NSW GOVERNMENT | sydney METRO

West

Westmead to The Bays and Sydney CBD

Environmental Impact Statement

Concept and Stage 1

Technical Paper 5
Landscape and visual impact assessment

Sydney Metro West

Stage 1- Construction from Westmead to the Bays

NSW Government | Sydney Metro Authority

LANDSCAPE & VISUAL IMPACT ASSESSMENT

April 2020

IRIS Visual Planning + Design

CONTENTS

ABBREVIATIONS & GLOSSARY

Abbreviations

Abbreviations

Abbreviations	Definition
CBD	Central Business District
DCP	Development Control Plan
LEP	Local Environmental Plan
s170	Listed under Section 170 of the Heritage Act 1977

Glossary

Term	Definition
Accessibility	A public transport customer's ability to reach their destination unhindered and as independently as possible. Includes compliance with relevant disability standards.
Amenity	*'The pleasantness of a place as conveyed by desirable attributes including visual, noise, odour etc.'* (Australian Institute of Landscape Architects QLD, 2018)
Ancillary infrastructure	Includes the services facilities and traction substations.
Canopy (Urban canopy)	*'Urban canopy: the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.'* (Office of the Government Architect NSW, 2017)
Construction site	The construction site is an area of land required to construct Stage 1. It may include site offices, amenities, workshops, material and plant storage areas, laydown areas, concrete batching plant etc. e.g. Parramatta metro station construction site.
Glare	*'The uncomfortable brightness of a light source when viewed against a dark background.'* (Institute of Lighting Professionals UK, 2011)
Landscape	'*All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure.'* (Roads and Maritime Services, 2018)
Landscape character	The … '*combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place*'. (Roads and Maritime Services, 2018)
Landscape character zone (or area)	*'An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby.'* (Roads and Maritime Services, 2018)
Legibility	The extent to which an urban environment can be easily understood. Legibility is enhanced through the provision of landmarks, clearly defined visual boundaries and other wayfinding elements.
Light intrusion ('trespass')	*'The spilling of light beyond the boundary of the property or area being lit.'* (Institute of Lighting Professionals UK, 2011)
Interchange	A location where customers transfer from one mode of transport to another or between two services of the same mode. Also includes a place where customers join or leave the public transport system on foot, by bicycle, motorcycle, or car.
Magnitude	Magnitude is the … *'measurement of the scale, form and character of a development proposal when compared to the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer.'* (Roads and Maritime Services, 2018)

ABBREVIATIONS & GLOSSARY

Glossary

Term	Definition
Out of hours works	Defined as works outside standard construction hours (i.e. outside of 7am to 6pm Monday to Friday, 8am to 1pm Saturday and no work on Sundays/public holidays).
Parramatta Park	The parkland encompassing Old Government House and the Domain; a World Heritage site.
Permeability	The extent to which an urban area provides for ease of movement and connections between places.
Place-making	*'Creating public spaces that are locally relevant and 'belong' to the local community, reflecting the community's inputs and aspirations. It seeks to make place more relevant, usable and meaningful.'* (Office of the Government Architect NSW, 2016)
Public realm	Streets, spaces and places. (Office of the Government Architect NSW, 2016).
Rail corridor (or corridor)	This area includes all elements within the Sydney Trains or Sydney Metro land used for the purposes of a railway. The rail corridor includes the permanent way, cuttings and embankments, overhead lines, signaling equipment, vegetation etc.
Rail possession	Possession is the term used by rail building/maintenance contractors to indicate that they have taken possession of the track (usually a block of track) for a specified period, so that no trains operate for a specified time. This is necessary to ensure the safety of workers and rail users.
S170 Register	Section 170 Register under the NSW Heritage Act 1977
SEPP	State environmental planning policy
Stage 1	Stage 1 would involve major civil construction work between Westmead and The Bays.
Sense of place	Is the intangible qualities and character of a place, interpreted and valued by people.
Sensitivity	*'Susceptibility of a landscape or receptor to accommodate change without losing valued attributes.'* (Australian Institute of Landscape Architects QLD, 2018) The sensitivity of a landscape character zone or view is *'its capacity to absorb change'*. (Roads and Maritime Services, 2013)
State Significant Precincts SEPP	State Environmental Planning Policy (State Significant Precincts) 2005
Sky glow	*'The brightening of the night sky.'* (Institute of Lighting Professionals UK, 2011)

Glossary

Term	Definition
Study area	Extends beyond the site to include the visual catchment of Stage 1, adjacent open spaces and public realm, and areas of the landscape that provide a setting for the area.
Urban design	'*Urban design is concerned with the arrangement, appearance and function of our suburbs, towns and cities. It is both a process and an outcome of creating localities in which people live, engage with each other, and the physical place around them. Urban design involves many different disciplines including planning, development, architecture, landscape architecture, engineering, law and finance.*' (Urban Design Protocol, 2011)
Values	'*Any aspect of landscape or views people consider to be important. Landscape and visual values may be reflected in local, state or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed.*' (Australian Institute of Landscape Architects QLD, 2018)
View	'*Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.*' (Australian Institute of Landscape Architects QLD, 2018)
Viewpoint	'*The specific location of a view, typically used for assessment purposes.*' (Australian Institute of Landscape Architects QLD, 2018)
Visual absorption capacity	'*The potential for a landscape or scene to absorb a particular change without a noticeable loss of valued attributes.*' (Australian Institute of Landscape Architects QLD, 2018)

EXECUTIVE SUMMARY

Stage 1

Sydney Metro ('the proponent') is seeking planning approval for the construction of Sydney Metro West ('Stage 1') between Westmead and The Bays. Sydney Metro West would be a commuter rail operated in tunnel between Westmead and the Sydney CBD.

Stage 1 comprises the construction of the tunnel and excavation for future metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays. There would be a construction site in Clyde which would accommodate a precast segment factory and storage and would accommodate a future stabling and maintenance facility. There would also be three intermediate services facilities along the tunnel, including at Rosehill and Silverwater.

Stage 1 construction would include enabling works, excavation (tunnels, stations, shafts and dive structure), civil works for the stabling and maintenance facility (including earthworks and structures for crossings of A'Becketts Creek and Duck Creek), and establishment of a concrete segment facility at Clyde, for use during construction.

Where acoustic measures are proposed at construction sites, the assessment has assumed the placement of an acoustic shed to consider the likely worse case visual impact. However, other acoustic measures (of a similar or smaller scale) could be implemented instead of acoustic sheds.

Stage 1 is subject to further design development, and changes may be made during the ongoing design which takes into account the outcomes of community and stakeholder engagement and environmental field investigations. The construction works proposed in Stage 1 are temporary in nature, that is, they would occur for a period of time, prior to subsequent stages of other construction activities and operation of the metro service and stations.

This technical paper provides an assessment of the landscape and visual impacts of Stage 1. This includes all works that would be seen on the surface and within the construction footprint during construction.

Approach to this landscape and visual impact assessment

The assessment considers a 'study area' which extends beyond the construction footprint to include the visual catchment of Stage 1 and adjacent public realm areas. This technical paper assesses the Stage 1 construction footprint from west to east and divides it into construction sites for the purposes of this assessment. These construction sites include the seven stations, Clyde stabling and maintenance facility, and services facilities at Rosehill and Silverwater.

This assessment identifies the potential landscape and visual impact of Stage 1 during the day and at night for each of these construction sites, for the period of Stage 1 construction.

Identified potential landscape and visual impacts

The following section summarises the potential landscape and visual impact that is expected at each construction site.

Westmead metro station

Landscape Impact

There would be a **moderate adverse landscape impact** at Westmead Station and the Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes. The ultimate realignment of Alexandra Avenue would improve pedestrian permeability for residences west of Hawkesbury Road to Westmead Station. However, the road closures, alterations to footpaths and bus stops, loss of vegetation and tree canopy and removal of built form, including a locally prominent corner building at the corner of Hawkesbury Road and Alexandra Avenue, would adversely affect the comfort, amenity, legibility and permeability

for residents and rail customers during Stage 1 construction.

Visual Impact

There would be a **moderate adverse visual impact** on views to the Stage 1 construction site from the station and nearby streets including Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street. The works would introduce large scale structures, such as an acoustic shed, and an intensive construction character to these views, resulting in loss of vegetation and an entire block of built form, including the removal of a locally prominent corner building and leafy residential areas.

There would be a **minor adverse visual impact** on views from Railway Parade and a **negligible visual impact** from parts of Alexandra Avenue as the construction works would be located in the background of these views. While the acoustic shed would be prominent from these locations, it would be somewhat absorbed into this view which includes other large scale built form.

At night there would be a **negligible visual impact** on the high district brightness areas of Westmead Station and Alexandra Avenue, as much of the work would be contained within an acoustic shed, or would otherwise be generally absorbed into the surrounding brightly lit night scene. Conversely, the night works would contrast with the lower light levels of surrounding residential areas of Bailey Street, Hawkesbury Road and Hassall Street, resulting in a **moderate adverse visual impact** at night.

Parramatta metro station

Landscape Impact

There would be a **minor adverse landscape impact** on the streetscapes of George and Macquarie Streets, and laneways at Horwood Place, Macquarie Lane and United Lane. The removal of buildings would create a 'gap' in the built form lining these streets, changing the rhythm of built form. Establishment of the site would also reduce pedestrian permeability and accessibility. In other locations surrounding the site, including the Church Street streetscape, Centenary Square and Parramatta Park, there would be a **negligible landscape impact** as there would be no direct landscape impacts or noticeable indirect impact on amenity or accessibility.

Visual Impact

There would be a **minor adverse visual impact** on views from Church, Smith and Macquarie Streets. While a large portion of the built form fronting Macquarie Street would be removed, the street trees would be retained. The construction work would be seen in the context of the final stages of construction and operation of the Parramatta Light Rail (Stage 1) project and views from Smith Street would be limited by intervening built form.

There would be a **moderate adverse visual impact** on views near the works from George Street due to the extent of demolition visible, unfiltered and seen in the context of several heritage character buildings.

At night, it is expected that the additional light sources and skyglow that would be seen from the setting of the Parramatta metro station construction site would be generally absorbed into the existing brightly lit night scene, resulting in a **negligible visual impact**.

Clyde stabling and maintenance facility

Landscape Impact

There would be a **minor adverse landscape impact** on the site, and Unwin, Kay and Shirley Streets, due to the loss of vegetation, extensive earthworks and presence of large scale construction works. There would also be a **minor adverse visual impact** on the A'Becketts Creek and Duck Creek landscapes. While a segment of these waterways would be removed, they have relatively low sensitivity as a landscape feature.

There would be a **negligible landscape impact** on the Sydney Speedway and Rosehill Gardens racecourse. The speedway would be removed entirely but has relatively low

sensitivity as a landscape feature. The Rosehill Gardens racecourse has a higher level of landscape sensitivity, however, there would be no direct impact on the landscape of this venue.

Visual Impact

There would be a **moderate adverse visual impact** on views from James Ruse Drive and the M4 Western Motorway, given the extent of intensive construction work that would be visible, including large scale earthworks, tree loss and construction of a new bridge which would rise to a height greater than the existing motorway bridges.

There would be a **minor adverse visual impact** on views from Unwin and Shirley streets. While there would be extensive views across the site and to large scale construction works, the construction works would be somewhat compatible with the existing industrial views which have a relatively low visual sensitivity.

There would be a **negligible visual impact** on views from the Rosehill Gardens racecourse as Stage 1 construction would be consistent in character with the existing and surrounding industrial landscape also seen within the broader panoramas from the spectator stands. Stage 1 would be located at an oblique angle and at a considerable distance from these receptors.

At night there would be a **negligible visual impact** on the setting of the stabling and maintenance facility as the additional lighting would be readily absorbed into the existing moderately lit setting of industry at Clyde and Rosehill.

Silverwater services facility

Landscape Impact

There would be a **negligible landscape impact** on the streetscapes of Silverwater Road and Derby Street due to the presence of construction work, minor changes to the verge along Derby Street, and removal of trees which would reduce amenity, pedestrian accessibility and legibility. These changes would be localised and affect a small part of these streetscapes.

Visual Impact

There would be a **negligible visual impact** on views from Silverwater Road and Derby Street in the vicinity of the site. While the works would introduce a construction character to these views, and vegetation would be removed, this change would be largely absorbed into the scale and character of these views, which have an existing industrial urban form and include considerable traffic movement. The low sensitivity of these views also reduces the overall level of impact.

At night, there would be a **negligible visual impact** on the setting of the Silverwater services facility as there is little lighting required at night. Any additional light sources and skyglow would be absorbed into the surrounding night scene which includes similarly lit industrial development.

Sydney Olympic Park metro station

Landscape Impact

There would be a **moderate adverse landscape impact** on the Abattoir Heritage Precinct gardens, due to the direct impact on part of the gardens, which provide an important setting to the Gatehouse and old Administration building.

There would also be a **moderate adverse landscape impact** on the Herb Elliott Avenue and Showground Road streetscapes as a result of the loss of trees within the site, particularly along the street front and within the Abattoir Heritage Precinct gardens, reducing the leafy character and level of comfort and amenity in this area.

There would be a **negligible landscape impact** on the Figtree Drive streetscape, as the existing leafy streetscape character would be largely maintained and only a small portion of this streetscape would change due to the loss of built form and vegetation within the construction site.

Visual Impact

There would be a **moderate adverse visual impact** on views from Showground Road and Herb Elliott Avenue due to the removal of visually important vegetation, obstruction to the visual buffer around the heritage precinct and the presence of construction work within this area.

The impact on views from Figtree Drive would be **negligible** as the visual bulk of the temporary structures would be comparable to the existing built form and the leafy character of the streetscape would be largely maintained.

There would be a **minor adverse visual impact** on views from Olympic Boulevard, as the streetscape vegetation would be retained, and the works would be consistent in scale with the existing and future development intended for this part of Sydney Olympic Park.

At night, the works would contrast with the lower light levels of the setting, particularly in the vicinity of the Abattoir Heritage Precinct. The works would also potentially be seen from elevated rooms of nearby hotels and residential towers, which overlook the site. Overall, these changes would result in a **minor adverse visual impact** at night.

North Strathfield metro station

Landscape Impact

There would be a **moderate adverse landscape impact** on the Railway heritage gardens and Queen Street streetscape as a result of Stage 1 construction. The gardens, which provide a setting to the railway station and local centre, would be partially removed, affecting local legibility and sense of place. The impact at the Queen Street streetscape would be due to the removal of street trees and footpaths for the construction site which would reduce pedestrian permeability, legibility and comfort.

Visual Impact

There would be a **moderate adverse visual impact** on views from the northern end of Queen Street, extending from the corner of Beronga and Wellbank Streets, along Queen Street and Waratah Street. This is due to the loss of vegetation and close proximity of construction work to adjacent residential and commercial properties.

There would be a **minor adverse visual impact** on views from the southern end of Queen Street, near the southern construction site as the scale of the construction work in this location would be largely in character with views to the existing rail corridor and maintenance facility.

There would be a **minor adverse visual impact** at the North Strathfield metro station construction site at night. While there would generally not be any construction activity at night, there would be security lighting and some after hours deliveries. The removal of trees along Queen Street would also open up views to the brightly lit areas to the west of the site including the existing station.

Burwood North Station

Landscape Impact

There would be a **moderate adverse landscape impact** on the Parramatta Road and Burwood Road streetscapes. Several traditional scale commercial terrace buildings, including two prominent corner buildings, would be demolished, resulting in a large gap and a break in the rhythm of the built form, affecting the sense of place and identity of this area.

There would be a **minor adverse landscape impact** on the streetscapes of Burton and Loftus Streets, and Neichs Lane. The removal of vegetation within the northern construction site, presence of large scale acoustic sheds and scale of construction work would reduce the comfort and amenity for pedestrians and adjacent residential properties.

EXECUTIVE SUMMARY

Visual Impact

There would be a **moderate adverse visual impact** on views from Parramatta Road and Burwood Road. While the scale of the acoustic sheds would be similar to other built form in these views, the removal of the commercial terrace buildings on Burwood Road and two prominent corner buildings, would result in a loss of local heritage character and visual interest.

Views from Burton Street would have a **moderate adverse visual impact** as the acoustic shed would be visible, set back from this location. However, a section of the construction site would be visible along the street, reducing the leafy residential character of the street.

There would be a **minor adverse visual impact** on views near the eastern end of the construction site, from Parramatta Road and Loftus Street. This section of Parramatta Road has limited visual amenity and a poor streetscape environment, with greater capacity to absorb the visual character of Stage 1. While part of the construction site would be seen from Loftus Street, the built form and leafy streetscape character would remain intact.

At night, the works at the North Burwood metro station construction site would result in a **minor adverse visual impact**. The setting is already brightly lit and has a high capacity to absorb additional light. While much of the night work would be contained by the acoustic shed, some areas of the site may introduce additional light to the adjacent residential areas which overlook the site.

Five Dock Station

Landscape Impact

There would be a **moderate adverse landscape impact** on the Great North Road streetscape due to the loss of built form, scale of the acoustic shed and resulting changes to the streetscape character. The presence of construction work and haulage would also reduce the connectivity, legibility and wayfinding in areas adjacent to the construction site.

There would be a **minor adverse landscape impact** on Fred Kelly Place and the Australia Post open space. While there would be no direct impact upon these landscapes, the close proximity of the construction work, potential for overshadowing at Fred Kelly Place, and possible trimming of trees in views from the Australia Post open space, would alter the level of comfort for users.

There would also be **minor adverse landscape impacts** to the East Street, Second Avenue and Waterview Street streetscapes. The demolition of buildings would result in a gap in these streetscapes and an acoustic shed would contrast in scale with the surrounding built form and streetscape character in these locations. The acoustic sheds could also result in some overshadowing of the properties on East Street and Waterview Street.

Visual Impact

There would be a **moderate adverse visual impact** on views from Waterview Street (to the eastern construction site) due to the scale of the acoustic shed in relation to the surrounding residential area. There would also be a **moderate adverse visual impact** on views from Great North Road (to the western construction site) as the works would comprise a large portion of the view and result in the loss of a continuous line of commercial buildings which contribute to the character of the view.

There would be a **minor adverse visual impact** on views from East Street and the corner of Great North Road and Second Avenue, due to the scale of works near to residential areas and parkland.

In views along Second Street from Five Dock Park, there would be a **minor adverse visual impact.** While this view is in the background and there is a context of existing large scale development, both acoustic sheds would be visible and they would rise above the predominant building height. They would also contrast in character with the surrounding residential areas and the architectural detail of the adjacent St Alban's Anglican Church.

There would be a **negligible visual impact** on views east from Great North Road towards Australia Post open space, as the construction site would be located in the background of this view, between the trees and buildings.

At night the works at the Five Dock construction site would result in a **minor adverse visual impact**, due to the potential for an increased view of lighting from residential areas on East Street, Second Avenue and Waterview Street and elevated multi-storey residential buildings along Great North Road which overlook the site.

The Bays Station

Landscape Impact

There would be a **negligible landscape impact** on the Glebe Island portside industrial and commercial areas. This area has limited public access so there would be minimal opportunity for any impact on adjacent users. The construction work would also be consistent in character with the surrounding industrial landscape.

Visual Impact

There would be a **minor adverse visual impact** on views south from Mansfield Street Open Space, as while the construction site would extend across a large portion of these views, the construction work would be consistent in character with the surrounding industrial landscape.

There would be a **negligible visual impact** on views from Peacock Point Reserve, Barangaroo Reserve, Victoria Road and the Victoria Road pedestrian path near Anzac bridge, due to the distance and visual compatibility of the construction work with the character of these views.

At night, there would be a **negligible visual impact** on The Bays Station construction site as the lighting would be consistent with the existing uses on the site and would be largely absorbed.

1. INTRODUCTION

1.1 Sydney Metro West

1.1 Sydney Metro West

Sydney Metro West is a critical step in the delivery of Future Transport Strategy 2056. It would provide fast, reliable and frequent rail service between Greater Parramatta and the Sydney CBD.

Sydney Metro (as 'the proponent') is seeking planning approvals as follows:

Approval for the whole Sydney Metro West (at concept level) concurrent with Stage 1. Stage 1 involves the major civil construction works between Westmead and The Bays (and is the subject of this technical paper)

Future stage(s) would include the remaining major civil construction works from The Bays to the Sydney CBD, rail systems fit-out, station fit-out and aboveground building construction, and operation of the metro line (future application(s)).

Sydney Metro West is State significant infrastructure and critical State significant infrastructure under sections 5.12(4) and 5.13 of the Environmental Planning and Assessment Act 1979, respectively. Therefore, Sydney Metro West is subject to assessment and approval by the Minister for Planning and Public Spaces under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979.

1.1.1 Location

Sydney Metro West would mainly be underground in twin tunnels. Stage 1, which is the subject of this assessment, extends from Westmead to The Bays (refer to Figure 1-1).

