – Recreation, tourism and education.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	3 years
Visual Modification	From the surrounding non-elevated viewpoints overlooking of the ground plane of the relatively confined construction area would not be possible. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Noticeable (Moderate) 29 deg. Vertical angle – Potentially Dominant (High) 16 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area – Domain Parklands Environmental Zone E4: high district brightness area – St Kilda Road. Although the Domain Parklands is a low brightness area, the adjacent area along St Kilda Road is a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.

VIEWPOINT EA–VP4 Linlithgow Avenue – Tom's Block Option	
Residual Visual Impact	High.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is high quality urban parkland. The project components would be generally small-scale and similar in massing to the existing toilet. As a result, there would be an overall low to moderate visual modification level for this viewpoint.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 18 deg. Vertical angle – Potentially Dominant (High) 11 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

F.2 PRECINCT 2: WESTERN PORTAL

FIGURE A-4: WESTERN PORTAL PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT WP –VP1 – JJ Holland Park	
Viewing Situation	Centre of Park.
Viewing Distance (To Most Prominent Object)	100 m (retaining wall).
Relative Elevation of Viewpoint	Ground Level.
Visual Setting	Local.
Landscape Character	The character of the setting is defined by the treed and open grassed parkland character of JJ Holland Park. Trees within the park provide partial screening of views south towards the project.
Setting Absorptive Capability	All sensitive viewpoints are located to the north of the western portal, resulting in the majority of views being back-dropped by the existing power lines and rail infrastructure. As a result, the ability of the setting to accommodate change is high.
Land Use	Open Space – Recreation and Sport.
Visual Sensitivity	High.
Number of Viewers	Low to Moderate.
Primary Duration of View	Dynamic (moving).
Construction Impacts – Temporary	
Duration of Construction.	5 years
Visual Modification	The setting of the construction works is defined by existing power lines and rail infrastructure. The proposed construction works would be viewed within this heavily modified context. The screening influence of intervening trees would result in an overall moderate visual modification level for this viewpoint.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 90 deg. Vertical angle – Potentially Dominant (High) 3.4 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E3: Medium district brightness area. The park is an E2: Low district brightness area surrounded by the residential area, which is E3: Medium district brightness area. Although there are no recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints. The construction lighting impacts for this viewpoint are considered to be moderate to high given views to the south would be typically of a low brightness area.
Potential Visual Impact	High. Given the non-elevated viewpoint and the presence of vegetation along the southern edge of the park that provides some screening, filtered views to the project would be possible. The high visual sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is defined by existing power lines and rail

VIEWPOINT WP –VP1 – JJ Holland Park	
	infrastructure. The project would be viewed within this heavily modified rail context. As a result of the project, the HV power lines would be relocated to the south of the rail lines, significantly improving the visual amenity of the area, and resulting in the operational project having a lower level of visual modification. The screening influence of intervening trees would result in an overall low visual modification level for this viewpoint.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 90 deg. Vertical angle – Potentially Noticeable (Moderate) 1.7 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. Given the distance from the project, the non-elevated viewpoint and the presence of vegetation along the southern edge of the park that provides partial screening, views to the project would be possible. The high visual sensitivity combined with a low to moderate visual modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

The following viewpoint is representative of residences facing the proposed project from Ormond Street, Altona Street and Kensington Road.

VIEWPOINT WP –VP2 – Residential Areas – Ormond Street and Altona Street	
Viewing Situation	Footpath at the corner of Ormond and Altona Streets.
Viewing Distance (To Most Prominent Object)	325 m (retaining wall).
Relative Elevation of Viewpoint	GL to four storeys above GL.
Visual Setting	Local.
Landscape Character	The character of the setting is defined by the transition from medium density residential development, with minimal street setback, to the treed and open grassed parkland character of JJ Holland Park. Trees within the park provide partial screening of views south towards the project.
Setting Absorptive Capability	All sensitive viewpoints are located to the north of the western portal, resulting in the majority of views being back-dropped by the existing power lines and rail infrastructure. As a result, the ability of the setting to accommodate change is high.
Land Use	Residential.
Visual Sensitivity	High.
Number of Viewers	Moderate (medium density and detached dwellings).
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The setting of the construction works is defined by existing power lines and rail infrastructure. The proposed construction works would be viewed within this heavily modified context. The distance from the construction works in conjunction with the screening influence of intervening trees would result in an overall moderate visual modification level for this viewpoint.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 75 deg. Vertical angle – Potentially Noticeable (Moderate) >1 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area. Although there are not rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to avoid light spill to residential areas. The construction lighting impacts for this viewpoint are considered to be low.
Potential Visual Impact	Moderate to high. Given the distance from the project, the relatively minimal topographic variation and the presence of vegetation that provides screening, views to the project would be unlikely. Where views may be possible, the high sensitivity combined with a low visual modification would result in a low visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high.

VIEWPOINT WP –VP2 – Residential Areas – Ormond Street and Altona Street	
Operation Impacts – Long Term	
Visual Modification	The setting of the project is defined by existing power lines and rail infrastructure. The proposed construction works would be viewed within this heavily modified context. As a result of the project, the HV power lines would be related to the south of the rail lines, significantly improving the visual amenity of the area, and resulting in the operational project having a lower level of visual modification. The distance from the project in conjunction with the screening influence of intervening trees would result in an overall low to moderate visual modification level for this viewpoint.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 65 deg. Vertical angle – Potentially Noticeable (Moderate) >0.5 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Low. Given the distance from the project, the relatively minimal topographic variation and the presence of vegetation that provides screening, views to the operational project would be unlikely. Where views may be possible, the high sensitivity combined with a low visual modification level would result in a low visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

F.3 PRECINCT 3: ARDEN STATION

FIGURE A-5: ARDEN PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT A –VP1 – Residential Area – Intersection of Laurens and Barwise Streets	
Viewing Situation	Footpath at the corner of Laurens and Barwise Streets.
Viewing Distance (To Most Prominent Object)	20 m (station entrance).
Relative Elevation of Viewpoint	Ground level.
Visual Setting	Local.
Landscape Character	The streetscape character of the mixed residential and industrial/ commercial area to the east of Laurens Street is typified by broad streets with street tree planting, lined by small workers cottages or industrial / commercial buildings, many of heritage value. The area is subject to renewal with many high to medium density developments either completed or underway. The area west of Laurens Street is comprised of newer industrial activities that have a high external space requirement. The landscape quality of the area immediately adjacent to the proposed station entry is poor.
Setting Absorptive Capability	The majority of sensitive viewpoints are located to the east of Laurens Street and north of Arden Street, resulting in the majority of views towards the project area being back-dropped by the existing industrial land uses Limited opportunities for overlooking are possible from the elevated area to the east of Munster Terrace. As a result, the ability of the setting to accommodate change is high.
Land Use	Industrial with some residential.
Visual Sensitivity	Moderate (Average of low [commercial] to high [residential]).
Number of Viewers	Low (limited number of medium density).
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The setting of the construction works is defined by existing industrial land uses. The proposed construction works would be viewed within this heavily modified context. The footprint of the construction works would be more extensive than those of the operational project. The screening influence of intervening buildings would result in an overall low visual modification level for this viewpoint.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 80 deg. Vertical angle – Potentially Dominant (High) 16 deg. Potential visual prominence – Potentially Dominant (High)
Lighting Impacts	Environmental Zone E3: Medium district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints. The construction lighting impacts for this viewpoint are considered to be low given there are few sensitive land uses in close proximity with views to the construction area. However, upward light spill may result in impacts to a number of residential apartments at the corner of Laurens and Queensberry Streets.
Potential Visual Impact	Low. Given the existing industrial character of the setting, the presence of existing built form which provides screening of views from more distant locations, the overall moderate sensitivity combined with a low visual

VIEWPOINT A –VP1 – Residential Area – Intersection of Laurens and Barwise Streets	
	modification level would result in a low visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.
Operation Impacts – Long Term	
Visual Modification	The setting of the operational project would be transformed as a result of the change in land use of the existing VicTrack land on which the station entry would be located. At the time of the station completion, the surrounding industrial uses would no longer be there and renewal is likely to have commenced. The visual modification level is considered to be low.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 20 deg. Vertical angle – Potentially Dominant (High) 16 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Low. The moderate visual sensitivity levels combined with a low visual modification level would result in a low visual impact level.
Amelioration Treatments (Refer to UDS)	Refer to UDS and EPRs.
Residual Visual Impact	Low beneficial.