1.1.2 Overview of Stage 1

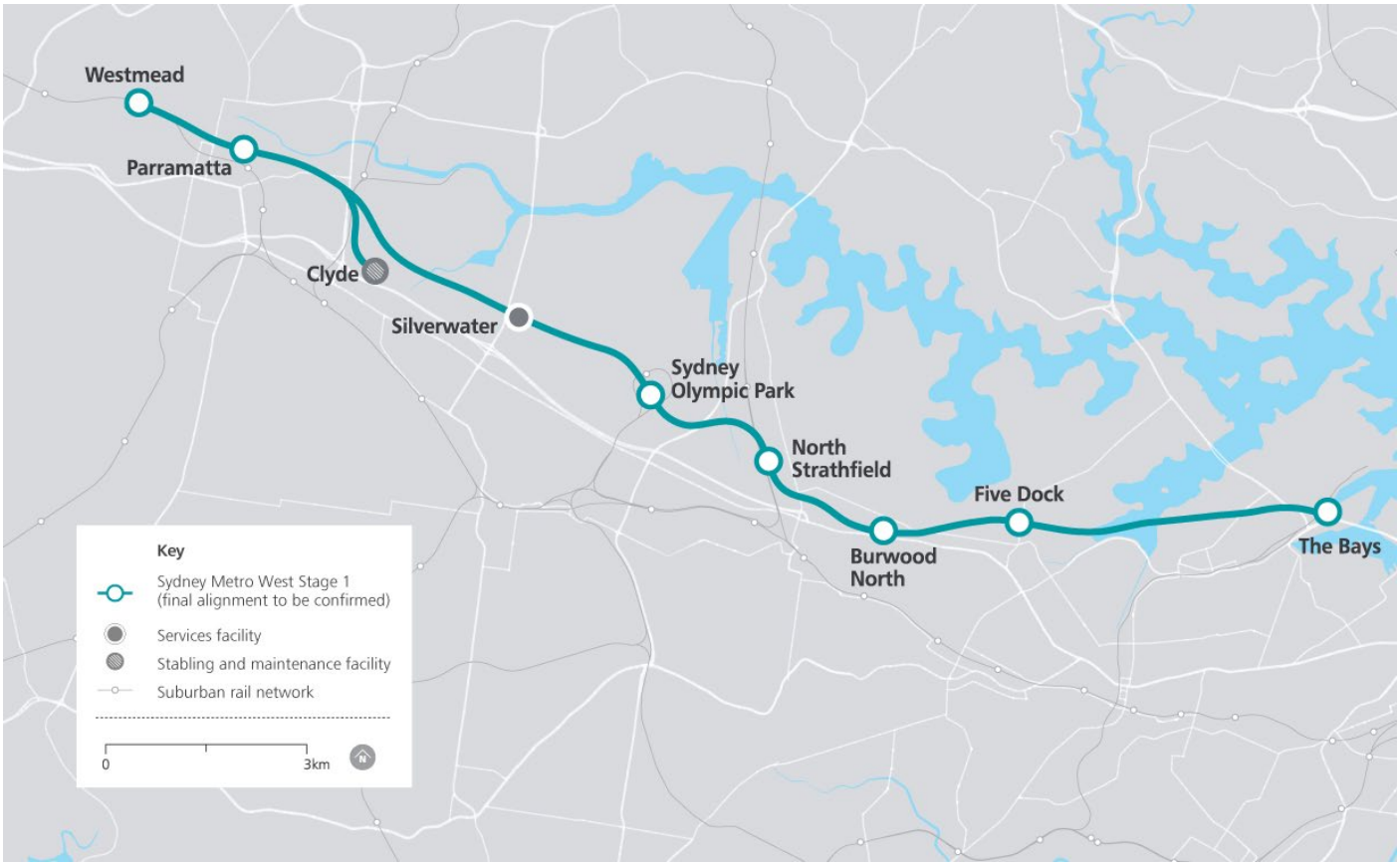
Stage 1 would involve the major civil construction work for Sydney Metro West (Westmead to The Bays), including:

- Enabling works such as demolition, utility supply to construction sites, utility adjustments and modifications to the existing transport network
- Tunnel excavation including tunnel support works
- Station excavation for new metro stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays
- Shaft excavation for services facilities at Rosehill (within the Clyde stabling and maintenance facility construction site), Silverwater and between Five Dock Station and The Bays Station construction sites
- Civil work for the stabling and maintenance facility at Clyde including earthworks and structures for crossings of A'Becketts Creek and Duck Creek
- A concrete segment facility for use during construction located at the Clyde stabling and maintenance facility construction site
- Excavation of a tunnel dive structure and associated tunnels at Rosehill to support a connection between the Clyde stabling and maintenance facility and the mainline metro tunnels.

The surface construction works at station and shaft excavation sites are temporary, that is, the construction proposed in Stage 1 is intended to occur across a period of about five years, with the construction program ranging at sites from around one year to five years. Therefore, the visual elements assessed at these locations are temporary in nature and subsequent applications would be submitted for future stages of construction and operation of Sydney Metro West.

1.1 Sydney Metro West

FIGURE 1-1: SYDNEY METRO WEST – STAGE 1



Stage 1 is further described in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

The location of the services facility between Five Dock Station and The Bays Station is currently being investigated, and is not assessed within this technical paper. Further detail on the locational and design criteria that would be used as part of determining the preferred location is detailed in Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

1. INTRODUCTION

1.2 Purpose and scope of this technical paper

1.2 Purpose and scope of this technical paper

This technical paper, Technical Paper 5: Landscape and visual impact assessment, is one of a number of technical papers that form part of the Environmental Impact Statement. The purpose of this technical paper is to identify and assess the landscape character and visual impacts of Stage 1. It responds directly to the Secretary's Environmental Assessment Requirements outlined in Section 1.3.

The assessment considers a 'study area' which extends beyond the construction footprint to include the visual catchment of Stage 1 and adjacent public realm areas. This technical paper assesses the Stage 1 construction footprint from west to east and divides it into construction sites for the purposes of this assessment.

These construction sites are:

- Westmead metro station
- Parramatta metro station
- Clyde stabling and maintenance facility
- Silverwater services facility
- Sydney Olympic Park metro station
- North Strathfield metro station
- Burwood North Station
- Five Dock Station
- The Bays Station.

1.3 Secretary's Environmental Assessment Requirements

The Secretary's Environmental Assessment Requirements were issued for Stage 1 on 11 December 2019. The requirements specific to Landscape and Visual Amenity, and where these requirements are assessed in this technical paper, are outlined in Table 1-1.

In support of seeking the Secretary's Environmental Assessment Requirements, the Sydney Metro West Scoping Report - Westmead to The Bays and Sydney CBD (Sydney Metro, 2019) identified a number of investigations and further assessments. How this technical paper addresses these matters is outlined in Table 1-2.

1.4 Structure of this technical paper

The remainder of this technical paper is structured as follows:

- Chapter 1 (this chapter) – background and Stage 1 description
- Chapter 2 – description of the methodology used for the assessment
- Chapter 3 – description of the legislative and policy framework
- Chapter 4 – description of Stage 1
- Chapter 5 – assessment of Westmead metro station
- Chapter 6 – assessment of Parramatta metro station
- Chapter 7 – assessment of Clyde stabling and maintenance facility
- Chapter 8 – assessment of Silverwater services facility
- Chapter 9 – assessment of Sydney Olympic Park metro station
- Chapter 10 – assessment of North Strathfield metro station
- Chapter 11 – assessment of Burwood North Station
- Chapter 12 – assessment of Five Dock Station
- Chapter 13 – assessment of The Bays Station
- Chapter 14 – cumulative impacts
- Chapter 15 – mitigation measures.

1.3 Secretary's environmental assessment requirements

TABLE 1-1: SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS – LANDSCAPE AND VISUAL AMENITY (STAGE 1)

Secretary's Environmental Assessment Requirements	Where addressed
1. Visual and related amenity impacts of construction including on streetscapes, key sites and buildings (including existing landscape works, greenspace and tree canopy).	Sections 5 to 13
2. Open space and tree impacts, including:	Sections 5 to 13
a) Estimating the number of trees to be cleared that will not be covered by a biodiversity offset strategy; and	Sections 5 to 13
b) for areas where trees are to be cleared before construction, investigate means to increase the number of trees and canopy within proximity of the impacted areas by providing additional planting before construction.	Section 15

TABLE 1-2: SYDNEY METRO WEST SCOPING REPORT – FURTHER INVESTIGATIONS AND ASSESSMENTS – LANDSCAPE AND VISUAL AMENITY (STAGE 1)

Further investigations and assessments	Where addressed
The assessment will:	
• Describe the visual character and unique qualities of the area around Stage 1	Sections 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 and 13.1.
• Consider the heritage and other social values of the site to establish the potential sensitivity of receivers and visual absorption capacity	Sections 5 to 13
• Identify the visual impacts of Stage 1 during daytime and night-time conditions (including lighting)	Sections 5.5, 5.6, 6.5, 6.6, 7.5, 7.6, 8.5, 8.6, 9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6, 13.5 and 13.6.
• Identify measures to avoid, minimise and/or mitigate potential impacts.	Section 15

2. ASSESSMENT METHODOLOGY

2.1 Guidance for landscape and visual impact assessment

2.1 Guidance for landscape and visual impact assessment

A range of guidance is available for the assessment of landscape and visual impacts. In New South Wales the following are typically referred to:

- *Guidance note EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment,* Roads and Maritime Services, 2018
- *The Guidance for Landscape and Visual Impact Assessment,* Third Edition, prepared by the Landscape Institute and Institute of Environmental Management & Assessment, UK, 2013
- *The Guidance Note for Landscape and Visual Assessment*, Australian Institute of Landscape Architects Queensland, 2018.

The methodology used for this assessment is described below and is consistent with the direction offered by these documents.

2.2 Method

A detailed landscape and visual assessment for Stage 1 has been carried out for each site in the following steps:

- A review of the relevant legislative and policy framework
- Identification of the existing environmental conditions
- Description of the components and character of Stage 1
- An assessment of landscape character impact during construction
- An assessment of the daytime visual impact during construction
- An assessment of night-time visual impact during construction
- Identification of mitigation measures.

These steps are described in the following sections.

2.2.1 Legislative and policy framework

A range of legislation and policies from International, Federal, State and Local Government agencies provide guidance for development within the study area. Additionally, numerous masterplans and guidance documents exist, identifying ambitions for the future land use, built form and the desired character of the study area.

The relevant requirements which apply across the study area have been summarised in Chapter 3. Further, site specific requirements have been summarised in the relevant chapter for each construction site.

2.2.2 Existing environment

The key landscape and visual features of each site have been identified to describe the existing environment of the study area. Site visits were carried out between February and September 2019, and the existing character, landscape elements and views were recorded with photographs. For the purposes of this assessment, an indicative number of trees on each site was estimated based on site observations and interpretation of aerial photography.

The landscape and visual conditions of the study area are evolving and changing over time and future development is redefining land use and the character of the study area in some locations. Where this is occurring, the future character and conditions of each location have been identified. This includes developments with a high level of certainty, including those currently under construction or with planning approval.

2.2.3 Description of the character and components of Stage 1

A description of the character and a summary of the key components and construction works in Stage 1 is included. This summary describes the features that would influence the level of landscape and visual impact at each construction site. This includes the elements and works that would be visible throughout the various stages of construction during the day and at night.

2.2.4 Landscape impact assessment

Landscape as defined by Roads and Maritime Services (2018) is … '*All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure*.' It also defines landscape character as the … '*combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place*'. In the urban context, landscape refers not only to trees and areas of open space, but also the character and function of a place. It includes all elements within the public realm and the interrelationship between these elements and the people who use it.

A range of landscape elements could be directly or indirectly impacted by Stage 1. To address these impacts, the landscape values of places within and surrounding each site were assessed. These include parkland, public plazas and streetscapes.

The landscape assessment was carried out by identifying the sensitivity of each landscape element and the likely magnitude of change expected as a result of Stage 1. These factors were combined to make an overall assessment of the level of impact.

Landscape sensitivity

Landscape sensitivity refers to the value placed on a landscape element or urban place and the level of service it provides to the community. The sensitivity of a landscape may reflect the frequency and volume of users in a location. It may also be valued for other characteristics such as tranquillity, visual relief and contribution to microclimate. The value of landscapes is often described in local and NSW Government masterplans and planning guidance documents, reflecting the importance of landscape resources to the local, regional and state-wide community.

The sensitivity of landscape features is therefore considered in the broadest context of possible landscapes (refer to Table 2-1), from those of national importance through to those considered to have a neighbourhood landscape importance. Landscape features which are afforded legislative protection are specifically identified in the policy context section of this assessment.

There are no landscapes of Aboriginal cultural heritage value that would affect the landscape sensitivity levels. A full assessment of the impact of Stage 1 on Aboriginal cultural heritage values is contained in Technical Paper 4 (Aboriginal cultural heritage assessment report, Artefact, 2020a).

The Non-Aboriginal cultural heritage values of landscapes within the study area have also been considered as they contribute to landscape character and community values. An assessment of the direct impact on Non-Aboriginal heritage values is contained in Technical Paper 3 (Non-Aboriginal heritage impact assessment, Artefact, 2020b).

Table 2-1 lists the landscape sensitivity levels that apply to this assessment.

TABLE 2-1: LANDSCAPE SENSITIVITY LEVELS

Landscape sensitivity	Description
National	Landscape feature protected under national legislation or international policy, e.g. the World Heritage Listed Parramatta Park.
State	Landscape feature that is heavily used and/or is iconic to the State, e.g. Sydney Olympic Park stadium plaza.
Regional	Landscape feature that is heavily used and valued by residents of a major portion of a city or a non-metropolitan region, e.g. Centenary Square Parramatta.
Local	Landscape feature valued and experienced by concentrations of residents and/or local recreational users. Provides a considerable service to the community. For example, it provides a place for local gathering, recreation, sport, street use by cafes and/or shade and shelter in an exposed environment e.g. the Five Dock Town Centre area and Fred Kelly Place.
Neighbourhood	Landscape feature valued and appreciated primarily by a small number of residents e.g. street trees in a local street. Provides a noticeable service to the community. For example, it provides a seat or resting place, passive recreation and/or some shade and shelter in a local street.

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2.2 Method

Magnitude of change to the landscape

The changes to the landscape that would occur as a result of Stage 1 are assigned a magnitude of change level. This considers direct impacts on the landscape such as the removal of trees and tree canopy, open space and public realm areas, as well as indirect impacts, such as changes to the function of an area of open space or the public realm. The magnitude of change can result in adverse or beneficial effects. Table 2-2 lists the magnitude of change levels that apply to this assessment.

The levels described in Table 2-2 have been informed by several national and state policies including:

- ***The National Urban Design Protocol*** (Australian Sustainable Built Environment Council, 2011) has been endorsed by the NSW Government. Its principles of good urban places are: enhancing, connected, diverse, enduring, comfortable, vibrant, safe and walkable
- ***Better Placed: A design led approach: developing an Architecture and Design Policy for New South Wales*** (Office of the State Government Architect NSW, 2016) and the subsequent document Evaluating Good Design (Office of the State Government Architect NSW, 2018). These documents offer detailed urban design principles, including: Better fit- contextual, local and of its place; Better performance- sustainable, adaptable and durable; Better for community- inclusive, connected and diverse; Better for people- safe, comfortable and liveable; Better working- functional, efficient and fit for purpose; Better value- creating and adding value; Better look and feel- engaging, inviting and attractive
- ***Around the Tracks: Urban Design for Heavy and Light Rail*** (Transport for NSW, 2016). This document identifies eight urban design principles for heavy and light rail, these are to: draw on a comprehensive site and context analysis to inform the design direction; provide value-for-money design solutions that achieve high quality low maintenance architectural and urban design outcomes that have longevity; provide connectivity and permeability for pedestrians; integrate the project with the surrounding area; maximise the amenity of the public domain; protect and enhance heritage features and significant trees; maximise positive view opportunities; design an efficient and functional transport solution which enhances and contributes to local amenity and prosperity.

Specific note has been made of considerations such as changes to the functioning of footpaths, built form, changes to public art, street trees and canopy, access to parks and open space, as well as the types of works supported in the public realm.

TABLE 2-2: LANDSCAPE MAGNITUDE OF CHANGE LEVELS

Landscape magnitude of change	Description
Considerable reduction or improvement	Substantial portion of the landscape is changed. This may include substantial changes to vegetation cover (trees and canopy), the area of open space or public realm area, accessibility, permeability, legibility and wayfinding, comfort and amenity, activation and safety, and diversity of the public realm.
Noticeable reduction or improvement	A portion of the landscape is changed. This may include some alteration to vegetation cover (trees and canopy), the area of open space or public realm area, accessibility, permeability, legibility and wayfinding, comfort and amenity, activation and safety, and diversity of the public realm.
No perceived reduction or improvement	Either the landscape quality is unchanged or if it is, it is largely mitigated by public realm improvements. Does not alter or not noticeably alter the vegetation cover (trees and canopy), the area of open space or public realm area, accessibility, permeability, legibility and wayfinding, comfort and amenity, activation and safety, and diversity of the public realm.

2.2.5 Daytime visual impact assessment

This visual impact assessment considers visual amenity as experienced by various people (referred to as receivers) and aims to identify the range of views to the site which may be impacted, including views from residential areas, offices, parks and streets.

To address potential impact on visual amenity, assessments were carried out by identifying the existing visual conditions, views that are representative of these conditions, the sensitivity of the view and the magnitude of change expected as a result of Stage 1, then making an overall assessment of the level of impact.

Identification of existing visual conditions

For each construction site, several viewpoints were selected to illustrate the visual influence of the site. These represent publicly accessible viewpoints from a range of locations and viewing situations. Particular attention was paid to views from places where viewers are expected to congregate such as plazas, parks, recreation areas, public transport nodes and commercial areas, as well as views to and from heritage items.

Visual sensitivity

Visual sensitivity refers to the nature and duration of views. Locations from which a view would potentially be seen for a longer duration, where there are higher numbers of potential viewers and where visual amenity is important to viewers, can be regarded as having a higher visual sensitivity. In addition, views recognised by local, state or federal planning regulations would, by nature of their recognition in these documents, have a higher sensitivity.

The sensitivity of a viewpoint is considered in the broadest context of possible views, from those of national importance through to those considered to have a neighbourhood visual importance (refer to Table 2-3).

TABLE 2-3: VISUAL SENSITIVITY LEVELS – DAYTIME VIEWS

Visual sensitivity	Description
National	Heavily experienced view to a national icon, e.g. view to the Sydney Opera House from Circular Quay or Lady Macquarie's Chair. There are no nationally sensitive views within Stage 1.
State	Heavily experienced view to a feature or landscape that is iconic to the State, e.g. views to Old Government House from within Parramatta Park.
Regional	Heavily experienced view to a feature or landscape that is iconic to a major portion of a city or a non-metropolitan region, or an important view from an area of regional open space, e.g. view to St John's Anglican Cathedral from Centenary Square.
Local	High quality view experienced by concentrations of residents and/or local recreational users, local commercial areas and/or large numbers of road or rail users. Views with local visual features and/or landmarks. For example, view along Macquarie or George Street in Parramatta, view to a prominent corner building on Parramatta Road in Burwood North, or the view to the landscaped gardens and palm grove within the Abattoir Heritage Precinct in Sydney Olympic Park.
Neighbourhood	Viewers whose interest is not specifically focused on views e.g. workers. Views where visual amenity is appreciated by a small number of isolated residents, not particularly valued by the wider community.

2. ASSESSMENT METHODOLOGY

2.2 Method

TABLE 2-4: MAGNITUDE OF CHANGE LEVELS – DAYTIME VIEWS

Visual magnitude of change	Description
Considerable reduction or improvement	A substantial part of the view is altered. Stage 1 contrasts substantially with the surrounding view.
Noticeable reduction or improvement	A small to moderate part of the view is altered. Stage 1 contrasts with the surrounding view.
No perceived reduction or improvement	Either the view is unchanged or if it is, the change in the view is unlikely to result in a change in the amenity of the view. Stage 1 does not contrast with the surrounding view.

Magnitude of change to views

The magnitude of change describes the extent of change resulting from Stage 1 and the visual compatibility of these new elements with the surrounding landscape. There are some general principles which determine the ranking of magnitude of change which include elements relating to the view itself such as distance, landform, backdrop, enclosure and contrast. There are also characteristics of Stage 1, such as scale, form, line, shape, pattern, colour or texture. The magnitude of change can result in an improvement or reduction in visual amenity.

A high magnitude of change would result if Stage 1 contrasts strongly with the existing landscape. A low magnitude of change occurs if there is minimal visual contrast and a high level of integration of form, line, shape, pattern, colour or texture between the development and the environment in which it is located.

Table 2-4 lists the terminology used to describe the magnitude of change levels.

2.2.6 Assessment of night-time visual impact

The assessment of night-time impact has been carried out with a similar methodology to the daytime assessment. However, the assessment also draws upon the guidance of the Institution of Lighting Engineers (UK), the *Guidance notes for the reduction of obtrusive light* (2011) and *AS4282 Control of the obtrusive effects of outdoor lighting* (1997).

AS4282 excludes '*public lighting*', which is defined as '*lighting for the provision of all-night safety and security on public roads, cycle paths, footpaths, and pedestrian movement areas*'. However, this Standard offers some useful terminology and principles that have been incorporated into the method for this assessment.

Firstly, it identifies three potential effects of lighting, at Section 2.4 within AS4282 *'Potential effects of outdoor lighting*', including:

- '*Changes to the amenity of an area due to the intrusion of spill light into otherwise dark areas, both outdoors and indoors, and to the direct view of bright luminaires*
- *A reduction in the ability of transport system users to see essential details of the route ahead, including signalling systems, due to glare from bright luminaires*
- *Changes to night-time viewing conditions due to a general luminous glow, i.e. skyglow, caused by the scattering of light in the atmosphere.'*

This assessment addresses the first of these potential effects- changes to the amenity of an area, with a focus on the outdoors. AS4282 also notes the potential visual intrusion caused by the daytime appearance of outdoor lighting systems. This potential impact has also been addressed in the daytime assessment.

AS4282 refers public spaces to AS1158 Lighting for Roads and Public Spaces which is a design guide that prioritises safety for vehicle and pedestrian users within the public realm.

The Guidance Notes from the Institution of Lighting Engineers (UK) identifies environmental zones, useful for categorising night-time landscape settings. This broader approach to the assessment of obtrusive light is consistent with the detail available at a planning approval application stage of Stage 1 and is therefore the basis for the method applied to the night-time visual assessment contained within this technical paper.

This guidance document defines environmental zones which describe the existing night-time visual condition, defines the environmental zone sensitivity and identifies the magnitude of change at night. The method for night-time visual assessment is as follows.

Night-time visual sensitivity

The environmental zone which best describes the existing night-time visual condition for each site would be selected. These zones are typical night-time settings and reflect the predominant light levels of each site. Each environmental zone has an inherent level of sensitivity as described in Table 2-5.

Night-time visual magnitude of change

Following the sensitivity assessment, the magnitude of change that would be expected within the study area is then identified. These changes are described, as relevant, in terms of:

- Sky glow – the brightening of the night sky
- Glare – the uncomfortable brightness of a light source when viewed against a darker background
- Light intrusion ('trespass') – the spilling of light beyond the boundary of the property or area being lit.

Table 2-6 lists the categories used to describe the visual magnitude of change at night.

TABLE 2-5: ENVIRONMENTAL ZONE SENSITIVITY – NIGHT-TIME

Environmental Zone	Description of Sensitivity
E0/E1: Dark/Intrinsically dark landscapes	Very high sensitivity visual settings at night including national parks, state forests etc.
E2: Low district brightness areas	Highly sensitive visual settings at night including rural, small village, or relatively dark urban locations.
E3: Medium district brightness areas	Moderately sensitive visual settings at night including small town centres or urban locations.
E4: High district brightness areas	Low sensitivity visual settings at night including town/city centres with high levels of night-time activity.

TABLE 2-6: VISUAL MAGNITUDE OF CHANGE LEVELS – NIGHT-TIME

Visual magnitude of change at night	Description
Considerable reduction or improvement	The lighting of Stage 1 contrasts substantially with the surrounding landscape at night.
Noticeable reduction or improvement	Alteration to the level of skyglow, glare or light intrusion would be clearly visible. The lighting of Stage 1 contrasts with the surrounding landscape at night.
No perceived reduction or improvement	Either the level of skyglow, glare and light intrusion is unchanged or if it is altered, the change is generally unlikely to be perceived by viewers. The lighting of Stage 1 does not contrast with the surrounding landscape at night.

2. ASSESSMENT METHODOLOGY

2.2 Method

TABLE 2-7 LANDSCAPE AND VISUAL IMPACT LEVELS

		Sensitivity				
		National	**State**	**Regional**	**Local**	**Neighbourhood**
Magnitude of change	**Considerable reduction**	Very high adverse	Very high adverse	High adverse	Moderate adverse	Minor adverse
	Noticeable reduction	Very high adverse	High adverse	Moderate adverse	Minor adverse	Negligible
	No perceived change	Negligible	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial	Negligible
	Considerable improvement	Very high beneficial	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial

TABLE 2-8 NIGHT TIME VISUAL IMPACT LEVELS

		Sensitivity			
		E0/E1: Dark/ Intrinsically dark landscapes	**E2: Low district brightness**	**E3: Medium district brightness**	**E4: High district brightness**
Magnitude of change	**Considerable reduction**	Very high adverse	High adverse	Moderate adverse	Minor adverse
	Noticeable reduction	High adverse	Moderate adverse	Minor adverse	Negligible
	No perceived change	Negligible	Negligible	Negligible	Negligible
	Noticeable improvement	High beneficial	Moderate beneficial	Minor beneficial	Negligible
	Considerable improvement	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial

2.2.8 Assigning impact levels

An assessment of landscape and visual impact has been made by combining the landscape or visual sensitivity and landscape or visual magnitude of change levels for each element and assigning an impact level (refer to Table 2-7).

Assessment of night-time visual impact has been made by combining the visual sensitivity of the environmental zone with the night-time visual magnitude of change for each area generally and assigning an impact level (refer to Table 2-8).

The impacts identified would be for the duration of the Stage 1 works. Therefore, they are temporary and for a short duration. These impacts are not reversible, but a future end state would be assessed as part of a future approval process.

2.2.9 Avoidance and minimisation of impacts

The design development of Stage 1 has included a focus on avoiding or minimising potential landscape and visual amenity impacts. This has included:

- Design of construction footprints at all sites to be broadly consistent within the area that would be required for the operational footprint where feasible and reasonable. This would minimise the unnecessary disturbance of land and the subsequent landscape and visual impacts
- Locating the stabling and maintenance facility construction site within an industrial area, where the landscape and visual sensitivity is lower.

Throughout the assessment there has been an acknowledgment of the need for measures incorporated into the design that minimises landscape and visual impact. For example, these may be where trees are retained or where the site layout avoids visually prominent activities close to sensitive receivers.

Following the assessment of landscape and visual impact, measures to further mitigate potential impacts have been identified. These measures include opportunities for mitigation on and off site, both day and night.

3. LEGISLATIVE AND POLICY FRAMEWORK

3.1 International and Commonwealth legislation and policy

The following chapter provides a brief review of the International, Commonwealth, State Government and Local Authority legislation and policy documents which provide guidance for the management of landscape character and visual amenity values relevant to the study area. Any site specific requirements have been provided in the relevant construction site assessment chapters as appropriate.

3.1 International and Commonwealth legislation and policy

3.1.1 Convention Concerning the Protection of World Cultural and National Heritage, 1972

The *Convention Concerning the Protection of World Cultural and National Heritage* (UNESCO World Heritage Centre, 1972) aims to promote international cooperation to protect heritage that is of outstanding universal value.

Old Government House and the Domain in Parramatta ('Parramatta Park') were inscribed on the UNESCO World Heritage List on 31 July 2010 (Parramatta Park Trust and The National Trust NSW, 2008). It is one of eleven places that make up the Australian Convict Sites World Heritage serial listing, and which also include Hyde Park Barracks and Cockatoo Island in NSW. It is a nationally significant cultural landscape closely associated with early colonial government, with the beginning of rural settlement in Australia, and with the exploration and expansion of colonisation.

Parramatta Park is also listed on the Australian National Heritage List and is protected by Commonwealth and State legislation, including the *Environment Protection and Biodiversity Conservation Act 1999*, *Parramatta Park Trust Act 2001*, the *Environmental Planning and Assessment Act 1979* and the *Heritage Act 1977*.

3.1 International and Commonwealth legislation and policy

The following documents include guidance for protecting the landscape and visual amenity of Parramatta Park:

- *Operational Guidelines for Implementation of the World Heritage Convention* (UNESCO World Heritage Centre, 2017)
- *Old Government House and Domain, Parramatta Park Management Plan* (Parramatta Park Trust and The National Trust NSW, 2008)
- *Development in Parramatta City and the Impact on Old Government House and Domain's World and National Heritage Listed Values: Technical Report* (Planisphere, 2012)
- *Parramatta Park Landscape Master Plan* (Landscape Design Group, 2002).

The relevant requirements of these documents are described in the following paragraphs.

3.1.2 Operational Guidelines for Implementation of the World Heritage Convention, 2017

This guideline identifies a buffer zone to protect … *'the immediate setting of the nominated property, important views and other areas or attributes that are functionally important as a support to the property and its protection.'* (UNESCO World Heritage Centre, 2017, p.104, p.30).

Although a buffer zone is not part of the inscribed World Heritage property, its boundaries are formally registered for the property by the World Heritage Committee and are an integral component of the Federal Government's commitment to the protection, conservation and management of the property.

3.1.3 Old Government House and Domain, Parramatta Park Management Plan, 2008

This Management Plan draws upon the *Parramatta Park Conservation Management Plan* (2008) and incorporates a number of policies into its recommendations. The overriding criterion for any future landscape works in Parramatta Park is to '*retain or reinstate the landscape character as recorded in the historic records including restoration and enhancement of natural systems and landforms*' (Parramatta Park Trust and The National Trust NSW, 2008 p.45).

The Management Plan identifies the buffer zone for the property, which includes the immediate setting of the World Heritage property and important views to and from the property. The important views from the property are described in the Management Plan as:

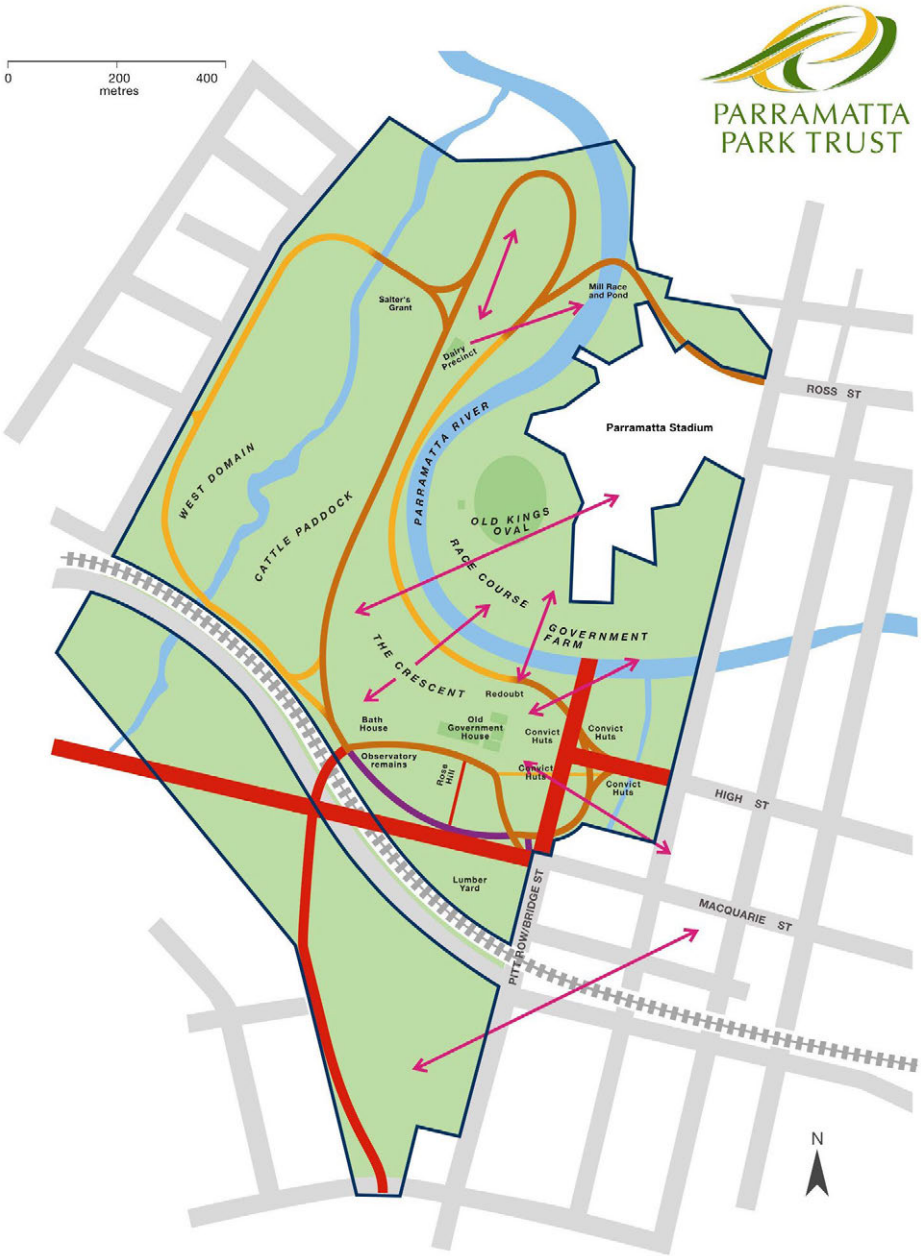
'Important views from Old Government House over the broader Domain (now forming Parramatta Park) are contained within the buffer zone emphasising the command and control function of Old Government House and Domain and consistent with historical records such as maps and plans, illustrations and paintings. Longer and more extensive views extend from the Domain and beyond the Buffer Area eastwards along the Parramatta River to Lennox Bridge, westwards and southwards to Mays Hill, the highest point in Parramatta Park. There are reciprocal views back from these positions to the Domain and Government House within the buffer zone. There is also an occasional vista from the eastern edges of the property along several key streets of the Parramatta CBD, which are also contained within the buffer zone.' (10. Appendices, 10.1, p.57)

The aboveground components of Stage 1 are not located within the curtilage of the Parramatta Park World Heritage site. The construction sites are also not located within the defined buffer zone. While, there are

3. LEGISLATIVE AND POLICY FRAMEWORK

3.1 International and Commonwealth legislation and policy

FIGURE 3-1: PARRAMATTA PARK SIGNIFICANT VIEWS (PINK ARROWS) (SOURCE: PARRAMATTA PARK TRUST AND THE NATIONAL TRUST NSW, 2008, P.11)



several defined key view lines which extend beyond the buffer zone, they do not extend to the Westmead or Parramatta Metro station construction sites. The power supply route for the Westmead metro station and Parramatta metro station construction sites pass through the Parramatta Park buffer zone and is to be assessed with duce consideration of the visual sensitivity of this zone.

Policy 8.2.1.1 in the Management Plan also requires maintenance of the following critical views and vistas to and from the park (refer to Figure 3-1). This study identifies several critical views and vistas that are relevant to the Stage 1 study area, including views from:

- Mays Hill to Hunter Street
- The ridgeline to the Macquarie Street gates
- The ridgeline to the centre of Parramatta.

Section 8.2.1 of the Management Plan refers to a policy from the Conservation Management Plan, which requires that within Parramatta Park, '*new structures, either permanent or temporary will not be constructed where they will have a detrimental effect on significant views'* (Parramatta Park Trust and The National Trust NSW, 2008 p.46).

Stage 1 would not have an impact on these identified views.

3.1.4 Development in Parramatta City and the Impact on Old Government House and Domain's World and National Heritage Listed Values: Technical Report, 2012

This report was commissioned by the then Department of Sustainability, Environment, Water, Population and Communities, in collaboration with the then NSW Department of Planning and Infrastructure, and City of Parramatta, to inform planners, developers and decision makers about where new building work has the potential to impact the heritage values of Parramatta Park and how this can be managed. The report identifies views and settings that are important to the world and national heritage listed values of Parramatta Park. The view cone (or viewshed) for important views are shown on Figure 3-2.

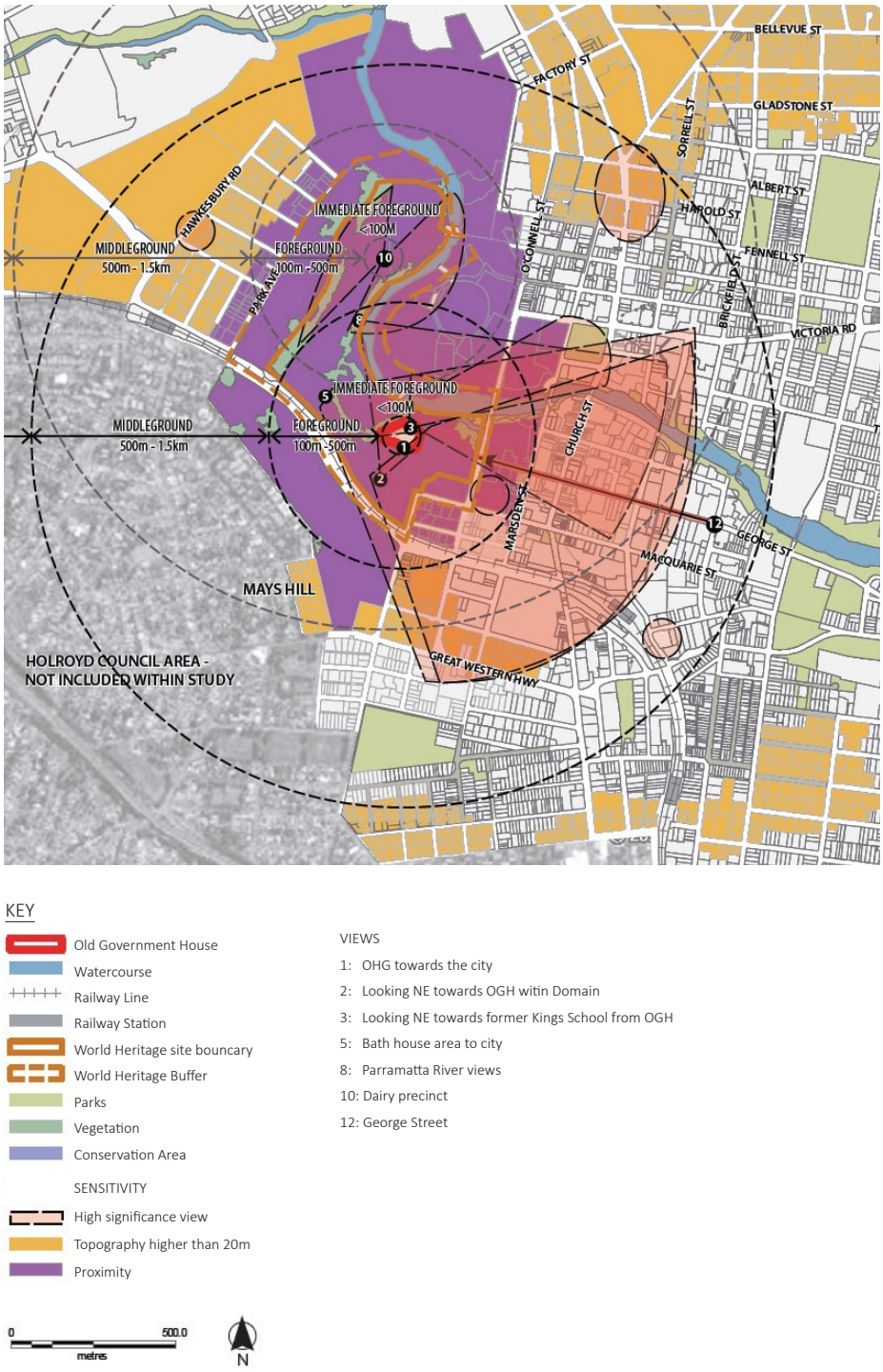
Both the Parramatta metro station and Westmead metro station sites are located within the middle ground (500 metres to 1.5 kilometres) of possible views from Old Government House and the Domain (refer to Figure 3-2, view 1), and the Dairy Precinct (refer to Figure 3-2, view 10).

The Parramatta metro station construction site is identified within the view cone of several west facing views from Parramatta Park which are identified as having '*high significance*' (refer views 1 and 5 on Figure 3-2). However, vegetation within Parramatta Park screens views to the construction site and only a few tall buildings in the Parramatta CBD can be seen rising above the foreground vegetation within these view cones. The site adjoins George Street, which provides an important axial view to the Gatehouse at the entrance to Parramatta Park (refer view 12 on Figure 3-2) and is categorised as a '*moderate significance'*.

The Westmead metro station construction site is not located within any identified '*high significance'* view.

This report combines the viewsheds, viewing

FIGURE 3-2: OLD GOVERNMENT HOUSE AND PARRAMATTA PARK - LOCATION OF HIGH SIGNIFICANCE VIEWS AND VIEW CONES USED TO DETERMINE AREAS OF SENSITIVITY (REFER TO FIGURE 3-3) (SOURCE: PLANISPHERE, 2012, P.79)



3. LEGISLATIVE AND POLICY FRAMEWORK

3.1 International and Commonwealth legislation and policy

distances (i.e. foreground, middle ground, background) and topography to map areas of sensitivity. This includes a '*highly sensitive area*' (refer to Figure 3-3) which extends beyond the buffer zone, where there is a risk development could have a significant impact under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Parramatta metro station construction site is located in the area identified as *'sensitive'* (refer to Figure 3-3). The Westmead metro station and Parramatta metro station power supply routes are proposed to pass through both the '*sensitive'* and '*highly sensitive'* areas of Parramatta Park, including part of the Parramatta Park buffer zone at Park Parade, Pitt Street, Macquarie Street and O'Connell Street (refer to Figure 3-3).