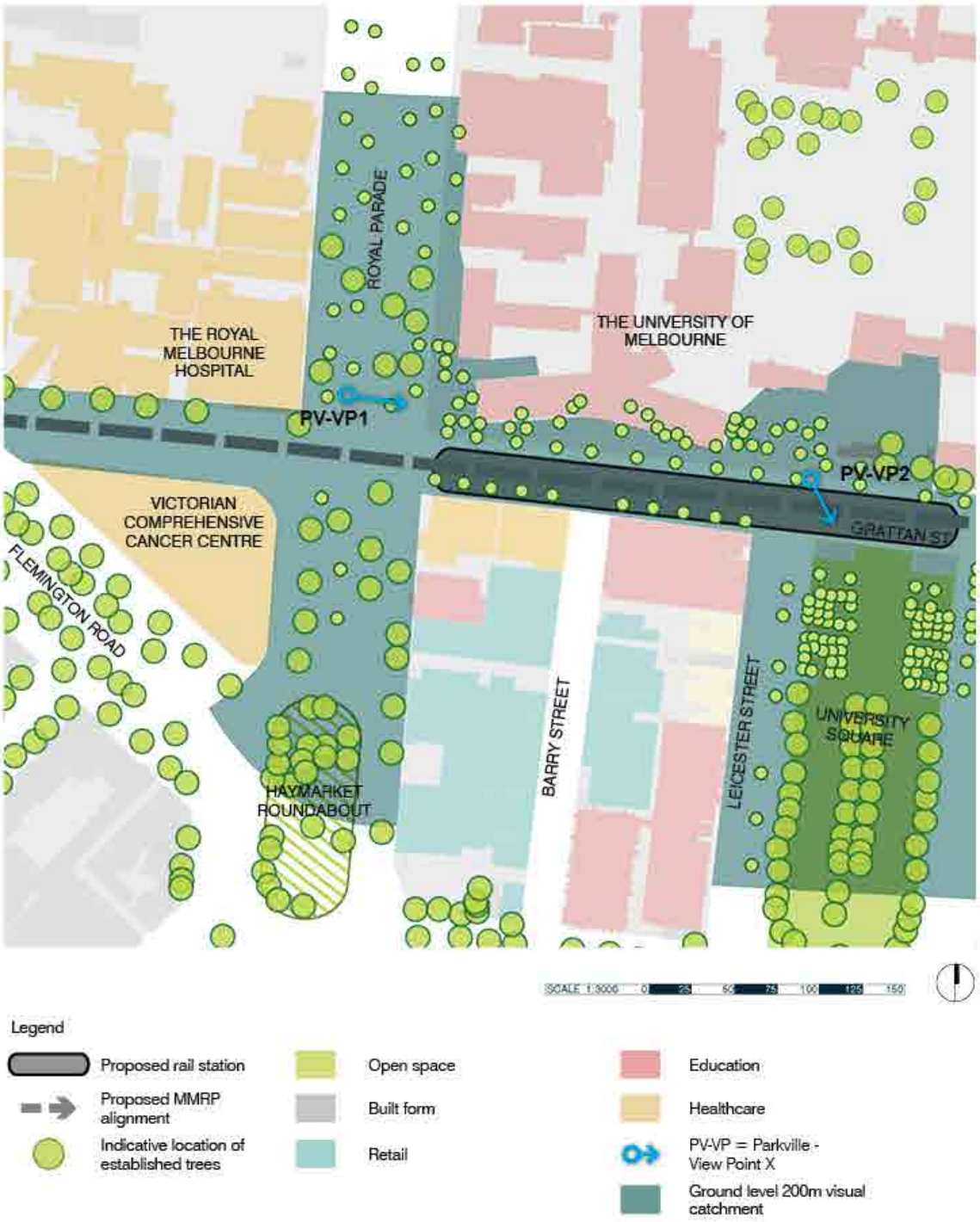


FIGURE A-6: PARKVILLE PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS

VIEWPOINT P–VP1 – Royal Parade	
Viewing Situation	North-west corner of Royal Parade and Grattan Street.
Viewing Distance (To Most Prominent Object)	5 m (construction area) 50 m (station entry).
Relative Elevation of Viewpoint	Ground Level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by wide streets that provide views, particularly along the tree-lined Royal Parade Boulevard with its multiple rows of trees, as well as the well treed Grattan Street. The hospitals with their high quality contemporary architecture sit in contrast to the campus style, classical sandstone architecture of the University of Melbourne. Together with the visually significant street tree plantings, the confluence of elements gives the precinct a unique urban character.
Setting Absorptive Capability	The setting has been subject to ongoing change and it has the ability to accommodate change that is appropriately designed and managed to ensure integration with the landscape and visual setting.
Land Use	Health and Education.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static (within the Royal Melbourne Hospital and VCCC) and Dynamic (streetscape).
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The construction area is located in a high quality urban setting. The construction process would require the removal of many mature trees along Grattan Street that may have provided a degree of screening of the construction area from elevated viewpoints. Overlooking of the construction area would not be possible from non-elevated viewpoints. Typically only a limited extent would be possible from this location. However, the proximity to the construction works and the area visible would result in a high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 200 deg. Vertical angle – Potentially Dominant (High) 32 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – Royal Parade and Grattan Street. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting. The construction lighting impacts for this viewpoint are considered to be moderate given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.

VIEWPOINT P–VP1 – Royal Parade	
Residual Visual Impact	High – Although temporary during construction amelioration measures may be effective for ground level viewpoints.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high quality urban setting. It contains existing transport infrastructure, including the tram stops on Royal Parade. The components of the project would be generally small-scale vertical forms or more expansive, low horizontal forms, which would be inserted into the streetscape and built form of the setting. As a result, there would be an overall low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of street tree plantings along Grattan Street.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (High) 19 deg. Vertical angle – Potentially Dominant (High) 5.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is expected to generate lower levels of lighting than the construction phase. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate to high. The high visual sensitivity combined with a low to moderate modification level would result in a moderate to high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

VIEWPOINT P–VP2 – Melbourne University – Main Grattan Street Entry	
Viewing Situation	Grattan Street footpath near main entry.
Viewing Distance (To Most Prominent Object)	5 m (construction area) 20 m (vent stacks).
Relative Elevation of Viewpoint	Ground level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by wide streets that provide views, particularly along the tree-lined Royal Parade Boulevard with its multiple rows of trees, as well as the well treed Grattan Street. The campus style, classical sandstone architecture of the University of Melbourne interfaces with the contemporary space of University Square, which sits elevated above the ground plane.
Setting Absorptive Capability	The setting has been subject to ongoing change and it has the ability to accommodate change that is appropriately designed and managed.
Land Use	Education.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Dynamic (streetscape) and static (UoM – Gatekeepers Cottage and Vice Chancellors residence).
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The construction area is located in a high quality urban setting. The construction process would require the removal of many mature trees along Grattan Street that may have provided a degree of screening of the construction area from elevated viewpoints. Overlooking of the construction area would not be possible from ground level viewpoints. Typically only a limited extent would be possible from this location. However, the proximity to the construction works and the area visible would result in a high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 180 deg. Vertical angle – Potentially Dominant (High) 60 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – Royal Parade and Grattan Street. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting. The construction lighting impacts for this viewpoint are considered to be moderate given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – Although amelioration measures may be effective for ground level viewpoints.

VIEWPOINT P–VP2 – Melbourne University – Main Grattan Street Entry	
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high quality urban and setting with existing infrastructure, including the vent shaft at University Square for the underground car park. The components of the project would be generally small-scale vertical forms or more expansive, low horizontal forms, which would be located within the existing streetscape and built form of the setting. As a result, there would be a low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of street tree plantings along Grattan Street.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 40 deg. Vertical angle – Potentially Dominant (High) 8.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is expected to generate lower levels of lighting than the construction phase. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate to High. The high visual sensitivity combined with a low to moderate modification level would result in a moderate to high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

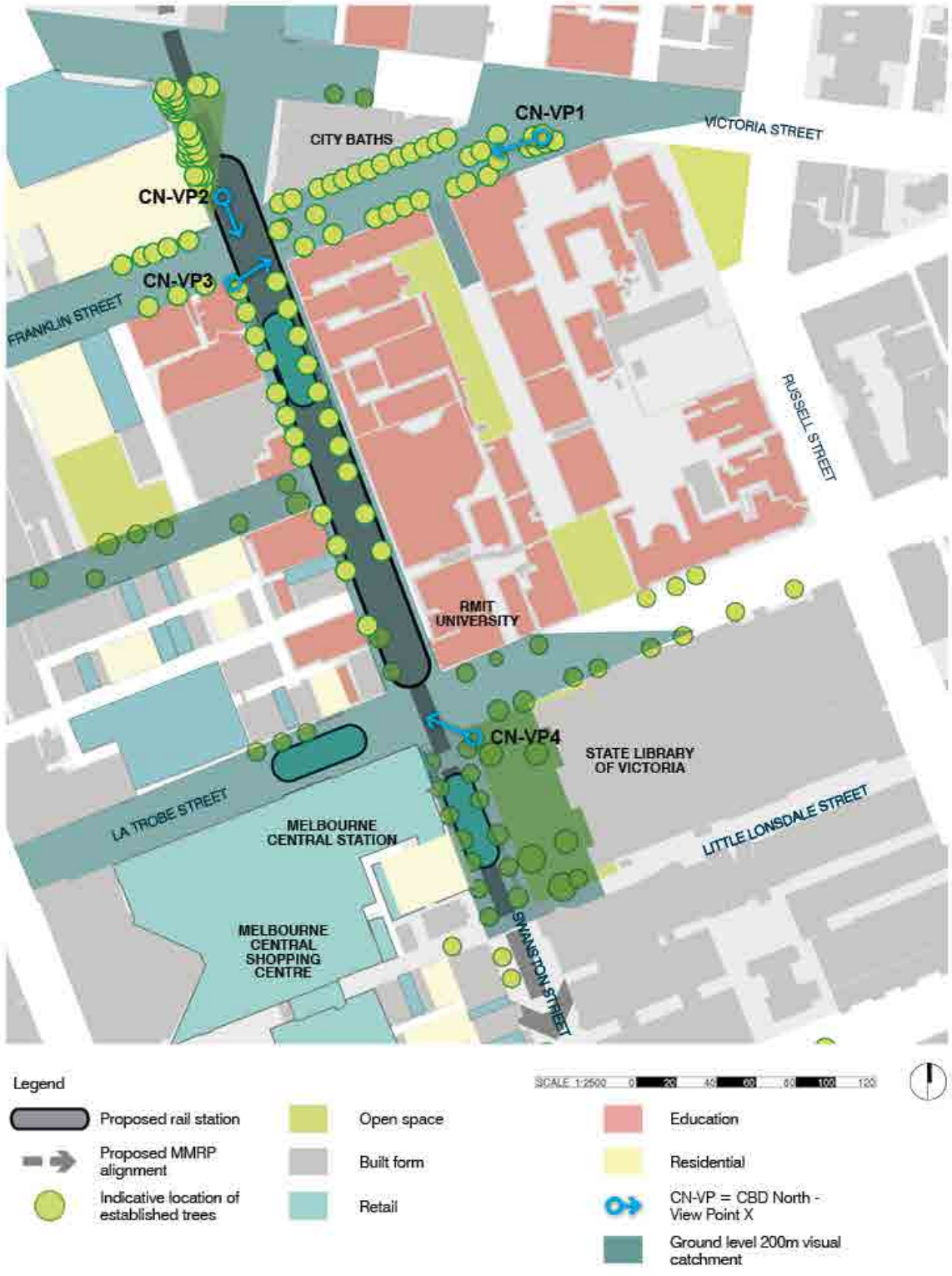


FIGURE A-7: CBD NORTH PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT CN–VP-01 – East side of Franklin Street	
Viewing Situation	North east end of Franklin Street.
Viewing Distance (To Most Prominent Object)	37m (Vent Shaft - Operations). 24m (Hoarding - Construction).
Relative Elevation of Viewpoint	Street level to 46 levels.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of land uses. It comprises of contemporary architecture and heritage buildings, set within a streetscape setting that has undergone recent enhancement. Franklin Street, east of Swanston Street, is flanked by RMIT buildings on the south side, and the City Baths to the north. Franklin Street has a generous street width, with 90 degree parking median running down the centre of the street. The section of Franklin Street east of Swanston Street extends approximately 140 m from Swanston Street to Victoria Street.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Education & Community Facilities.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The construction area is located in an intensively used urban setting. The viewpoint allows a street level view of the construction area. Construction activities would be visible from retail uses (primarily non-elevated). There is the potential for an impact on views along the Swanston Street visual axis to the Shrine of Remembrance. The elevated viewpoints from residential/accommodation uses would allow for overlooking of the construction area. As a result, there would be an overall high visual modification level during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially dominant (High) 52 deg. Vertical angle – Potentially dominant (High) 7.2 deg. Potential visual prominence – Potentially dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – Victoria Street, Franklin Street and Swanston Street. Franklin Street is located proximate to major intersections at Swanston and Victoria Streets. The construction would take place in a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Duration of Construction	Mid 2018 - End 2023 (5.5 years).
Potential Visual Impact	High.

VIEWPOINT CN–VP-01 – East side of Franklin Street	
	The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the overlooking of the temporary construction areas.
Operation Impacts – Long Term	
Visual Modification	The operational components of the project are located in an intensely used urban setting with existing tram movement along Swanston Street. The viewpoint allows a street level view of the construction area. The project components would be generally small-scale and would be inserted into the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 18 deg. Vertical angle – Potentially Dominant (High) 4.6 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high sensitivity combined with a moderate visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

VIEWPOINT CN–VP-02 – Swanston Street axis view to Shrine of Remembrance	
Viewing Situation	Swanston Street, between Franklin Street and Victoria Street.
Viewing Distance (To Most Prominent Object)	48m (Hoarding – Construction) 38m (Station Entrance/ Egress, Grouting Area)
Relative Elevation of Viewpoint	Street level to 46 levels.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of land uses. It comprises of contemporary architecture and heritage buildings, set within a streetscape setting that has undergone recent enhancement. The Swanston Street interface has RMIT buildings located to both side and the City Baths to the north-east. Swanston Street is the main viewing axis to the Shrine of Remembrance.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Education and Retail.
Visual Sensitivity	High.
Number of Viewers	High
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The construction area is located in highly utilised urban setting. The viewpoint allows a street level view of the construction area. The elevated viewpoint from residential/accommodation would allow for overlooking of the construction area. As a result, there would be an overall high visual modification level for this viewpoint during construction. There is also the potential for an impact on views along the Swanston Street visual axis to the Shrine of Remembrance.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Noticeable (Moderate) 53 deg. Vertical angle – Potentially Dominant (High) 19.6 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E4: High district brightness area – Victoria Street, Franklin Street and Swanston Street. The tram services reserve is surrounded by the busy Victoria and Franklin Streets. The construction would take place in a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of residents, particularly those in the Verve apartments. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the overlooking of the construction areas.
Operation Impacts – Long Term	

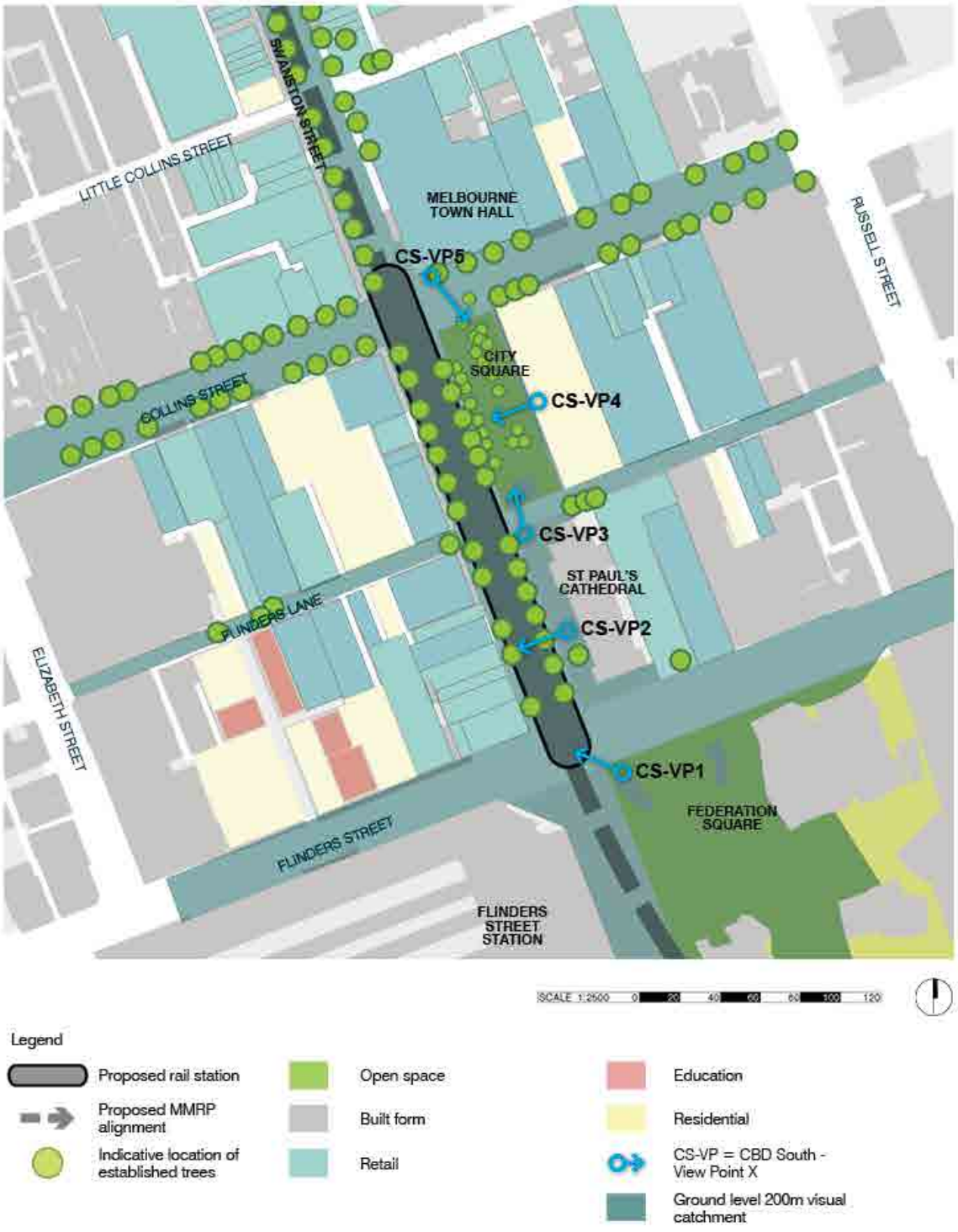
VIEWPOINT CN–VP-02 – Swanston Street axis view to Shrine of Remembrance	
Visual Modification	The project components would be generally small-scale and would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings along Swanston Street.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 54 deg. Vertical angle – Potentially Dominant (High) 11.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high sensitivity combined with a moderate visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