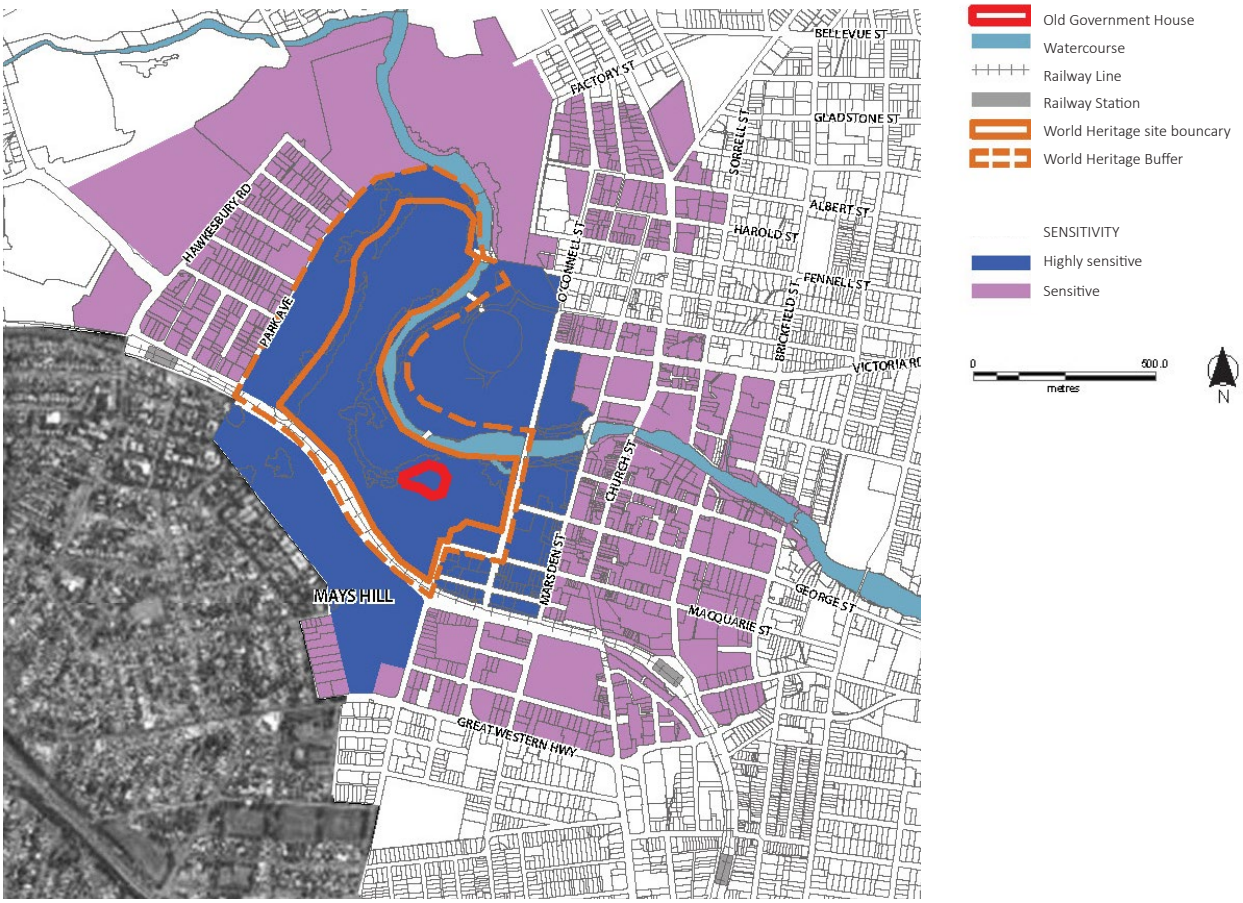
The Westmead metro station construction site is not located within an area identified as 'highly sensitive' or 'sensitive' (refer to Figure 3-3). This report suggests three principles to guide future development in this area. These are:

- ***Visual prominence and symbolism*** – *new development should not detract from the setting of Old Government House as the former seat of colonial power, and its traditional 'master and commander' relationship with Parramatta*
- ***Landscape setting*** – *new development should not dominate the landscape setting of Old Government House and Domain or detract from the mostly 'green' outlook north, allowing the Domain to retain it's* (sic.) *existing landscape character*
- ***Layering of cultural heritage elements*** *– new development should retain views that demonstrate the multi-layers of built and landscape elements, which contribute to the story of the place. These 'layers' or elements include the Georgian Town Plan, Old Government House itself, the Domain, the crescent, Old Government Farm, the dairy, the river, the formal layout of the carriageways, other historic buildings and monuments, the broad lawns, and the picturesque 'English style' garden setting.* (p.84-85)

The report also includes guidelines to inform the nature and form of future development in the 'sensitive' area. This area has been divided into seven precincts, and design guidelines have been developed for each precinct. The Parramatta metro station construction site is located in the *'City Central'* precinct. The development guidelines are included in the Westmead and Parramatta metro station assessments (chapters 5 and 6 of this technical paper).

3.1 International and Commonwealth legislation and policy

FIGURE 3-3: OLD GOVERNMENT HOUSE AND PARRAMATTA PARK AREAS OF SENSITIVITY – VIEWS AND SETTINGS (SOURCE: PLANISPHERE, 2012, P.81)



3. LEGISLATIVE AND POLICY FRAMEWORK

3.2 State legislation and planning guidance

3.2 State legislation and planning guidance

3.2.1 A Metropolis of Three Cities – the Greater Sydney Region Plan, 2018

This plan sets a 40-year vision (2016-2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters. It divides Greater Sydney into three regions, including the *'Western Parkland City'* including Penrith, Western Sydney Airport– Badgerys Creek Aerotropolis and Campbelltown – Macarthur, the *'Central River City'* including Greater Parramatta, and the *'Eastern Harbour City'* centred around Sydney CBD (Greater Sydney Commission, 2018, p.6).

The role of this plan is to co-ordinate a whole-of-government approach to providing the appropriate infrastructure in the right places to support the growth of three cities. It also intends to provide a coordinated approach to district level planning. The three identified regions ('cities') of Greater Sydney extend across five districts which are the: Western City District, Central City District, Eastern City District, North District and South District.

Sydney Metro West is located in the '*Central River City'* and the '*Eastern Harbour City'* and is identified as a key infrastructure project in the vision for both (Greater Sydney Commission, 2018, p.18 and p.21). It is also a key project in the delivery of the Greater Parramatta and the Olympic Peninsula economic corridor (Greater Sydney Commission, 2018, p.7).

Greater Sydney's '*green infrastructure'* including '*urban tree canopy, green ground cover, bushland, waterways, parks and open spaces'* (Greater Sydney Commission, 2018, p.6) are valued assets. A target has been set to '*increase tree canopy cover to 40 per cent, up from the current 23 per cent'* (Greater Sydney Commission, 2018, Strategy 30.1, p.164). Strategy 25.1 aims to *'protect environmentally sensitive areas of waterways'* (Greater Sydney Commission, 2018, p.151) such as the Parramatta River. The scenic value of landscape is also acknowledged in the plan, including waterways, urban bushland; urban tree canopy and green ground cover; and parks and open spaces, which create a '*sense of identity'* (Greater Sydney Commission, 2018, p.158). Strategy 28.2 aims to *'enhance and protect views of scenic and cultural landscapes from the public realm*' (Greater Sydney Commission, 2018, p.158). Objective 32 aims to connect parks, open spaces, bushland and walking and cycling paths through network of green spaces known as the Greater Sydney Green Grid. Duck River and Duck Creek are identified as part of this grid.

The Greater Sydney Commission has prepared plans for each 'city' to provide a link between regional and local planning. These plans intend to manage growth over the next 20-years. They include planning priorities and actions consistent with the relevant objectives, strategies and actions in the Greater Sydney Region Plan. The plan also integrates regional land use with transport and infrastructure initiatives including Metro West.

The Central City District Plan and Eastern Sydney District Plan are relevant to Metro West.

3.2.2 Our Greater Sydney 2056 Central City District Plan - connecting communities, 2018

The Central City District encompasses four local government areas including Blacktown, The Hills, Cumberland and Parramatta City Councils. Stage 1 is located in the latter two local government areas.

This plan has 10 directions including, Direction 8 '*A city in its landscape*' (Greater Sydney Commission, 2018a, p.13).

Supporting this direction is a number of planning priorities including:

- *Planning Priority C13 Protecting and improving the health and enjoyment of the District's waterways*
- *Planning Priority C14 Creating a Parkland City urban structure and identity, with South Creek as a defining spatial element*
- *Planning Priority C15 Protecting and enhancing bushland, biodiversity and scenic and cultural landscapes*
- *Planning Priority C16 Increasing urban tree canopy cover and delivering Green Grid connections*
- *Planning Priority C17 Delivering high quality open space*

Green infrastructure in the Central City District is intended to be increased through the delivery of green grid connections such as the '*Parramatta Ways Walking Strategy'* which builds upon a range of existing initiatives such as '*transport, streetscapes, urban greening, recreation, environment, place-making, city activation water sensitive urban design' and the promotion of heritage*' (Planning Priority C16, p.106 and p.110). Priority Green Grid Links are identified along Parramatta River and Duck Creek.

3.2.3 Our Greater Sydney 2056 Eastern City District Plan - connecting communities, 2018

The Eastern City District Plan includes the local government areas of Burwood, City of Canada Bay and Inner West in which Sydney Metro West would be located.

This plan has 10 directions including, Direction 8 '*A city in its landscape*' (Greater Sydney Commission, 2018b, p.13). Supporting this direction is a number of planning priorities including:

- *Planning Priority E14 Protecting and improving the health and enjoyment of Sydney Harbour and the District's waterways*
- *Planning Priority E15 Protecting and enhancing bushland and biodiversity*
- *Planning Priority E16 Protecting and enhancing scenic and cultural landscapes*
- *Planning Priority E17 Increasing urban tree canopy cover and delivering Green Grid connections*
- *Planning Priority E18 Delivering high quality open space (p13)*

Planning Priority E16 '*Protecting and enhancing scenic and cultural landscapes'* has two key actions:

- *Identify and protect scenic and cultural landscapes*
- *Enhance and protect views of scenic and cultural landscapes from the public realm* (p.106).

Direction 5, '*A city of great places*' (p.13) is supported by Planning Priority E6 *'Creating and renewing great places and local centres, and respecting the District's heritage'*. This Planning Priority has two key objectives:

- *Great places that bring people together*
- *Environmental heritage is identified, conserved and enhanced* (p.46).

The District's great places include local and strategic centres, local neighbourhoods and city high-rise areas which exhibit a diversity of character due to the mix of land uses and activities.

The city waterways are identified as important for shaping the landscape and character of the city and contributing to the city's sense of place.

Sydney Harbour is described as being '*one of Greater Sydney's most recognised and valuable assets – it is part of what makes Sydney one of the most attractive and recognisable cities in the world*' (Greater Sydney Commission, 2018, p.102). The Parramatta River is important to *'Greater Sydney's Aboriginal and colonial history and the development of modern Sydney*' (Greater Sydney Commission, 2018, p.104).

Planning Priority E17 '*Increasing urban tree canopy cover and delivering Green Grid connections*' aims to increase urban tree canopy cover (Objective 30) and create a *'green grid which links parks, open spaces, bushland and walking and cycling paths*' (Objective 31) (Greater Sydney Commission, 2018, p.107).

Planning Priority E18 '*Delivering high quality open space*' aims to ensure '*public open space is accessible, protected and enhanced*' (Greater Sydney Commission, 2018, p.112).

3. PLANNING LEGISLATION AND POLICY

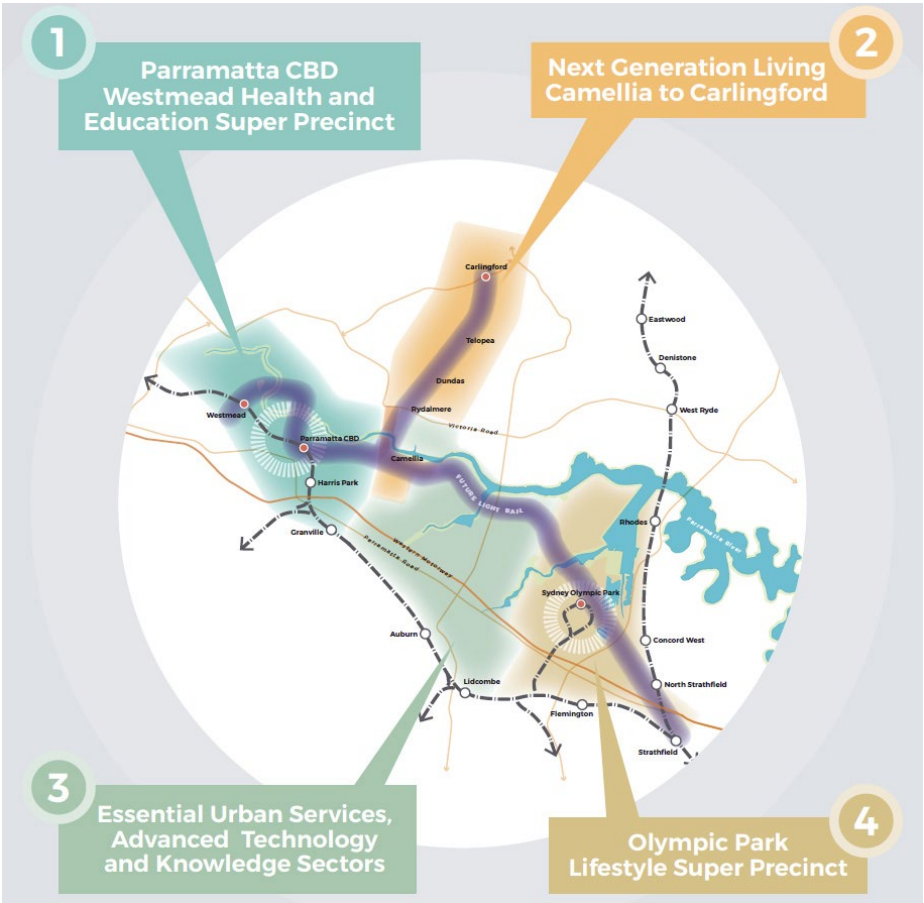
3.2 State legislation and planning guidance

3.2.4 Greater Parramatta to Olympic Peninsula vision, 2016

This plan provides a strategic vision for the Greater Parramatta to Olympic Peninsula, a 4,000-hectare area identified as a '*new priority growth area'* in the metropolitan planning strategy '*A Plan for Growing Sydney'* (2014) (Greater Sydney Commission, 2016, p.6).

The plan identifies the following four precincts or '*quarters*' (shown in Figure 3-4) which are connected by the Parramatta River and Parramatta Light Rail.

FIGURE 3-4: GREATER PARRAMATTA TO OLYMPIC PENINSULA FOUR QUARTERS (SOURCE: GREATER SYDNEY COMMISSION, 2016, P.7). (NOTE – PURPLE SHADING IS THE PARRAMATTA LIGHT RAIL CORRIDOR)



Each quarter has a different role, these are:

- *'Parramatta CBD and Westmead Health and Education Super Quarter'* which includes a revitalised Parramatta CBD connected to the river and a *'health city and international innovator'* at Westmead (Greater Sydney Commission, 2016, p.30)
- *'Next Generation Living from Camellia to Carlingford Quarter'* which includes the redevelopment of the 19 hectare site at Rydalmere into a residential area with retail and commercial uses affiliated with the Western Sydney University's campus opposite (Greater Sydney Commission, 2016, p.32)
- *'Essential Urban Services, Advanced Technology and Knowledge Sectors'* in Rydalmere, Silverwater and Auburn Quarter which includes a *'major hub of urban services and employment'* within these areas (Greater Sydney Commission, 2016, p.34)
- *'Olympic Park Lifestyle Super Precinct Quarter'* which will offer inner-city style living such as sustainable transport and high density housing with a mix of housing types at Sydney Olympic Park (Greater Sydney Commission, 2016, p.36 and p.37).

3.2.5 Greater Parramatta Interim Land Use and Infrastructure Implementation Plan, 2017

This document provides an Interim Land Use and Infrastructure Implementation Plan for the Greater Parramatta Priority Growth Area following on from the draft vision for Greater Parramatta to Olympic Peninsula. The study identifies priority precincts in Westmead, Parramatta CBD, Sydney Olympic Park and Burwood which are of relevance to this study.

3.2.6 Around the Tracks: Urban Design for Heavy and Light Rail, Transport for NSW, 2016

The NSW Government is committed to the development of a customer focused transport network to help it achieve its economic, social and environmental objectives. Good urban design is an important part of achieving these objectives. Key urban design objectives for heavy and light rail are described as creating liveable, sustainable and productive places, creating places for people, and optimising investment in heavy and light rail.

This document identifies eight urban design principles for heavy and light rail:

- *Draw on a comprehensive site and context analysis to inform the design direction*
- *Provide value-for-money design solutions that achieve high quality low maintenance architectural and urban design outcomes that have longevity*
- *Provide connectivity and permeability for pedestrians*
- *Integrate the project with the surrounding area*
- *Maximise the amenity of the public domain*
- *Protect and enhance heritage features and significant trees*
- *Maximise positive view opportunities*
- *Design an efficient and functional transport solution which enhances and contributes to local amenity and prosperity.*

3.2.7 Sydney Green Grid – Spatial Framework and Project Opportunities, 2017

In acknowledging that '*green space is a key hallmark of liveability',* the Sydney Green Grid proposes the creation and consolidation of a *'network of high quality green areas that connect town centres, public transport networks and major residential areas'* (Office of the State Government Architect NSW, p.7), enhancing open space throughout Metropolitan Sydney.

The western part of Sydney Metro West (between Westmead and Sydney Olympic Park) is located in the '*West Central District*', described as a '*highly urbanised*' landscape with '*extensive open space systems along the creek corridors*' (Office of the State Government Architect NSW, p.33). It includes '*a number of large regional parks*' such as Parramatta Park and Sydney Olympic Park.

A number of *'priority and important Green Grid projects opportunities'* have been identified within this district which are in close proximity to Sydney Metro West, include:

- Parramatta River Foreshore project, which aims to create a *'contiguous open space network on both sides of the river, connecting key spaces along the River foreshore from Westmead and Parramatta Park to Sydney Olympic Park, Rhodes, Hen and Chicken Bay and Iron Cove Bay'* (p.57)
- Duck River Corridor project, which is located south of the Clyde stabling and maintenance facility construction site. The project aims to create a '*continuous walking and cycling link north-south'* connecting Parramatta, Camellia and Olympic Park to Bankstown (p.57)
- The Sydney Speedway is identified as an *'existing green space'* (p.60) in close proximity to the corridor
- *Parramatta Road Urban Transformation* project is also identified as an opportunity in this district, designed to improve *'north-south green link connectivity'* and access to open space (p.65).

The eastern part of Sydney Metro West (between Sydney Olympic Park and The Bays) is located in the *'Central District'. 'The Bays'* and *'Inner West'* are both *'project opportunity precincts'* (p.116).

Proposed changes to land use in The Bays precinct has the potential to *'allow for additional public open space, active sports facilities and increased foreshore access'* (Office of the State Government Architect NSW, p.117).

The *'urban renewal'* occurring in the Inner West precinct provides a *'unique opportunity to help mitigate access and amenity issues associated with Parramatta Road'* (Office of the State Government Architect NSW, p.116).

3.2.8 Greener Places – Establishing an urban Green Infrastructure policy for New South Wales (Draft for discussion), 2017

This draft policy is intended to guide the design, planning and delivery of green infrastructure across NSW, including strategically planned, designed, and managed parks, bushland, gardens and tree lined streets to support '*good quality of life in an urban environment'* (Office of the State Government Architect NSW, p.11).

Green Infrastructure is considered to be an essential asset, and '*should be as integral to NSW as its roads, rail lines and storm water pipes'* (Office of the State Government Architect NSW, p.14). This policy identifies the Government's infrastructure and urban renewal projects as an opportunity for the delivery of quality Green Infrastructure.

One of the four key principles to help deliver Green Infrastructure in NSW is the '*connectivity*' of green spaces, particularly in and around high-density precincts, including design actions to increase planting along rail corridors and streets. Another principle is '*multifunctionality*', which promotes the ability of Green Infrastructure projects to deliver multiple objectives such as strengthening the image and identity of a locality whilst improving access to open space.

3.3 Local Government planning guidance

The surface components of Stage 1 are located across several local government areas, including:

- Cumberland Council
- City of Parramatta
- City of Canada Bay Council
- Burwood Council
- Inner West Council.

Relevant local planning requirements and guidance for these areas have been summarised in the following sections. While these provisions do not apply to State significant infrastructure projects (Stage 1) or State Significant Precincts such as Sydney Olympic Park and The Bays, they have been considered in this assessment.

3.3.1 Cumberland Council planning guidance

The construction site for the Westmead metro station and parts of the Westmead power supply route are located within the former Holroyd City Council area, which has since been incorporated into Cumberland Council.

The following documents are applicable:

- Draft Cumberland 2030: Our Local Strategic Planning Strategy (2019)
- Holroyd Local Environmental Plan 2013
- Holroyd Development Control Plan 2013.

The relevant clauses from these documents have been summarised in the following sections.

Draft Cumberland 2030: Our Local Strategic Planning Strategy, 2019

This Local Strategic Planning Strategy aligns with the directions and priorities under the Sustainability theme in the Central City District Plan, Direction 8 – A city in its landscape (Greater Sydney Commission, 2018a, p.133).

The Local Strategic Planning Statement sets a land use vision and establishes priorities and actions for Cumberland Council to manage growth and change. At a local level, Cumberland Council has several priorities for achieving this, which relate to landscape and visual amenity, including:

- Priority C13 – Protecting, enhancing and increasing natural and green spaces
- Priority C16 – Supporting urban cooling to minimise heat island effects (p.56).

In particular, Cumberland Council seeks to deliver new development that is '*landscape led, where water is retained within a landscape though permeable surfaces and an irrigated tree canopy, with compact urban form'* (p.50).

3.3 Local Government planning guidance

Westmead (South) is described as *'predominately low density residential area to the south of the railway, including significant Land and Housing Corporation assets and landholdings with potential for redevelopment'* (Greater Sydney Commission, 2018a, p.26). Hawkesbury Road is a *'key connector'* through Westmead, providing access across the railway, and to a *'vibrant group of neighbourhood shops'* (Greater Sydney Commission, 2018a, p.26).

Holroyd Local Environmental Plan 2013

A key aim of the Local Environmental Plan is '*to protect the environmental and cultural heritage of Holroyd*' including:

(i) identifying, conserving and promoting cultural heritage as a significant feature of Holroyd's landscape and built form as a key element of its identity' (City of Holroyd, 2013, cl.1.2.2f (i)).

A number of clauses relate to this assessment, including:

- Design excellence clause: considers whether the *'form and external appearance of the development will improve the quality and amenity of the public domain'* and *'whether the development detrimentally impacts on view corridors'* (cl.6.11)
- Heritage conservation clause: the '*settings and views'* (cl.5.10) of the local heritage listed items adjacent to the proposed construction site at Westmead will be considered.

Holroyd Development Control Plan 2013

The purpose of this development control plan is to supplement the Holroyd Local Environmental Plan 2013 and provide more detailed provisions to guide development. The aims of the Development Control Plan are to :

- *ensure that the natural environment of the City of Holroyd is protected and enhanced throughout all stages of development works*
- *protect and enhance the amenity of the City of Holroyd*
- *create development that will enhance the City of Holroyd as a great place to live and work* (City of Holroyd, 2013, p.4).

3.3.2 City of Parramatta planning guidance

The Stage 1 construction sites for the Parramatta metro station, Silverwater services facility, Clyde stabling and maintenance facility and Sydney Olympic Park metro station are located within the City of Parramatta local government area.