VIEWPOINT CN–VP-03 – Intersection of west side of Franklin Street and Swanston Street	
Viewing Situation	Corner of Franklin Street and Swanston Street.
Viewing Distance (To Most Prominent Object)	20m (Hoarding - Construction). 40m (Franklin Street station entry - Operational).
Relative Elevation of Viewpoint	Street level.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises a range of land uses. It comprises both contemporary architecture and heritage buildings, set within a streetscape setting that has undergone recent enhancement. Built form fronting Franklin Street and Swanston Street consists primarily of RMIT buildings along Swanston Street, to the south of Franklin Street, and residential buildings along Franklin Street to the east of the intersection with Swanston Street. The City Baths are located on the adjacent north-eastern corner.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Education and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The construction area is located in highly utilised urban setting. The viewpoint allows a street level view of the construction area. The elevated viewpoint from residential/accommodation would allow for overlooking of the construction area. As a result, there would be an overall high visual modification level for this viewpoint during construction. There is also the potential for an impact on views along the Swanston Street visual axis to the Shrine of Remembrance.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 145 deg. Vertical angle – Potentially Dominant (High) 8.6 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – Franklin Street and Swanston Street. The Franklin and Swanston Street intersection is a highly utilised area, and subsequently well lit. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of residents, particularly those in the Verve apartments. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.

VIEWPOINT CN–VP-03 – Intersection of west side of Franklin Street and Swanston Street	
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the overlooking of the construction areas.
Operation Impacts – Long Term	
Visual Modification	The project components are located in a well-established urban setting and the viewpoint allows a street level view. The project components would be generally small-scale and would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 26 deg. Vertical angle – Potentially Dominant (High) 4.0 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high sensitivity combined with a moderate visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

VIEWPOINT CN–VP-04 – Intersection of La Trobe and Swanston Streets	
Viewing Situation	Corner of State Library Forecourt.
Viewing Distance (To Most Prominent Object)	42m (Hoarding - Construction). 41m (La Trobe Street station entry and egress).
Relative Elevation of Viewpoint	Street level.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of land uses. It comprises of contemporary architecture and heritage buildings, set within a streetscape setting that has undergone recent enhancement. The Swanston Street interface predominantly consists of RMIT City Campus, Melbourne Central and Melbourne Central Station, residential buildings and the State Library. A tram super-stop is located just south of the viewing point, on Swanston Street.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Education and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	5 years
Visual Modification	The construction area is located in highly utilised urban setting. The viewpoint allows a street level view of the construction area. The construction activities will be seen in context with the existing poor quality architecture surrounding the site. Built form will result in a low to moderate visual modification level. There is also the potential for an impact on views along the Swanston Street visual axis to the Shrine of Remembrance.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 77 deg. Vertical angle – Potentially Dominant (High) 4.1 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The construction would take place in a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of the State Library and RMIT University. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	Moderate to high. The high sensitivity combined with a low to moderate visual modification level would result in a moderate to high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the proximity of State Library Forecourt and prominent corner intersection.

VIEWPOINT CN–VP-04 – Intersection of La Trobe and Swanston Streets	
Operation Impacts – Long Term	
Visual Modification	The project components are located in a well-established urban setting and the viewpoint allows a street level view. The project components would be generally small-scale and would be inserted into the built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the reestablishment of La Trobe and Swanston streetscapes and the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 46 deg. Vertical angle – Potentially Dominant (High) 32 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High The high sensitivity combined with a low beneficial visual modification level would result in a low beneficial visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low beneficial.



FIGUREA-8: CBD SOUTH PRECINCT: VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT CS–VP-01 – Federation Square (northwest corner)	
Viewing Situation	Federation Square pedestrian crossing, at the intersection of Swanston Street and Flinders Street.
Viewing Distance (To Most Prominent Object)	2m (Hoarding – Construction). 61m (Retail on Swanston Street - Operation).
Relative Elevation of Viewpoint	Street level.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of contemporary architecture and heritage buildings, set within a streetscape and key public realm area. This prominent intersection has St Paul's Cathedral on the north-east corner, Young and Jackson on the north-west, Flinders Street Station to the south-west and Federation Square. This is one of the busiest intersections in the Melbourne CBD.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Commercial and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years.
Visual Modification	The construction area is located in a well-established area of heritage buildings and a well-developed and established streetscape. The viewpoint allows a street level view of the construction area. The construction activities will be seen in context with the existing poor quality architecture surrounding the site. Built form will result in a low to moderate visual modification level.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 269 deg. Vertical angle – Potentially Dominant (High) 73.7 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. This intersection is formed by two busy streets. The construction would take place in a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of Federation Square, St Paul's Cathedral and Flinders Street Station. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	Moderate to high. The high sensitivity combined with a low to moderate visual modification level would result in a moderate to high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high.
Operation Impacts – Long Term	

VIEWPOINT CS–VP-01 – Federation Square (northwest corner)	
Visual Modification	The construction area is located in a well-established area of heritage buildings and a well-developed and established streetscape. The project components would be generally moderately scaled and would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall low beneficial visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 75 deg. Vertical angle – Potentially Dominant (High) 16.6 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high sensitivity combined with a moderate visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low beneficial.

VIEWPOINT CS–VP-02 – St Paul's Cathedral	
Viewing Situation	St Paul's Cathedral forecourt looking west towards Swanston Street.
Viewing Distance (To Most Prominent Object)	28m (Hoarding – Construction). 30m (Retail development, approximately 6m height – Operations).
Relative Elevation of Viewpoint	Street level.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of contemporary architecture and heritage buildings, set within a streetscape and iconic civic realm. This area comprises of St Paul's Cathedral to the east and retail and commercial along the west side of Swanston Street.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Commercial and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years
Visual Modification	The construction area is located in a well-established area of heritage buildings and a well-developed and established streetscape. The viewpoint allows a street level view of the construction area. Project activities would be visible from the St Paul's Cathedral grassed forecourt and footpath. The potential exists for impacts on views from along the Swanston Street visual axis to the Shrine of Remembrance. As a result, there would be an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 203 deg. Vertical angle – Potentially Dominant (High) 6.1 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of residents. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High
Operation Impacts – Long Term	
Visual Modification	The viewpoint allows a street level view of the 6 m high façade of the

VIEWPOINT CS–VP-02 – St Paul's Cathedral	
	project. The project components are located within a setting comprised of strong canopy tree plantings and numerous heritage buildings. Tram infrastructure is located along Swanston Street. The project components at the corner of Swanston and Flinders Streets would be generally like-for-like insertions into the fabric of the streetscape and built form. As a result, there would be an overall low visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 137 deg. Vertical angle – Potentially Dominant (High) 31.7 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high sensitivity combined with a low visual modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