The following documents are applicable:

- Draft Parramatta Local Strategic Planning Statement (2019)
- Parramatta Local Environmental Plan 2011
- Parramatta Development Control Plan 2011
- Parramatta CBD Planning Strategy (2016) and Draft Parramatta CBD Planning Proposal (2018)
- Design Parramatta (2012) and Public Domain Guidelines (2017)
- Parramatta Ways, Implementing Sydney's Green Grid (2017)
- Camellia Precinct Land Use & Infrastructure Strategy (2015)
- Civic Link Framework Plan (2017).

The relevant clauses from these documents have been summarised in the following sections.

The Silverwater services facility construction site would be located within the former City of Auburn, now amalgamated with the City of Parramatta. The Auburn Development Control Plan 2010 and Auburn Local Environmental Plan 2010 have additional provisions which apply to this site and have been provided in Chapter 8 (Silverwater services facility) of this technical paper.

While the Sydney Olympic Park metro station is situated within the Parramatta local government area, it is designated as a State significant precinct and is excluded from Council planning documents.

Draft Parramatta Local Strategic Planning Statement, 2019

The purpose of the Local Strategic Planning Statement is to provide a vision and strategic direction to ensure the city is well-planned, liveable, productive and sustainable into the future. The Local Strategic Planning Statement seeks to achieve a future which is sustainable, liveable and productive.

A structure plan has been developed to guide investment and development within Greater Parramatta. Parramatta CBD is identified as a metropolitan centre and part of the *'growth precinct'* (City of Parramatta, 2019, p.32). Sydney Metro West is identified as an *'essential project for Parramatta'* (p.26) and its delivery is listed as a key planning priority (no.2) and action to maximise access to public transport. The City of Parramatta also places importance on the protection of *'scenic and cultural landscapes'* and is committed to an increase in *'urban tree canopy cover'* to manage urban heat through landscaping.

The Local Strategic Planning Statement will inform and guide zoning, land use, protection and development within Parramatta, including preparation of local character statements which identify key place-making measures for Growth Precincts and Local Centres undergoing transformation.

Parramatta Local Environmental Plan 2011

A key aim of this plan is to '*identify, conserve and promote Parramatta's natural and cultural heritage as the framework for its identity, prosperity, liveability and social development'* (City of Parramatta, 2011, cl. 1.2.2c).

A number of clauses relate to this assessment, including:

- Design excellence: requires consideration of whether the *'form and external appearance of the development will improve the quality and amenity of the public domain*' and '*whether the development detrimentally impacts on view corridors'* (cl.6.12)

- Preservation of trees or vegetation: aims to *'preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation'* (cl.5.9)
- Heritage conservation: the '*settings and views'* (cl.5.10) of the local and State heritage listed items.

Parramatta Development Control Plan 2011

The purpose of the Development Control Plan is to supplement the Parramatta Local Environmental Plan 2011 and provide more detailed provisions to guide development, ensuring that development:

- *contributes to the quality of the natural and built environments*
- *contributes to the quality of the public domain*
- *positively responds to the qualities of the site and its context*
- *positively responds to the character of the surrounding area* (City of Parramatta, 2011b, s.1.6).

When designing a development, the development control plan advocates a response to the local and broader urban context of a site through thorough site analysis, including identification of *'key views and vistas'* (City of Parramatta, 2011b, s.2.1).

The Development Control Plan contains the following design principles intended to guide development in relation to the visual environment include:

- *P.1 Development is to preserve views of significant topographical features such as ridges and natural corridors, the urban skyline, landmark buildings, sites of historical significance and areas of high visibility, particularly those identified in Appendix 2 Views and Vistas*
- *P.2 Buildings should reinforce the landform of the City and be designed to preserve and strengthen areas of high visibility. In some locations, this may be achieved through uniform heights and street walls as a means of delineating the public view corridor*
- *P.3 Landscaping of streets and parks is to reinforce public view corridors*
- *P.4 Building design, location and landscaping is to encourage view sharing between properties*
- *P.5 Views to and from the public domain are to be protected* (City of Parramatta, 2011b, s.2.4.1).

Other relevant design principles that relate to the visual amenity of new development include:

- *To enhance the existing streetscape and promote a scale and density of planting that softens the visual impact of buildings*
- *To ensure developments make an equitable contribution to the landscape setting of the locality* (City of Parramatta, 2011b, s.3.3.1).

Parramatta CBD Planning Strategy, 2016 and draft Parramatta CBD Planning Proposal, 2018

The City of Parramatta has adopted planning controls to encourage and facilitate greater development in the Parramatta CBD. This is consistent with the NSW State Government's identification of the importance of Parramatta as a second CBD for Sydney. The proposal also gives effect to the adopted *Parramatta CBD Planning Strategy 2015*, which established principles and actions to guide a new planning framework for the Parramatta CBD.

The proposal broadly divides the Parramatta CBD into four precincts. The Parramatta metro station construction site is located in the '*City Centre Core*' precinct. The proposal seeks the provision of urban intensification and integration of new development, while:

- *'protecting and enhancing the heritage values of Parramatta's local, state, national and world significant heritage items, conservation areas, places and views'* (City of Parramatta, 2016, p.10)
- *'ensuring development is of an appropriate scale for the site, adjoining development and the wider city'* (p.11).

3. PLANNING LEGISLATION AND POLICY

3.3 Local Government planning guidance

This proposal includes proposed changes to the Parramatta CBD boundary, land use, built form (heights, density, floor space ratios) and urban design provide context for this assessment.

Design Parramatta, 2012

Design Parramatta (City of Parramatta, 2012) identifies 15 sites and 19 projects within the Parramatta city centre, including main streets, laneways, public spaces and parks, and art and experimental spaces.

Each of the sites and projects were either selected for their individual importance or their ability to contribute in a temporary or permanent way towards the City Centre's program of urban renewal. The Parramatta metro station construction site is located within or adjacent to the following projects:

- *'Macquarie Street will become a tree lined transit boulevard'*
- *'George Street will be reinstated as Parramatta's pre-eminent civic street'*
- *'Horwood Avenue Civic Link will connect major spaces and streets'* (p.4)

Parramatta's Public Domain Guidelines, 2017

Parramatta's Public Domain Guidelines (City of Parramatta, 2017) provide design strategies, technical guidelines and materials palettes for streets and public places in the City of Parramatta.

Relevant design considerations for streets within the Parramatta CBD commercial core area include:

- *Achieve a safe and comfortable pedestrian environment that accommodates large pedestrian flows*
- *Provide a widened footway to accommodate large canopy trees and awnings where possible*
- *Provide large street trees and optimum soil volume in the root zone*
- *Carefully co-ordinate awning lengths and widths with street tree planting to achieve the required continuous covered walkways and to maximise street trees*
- *Create rest places where space permits.* (p.44)

This guideline includes strategies for paving, street trees, overhead power lines, street furniture, lighting levels, poles and banners. These documents have been considered in the identification of landscape and visual sensitivity and mitigation.

Parramatta Ways, Implementing Sydney's Green Grid, 2017

The walkability of a city is recognised as one of the key aspects that make a city liveable. *Parramatta Ways* is a plan to improve walkability across Parramatta, creating a safe and attractive walking network, accessible to everyone. The plan aims to deliver and expand on the state government's plan for the *Sydney Green Grid* (Greater Sydney Commission, 2017c), improving the street network and green corridors to provide a better experience for people.

Hawkesbury Road is identified as a '*major route'* in the plan, suggesting a strong desire for improved pedestrian facilities including large shade tree planting and active transport. The Parramatta River is also listed as an '*opportunity*' in the green grid network. The network will support '*key development precincts*', including Westmead and the Parramatta CBD.

Camellia Precinct Land Use & Infrastructure Strategy, 2015

The Camellia Precinct is a '*priority revitalisation precinct*' and an area expected to '*grow significantly over the next 20 years and strengthen Parramatta's status as Sydney's second CBD*' (Department of Planning and Environment, 2015). This strategy primarily outlines the intent for redevelopment of the Camellia Town Centre but also addresses redevelopment of industrial areas at Clyde.

Although the Clyde stabling and maintenance facility construction site is outside the proposed Camellia town centre area outlined in the more recent *Draft Camellia Town Centre Master Plan* (Department of Planning and Environment, 2018), the *Camellia Precinct Land Use & Infrastructure Strategy* (2015) remains relevant.

Parramatta Civic Link Framework Plan, 2017

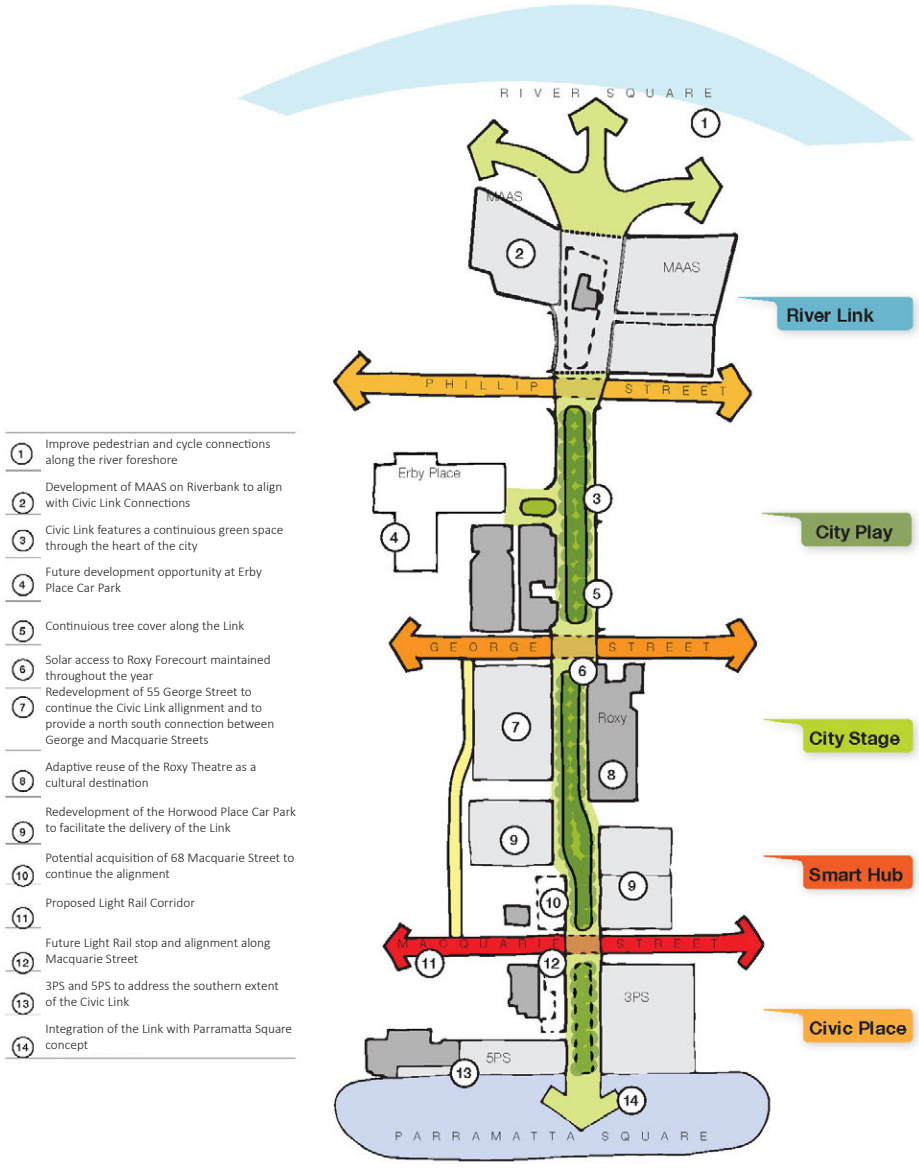
This document sets out the vision for the *Parramatta Civic Link*, a green, pedestrianised public space and cultural spine that will connect public life from the heart of Parramatta CBD to the River. The Civic Link will be located between the proposed Parramatta Square in the south, and River Square in the north.

The Civic Link would be located within the proposed Parramatta metro station construction site, between Macquarie and George Streets.

It will serve as a major pedestrian connector linking two event spaces with the broader network of active and public transport in the Parramatta CBD.

A key priority for the Civic Link framework plan is to increase urban tree canopy cover and '*green public space*' within the CBD, to *'improve visual amenity and comfort' and 'health and wellbeing benefits that green spaces provide'* (City of Parramatta, 2017, p.32).

FIGURE 3-5: AREA FRAMEWORK FOR THE SOUTH EAST PRECINCT (SOURCE: CITY OF PARRAMATTA, 2017B, P.50)



3.3.3 City of Canada Bay planning guidance

The construction sites for North Strathfield metro station, Five Dock Station and the northern construction site for Burwood North Station are located within the City of Canada Bay local government area.

The following documents are applicable:

- Canada Bay Draft Local Strategic Planning Statement (2019)
- Canada Bay Local Environmental Plan 2013
- Canada Bay Development Control Plan 2017
- Canada Bay Local Planning Strategy 2010-2031 (2010).

The relevant clauses from these documents have been summarised in the following sections.

Draft Canada Bay Local Strategic Planning Statement, 2019

This Local Strategic Planning Statement supports the *Eastern City District Plan* (Greater Sydney Commission, 2018b) at a local level and aims to '*guide the character*' of the centres and neighbourhoods into the future (City of Canada Bay Council, 2019, p.6). In particular, it seeks new development to *'reflect the character of the surrounding neighbourhood and contribute to the greening of our local area'* (p.8).

Four themes frame the planning priorities and land use actions for the City of Canada Bay, including infrastructure and collaboration, liveability, productivity and sustainability. There are several planning priorities under the liveability, productivity and sustainability themes which consider landscape and visual amenity, including:

- *Planning Priority 7 – Create vibrant places that respect local heritage and character*
- *Planning Priority 11 – Identify land use and opportunities arising from Sydney Metro West*
- *Planning Priority 15 – Protect and enhance scenic and cultural landscapes*
- *Planning Priority 16 – Increase urban tree canopy and deliver Green Grid connections* (p.18-19).

City of Canada Bay Council intends to adopt a strategic approach when planning for change on and around proposed metro stations at North Strathfield, Burwood North and Five Dock, including '*working with the community to identify the desired future character of metro station locations and the preparation of a local planning study'* (p.45). Under Priority 15, City of Canada Bay Council seeks to ensure that '*views to and from the Parramatta River and Sydney Harbour from outside the LGA are preserved, by ensuring that development does not impact those views*' (p.53).

3.3 Local Government planning guidance

City of Canada Bay Council also views areas under development and change as opportunities to '*provide new area of tree canopy'* (p.54).

Relevant Green Grid project opportunities in the local government area include:

- *Parramatta Road Urban Renewal Corridor*
- *St Lukes Park and Concord Oval Green Link* (p.57).

Canada Bay Local Environmental Plan 2013

Objectives of this plan which relate to this technical paper include: '*to maintain and enhance the existing amenity and quality of life of the local community by providing for a balance of development*' and '*to achieve high quality urban form by ensuring that new development reflects the existing or desired future character of particular localities*' (City of Canada Bay, 2013, cl.1.2).

Several clauses relate to this technical paper, these include:

- Principal development standards: the design of developments to be *'compatible with the desired future character of the area and with the height, bulk, scale, massing and modulation of surrounding buildings'.* It also advocates development schemes to achieve '*excellence in urban design, while relating to the local context'* (cl.4.4.2f)
- Architectural roof features: ensure that *'any architectural roof feature does not cause an adverse visual impact or adversely affect the amenity of neighbouring properties*' (cl.5.6)
- Heritage conservation: the '*settings and views'* (cl.5.10) of the local and State heritage listed items.

Canada Bay Development Control Plan 2017

The key objectives of the development control plan are '*Encourage development that responds to its context and is compatible with the existing built environment and public domain*' and '*Recognise and reinforce the distinctive characteristics of Canada Bay's neighbourhood and centres*'. It also encourages '*design that maintains and enhances the character and heritage significance of heritage items and heritage conservation areas*' (s.A1.5).

Although the Development Control Plan contains no specific requirements relating to the design of public infrastructure such as rail buildings and structures, it places importance on the appearance and compatibility of development with the surrounding context, in the following requirements:

Development height and scale:

- *'Height is an important control because it has a major impact on the physical and visual amenity of a place'* (s.E3.6)

Use of landscaping:

- *'To improve the visual amenity of industrial development sites and areas'* (s.G3).

Design of built form:

- *'To ensure the form and scale of development enhances the streetscape and visual quality of the area'*
- *'Building height, mass, and scale should complement and be in keeping with the character of surrounding and adjacent development'*
- *'Colours should be consistent with the themes of adjoining development and enhance the visual amenity*' (s.G4).

Canada Bay Local Planning Strategy 2010-2031, 2010

This document outlines a strategy for land use planning to provide a framework for the development for new development control plan and local environmental plans. It identifies a broad environmental objective for landscape and visual character which is to:

- *'Enhance the landscape and visual character of the area. Ensure the geographical qualities within Canada Bay are maintained, by placing emphasis on maintaining views to the foreshore and improving green linkages to enhance the parkland setting'* (s.7.9, p.170).

Parramatta Road is also identified as a Special Planning Area (s.9.2, p.193).

3.3.4 Burwood Council planning guidance

The Burwood North Station southern construction site is located within the Burwood local government area.

The following documents are applicable:

- Draft Burwood Local Strategic Planning Statement (2019)
- Burwood Local Environmental Plan 2012
- Burwood Development Control Plan 2013.

The relevant clauses from these documents have been summarised in the following sections.

Draft Burwood Local Strategic Planning Statement, 2019

The Draft Burwood Local Strategic Planning Statement sets out the 20-year vision for the area and identifies priorities and actions to make Burwood *'more liveable, productive and sustainable in the future'* (p.2, Burwood Council, 2019).

The vision for Burwood includes a *'thriving town centre and cherished heritage conservation areas'* with *'clean, green, leafy neighbourhoods'* which are *'filled with distinct character'* and provide *'great amenity with access to nearby open space'* (p.2).

The vision is supported by four themes including infrastructure and collaboration, liveability, productivity and sustainability. There are several planning priorities under the liveability and sustainability themes which consider landscape and visual amenity, including:

- *Planning Priority 4 – Provide high quality planning and urban design outcomes for key sites and precincts*
- *Planning Priority 5 – Identify local character areas considering preservation, enhancement and cultivation*
- *Planning Priority 11 – Increase urban tree canopy cover*
- *Planning Priority 12 – Deliver Green Grid connections* (p.2).

3.3 Local Government planning guidance

Burwood Local Environmental Plan 2012

A key objective of this plan is: '*to encourage or restrict development of land according to its suitability for various purposes*' (cl.1.2).

Several clauses relate to this technical paper, these include:

- Temporary use of land: aims to ensure *'the temporary use will not adversely impact on any adjoining land or the amenity of the neighbourhood*' (cl.2.8)
- Principal development standards: requires the design of developments to be *'compatible with the desired future character of the area and with the height, bulk, scale, massing and modulation of surrounding buildings'. It also advocates development schemes to achieve 'excellence in urban design, while relating to the local context' (cl.4.4.2f)*
- Architectural roof features: ensure that *'any architectural roof feature does not cause an adverse visual impact or adversely affect the amenity of neighbouring properties'* (cl.5.6)
- Heritage conservation: the '*settings and views'* (cl.5.10) of the local and State heritage listed items are considered.

Burwood Development Control Plan 2013

The purpose of this Development Control Plan is to supplement the Burwood Local Environmental Plan 2013 and provide more detailed provisions to guide development, ensuring that development helps to '*maintain and enhance the quality of the natural and built environments in the Burwood LGA'* (Burwood Council, 2013, s.1.1).

Burwood's '*gentle topography*' results in '*mainly urban and local views and vistas*', which '*are an important part of sense of place, amenity and character in the Burwood LGA*' (s.2.3). When designing a development, the development control plan advocates a response to the local and broader urban context of a site through thorough site analysis, including identification of '*views and vistas*' (s.2.3).

3.3.5 Inner West Council planning guidance

The construction site for The Bays Station is located within the former Leichhardt Council area. The Leichhardt Council has since been amalgamated with the former Ashfield and Marrickville Councils to become the Inner West Council.

The following documents are applicable:

- Draft Inner West Council Local Strategic Planning Statement (2019)
- Leichhardt Local Environmental Plan 2013
- Leichhardt Development Control Plan 2013

The Bays Station has been removed from the Leichhardt Local Environmental Plan as it is a State Significant Precinct.

The relevant clauses from these documents have been summarised in the following sections.

Draft Inner West Council Local Strategic Planning Statement, 2019

Based around six themes, the *Draft Inner West Council Local Strategic Planning Statement … 'identifies the challenges and opportunities for our communities, in the context of a changing climate, changing technologies and a growing population. The Statement sets out planning priorities, objectives and actions to enable opportunities for social, economic and environmental benefits to be taken while maintaining the character, culture and values so important to the identity of Inner West communities.'* (Inner West Council, 2019 p.2)

One key focus of the Local Strategic Planning Statement is sense of place. The statement indicates that … *'Community engagement has shown that the character, diversity, creativity, culture and heritage of Inner West are central to our identity.'* (p.2). The statement seeks development which is undertaken … *'with respect for place, local character and heritage significance'* (p.6). It also advocates new development to *'enhance permeability and connectivity ... to the public domain and provide a positive contribution to the public space'* (p.41).

The Statement describes the urban character of the Inner West Council area as quite diverse with many distinct neighbourhoods and centres. The landscape is identified as contributing to the community's identity.

There are several Planning Priorities which consider landscape and visual amenity, including:

- *Planning Priority 3 - A diverse and increasing urban forest that connects habitats of flora and fauna* (p.32)
- *Planning Priority 7 - Provide for a rich diversity of functional, safe and enjoyable urban spaces connected with and enhanced by their surroundings* (p.41)
- *Planning Priority 11 - Provide accessible facilities and spaces that support active, healthy communities* (p.60).