VIEWPOINT CS–VP-03 – Corner of Swanston Street & Flinders Lane	
Viewing Situation	North corner of St Paul's Cathedral forecourt, on the corner of Flinders Lane and Swanston Street, looking north towards City Square.
Viewing Distance (To Most Prominent Object)	17m (Hoarding - Construction). 38m (Retail - Operations).
Relative Elevation of Viewpoint	Street level.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of contemporary architecture and heritage buildings, set within a streetscape and iconic civic realm. This area comprises of St Paul's Cathedral to the east and retail and commercial along the west side of Swanston Street. Flinders Lane comprises a variety of boutique retail.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Commercial and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years
Visual Modification	The construction area is located in a well-established area of heritage buildings and a well-developed and established streetscape. The viewpoint allows a street level view of the construction area. Project activities would be visible from the St Paul's Cathedral grassed forecourt and footpath. The potential exists for impacts on views from along the Swanston Street visual axis to the Shrine of Remembrance. As a result, there would be an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 254 deg. Vertical angle – Potentially Dominant (High) 10.1 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High.
Operation Impacts – Long Term	

VIEWPOINT CS–VP-03 – Corner of Swanston Street & Flinders Lane	
Visual Modification	The viewpoint allows a street level view of the 6 m high façade of the project. The project is located in a well-established area of heritage buildings and a well-developed and established streetscape. Tram infrastructure is located along Swanston Street. The components of the project at the corner of Swanston and Flinders Streets would be generally like-for-like insertions into the fabric of the streetscape and built form. As a result, there would be an overall low visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 180 deg. Vertical angle – Potentially Dominant (High) 25.8 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high sensitivity combined with a low visual modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

VIEWPOINT CS–VP-04 – Westin Hotel	
Viewing Situation	Westin Hotel looking down to City Square (Note: This is an assumed viewpoint as access to hotel suites was not available
Viewing Distance (To Most Prominent Object)	2m (Hoarding - Construction). 14m (City Square Station entrance - Operations).
Relative Elevation of Viewpoint	19 levels (40m height).
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of contemporary architecture and heritage buildings, set within a streetscape and key civic area. This area includes the Westin Hotel, City Square and retail and commercial along the west side of Swanston Street.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Commercial and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years
Visual Modification	The construction area is located in a well-established area of heritage buildings and a well-developed and established streetscape. The viewpoint offers an elevated view of the construction area. Project activities would be visible from the Weston Hotel. The potential exists for impacts on foreground views from along the Swanston Street visual axis to the Shrine of Remembrance. As a result, there would be an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 184 deg. Vertical angle – Potentially Dominant (High) 54.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of guests at the Westin Hotel. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high.
Operation Impacts – Long Term	
Visual Modification	The viewpoint allows a street level view of the 6 m high façade of the

VIEWPOINT CS–VP-04 – Westin Hotel	
	project. The project components are located in streetscape with strong canopy plantings and numerous heritage buildings. The project components at the corner of Swanston and Collins Streets, namely the station entry, would be of a scale that is similar to the Mockridge fountain and adjacent terraces. The City Square would be returned to a form similar to that which currently exists. As a result, there would be an overall low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 141 deg. Vertical angle – Potentially Dominant (High) 15.3 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate to high. The high sensitivity combined with a low to moderate visual modification level would result in a moderate to high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

VIEWPOINT CS–VP-05 – Town Hall Street Corner	
Viewing Situation	Town Hall, at the intersection of Collins Street and Swanston Street.
Viewing Distance (To Most Prominent Object)	27m (Hoarding – Construction). 27m (City Square Station and egress).
Relative Elevation of Viewpoint	Street level.
Visual Setting	Local.
Landscape Character	The precinct is highly developed and comprises of a range of contemporary architecture and heritage buildings, set within a streetscape and key civic area. This area comprises Melbourne Town Hall and retail and commercial along the west side of Swanston Street.
Setting Absorptive Capability	The local setting is not immune from change and has the ability to accommodate change that is appropriately designed and managed.
Land Use	Residential / Accommodation, Community Facilities, Commercial and Retail.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years
Visual Modification	The construction area is located in a well-established area of heritage buildings and a well-developed and established streetscape. The viewpoint allows a street level view of the construction area. Project activities would be visible from the Melbourne Town Hall. The potential exists for impacts on views from along the Swanston Street visual axis to the Shrine of Remembrance. As a result, there would be an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 60 deg. Vertical angle – Potentially Dominant (High) 6.4 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of residents. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High.
Operation Impacts – Long Term	
Visual Modification	The project components at the corner of Swanston and Collins Streets, namely the station entry, would be of a scale that is similar to the

VIEWPOINT CS–VP-05 – Town Hall Street Corner	
	Mockridge fountain and adjacent terraces. The City Square would be returned to a form similar to that which currently exists. As a result, there would be an overall low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 49 deg. Vertical angle – Potentially Dominant (High) 8.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate to high. The high sensitivity combined with a low to moderate visual modification level would result in a moderate to high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

F.7 PRECINCT 7: DOMAIN STATION

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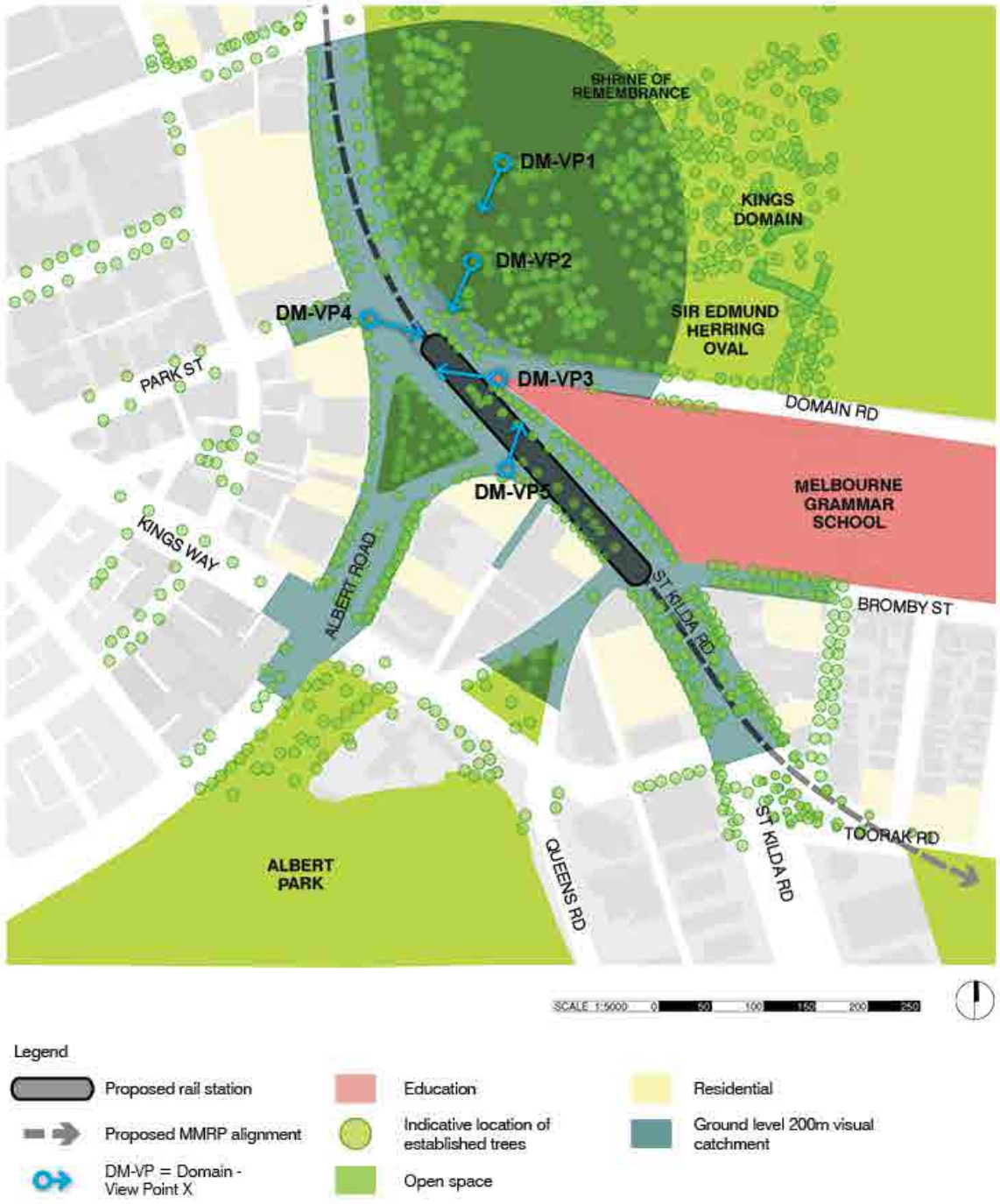

FIGUREA-9: DOMAIN PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT D–VP1 – Shrine of Remembrance	
Viewing Situation	South west corner of terrace.
Viewing Distance (To Most Prominent Object)	200 m (eastern station entry).
Relative Elevation of Viewpoint	20 m above St Kilda Road.
Visual Setting	Local.
Landscape Character	The precinct is characterised by the expansive, and well treed, Domain Parkland as well as wide streets that provide views, particularly along the tree-lined St Kilda Road Boulevard with its multiple rows of trees. The western side of St Kilda Road is a high-density mix of residential and commercial multi-storey buildings. Trees within the Shrine Reserve provide partial screening of views south west towards the project.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Parks – Recreation.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years.
Visual Modification	The construction area is located in a high landscape quality urban and parkland setting. Intervening trees would partially assist with the screening of views to the construction area. However, the elevated viewpoint would allow for overlooking of the construction area. As a result, there would be an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 180 deg. Vertical angle – Potentially Noticeable (Moderate) 3 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area – Domain Parklands. Environmental Zone E4: High district brightness area – St Kilda Road. Although the Shrine is located within a low brightness area, the area surrounding St Kilda Road, which it overlooks, and where the construction would take place, is a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as the Shrine. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. Given the distance from the construction area, the elevated viewpoint and the presence of deciduous vegetation that provides partial, seasonal screening, filtered overlooking views would be possible. The high sensitivity combined with a high visual modification level would result in a high visual impact.