3.3 Local Government planning guidance

Leichhardt Local Environmental Plan 2013

A number of objectives for this Local Environmental Plan relate to this technical paper, these include:

- *Protect and enhance the amenity, vitality and viability of Leichhardt* (cl.1.2.2e)
- *To protect and enhance:*
  - *(i) views and vistas of Sydney Harbour, Parramatta River, Callan Park and Leichhardt and Balmain civic precincts from roads and public vantage points, and*
  - *(ii) views and view sharing from and between private dwellings* (cl.1.2.2k)
- *To ensure that development is compatible with the character, style, orientation and pattern of surrounding buildings, streetscape, works and landscaping and the desired future character of the area* (cl.1.2.2l)
- *To protect, conserve and enhance the character and identity of the suburbs, places and landscapes of Leichhardt, including the natural, scientific and cultural attributes of the Sydney Harbour foreshore and its creeks and waterways, and of surface rock, remnant bushland, ridgelines and skylines* (cl.1.2.2n).

A number of clauses relate to this technical paper, these include:

- Temporary use of land clause: aims to ensure *'the temporary use will not adversely impact on any adjoining land or the amenity of the neighbourhood'* (cl.2.8)
- Limited development on foreshore area clause: aims to ensure '*that development in the foreshore area will not adversely impact on natural foreshore processes or affect the significance and amenity of the area' or the 'aesthetic appearance of the foreshore'* (cl.6.5)

Leichhardt Development Control Plan 2013

The purpose of this Development Control Plan (Leichhardt City Council, 2013b) is to supplement the Leichhardt Local Environmental Plan 2013 and provide more detailed provisions to guide development. One aim of this plan is to '*provide and support reasonable amenity*' and '*contain or respond to the essential elements that make up the character of the surrounding area and the desired future character*' (Part C–4).

4. OVERVIEW OF STAGE 1 COMPONENTS AND CHARACTER

4.1 Typical character of construction

4.1 Typical character of construction

Construction sites would be established along the alignment, extending across the area required for Stage 1 and all enabling works.

Elements seen at construction sites would typically include:

- Traffic management
- Site perimeter noise barriers, hoardings and/or security fencing with shade cloth
- Demolition works including the removal of buildings and trees
- Equipment including cranes, piling rigs, excavators and other heavy equipment
- Site office, amenities, workshops, and plant (such as water treatment, concrete and asphalt batching plants, bentonite plant etc.)
- Laydown, material and plant storage areas
- Heavy vehicle access for deliveries and haulage
- Acoustic sheds or other acoustic measures
- Precast concrete segment storage.

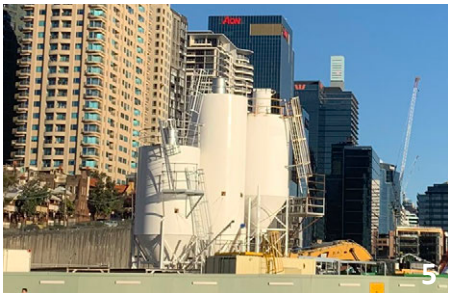
Typical examples of these elements from previous stages of the Sydney Metro project are shown at Figure 4-1.

The construction of Stage 1 would occur for around five years. Further construction activities and the project operations would occur in subsequent stages of Sydney Metro West and would be the subject of future staged planning approvals.

The duration of work at each Stage 1 construction site varies, ranging from around one year to five years. Further details are contained in the Chapter 9 (Stage 1 description) of the Environmental Impact Statement.

4.1 Typical character of construction

FIGURE 4-1 CONSTRUCTION CHARACTER IMAGES



1 CONSTRUCTION SITE, BARANGAROO
2 DEMOLITION SCAFFOLDING AND MESH, PITT STREET
3 METAL CLAD ACOUSTIC SHED, CROWS NEST
4 CRANE, MARTIN PLACE
5 CONCRETE BATCHING PLANT, BARANGAROO
6 SPOIL STORAGE MOUND WITH EXCAVATORS, BARANGAROO
7 SITE OFFICES, BLIGH STREET
8 SITE BOUNDARY FENCING WITH MESH BANNERS, BARANGAROO
9 SITE BOUNDARY HOARDING, BARANGAROO

5. WESTMEAD METRO STATION CONSTRUCTION SITE

5.1 Existing environment

5.1 Existing environment

The Westmead metro station construction site is situated to the south of the existing Westmead Station and to the east of Hawkesbury Road and would extend south to Bailey Street and east to Hassall Street (refer to Figure 5-1: Westmead metro station – Landscape context).

The existing Westmead Station is located on the T1 Western Line and T5 Cumberland Line. The existing station includes two island platforms, accessed via an overbridge which extends from Railway Parade in the north to Alexandra Avenue in the south. Bus stops and bicycle parking are located on Alexandra Avenue, and commuter parking on Railway Parade.

The existing rail corridor generally divides the landscape character of Westmead. Areas to the south of the rail corridor consist of leafy, low to medium density residential areas with scattered small scale commercial and community uses. This includes a shop on the corner of Alexandra Avenue and Hawkesbury Road, an automotive workshop on the corner of Alexandra Avenue and Hassall Street, and a two storey terrace with shopfront on Hassall Street. The locally heritage listed Westmead Public School (c1917) is also located on Hawkesbury Road near to the site.

Mays Hill Precinct (formerly occupied by the Parramatta Golf Club) is located to the east of the site and forms part of the visual setting and green space buffer of Parramatta Park.

FIGURE 5-1: WESTMEAD METRO STATION – LANDSCAPE CONTEXT

There are no views between the Westmead metro station construction site and Mays Hill Precinct.

The northern side of the rail corridor includes more intensive retail and office development opposite the existing station and along Hawkesbury Road. There are mainly medium rise residential apartment buildings between this commercial area and Parramatta Park in the east.

There are residential properties along Railway Parade which face the station and have views across the rail corridor and to the construction site to the south. To the north-west of the existing station, on Hawkesbury Road, there are several major institutions including the Western Sydney University Westmead campus including the former Westmead Boys Home (local heritage listed in Parramatta Local Environmental Plan) and the Westmead health and medical research precinct.

Under the Greater Parramatta to Olympic Peninsula Strategy (Greater Sydney Commission, 2016, p.30), Westmead is intended to fulfil an important role within Greater Sydney as a '*health city and international innovator*', based '*around a lively main street and urban village, served by rail, light rail and rapid bus*'. Westmead is also identified as a state led strategic planning area and the NSW Government Department of Planning, Industry and Environment (Planning and Assessment) is intending to prepare a future precinct plan for the area. The NSW Government is currently working with the Cumberland Council to carry out precinct planning for the residential areas in the south of Westmead.

As part of the Parramatta Light Rail (Stage 1) project, a future light rail terminus stop ('Westmead Station stop') will be constructed at the northern corner of Hawkesbury Road and Railway Parade, opposite the existing Westmead Station. The light rail alignment will extend north along Hawkesbury Road and is expected to be operational in 2023.

1 WESTMEAD STATION, VIEW FROM RAILWAY PARADE
2 WESTMEAD STATION, VIEW FROM ALEXANDRA AVENUE
3 AUTOMOTIVE WORKSHOP AND TWO STOREY TERRACE WITH SHOPFRONT, CORNER OF ALEXANDRA AVENUE AND HASSALL STREET
4 FORMER WESTMEAD BOYS HOME
5 SHOP ON CORNER OF ALEXANDRA AVENUE AND HAWKESBURY ROAD

5.2 Planning guidance

Further to the planning review provided in Section 3 of this technical paper, the following section summarises the specific planning provisions which are relevant to the landscape and visual impact assessment of Stage 1 in this location.

FIGURE 5-2: MAYS HILL PRECINCT MASTER PLAN (SOURCE: TYRRELLSTUDIO, 2017, P.14)

5.2.1 Development in Parramatta City and the Impact on Old Government House and Domain's World and National Heritage Listed Values: Technical Report, 2012

This report suggests future development guidelines to inform the nature and form of development and reduce impacts on the world and national heritage values of the Old Government House and Domain. The former Parramatta Golf Club is identified as a '*highly sensitive area*' and is located about 180 metres to the east of the construction site. The site is not located within an important view corridor or area of sensitivity, however, it forms part of the middle ground (500 metres - 1.5 kilometres) of possible views from Old Government House and the Domain, as shown in Figure 3-3, at Section 3.1.1 of this technical paper.

The report suggests that '*alterations in the middle ground (up to 1.5 km from the observer) are less distinctive. Some detail can be seen, but where increasingly colour and texture variation is seen as grouped into mass elements. Visible details progressively decline*' (Planisphere, 2012, p.78).

While the construction site is located within a distance to the site that has been identified as potentially being in the middle ground of views from Parramatta Park, intervening vegetation and built form would screen any views of the site and larger scale elements such as acoustic sheds, piling rigs and cranes at the Westmead metro station construction site from the former golf course, Old Government House and the Domain.

5.2.2 Mays Hill Precinct Master Plan, 2017

The Westmead power supply route is located adjacent to Mays Hill Precinct, at Park Parade. This precinct forms the southern part of Parramatta Park, separated from the northern areas of the Park by the railway corridor and Park Parade. Much of Mays Hill Precinct was previously occupied by the Parramatta Golf

Course, which closed in 2015. The Master Plan (refer to Figure 5-2: Mays Hill Precinct Master Plan) proposes a range of sport and recreation facilities '*woven through a scenic landscape setting'* (Tyrrell Studio, 2017). This includes the future Parramatta Aquatic Leisure Centre. The design proposes to reconnect with Parramatta Park across Park Parade and the railway, via a new landbridge, in the location of the former Governor's Avenue.

The ridge line along the western side of the Mays Hill Precinct is a prominent topographical feature of the Parramatta area, with a history of use as a viewing point. The railway forms a '*visual barrier between Old Government House and Mays Hill*' (Tyrrell Studio, 2017, p.28).

The following views from and within the Precinct have been identified as significant in the master plan:

- *Iconic and expansive skyline view of Parramatta city from Mays Hill ridge*
- *City view along Jubilee Avenue from a landform associated with the former golf course.*
- *Key long views through the Precinct offer sense of space and scale, with stands of trees*
- *Northern end of Precinct is less open, with fewer long viewlines, bounded by Domain Creek and groves of trees* (Tyrrell Studio, 2017, p.22).

5.2.3 Holroyd Local Environmental Plan 2013

The Westmead metro station construction site is located within the City of Cumberland local government area where the planning provisions for the former City of Holroyd still apply. In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the following is of relevance to the construction site.

The construction site is zoned R4 High Density Residential. The following objectives provide guidance for built form and streetscape character in this area.

Building height

- *Building heights may be developed up to a height of 15 metres*
- *To permit a scale of development compatible with the localities topography, and the context, scale and character of the street and streetscape*
- *To preserve the amenity of adjoining residents* (Part B, cl.6.4).

Building appearance

- *To protect the amenity of adjoining sites, maintaining appropriate residential character and providing adequate sunlight to dwellings and private open space*
- *To ensure that new developments have facades which define and enhance the public domain and desired streetscape character and provide visual interest* (Part B, cl.6.7).

There are no *'Site Specific Controls'* (Part J) which relate to this site and the site is not located within a '*Heritage Conservation Area*' (Part H).

Heritage

The construction site contains no heritage listed buildings. The Westmead Public School, located on Hawkesbury Road, opposite the site, however, is a local heritage listed property.

5.2.4 Holroyd Development Control Plan 2013

The following objectives provide guidance for views under general residential controls:

- *To have regard, wherever possible, for the obstruction of existing significant and district views from adjoining buildings when developing/redeveloping for the purposes of residential uses*
- *To protect public views and vistas from streets and public places*
- *To design development in a way which will maintain or create access to significant and district views enjoyed from other buildings or public places and allow for appropriate view sharing.* (Part B, Section 1.3, p.156)

In addition, development controls for views include:

- *Where significant and/or district views are currently enjoyed, or where views may be reasonably created, the design of development shall be designed to minimise the obstruction of such views*
- *Where the height and bulk of a development is likely to block a significant and/or district view, amendments to residential development proposals will be required, to retain, at least part of that view* (Part B, Section 1.3, p.156).

Objectives for Heritage Items which relate to this technical paper are:

- *To promote sympathetic redevelopment of or surrounding a heritage item, that complements the style and character of any item of environmental heritage* (Part H, Section I, p.387).

Objectives for development in the vicinity of a heritage item include:

- *To ensure that new development fits within its environmental and built context and is designed to make reference to any significant heritage item or feature*
- *For new development to be designed to maintain the existing streetscape character, and is compatible with its particular heritage themes*
- *To locate new development so that it does not overshadow or affect the curtilage, landscaping, setting or views associated with any heritage item or conservation area* (Part H, Section 4, p.402).

The Westmead metro station construction site is not located within an identified Heritage Conservation Area under the *Holroyd Development Control Plan 2013.*

5. WESTMEAD METRO STATION CONSTRUCTION SITE

5.3 Character and components of Stage 1

5.3 Character and components of Stage 1

Stage 1 construction at the Westmead metro station construction site would comprise surface and underground works on a site to the south of the existing Westmead Station. The site would cover about 15,750 square metres within the block bound by the existing rail corridor, Hawkesbury Road, Bailey Street and Hassall Street.

The key elements and works that would be seen include:

- Demolition of the following buildings and structures:
  - Retail building and rear car park at 141 Hawkesbury Road
  - Automotive workshop at 3 Hassall Street
  - Mixed use building at 9 Hassall Street
  - Residential unit blocks at 139 Hawkesbury Road, 20-22 Alexandra Avenue, 15-19 Hassall Street and 27 Bailey Street
  - Detached residential properties at 131-135 Hawkesbury Road, 31-37 Bailey Street, 24-27 Alexandra Avenue and 21 Hassall Street
- Removal of about 100 trees and all other vegetation within the site including:
  - All trees within the site boundary
  - Two street trees in front of 20-22 Alexandra Avenue, two street trees in front of 27 and 31 Bailey Street and one street tree in front of 15-19 Hassall Street
  - All vegetation within the southern side of the rail corridor adjacent to Westmead Station and between Hawkesbury Road and Hassall Street
- Construction elements and works including:
  - Workshops, laydown area, site offices, site parking, grout plant and silos
  - A metal clad acoustic shed (about 15 metres high at Hawkesbury Road and 25 metres high at Hassall Street)
  - Tunnel boring machine launch
  - Segment storage
  - The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs etc.
  - Noise barriers and hoardings surrounding the construction site (about three metres high)
- Road, intersection and footpath works including:
  - Construction site entrance on Bailey Street and exit on Hawkesbury Road (haulage via Hawkesbury Road and Bailey Street)
  - Closure of Alexandra Avenue between Hassall Street and Hawkesbury Road, installation of temporary traffic signals to Bailey Street and Hawkesbury Road and Bailey and Hassall Streets, and modified traffic signals to Alexandra Avenue and Hassall Street
  - Construction of a temporary pedestrian footpath between Hawkesbury Road and Hassall Street to maintain access to the existing Westmead Station
  - Relocation of bus stops and bicycle racks from Alexandra Avenue adjacent to Westmead Station
  - Traffic and pedestrian management signage and structures around the perimeter of the site as required
  - Works to realign Alexandra Avenue between Hassall Street and Hawkesbury Road and the installation of new traffic lights at Hawkesbury Road and Grand Avenue.

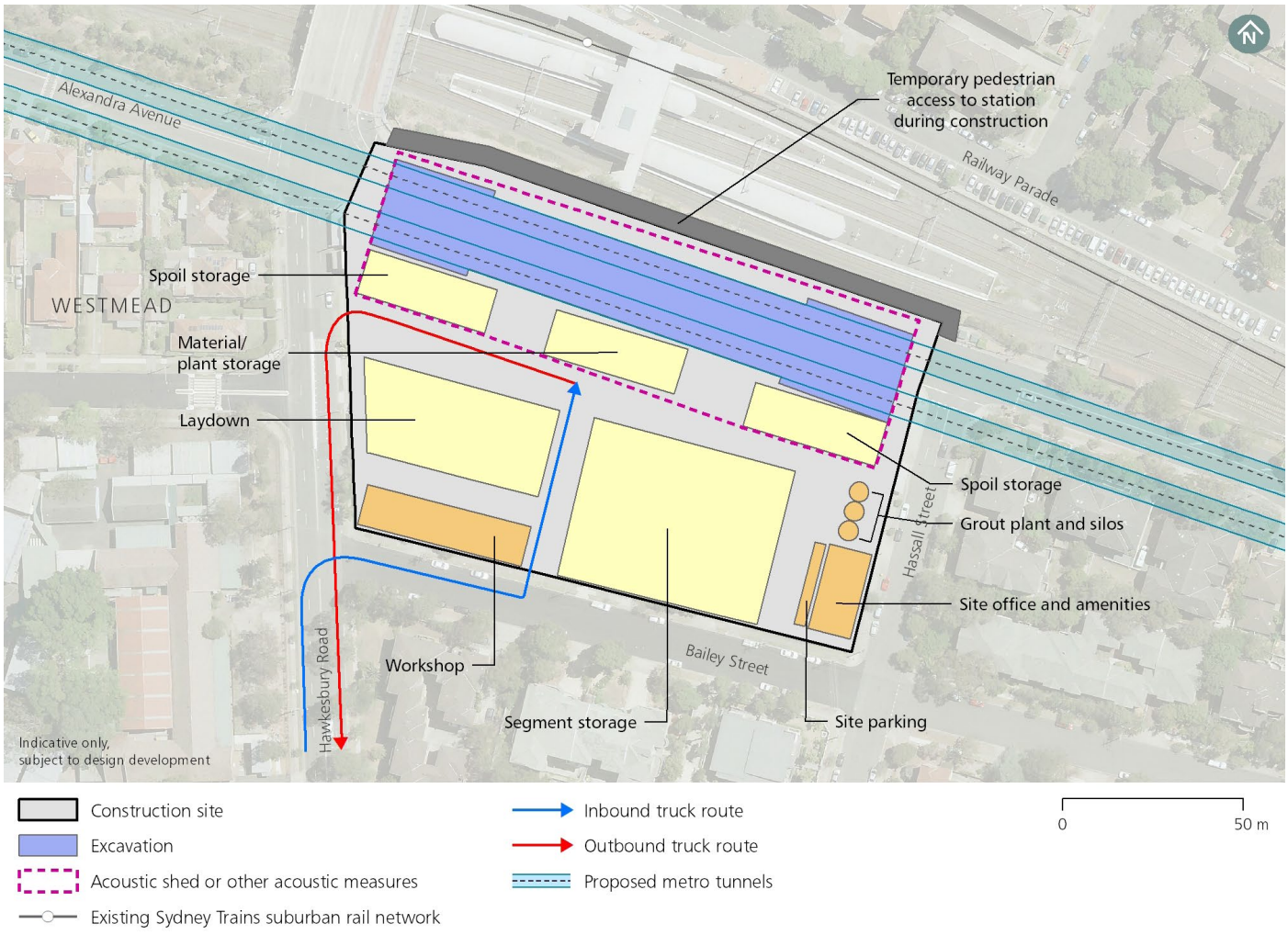
Stage 1 construction at Westmead metro station construction site would be carried out over about five years, including enabling and demolition works, station excavation, tunnel boring machine excavations and crossover cavern excavations.

The hours of construction would be as follows:

- Demolition and concrete deliveries would be carried out during standard hours
- Heavy plant delivery would be carried out after hours
- Underground works and tunnel boring machine launch (under the acoustic shed if required), and spoil haulage would be carried out 24 hours, 7 days a week.

Figure 5-3 identifies the construction site layout and indicative location of these components.

FIGURE 5-3: WESTMEAD METRO STATION CONSTRUCTION SITE LAYOUT



5.4 Assessment of landscape impact

The landscapes and public realm areas which may potentially be impacted by Stage 1 are:

- Westmead Station, Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes.

The following section summarises the assessment of impact for this landscape and public realm area. (refer to Table 2-7 for impact levels).

5.4.1 Westmead Station, Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes

Existing conditions: Hawkesbury Road, as it passes the site, is a four lane roadway providing access to a mix of medium density residential apartment blocks, single storey detached homes, a small corner retail building, and the Westmead Public School. The road slopes down from a high point near the rail overbridge and there are some mature street trees south of Bailey Street. Trees within adjacent private properties along Hawkesbury Road contribute to a somewhat leafy streetscape character. The existing pedestrian environment along Hawkesbury Road comprises narrow pavements and mixed surfaces. At the school the footpaths are separated from the road by fencing.

Alexandra Avenue is located parallel to the rail line and provides access to Westmead Station. To the south of the street there is a mix of low and medium density residential properties and a few scattered retail uses. It comprises three to four traffic lanes, footpaths to both sides, bike rack areas, and bus stops. There are covered stairs connecting to the station via a footbridge and lifts.

Existing vegetation within the railway corridor largely contains views within the station.

Hassall and Bailey Streets are residential scale streets. These streets have footpaths, grassed verges, powerlines and scattered street trees. The trees within the adjacent private properties, including those within the construction site, provide some amenity to these streetscapes.

Sensitivity: The Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes are used by local residents and customers of the small-scale commercial uses, the existing Westmead Station and bus stops. They include intermittent street trees which provide some localised shade and amenity. There is vegetation along the rail corridor at the Westmead Station which provides some amenity to the station and adjacent street. Overall, the landscape of the station and surrounding streetscapes are of **local landscape sensitivity**.

Landscape impact: The construction site would require the closure of Alexandra Avenue, between Hawkesbury Road and Hassall Street, and the demolition of all buildings and vegetation within the block extending south to Bailey Street. This would include the removal of the low and medium-density residential buildings, which characterise these streetscapes, and their mature garden trees which provide tree canopy cover and contribute to the amenity of the streetscape. There are several existing small scale retail buildings, which also contribute to the streetscape character that would be removed. The automotive workshop, which detracts from the streetscape character, would also be removed. The vegetation to the north of Alexandra Road, within the rail corridor, would be removed to accommodate a temporary structure to maintain pedestrian access to the station. The loss of the existing built form and vegetation, and the closure of Alexandra Avenue, would result in a substantial change to the urban form and character of these streetscapes, influencing the residential areas

to the south and south-east of the station. The removal of vegetation along the rail corridor would reduce the level of comfort and amenity for pedestrians approaching the station.

Footpaths adjacent to the construction site would be closed requiring the diversion of pedestrian routes during construction. Temporary pedestrian access to the existing Westmead Station would be provided within the rail corridor adjacent to the existing Alexandra Avenue. The bus stops along Alexandra Avenue would also be relocated. These changes would adversely affect legibility and permeability for residents and rail customers. The road closure, alterations to footpaths and bus stops and loss of a locally prominent corner building to the corner of Hawkesbury Road and Alexandra Avenue would affect wayfinding and legibility within the neighbourhood.

At the end of Stage 1, Alexandra Avenue would be realigned between Hassall Street and Hawkesbury Road with a new signalised intersection at Hawkesbury Road and Grand Avenue. While the ultimate realignment of Alexandra Avenue would substantially increase the footprint of the intersection, it would also improve the pedestrian environment and permeability for residences west of Hawkesbury Road and from Grand Avenue to the station.

Overall, there would be a considerable reduction in the quality of these streetscapes and the landscape at the site, which are of local sensitivity, resulting in a **moderate adverse landscape impact**.

1 ALEXANDRA AVENUE
2 VIEW SOUTH ALONG HAWKESBURY ROAD

5.5 Assessment of daytime visual impact

The Westmead metro station construction site can be seen from the surrounding adjacent streets including Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street. Longer views to the site are possible from Grand Avenue in the west and Bailey Street in the east, as a narrow view corridor. There are views from Railway Parade, south across the station and rail corridor, where existing vegetation and the station buildings do not intervene. This would include elevated views from the upper levels of residential and commercial medium rise buildings along Railway Parade, facing south towards the site. Further east, intervening built form and vegetation contain and obstruct views from Parramatta Park and the former Parramatta Golf Course towards the Westmead station site (refer to Figure 5-4).

FIGURE 5-4: VIEW TOWARDS THE WESTMEAD STATION CONSTRUCTION SITE FROM THE FORMER PARRAMATTA GOLF COURSE

The following viewing locations were selected as representative of the range of views to Stage 1:

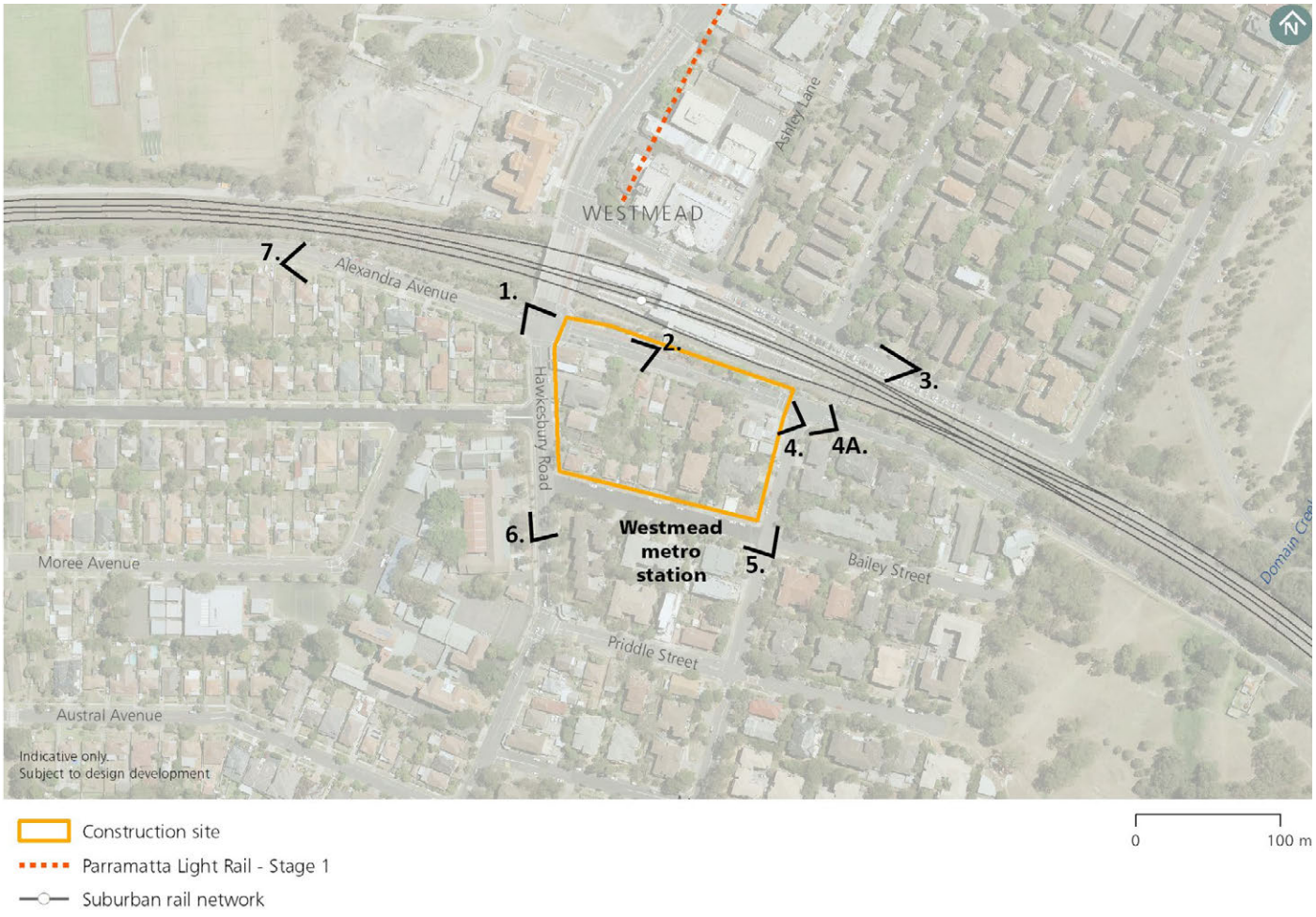
- Viewpoint 1: View south-east from Hawkesbury Road and Alexandra Avenue
- Viewpoint 2: View west from the existing Westmead Station entry
- Viewpoint 3: View west from Railway Parade
- Viewpoint 4 and 4A: View west from Alexandra Avenue and Hassall Street
- Viewpoint 5: View north-west from Hassall Street
- Viewpoint 6: View north-east along Hawkesbury Road
- Viewpoint 7: View east along Alexandra Avenue.

Figure 5-5 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

1 GRAND AVENUE
2 HAWKESBURY ROAD

FIGURE 5-5: WESTMEAD METRO STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS



5. WESTMEAD METRO STATION CONSTRUCTION SITE

5.5 Assessment of daytime visual impact

5.5.1 Viewpoint 1: View south-east from Hawkesbury Road and Alexandra Avenue

Existing conditions: A small-scale commercial building marks the street corner of Hawkesbury Road and Alexandra Avenue in this view (refer to Figure 5-6). The areas adjacent to this commercial building have a predominantly leafy residential character. This section of Hawkesbury Road consists of four lanes of traffic with footpaths on each side and limited street tree planting. The landform slopes down to the east and there are filtered views to the Parramatta CBD in the distance (left of view).

Sensitivity: This view would be experienced by local residents and their visitors, users of the small-scale commercial properties, adjacent roads, the existing Westmead Station and the adjacent bus stops on Alexandra Avenue. There are glimpses to the Parramatta CBD and vegetation within Parramatta Park from this location, however this is an incidental view to these features. Overall, this view is of **local visual sensitivity**.

Visual impact: The buildings and vegetation located along the eastern side of Hawkesbury Road, extending south between Alexandra Avenue and Bailey Street (centre of view), and east to Hassall Street (left of view) would be removed. This would include the locally prominent commercial building on the corner of Hawkesbury Road and all adjoining street trees, vegetation within private properties and vegetation along the southern boundary of the rail corridor (refer to Figure 5-7).

Alexandra Avenue would be closed and an acoustic shed would be established across this area of the site. This shed would extend along Hawkesbury Road about half way to Bailey Street, and also away from the viewer, out of view, to Hassall Street in the east. The acoustic shed would rise about four times the height of the existing built form on the site and would create a wall of built form alongside Hawkesbury Road, obstructing views across the residential areas of Westmead and the glimpsed views to the Parramatta CBD skyline.

The structure would also conceal views to spoil areas and material and plant storage areas which would be established within the site. Laydown areas and workshops may be visible in the background of the view, along Hawkesbury Road (right of view). The site would be contained by hoardings which would screen views to much of the construction work at street level. Heavy vehicles would be seen exiting the site and travelling south along Hawkesbury Road in the background of the view.

Alexandra Avenue would be realigned and a new signalised intersection would be created mid block along Hawkesbury Road to align with Grand Avenue. This new intersection would visible in the middle ground (right of view).

Overall, the works would introduce large scale structures and an intensive construction character to this view, resulting in a loss of a locally prominent commercial corner building, and the adjacent leafy residential areas of south Westmead. Overall this change would create a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

5.5.2 Viewpoint 2: View west from the existing Westmead Station entry

Existing conditions: This view is from the southern entrance to the existing Westmead Station across Alexandra Avenue and includes a mix of one and two storey detached residential properties, three storey multi-unit developments, vacant land and a commercial building at the corner with Hawkesbury Road and Hassall Street (refer to Figure 5-8). The landform rises to a crest near the intersection with Hawkesbury Road which is visible in the background of this view. Mature trees within the private properties on Alexandra Avenue, intermittent street trees and planting near the existing station entrance enhance the visual character of this broad open streetscape.

5.5 Assessment of daytime visual impact

FIGURE 5-6: VIEWPOINT 1 – VIEW SOUTH-EAST FROM HAWKESBURY ROAD AND ALEXANDRA AVENUE, EXISTING VIEW

FIGURE 5-7: VIEWPOINT 1 – VIEW SOUTH-EAST FROM HAWKESBURY ROAD AND ALEXANDRA AVENUE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

5. WESTMEAD METRO STATION CONSTRUCTION SITE

5.5 Assessment of daytime visual impact

FIGURE 5-8: VIEWPOINT 2 – VIEW WEST FROM THE EXISTING WESTMEAD STATION ENTRY, EXISTING VIEWS

FIGURE 5-9: VIEWPOINT 2 – VIEW WEST FROM THE EXISTING WESTMEAD STATION ENTRY, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

This street provides pedestrian access to the station, nearby residential areas and to bus stops adjacent to the station (right of view).

Sensitivity: This view would be experienced by a concentration of commuters accessing the Westmead Station and the adjacent bus stops on Alexandra Avenue. There are no visual features of note in this view. Overall, this view is of **local visual sensitivity**.

Visual impact: Alexandra Avenue would be closed and the construction site would extend along the full frontage of Alexandra Avenue from the corner of Hawkesbury Road (right of view) extending east towards Hassall Street (far left of view). All buildings and vegetation between the viewer and Hawkesbury Road would be removed (refer to Figure 5-9). An acoustic shed would be established, extending along the full frontage of the rail corridor between Hassall Street and Hawkesbury Road, within the foreground of this view. This structure would rise about 15 metres, abruptly enclosing this view and obstructing views south and into the construction site. The construction site would be surrounded by hoardings, which would conceal views to any other construction work within the lower portions of the site.

Pedestrian access to the station would be temporarily relocated within the rail corridor (right of view) and alterations would be required to bus stop locations. Due to the scale of Stage 1 and extent of building and vegetation removal, there would be a considerable reduction in the amenity of this view. This view is of local sensitivity and this change would result in a **moderate adverse visual impact**.

5.5.3 Viewpoint 3: View west from Railway Parade

Existing conditions: This view from Railway Parade, adjacent to medium density residential buildings, includes the construction site in the background (refer to Figure 5-10). The site provides a leafy backdrop to the existing Westmead Station and rail corridor which are visible in the middle ground of this view. Dense vegetation within the southern side of the rail corridor also contributes to this leafy character. The roofline of some medium rise buildings and the automotive workshop at the corner of Alexander Avenue and Hassall Street can be seen through the wires and fencing of the rail corridor. The foreground of this view is dominated by commuter car parking areas for the existing Westmead Station which offer limited amenity to the streetscape. The existing Westmead Station is visible to the west (right of view) in the middle to background, and the Western Sydney University Westmead campus (local heritage listed in Parramatta Local Environmental Plan) can be glimpsed in the background, on a local highpoint on Hawkesbury Road.

Sensitivity: This view would be experienced mainly by local residents and their visitors, adjacent road and public transport users accessing the existing Westmead Station. The existing Westmead Station and the Western Sydney University Westmead campus building are local features in this view. Overall, this view is of **local visual sensitivity**.

Visual impact: All buildings within the site would be removed including the automotive workshop and medium density building in the background of this view. The vegetation within the site and along the southern side of the rail corridor would also be removed (refer to Figure 5-11).

An acoustic shed would extend along the northern frontage of the construction site, so that the full length of the structure would be seen from this angle. The structure would rise about twice the height of the existing built form at the local high point on Hawkesbury

FIGURE 5-10: VIEWPOINT 3 – VIEW WEST FROM RAILWAY PARADE, EXISTING VIEW

FIGURE 5-11: VIEWPOINT 3 – VIEW WEST FROM RAILWAY PARADE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Road (right of view). To the west (centre of view) it would rise about four times the height of the existing buildings on the site. This structure would replace the vegetated skyline and be visible rising above the station buildings. This structure would also largely conceal the other construction works in the background of this view.

While the construction site is located in the background of this view, it would introduce a substantial structure and intensive construction character to what is otherwise a predominantly vegetated backdrop to this view towards the rail corridor and station. Overall, this change would create a noticeable reduction in the amenity of this view, which is of local sensitivity, resulting in a **minor adverse visual impact**.

5.5.4 Viewpoint 4 and 4A: View west from Alexandra Avenue and Hassall Street

Existing conditions: In views from the corner of Alexandra Avenue and Hassall Street (refer to Figure 5-12), the existing Westmead Station is mostly screened by the vegetation which borders the rail corridor (right of view). The station is separated from the residential neighbourhood by Alexandra Avenue which is four lanes wide and forms a wide intersection with Hassall Street (centre of view). An automotive workshop can be seen on the street corner in the middle ground of this view and includes large hardstand vehicular circulation areas which continue the vehicular dominated character. The built form steps up to the south (left of view), with a small two storey building with a ground level shop front. The landform rises to the west (centre of view) and south (left of view) so that the foreground elements obstruct views into the adjacent properties. Mature trees, mostly located within private property, filter views to medium density residential located to the rear of these buildings, and contribute to the residential amenity of the neighbourhood.

Sensitivity: This view would be experienced by local residents and their visitors, users of the small-scale commercial properties including the automotive workshop, adjacent roads, and commuters approaching the existing Westmead Station and the bus stops on Alexandra Avenue. These views are of **local visual sensitivity**.

Visual impact: All buildings and vegetation to the south (left of view) of Alexandra Avenue would be demolished and Alexandra Avenue would be closed from the intersection with Hassall Street, west to Hawkesbury Road (refer to Figure 5-13). Vegetation within this section of the rail corridor would also be removed to accommodate a temporary footpath to the station. An acoustic shed would be established on the site of the existing automotive workshop and the Alexandra Avenue road reserve, extending west towards Hawkesbury Road, so that the short end of the shed would be visible from this location. The shed would rise about three times the height of the existing buildings on the site and conceal a range of construction works including tunnel boring machine launch, excavation, spoil stockpiles, plant and material storage. A grout plant and silos, and site offices would be seen adjacent to the shed, along Hassall Street (far left of view). There would be hoarding established on the site perimeter which would screen views to the lower areas of the site.

Following the station construction works Alexandra Avenue would be realigned. This work would include road construction works in the fore and middle ground of this view, extending across the site to the west and rising up to the crest at Hawkesbury Road.

This construction work would be substantial in size and intensity and extend across most of this view transforming its character. Overall, this change would create a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

5.5 Assessment of daytime visual impact

FIGURE 5-12: VIEWPOINT 4 – VIEW WEST FROM ALEXANDRA AVENUE AND HASSALL STREET, EXISTING VIEW

FIGURE 5-13: VIEWPOINT 4 – VIEW WEST FROM ALEXANDRA AVENUE AND HASSALL STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

5. WESTMEAD METRO STATION CONSTRUCTION SITE

5.5 Assessment of daytime visual impact

FIGURE 5-14: VIEWPOINT 4A – VIEW WEST FROM ALEXANDRA AVENUE AND HASSALL STREET, EXISTING VIEW

FIGURE 5-15: VIEWPOINT 4A – VIEW WEST FROM ALEXANDRA AVENUE AND HASSALL STREET, PHOTOMONTAGE

Figure 5-14 and 5-15 show this view set back further along Alexandra Avenue (viewpoint 4A) and a photomontage which illustrates the potential scale of a possible acoustic shed.

5.5.5 Viewpoint 5: View north-west from corner of Hassall Street and Bailey Street

Existing conditions: In this view the residential streetscape of Hassall Street comprises a mix of low rise and multi-storey residential buildings together with a small-scale mixed-use building near the intersection with Alexandra Avenue (refer to Figure 5-16). Tall tower development and medium density buildings within the commercial areas of Westmead, to the north, terminate views north along Hassall Street (right of view). Mature vegetation, mostly within private property, softens and filters views to the buildings along both Hassall Street and Bailey Street (left of view). Bailey Street rises to a high point near Hawkesbury Road (far left of view).

Sensitivity: This view would be experienced by a concentration of local residents and their visitors, including medium density properties, and adjacent road users. There are no visual features in this view and therefore these views are of **local visual sensitivity**.

Visual impact: The construction site would extend from Hassall Street north to Alexandra Avenue (right of view) and from Bailey Street west to Hawkesbury Road (left of view). The residential buildings and small two storey building, visible within the middle ground of this view, would be demolished and all vegetation within the site including adjacent street trees would be removed (refer to Figure 5-17).

A large acoustic shed would be located in the northern area of the construction site (right of view) and set back from this view. The structure would appear about three times the height of the existing buildings on the site at Hassall Street. Despite being set back from this view, the rising landform would increase the visual prominence of the shed from this location.

Site offices and staff amenities buildings, a grout plant and silos would be located in the foreground of this view, to the south of the acoustic shed and adjacent to Hassall Street (right of view). These buildings would partially screen views to site parking and site entry. Beyond this, along Bailey Street (left of view), there would be a segment storage area. These precast concrete segments would be stacked and while they would be set back from the corner, and behind the workshops on Bailey Street, they are likely to be prominent in this view. There would be temporary traffic signals located on Bailey and Hassall Streets and construction vehicles would be seen accessing the site along Bailey Street. Hoardings would be located along the street frontages, obstructing views to the construction work within the lower areas of the site.

FIGURE 5-16: VIEWPOINT 5 – VIEW NORTH-WEST FROM CORNER OF HASSALL STREET AND BAILEY STREET, EXISTING VIEW

FIGURE 5-17: VIEWPOINT 5 – VIEW NORTH-WEST FROM CORNER OF HASSALL STREET AND BAILEY STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

FIGURE 5-18: VIEWPOINT 6 – VIEW NORTH-EAST ALONG HAWKESBURY ROAD, EXISTING VIEW

FIGURE 5-19: VIEWPOINT 6 – VIEW NORTH-EAST ALONG HAWKESBURY ROAD, PHOTOMONTAGE

The scale and extent of the construction works in this view, including the demolition of buildings and removal of vegetation within the site, would result in a considerable reduction in the amenity of this view. As this is a view of local sensitivity, this would result in a **moderate adverse visual impact**.

5.5.6 Viewpoint 6: View north-east along Hawkesbury Road

Existing conditions: In this view the Hawkesbury Road streetscape consists of four lanes of traffic with footpaths on each side and intermittent street trees (refer to Figure 5-18). A mix of low density residential properties (right of view) can be seen alongside small scale commercial uses, located to the north along Hawkesbury Road (centre of view). This view is located adjacent to the heritage listed Westmead Public School, which is located on the western side of Hawkesbury Road (screened by trees left of view). Grand Avenue forms the northern boundary to Westmead Public School and can be seen in the far left of the view.

Sensitivity: This view would be experienced by students and parents from the adjacent Westmead Public School, local residents and their visitors, users of the several small-scale commercial businesses, adjacent roads and commuters approaching the Westmead Station and the bus stops on Alexandra Avenue. These views are of **local visual sensitivity**.

Visual impact: All buildings and vegetation on the eastern side of Hawkesbury Road, between Alexandra Avenue and Bailey Street (centre of view), would be removed. The residential character of the centre of this view would be transformed to a busy construction site. Construction works and structures, including a laydown area and workshop buildings, would be visible in the middle ground of this view. An acoustic shed would be located to the rear of the site, in the vicinity of Alexandra Avenue, in the background of the view. The shed would rise about twice the height of the buildings

FIGURE 5-20: VIEWPOINT 7 – VIEW EAST FROM ALEXANDRA AVENUE, EXISTING VIEW

along Hawkesbury Road and create a visually dominant background element, rising above the skyline of this view (refer to Figure 5-19).

The site would be contained by hoardings which would partially block views to construction work and vehicle movements within lower areas of the site. Construction traffic would be seen accessing the site via Bailey Street and temporary traffic signals would be located at this intersection. Construction vehicles would exit the site via Hawkesbury Road.

At the end of Stage 1 there would be road works to realign Alexandra Avenue including construction of a new signalised intersection at Grand Avenue which would be seen from this location (left of view).

Overall, due to the scale and extent of construction work that would be seen in this view, there would be a considerable reduction in the amenity of this view. As this is a view of local sensitivity, this would result in a **moderate adverse visual impact**.