VIEWPOINT D–VP1 – Shrine of Remembrance	
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the overlooking of the construction areas.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high quality urban and parkland setting with existing tram infrastructure, including the tram super-stop at the Domain Interchange. The components of the project would be generally small scale and would be inserted into the fabric of the streetscape and built form of the setting. Intervening trees would partially assist with the screening of elevated views to the operational project. As a result, there would be an overall low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Insignificant (Low) 20 deg. Vertical angle – Insignificant (Low) >0.5 deg. Potential visual prominence – Insignificant (Very Low).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	Moderate. The high sensitivity combined with a moderate visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low.

VIEWPOINT D–VP2 – Domain Parklands	
Viewing Situation	Pathway from the Shrine to St Kilda Road.
Viewing Distance (To Most Prominent Object)	10 m (construction area) 75 m (tram stop and central station entry).
Relative Elevation of Viewpoint	1 m above St Kilda Road.
Visual Setting	Local.
Landscape Character	The precinct is characterised by the expansive, and well treed, Domain Parkland as well as wide streets that provide views, particularly along the tree-lined St Kilda Road Boulevard with its multiple rows of trees. The western side of St Kilda Road is a high-density mix of residential and commercial multi-storey buildings. The Albert Road Reserve, a small, triangular grassed parkland surrounded by mature trees and containing a significant monument, provides a green backdrop to views to the south west across St Kilda Road.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Parks – Recreation.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years.
Visual Modification	The construction area is located in a high-quality urban and parkland setting. The construction process would require the removal of many mature trees along St Kilda Road between Park Street and Toorak Road that may have provided a degree of screening of the construction area. The construction process would also require the removal of Albert Road Reserve and its vegetation. From non-elevated viewpoints around the western edge of the Domain Parklands, overlooking of the ground plane of the construction area would not be possible. However, sheds housing the TBM operations would be highly visible. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 150 deg. Vertical angle – Potentially Dominant (High) 32 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E2: Low district brightness area – Domain Parklands. Environmental Zone E4: High district brightness area – St Kilda Road. Although the Domain Parklands are a low brightness area, the adjacent area along St Kilda Road where the construction would take place, is a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as the Shrine. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.

VIEWPOINT D–VP2 – Domain Parklands	
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the extent and proximity of the construction areas.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high quality urban and parkland setting with existing tram infrastructure, including the tram super-stop at the Domain Interchange. The project components would be generally small-scale or similar in character to the components being replaced, such as the tram super-stop, and would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings and the reestablishment of vegetation in Albert Road Reserve.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 65 deg. Vertical angle – Potentially Dominant (High) 3 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high visual sensitivity combined with a low to moderate modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

VIEWPOINT D–VP3 – Melbourne Grammar School	
Viewing Situation	Footpath on St Kilda Road adjacent to school boundary.
Viewing Distance (To Most Prominent Object)	5 m (construction area) 35 m (tram stop and central station entry).
Relative Elevation of Viewpoint	Ground level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by wide streets that provide views, particularly along the tree-lined St Kilda Road Boulevard with its multiple rows of trees, and the expansive, and well treed, Domain Parkland. The western side of St Kilda Road is a high-density mix of residential and commercial multi-storey buildings. The South African War Memorial Reserve, a small, triangular grassed parkland surrounded by mature trees and containing a significant monument, provides a green backdrop to views to the south west across St Kilda Road. The school is comprised of high quality architecture buildings arranged along the adjacent road interfaces of Domain Road and St Kilda Road.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Parks – Recreation.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years.
Visual Modification	The construction area is located in a high quality urban and parkland setting. The construction process would require the removal of a large number of mature trees along St Kilda Road, between Park Street and Toorak Road, which may have provided a degree of screening of the construction area. The construction process would also require the removal of Albert Road Reserve and its vegetation. Views of the construction area would extend from Edmund Herring Memorial Oval, located to the north east of St Kilda and Domain Roads, to the western side of St Kilda Road and Albert Road Reserve to the west. From non-elevated viewpoints around the adjacent perimeter of the school, overlooking of the ground plane of construction area would not be possible. However, sheds housing the TBM operations would be highly visible. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 280 deg. Vertical angle – Potentially Dominant (High) 40 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – St Kilda Road. Environmental Zone E3: Medium district brightness area – Domain Road. The St Kilda Road area is a high district brightness area, while the area around Domain Road is a medium district brightness area due to the presence of the Domain parklands, Melbourne Grammar School and the predominately residential uses. Although there are no rigorous recommendations for the control of light

VIEWPOINT D–VP3 – Melbourne Grammar School	
	from upward illumination or light trespass for developments in Environmental Zone E3 and E4, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as residential areas. The construction lighting impacts for this viewpoint are considered to be low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the extent and proximity of the construction areas.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high quality urban and parkland setting with existing tram infrastructure, including the tram super-stops at the Domain Interchange. The project components would be generally small-scale or similar in character to the components being replaced, such as the tram super-stops, and would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings and the reestablishment of vegetation in Albert Road Reserve.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 200 deg. Vertical angle – Potentially Dominant (High) 3 deg. Potential visual prominence – Potentially Dominant (High)
Lighting Impacts	Environmental Zone E4: High district brightness area. Environmental Zone E3: Medium district brightness area – Domain Road. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high visual sensitivity combined with a moderate modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

The following viewpoint (***Viewpoint D-VP4***) is representative of ground level views from the entries to adjacent apartment buildings, such as Domain Towers and the Hallmark Apartments, as well as views for tourists using the St Kilda Road footpaths.

VIEWPOINT D–VP4 – St Kilda Road Footpath – the Hallmark Apartments	
Viewing Situation	St Kilda Road footpath at south-west corner of Park Street.
Viewing Distance (To Most Prominent Object)	10 m (construction area) 65 m (western station entry).
Relative Elevation of Viewpoint	Ground level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by wide streets that provide views, particularly along the tree-lined St Kilda Road Boulevard with its multiple rows of trees, as well as the expansive, and well treed, Domain Parklands which provides a backdrop to the east. The western side of St Kilda Road is a high-density mix of residential and commercial multi-storey buildings. The Albert Road Reserve is small, triangular grassed parkland surrounded by mature trees and containing a significant monument. The reserve provides a green break along the heavily developed western side of St Kilda Road and also creates a connection between the Domain Parkland and the Albert Road Reserve.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Residential.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Dynamic.
Construction Impacts – Temporary	
Duration of Construction	4 years.
Visual Modification	The construction area is located in a high quality urban and parkland setting. The construction process would require the removal of many mature trees along St Kilda Road that may have provided a degree of screening of the construction area. The construction process would also require the removal of South African War Memorial Reserve and its vegetation. From non-elevated viewpoints, overlooking of the ground plane of construction area would not be possible. However, sheds housing the TBM operations would be highly visible. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 225 deg. Vertical angle – Potentially Dominant (High) 32 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – St Kilda Road. Although there are not rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as overlooking apartments. The construction lighting impacts for this viewpoint are considered to be

VIEWPOINT D–VP4 – St Kilda Road Footpath – the Hallmark Apartments	
	low given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – Although amelioration measures may be effective for non-elevated viewpoints.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high-quality urban and parkland setting with existing tram infrastructure, including the tram superstop at the Domain tram interchange. The components of the project would be generally small scale vertical forms or more expansive, low horizontal forms that would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings and the re-establishment of the Albert Road Reserve.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (High) 120 deg. (Full extent of all visible elements). Vertical angle – Potentially Dominant (High) 2.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is expected to generate lower levels of lighting than the construction phase. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high visual sensitivity combined with a moderate modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

The following residential / apartment viewpoint (***Viewpoint D-VP5***) is representative of elevated views from adjacent apartment buildings such as Domain Towers (38-50 Albert Road) and the Hallmark Apartments (305 Albert Road).

VIEWPOINT D–VP5 – Domain Towers entry	
Viewing Situation	St Kilda Road Footpath at building entry.
Viewing Distance (To Most Prominent Object)	45 m (western station entry).
Relative Elevation of Viewpoint	Ground level to 20 levels above.
Visual Setting	Local.
Landscape Character	The precinct is characterised by wide streets that provide views, particularly along the tree-lined St Kilda Road Boulevard with its multiple rows of trees, as well as the expansive, and well treed, Domain Parklands which provides a backdrop to the east. The western side of St Kilda Road area is a high-density mix of residential and commercial multi-storey buildings.
Setting Absorptive Capability	The setting is very sensitive to change and the ability to accommodate change is limited. Any change needs to be well considered in its design response.
Land Use	Residential.
Visual Sensitivity	High.
Number of Viewers	High.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	4 years.
Visual Modification	The construction area is located in an urban setting with a well vegetated landscape character. The construction process would require the removal of many mature trees along St Kilda Road that may have provided a degree of screening of the construction area from elevated locations. Elevated viewpoints would allow for overlooking of the construction area. From ground level to approximately level 10, the views of the construction area would primarily relate to the eastern side of St Kilda Road and the South African Soldiers Memorial Reserve to the west. The construction area at the Edmund Herring Oval to the east of St Kilda Road would be obscured by Melbourne Grammar School buildings and tree planting along Domain Road. From approximately level 10 and above, more elevated viewpoints over Melbourne Grammar School would allow views that encompass a wider extent of the construction area, from the western side of St Kilda Road to the Edmund Herring Oval to the east As a result, there would be an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 153 deg. Vertical angle – Potentially Dominant (High) 70 deg. Potential visual prominence – Potentially Dominant (High). Note: Angles calculated from highest level of building.
Lighting Impacts	Environmental Zone E4: High district brightness area – St Kilda Road. The area surrounding St Kilda Road is a high district brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E4, illumination should be minimised in order to

VIEWPOINT D–VP5 – Domain Towers entry	
	maintain the night-time setting and the amenity of sensitive viewpoints such as overlooking apartments. The construction lighting impacts for this viewpoint are considered to be low to moderate given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the limited ability to provide amelioration to elevated viewpoints.
Operation Impacts – Long Term	
Visual Modification	The setting of the project is a high quality urban setting with existing tram infrastructure, including the tram super-stops at the Domain Interchange. The components of the project would be generally small scale and would be inserted into the fabric of the streetscape and built form of the setting. As a result, there would be an overall moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape, consisting primarily of boulevard tree plantings.
Potential Visual Prominence	Horizontal angle – Potentially Noticeable (Moderate) 28 deg. Vertical angle – Potentially Dominant (High) 25 deg. Potential visual prominence – Potentially Dominant (High). Note: Angles calculated from highest level of building.
Lighting Impacts	Environmental Zone E4: High district brightness area. The operational project is not expected to generate significant levels of lighting. Therefore, the lighting impacts for this viewpoint are considered to be low.
Visual Impact	High. The high visual sensitivity combined with a moderate visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low to moderate.

F.8 PRECINCT 8: EASTERN PORTAL

FIGURE A-10: EASTERN PORTAL PRECINCT - VISUAL CATCHMENT AND REPRESENTATIVE SENSITIVE VIEWPOINTS AND HIGH SENSITIVITY LAND USES

VIEWPOINT EP–VP1 – Toorak Road	
Viewing Situation	Footpath on Toorak Road opposite South Yarra Station.
Viewing Distance (To Most Prominent Object)	50 m (construction area).
Relative Elevation of Viewpoint	Ground level (on bridge over cutting).
Visual Setting	Local.
Landscape Character	The precinct is characterised by detached, small lot and medium density housing, surrounding the retail and commercial strips of Toorak Road and Chapel Streets. Local streets are fine-grained and tree lined with minimal building setbacks. Buildings on the major roads have no setbacks with street tree plantings confined to the road reserve. South Yarra Siding Reserve, a triangular grassed parkland, that provides amenity for local residents, is located at the intersection of two train lines which form the reserve's western and eastern frontages. The reserve has a narrow frontage to Williams Street to its east, from which access is afforded. The side fences of residences that front William Street are located along the reserve's southern boundary. The reserve has a small area of flattish usable space along its western boundary and slopes steeply down to the rail line to its east. The steep batter slopes of the rail cuttings support dense, unmanaged vegetation that provide visual softening of the embankment faces. A linear reserve is located between Osborne Street and the rail cutting to the west of South Yarra Siding Reserve. Lovers Walk, a local footpath that connects Toorak Road to Chapel Street, follows the eastern side of the rail line between the top of the cutting and the rear of properties. A rail communications compound and tower is a highly prominent element within the foreground of views from Toorak Road.
Setting Absorptive Capability	The setting of the proposed portal construction area is relatively undeveloped parkland, however, the surrounding residential and mixed used interfaces have been subject to minimal change. As a result, the setting is very sensitive to change and the ability to accommodate change is limited.
Land Use	Retail / Commercial / Commuter Rail.
Visual Sensitivity	Moderate to High.
Number of Viewers	High.
Primary Duration of View	Dynamic.
Construction Impacts – Temporary	
Duration of Construction	6 years.
Visual Modification	Views of the construction area from Toorak Road would be confined to a relatively limited area where the road bridge crosses the rail cutting. In other areas, views from Toorak Road would be screened by buildings. The setting of the proposed portal is primarily a relatively undeveloped parkland, however, the surrounding residential and mixed used interfaces have been subject to minimal change and any change to the setting would result in a modification to the setting The construction process would require the removal of scattered mature trees within the reserve as well as along the rail cutting. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 50 deg.

VIEWPOINT EP–VP1 – Toorak Road	
(Assumes no vegetation)	Vertical angle – Potentially Dominant (High) 11 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – Toorak Road. Environmental Zone E2: Low district brightness area – South Yarra Siding Reserve. The Toorak Road area is a high district brightness area, while the Reserve is a low district brightness area due to light only being present around its perimeter. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zones E2 and E4, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as residential areas. The construction lighting impacts for this viewpoint are considered to be moderate to high given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high level of visual prominence would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	High – given the extent and proximity of the construction areas.
Operation Impacts – Long Term	
Visual Modification	On completion of the project, the parkland would be returned to a condition that is equal or better than the existing condition. As a result, there would be a visual modification level for this viewpoint that would progressively reduce from moderate to low as the replacement landscape establishes.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 200 deg. Vertical angle – Potentially Dominant (High) 3.5 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E4: High district brightness area – Toorak Road. Environmental Zone E2: Low district brightness area – South Yarra Siding Reserve. The operational project is not expected to generate any level of lighting above that required for safe use of the Reserve. Therefore, the lighting impacts for this viewpoint are considered to be very low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate beneficial.

VIEWPOINT EP–VP2 – Osborne Street	
Viewing Situation	Footpath on Osborne Street at southern extent of South Yarra Siding Reserve.
Viewing Distance (To Most Prominent Object)	50 m (construction area). 12 m (access bridge).
Relative Elevation of Viewpoint	Ground level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by detached, small lot and medium density housing. Local streets are fine-grained and treed lined with minimal building setbacks. A linear reserve containing tree and large shrub planting is located between Osborne Street and the rail cutting to the west of South Yarra Siding Reserve. The steep batter slopes of the rail cutting abutting the Osborne Street Reserve support dense, unmanaged vegetation that provides additional visual screening of views towards South Yarra Siding Reserve.
Setting Absorptive Capability	The setting of the construction area is relatively undeveloped parkland, obscured from view from viewpoints along Osborne Street by existing planting. However, the surrounding residential interfaces have been subject to minimal change. As a result, the setting is very sensitive to change and the ability to accommodate change is limited should foreground screening vegetation be removed.
Land Use	Residential.
Visual Sensitivity	High.
Number of Viewers	Low to moderate.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	6 years.
Visual Modification	The setting of the proposed portal is primarily relatively undeveloped parkland, however, the surrounding residential and mixed used interfaces have been subject to minimal change and any change to the setting would result in a modification to the setting. The construction process would require the removal of scattered mature trees within the Osborne Street Reserve as well as the along the embankment along the rail cutting. Residences with views previously screened would be visually exposed to the construction activities. A proposed access bridge to the construction area would be constructed from Osborne Street into the South Yarra Siding Reserve site. Construction vehicle movements would result in additional modifications to the existing residential street setting. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 177 deg. Vertical angle – Potentially Dominant (High) 4 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E3: Medium district brightness area – Osborne Street residential area. The Osborne Street residential area is a medium district brightness area. The South Yarra Siding Reserve is a low district brightness area with light only being present around its perimeter. Although there are not rigorous recommendations for the control of light

VIEWPOINT EP–VP2 – Osborne Street	
	from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as residential areas. The construction lighting impacts for this viewpoint are considered to be moderate to high given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high – given the extent and proximity of the construction areas and the ability to temporarily replace tree screen planting with hoardings.
Operation Impacts – Long Term	
Visual Modification	At the completion of the project, the parkland would be returned to a condition that is equal or better than the existing condition. As a result, there would be an overall moderate to low visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 200 deg. Vertical angle – Insignificant (low) 0.2 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area – Osborne Street residential area. Environmental Zone E2: Low district brightness area – South Yarra Siding Reserve. The operational project is not expected to generate any level of lighting above that required for safe use of the Reserve. Therefore, the lighting impacts for this viewpoint are considered to be very low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate beneficial.

VIEWPOINT EP–VP3 – Residences on William Street adjoining onto South Yarra Siding Reserve	
Viewing Situation	Within South Yarra Siding Reserve adjacent to residences adjacent to Reserve's southern boundary.
Viewing Distance (To Most Prominent Object)	0 m (construction area).
Relative Elevation of Viewpoint	Ground level to 3 levels above ground level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by detached, small lot and medium density housing. Local streets are fine-grained and treed lined with minimal building setbacks. The South Yarra Siding Reserve is located at the intersection of two train lines that form the reserve's western and eastern frontages. The reserve has a narrow frontage to Williams Street from which access is afforded. The side fences of adjacent residences are located along the Reserve's southern boundary. The reserve has a small area of flattish usable space along its western boundary and slopes steeply down to the rail line to its east. Scattered trees are planted along the reserve's southern boundary.
Setting Absorptive Capability	The setting of the construction area is relatively undeveloped parkland, with scattered vegetation. The surrounding residential interfaces have been subject to minimal change. As a result, the setting is very sensitive to change and the ability to accommodate change is limited.
Land Use	Residential.
Visual Sensitivity	High.
Number of Viewers	Low.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	6 years.
Visual Modification	The construction process would require the removal of scattered mature trees within the reserve. The reserve and area between and along the cuttings of the two converging rail lines would be used for construction staging as well as portal construction. For this viewpoint, the construction works would be visible from the windows of adjacent residences that are located up to three levels above the typical height suburban fence. The removal of vegetation within the reserve and along the edges of the cutting would also open up views towards the Toorak commercial centre and Forest Hill precinct. The proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 140 deg. Vertical angle – Potentially Dominant (High) 78 deg. Potential visual prominence – Potentially Dominant (High).
Lighting Impacts	Environmental Zone E3: Medium district brightness area – William Street residential area. The William Street residential area is a low district brightness area. The South Yarra Siding Reserve that the residences overlook is a low district

VIEWPOINT EP–VP3 – Residences on William Street adjoining onto South Yarra Siding Reserve	
	brightness area. Although there are no rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, given the low level of illumination of the reserve, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as residential areas. The construction lighting impacts for this viewpoint are considered to be moderate to high given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high level of visual prominence would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high – given the extent and proximity of the construction areas and the ability to temporarily replace tree screen planting with hoardings.
Operation Impacts – Long Term	
Visual Modification	At the completion of the project, the parkland would be returned to a condition that is equal or better than the existing condition. As a result, there would be an overall low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 70 deg. Vertical angle – Insignificant (low) 0.2 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area – William Street residential area. Environmental Zone E2: Low district brightness area – South Yarra Siding Reserve. The operational project is not expected to generate any level of lighting above that required for safe use of the reserve. Therefore, the lighting impacts for this viewpoint are considered to be very low.
Visual Impact	Moderate. The high visual sensitivity combined with a low modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low beneficial.

VIEWPOINT EP–VP4 – William Street	
Viewing Situation	Footpath on William Street to south east of South Yarra Siding Reserve.
Viewing Distance (To Most Prominent Object)	50 m (construction area). 12m (access bridge).
Relative Elevation of Viewpoint	Ground level.
Visual Setting	Local.
Landscape Character	The precinct is characterised by detached, small lot and medium density housing. Local streets are fine-grained and tree lined with minimal building setbacks. The South Yarra Siding Reserve is located at the intersection of two train lines that form the Reserve's western and eastern frontages. The reserve has a narrow frontage to Williams Street from which access is afforded. Residences front the reserve off Williams Street and side the reserve's southern boundary. The reserve has a small area of flattish usable space along its western boundary and slopes steeply down to the rail line to its east. Apart from the reserve interface, the steep batter slopes of the rail cutting support dense, unmanaged vegetation that provide visual softening of the embankment faces. The rail cutting crosses under the Williams Street Bridge and separates the residential area of Williams Street.
Setting Absorptive Capability	The setting of the construction area is relatively undeveloped parkland, obscured from viewpoints along William Street by existing planting and intervening built form apart from a relatively short stretch of approximately 60 m in the vicinity of the rail bridge. The surrounding residential interfaces have been subject to minimal change. As a result, the setting is very sensitive to change and the ability to accommodate change is limited.
Land Use	Residential.
Visual Sensitivity	High.
Number of Viewers	Low to moderate.
Primary Duration of View	Static.
Construction Impacts – Temporary	
Duration of Construction	6 years.
Visual Modification	The construction process would require the removal of scattered mature trees within the reserve as well as along the embankment along the rail cutting. The reserve and area between and along the cuttings of the two converging rail lines would be used for construction staging as well as portal construction. The William Street bridge would also be removed and replaced as part of the works. For this viewpoint, the construction works would be visible from the street through a relatively small break between built form. However, the proximity to the construction works and the area visible would result in an overall high visual modification level for this viewpoint during construction.
Potential Visual Prominence (Assumes no vegetation)	Horizontal angle – Potentially Dominant (High) 70 deg. Vertical angle – Potentially Dominant (High) 4 deg. Potential visual prominence – Potentially Dominant (High).

VIEWPOINT EP–VP4 – William Street	
Lighting Impacts	Environmental Zone E3: Medium district brightness area – William Street residential area. The William Street residential area is a medium district brightness area. The South Yarra Siding Reserve is a medium district brightness area primarily due to the light being present around its perimeter. Although there are not rigorous recommendations for the control of light from upward illumination or light trespass for developments in Environmental Zone E3, illumination should be minimised in order to maintain the night-time setting and the amenity of sensitive viewpoints such as residential areas. The construction lighting impacts for this viewpoint are considered to be moderate to high given the existing lighting levels.
Potential Visual Impact	High. The high sensitivity combined with a high visual modification level would result in a high visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Moderate to high – given the extent and proximity of the construction areas and the ability to temporarily replace tree screen planting with hoardings.
Operation Impacts – Long Term	
Visual Modification	At the completion of the project, the parkland would be returned to a condition that is equal or better than the existing condition. The existing William Street bridge would be elevated above existing surface levels. As a result, there would be an overall low to moderate visual modification level for this viewpoint during the initial years of operation prior to the establishment of the replacement landscape.
Potential Visual Prominence	Horizontal angle – Potentially Dominant (High) 70 deg. Vertical angle – Insignificant (low) 0.2 deg. Potential visual prominence – Potentially Noticeable (Moderate).
Lighting Impacts	Environmental Zone E3: Medium district brightness area – William Street Residential Area. Environmental Zone E3: Medium district brightness area – South Yarra Siding Reserve. The operational project is not expected to generate any level of lighting above that required for safe use of the Reserve. Therefore, the lighting impacts for this viewpoint are considered to be very low.
Visual Impact	Moderate to high. The high visual sensitivity combined with a low to moderate modification level would result in a moderate visual impact.
Amelioration Treatments	Refer to UDS and EPRs.
Residual Visual Impact	Low beneficial.

Sydney
Tower 2, Level 23, Darling Park
201 Sussex Street
Sydney, NSW 2000
t +02 8233 9900
f +02 8233 9966

Brisbane
Level 7, 123 Albert Street
Brisbane, QLD 4000
t +07 3007 3800
f +07 3007 3811

Melbourne
Level 12, 120 Collins Street
Melbourne, VIC 3000
t +03 8663 4888
f +03 8663 4999

Perth
Level 1, 55 St Georges Terrace
Perth, WA 6000
t +08 9346 0500
f +08 9221 1779

Australia • Asia • Middle East
w urbis.com.au **e** info@urbis.com.au