5.5.7 Viewpoint 7: View east along Alexandra Avenue

Existing conditions: This section of Alexandra Avenue follows the rail corridor (left of view) and includes a wide road verge to the south, in front of low density residential homes (refer to Figure 5-20). The rail corridor is in a cutting at this location so that it cannot be seen. The vegetation along the rail provides a green edge to this view. It also partly screens views to the Western Sydney University Westmead campus (local heritage listed in Parramatta Local Environmental Plan) which can be glimpsed between the trees in the background (left of view). Construction works on the university site can also be seen to the north of the rail corridor (far left of view). The site would be located on Alexandra Avenue and Hawkesbury Road, at the highpoint, in the background of this view.

Sensitivity: This view would be experienced by local residents in low density properties, their visitors and adjacent road users. These views are influenced by the proximity of the existing rail corridor, and there are no visual features in this view. Overall, these views are of **neighbourhood visual sensitivity**.

Visual impact: An acoustic shed would be constructed on the corner of Hawkesbury Road and across Alexandra Avenue, in the background of this view. This structure would rise about four times the height of the low rise residential properties along this section of Alexandra Avenue. Due to its position on a local highpoint, and the scale of the structure, it would create a visually dominant background element, rising above the skyline of this view.

While the Stage 1 acoustic shed structure would be prominent in this view, it would be somewhat consistent with other large scale built form. Overall, there would be a noticeable reduction in the amenity of this view, which is of neighbourhood visual sensitivity, resulting in a **negligible visual impact**.

5. WESTMEAD METRO STATION CONSTRUCTION SITE

5.5 Assessment of daytime visual impact

VIEW EAST ALONG ALEXANDRA AVENUE

VIEW SOUTH ALONG PITT STREET

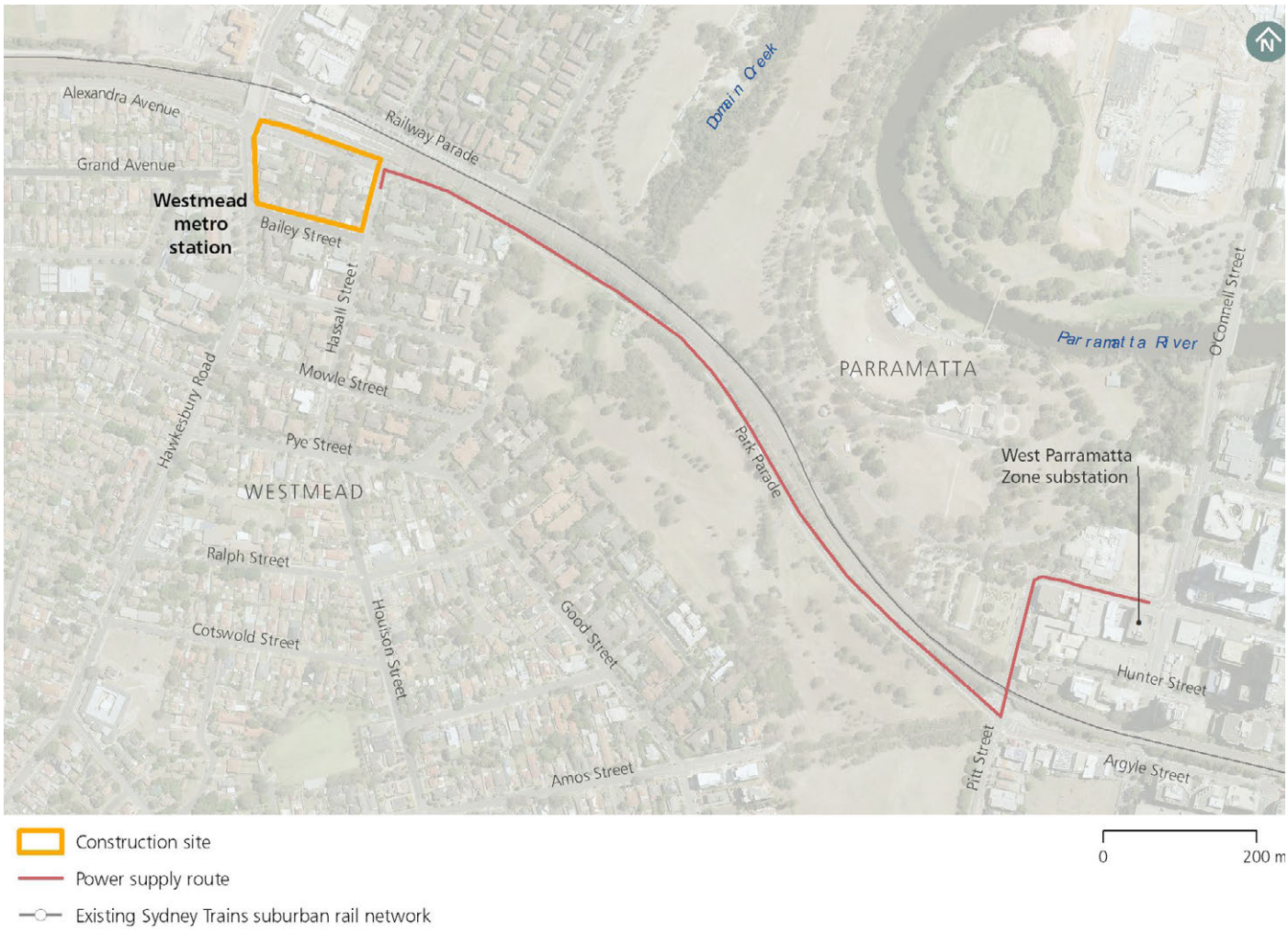
5.5.8 Views to the Westmead power supply route

Existing conditions: The Westmead power supply route (refer to Figure 5-21) is located between the Westmead metro station construction site and the West Parramatta zone substation. The power supply route would extend east from Hassell Street along Alexandra Avenue passing medium density residential areas. The route would continue along Park Parade which is located to the north of the Mays Hill Precinct of Parramatta Park. This section of the park was formerly occupied by the Parramatta Golf Course will include the Parramatta Aquatic Leisure Centre, near Pitt Street, in the future. The route would continue north along Pitt Street, under the rail bridge, and adjacent to Parramatta Park, past the Rumsey Rose Garden and Macquarie Street gatehouse. The route would extend east along Macquarie Street, within the western part of the Parramatta CBD, to the West Parramatta zone substation.

Sensitivity: Views along the this route are generally experienced by road users, residents and visitors to adjacent medium density residential apartments and commercial buildings. There would also be recreational users of Parramatta Park, particularly at the Rumsey Rose Garden and Macquarie Street gatehouse, who would view works along the route. The power supply route is proposed to pass through the Parramatta Park buffer zone at Park Parade, Pitt Street and Macquarie Street which is a '*highly sensitive*' area of Parramatta Park (Planisphere, 2012, p.79-81). These views are of **regional visual sensitivity**, due to the amenity values of Parramatta Park. Views along Hassall Street and Alexandra Avenue are of **local visual sensitivity**.

Visual impact: There would be open trench construction activity seen within the road corridors. The works would not require the removal of street trees and the small scale construction activity would be undertaken sequentially along the route. While some

FIGURE 5-21: WESTMEAD POWER SUPPLY ROUTE



of the views along the route would contain landscape features of value, the works would not noticeably obstruct views to these features. As these are highly urban and heavily trafficked roads, and the scale and extent of construction work would generally be absorbed within these views, resulting in no perceived change in the amenity of view along the route and a **negligible visual impact** along the entire route.

5.6 Assessment of night-time visual impact

Existing conditions: Areas along Alexandra Avenue, in the vicinity of the station, are of **High district brightness (E4)**. This is due in part to the brightly lit concourse and platforms at the existing Westmead Station, the automotive workshop on Alexandra Avenue and the nearby intensive retail and office development north of the station. The headlights from traffic along Hawkesbury Road and bus movements along Alexandra Avenue together with traffic lights at signalised intersections also contribute to the night-time brightness of this environment.

Surrounding this, there is an area of **Medium district brightness (E3)** where there is a lower level of lighting associated with the predominantly low density and medium rise residential apartment buildings. This area includes some smaller scale commercial and retail uses, and the Westmead Public School on Hawkesbury Road, opposite the site.

Visual impact: Night works would be required at this location. The acoustic shed would contain much of the light from the station excavation. However, there would be some lighting required outside of these areas including lighting associated with site offices, staff amenities, workshop buildings and car parking. If an acoustic shed is not required, all lighting would be designed to minimise light spill and skyglow.

The removal of mature vegetation within the site and rail corridor and on adjacent streets would also potentially allow existing station and road lighting to be seen from residential properties on adjacent streets which overlook the site.

Lighting at the site would include both static construction site and task illumination. Temporary traffic signals located at the corner of Hawkesbury Road and Bailey Street and also at Bailey Street and Hassall Street would further contribute to the night-time lighting levels. This would result in the site, as well as the adjacent areas of Hawkesbury Road, Hassall and Bailey Streets, being more brightly lit than the existing setting.

It is expected that the additional light sources and skyglow would be seen from areas within the **E4: High district brightness**, including Westmead Station. This work would be generally absorbed into the surrounding night scene. Overall, it is expected that this lighting would not create a noticeable reduction in the amenity of this area, resulting in a **negligible visual impact** at night.

Night works within the areas of **E3: Medium district brightness**, such as the residential properties on Bailey Street, Hawkesbury Road and Hassall Street, would contrast with the lower light levels of this precinct. There would be a considerable reduction in the amenity of these areas and a **moderate adverse visual impact** at night.

5.7 Summary of impact

Table 5-1, 5-2 and 5-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 5-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Westmead Station, Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes	Local	Considerable reduction	Moderate adverse

TABLE 5-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south-east from Hawkesbury Road and Alexandra Avenue	Local	Considerable reduction	Moderate adverse
2	View west from the existing Westmead Station entry	Local	Considerable reduction	Moderate adverse
3	View west from Railway Parade	Local	Noticeable reduction	Minor adverse
4	View west from Alexandra Avenue and Hassall Street	Local	Considerable reduction	Moderate adverse
5	View north-west from corner of Hassall Street and Bailey Street	Local	Considerable reduction	Moderate adverse
6	View north-east along Hawkesbury Road	Local	Considerable reduction	Moderate adverse
7	View east along Alexandra Avenue	Neighbourhood	Noticeable reduction	Negligible
	Views to Westmead power supply route - Hassell and Alexandra Avenue	Local	No perceived change	Negligible
	Views to Westmead power supply route - Park Parade, Pitt Street and Macquarie Street	Regional	No perceived change	Negligible

TABLE 5-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Westmead Station and Alexandra Avenue	E4: High district brightness	Noticeable reduction	Negligible
2	Bailey Street, Hawkesbury Road and Hassall Street residential areas	E3: Medium district brightness	Considerable reduction	Moderate adverse

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.1 Existing environment

1 ST JOHN'S ANGLICAN CATHEDRAL CHURCH

2 MACQUARIE STREET, VIEW TOWARDS PARRAMATTA PARK GATEHOUSE

3 HERITAGE LISTED ROXY THEATRE ON GEORGE STREET

4 CHURCH STREET WITH OVERHEAD ART INSTALLATION 'FLOCK'

6.1 Existing environment

The Parramatta metro station construction site is situated generally between Church, George, Smith and Macquarie Streets, in the heart of the Parramatta CBD (refer to Figure 6-1: Parramatta metro station – Landscape context).

The Parramatta CBD is characterised by a highly urban mix of contemporary and historic character built form. Located on the Parramatta River floodplain, the Parramatta CBD contains numerous heritage items that reflect the nature and character of colonial settlement and historic development along the river. The landform is generally flat, with a grid street pattern, allowing the built form to channel views to the river via north-south aligned streets and to the World Heritage listed landscape of Parramatta Parkland via east-west streets.

The Church Street streetscape is narrow between George and Macquarie Streets, with one-way traffic and a more spacious public realm including wider footpaths, street furniture and streetscape planting. An overhead art installation 'Flock' spans the roadway, creating visual interest adjacent to the heritage character sandstone façade of the former Post Office and Commonwealth Bank buildings. This pedestrianised environment provides a transition to Centenary Square, located to the south of Macquarie Street. Formerly a busy traffic thoroughfare, Centenary Square is an important civic place within the Parramatta CBD, providing a setting to Parramatta Town Hall and St John's Anglican Cathedral. The square and spire of St John's Anglican Cathedral terminate views south along Church Street.

George, Macquarie and Phillip Streets are Parramatta's three main east-west streets aligned generally parallel to the river. These long straight streets traverse the city centre and channel views to Robin Thomas Reserve in the east and Parramatta Park in the west. The gatehouses and parkland setting of Parramatta Park terminate views along George and Macquarie Streets. Notable visual landmarks within the study area include the Brislington Medical and Nursing Centre Museum, St John's Anglican Cathedral, Centennial Memorial Clock, London plane trees in Centenary Square and along Macquarie Street, Kia Ora House and the Leigh Memorial Uniting Church.

The Greater Sydney Commission (2016, p.30) intends for Parramatta CBD to be revitalised as a commercial and civic centre with a distinctive CBD skyline as part of the Greater Parramatta to Olympic Peninsula Strategy. The Parramatta Light Rail (Stage 1) project forms a key part of this rejuvenation and is scheduled for completion in 2023. As part of that project, a future light rail stop ('Parramatta Square') will be located near the corner of Smith Street and Macquarie Street and light rail and pedestrian zones are proposed along both Church and Macquarie Streets.

South of Macquarie Street and directly opposite the construction site, Parramatta Square (previously known as Civic Place) is a proposed mixed-use urban renewal precinct, which is currently under construction. The proposal includes a 14 storey Western Sydney University campus (completed in early 2017), commercial towers up to 50 storeys with retail and office space, a residential tower, and community and civic space, east of historic Town Hall (expected to be completed by 2020).

Stage 1 of the Westfield Shopping Centre Parramatta Retail and Commercial development, located nearby on the corner of Argyle and Church Streets, has approval for a 25 storey office tower and a proposal to increase the height to 42 storeys.

Other projects within the vicinity include an approved 60 storey mixed use development ('Macquarie Street residential development') at 142-154 Macquarie Street and an approved 14 storey commercial building at 89 George Street. The Department of Education is currently redeveloping land east of Smith

FIGURE 6-1: PARRAMATTA METRO STATION – LANDSCAPE CONTEXT

Construction site
Parramatta Light Rail - Stage 1
Suburban rail network

0 150 m

1. Parramatta Park
2. Parramatta Park George Street gatehouse
3. Brislington Medical and Nursing Museum
4. Former Post Office / Commonwealth Bank building
5. Centenary Square
6. St John's Anglican Cathedral Church
7. Parramatta Town Hall
8. Westfield Parramatta
9. Parramatta Station
10. Parramatta Square
11. Kia-Ora House
12. Horwood Place
13. Victorian sandstone terraces (45 George Street)
14. Roxy Theatre

Street which comprises Arthur Phillip High School. That project will comprise a new 17-storey secondary school building. A mixed use development has been proposed at 2B-6 Hassall Street which would comprise a campus for Western Sydney University and commercial and retail uses, otherwise known as the 'Western Sydney University Innovation Hub'.

6.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review summarises any specific planning provisions which are relevant to the landscape and visual impact assessment of Stage 1 in this location.

6.2.1 Development in Parramatta City and the Impact on Old Government House and Domain's World and National Heritage Listed Values: Technical Report, 2012

This report includes future development guidelines to inform the nature and form of development and reduce impacts on the world and national heritage values of the Old Government House and Domain (OGHD). The Parramatta metro station construction site is located in the *'City Central'* precinct.

Future development guidelines for this precinct which relate to this technical paper include:

- The most intensive development should be contained within the city central precinct to ensure that the city buildings do not visually dominate the skyline over a broad area
- New development should strengthen the visual connection between the OGHD and the city, when viewed from the Domain, by improving the legibility of the central city and its buildings
- New development throughout the city centre area should reinforce the formal layout of the Georgian town plan with consistent setbacks and orientation of buildings towards the street grid
- New development in George Street should strengthen and frame the vista along the street and further reinforce the *'formal Georgian town plan'*, including *'consistent front setbacks at street level and orientation of buildings towards the street grid'*

Important views in this precinct that should be protected, including:

- *views from Old Government House and bath house area towards the city*
- *westerly views along George Street to gatehouse and Parramatta Park* (Planisphere, 2012, p.92-93).

The vision and guidelines for these precincts have been considered in this assessment.

6.2.2 Parramatta Local Environmental Plan 2011

In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the following is of note:

Land use zoning

The western part of the construction site is zoned B3 Commercial Core. Objectives for this zone which relate to this technical paper include: '*to provide for the retention and creation of view corridors'* and '*to protect and enhance the unique qualities and character of special areas and heritage values within the Parramatta City Centre*'. (Zone B3 obj.1)

The remainder of the construction site is zoned B4 Mixed Use, which aims to '*encourage development that contributes to an active, vibrant and sustainable neighbourhood*' and '*create opportunities to improve the public domain and pedestrian links*'. (Zone B4 obj.4)

Building heights

Maximum building heights along Church Street are 12 metres. Building heights within the remainder of the site are limited by a performance requirement to … '*protect public open space in Parramatta Square from overshadowing*' (cl.7.4).

Heritage

The construction site contains two heritage properties: a two-storey Victorian sandstone commercial property at 45 George Street and the Kia Ora building at 62–64 Macquarie Street. The site is in close proximity to several other heritage listed properties, including The Roxy Cinema at 69 George Street and the

horse parapet façade at the corner of Church and Macquarie Street.

6.2.3 Parramatta Development Control Plan 2011

The site is located in the *'Parramatta City Centre Precinct'* which is identified as one of five strategic precincts in the development control plan. Design principles for this precinct which relate to this technical paper include:

- *To maintain and enhance views from the city centre to significant heritage or natural features*
- *To enhance views along city streets, including southerly views along Church Street to St Johns church and Centenary square, and views along George Street to Parramatta Park gatehouse and trees.*
- *To protect silhouettes of the tops of major buildings or structures as seen against the sky.* (City of Parramatta s.4.3.3 p.43)

The site is not located within a 'Special Character Area' (s.4.2), 'City Centre Special Area' (s.4.3.3.7) or 'Heritage Conservation Area' (s.4.4).

6.2.4 Civic Link Framework Plan, A vibrant green heart for Australia's next great city, 2017

This plan provides a long term aspiration, strategies, design ideas and recommendations for a new public open space in Parramatta which would extend across four city blocks from Parramatta Square to River Square. It is intended that this new public open space would provide a '*green, pedestrianised public space and cultural spine that connects public life from the heart of Parramatta CBD to the River'* (City of Parramatta, 2017b, p.4). This area includes the redevelopment of the above-ground car park at Horwood Place in which the Parramatta metro station construction site is located.

The Conceptual Master Plan provided in Figure 6-2 shows this proposed green spine. In relation to the proposed Parramatta metro station construction site, the Conceptual Master Plan will include the:

- *'Redevelopment of 55 George Street to continue the civic link alignment and to provide a north south connection between George and Macquarie Streets*
- *Adaptive reuse of the Roxy Theatre as a cultural destination*
- *Redevelopment of the Horwood Place Car Park to facilitate the delivery*
- *Potential acquisition of 68 Macquarie Street to continue the alignment*' (City of Parramatta, 2017b, p.5).

The proposed green spine is divided into a number of future character areas. The vision for the green spine south of George Street and adjoining the Roxy Theatre (in which the site is located) is for this area to become the '*City Stage: A social and creative gathering place, the heart of the Civic Link designed to support cultural events and attractors'* (City of Parramatta, 2017b, p.94)

Further south and adjoining Macquarie Street, the green spine is intended to become a 'Smart Hub' which would respond '*to the potential for future A-grade commercial buildings being realised within the Horwood place block, as well as the newly opened nearby UWS business campus and the increasing number of knowledge workers in the CBD. It is based around flexible and dynamic spaces that accommodate changing activities and users and incorporate the city's smart strategy*' (City of Parramatta, 2017b, p.88).

FIGURE 6-2: CIVIC LINK CONCEPTUAL MASTER PLAN - ALIGNMENT PLAN (SOURCE: CITY OF PARRAMATTA, 2017B, P.81)

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.3 Character and components of Stage 1

6.3 Character and components of Stage 1

The Parramatta metro station construction site would cover about 24,150 square metres and include aboveground components within the block bounded by George Street, Smith Street, Macquarie Street and Church Street.

The key works and components that would be seen at this site include:

- Protection and retention of the following heritage listed items:
    - Two-storey Victorian sandstone shop at 45 George Street
    - Kia Ora building at 62–64 Macquarie Street
- Demolition of the following buildings and structures:
    - Retail buildings at 48 Macquarie Street, 220-238 Church Street (including 'Greenway Plaza'), 55-67 George Street ('Parramall Shopping Centre'), and 49-53 George Street
    - Commercial buildings with some ground floor retail at 58-60 and 68-74 Macquarie Street
    - Parramatta CBD city centre car park at 71 George Street
- Removal of about six trees and all other vegetation within the site including:
    - Several trees along Horwood Place and within the site
    - Trimming of trees to the front of 60-64 Macquarie Street
- Construction elements and works including:
    - Workshop and parking in the north of the site
    - Water treatment plant, laydown area, temporary spoil storage and material/plant storage in the centre of the site
    - Site offices, site parking and amenities to the south of the site
    - The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs etc.
    - Hoardings (about three metres high) surrounding the construction site
- Road, parking, and public transport works including:
    - Temporary closure of Horwood Place
    - Alternative rear access lane for properties facing Church Street
    - Closure of Batman Walk
    - Temporary access roads at the rear of properties along Church Street
    - Removal of car parking adjacent to the construction site on Church Street
    - Site entry and exit on George Street (at Horwood Place)
    - Haulage via George Street
    - Traffic and pedestrian management signage and structures around the perimeter of the site as required.

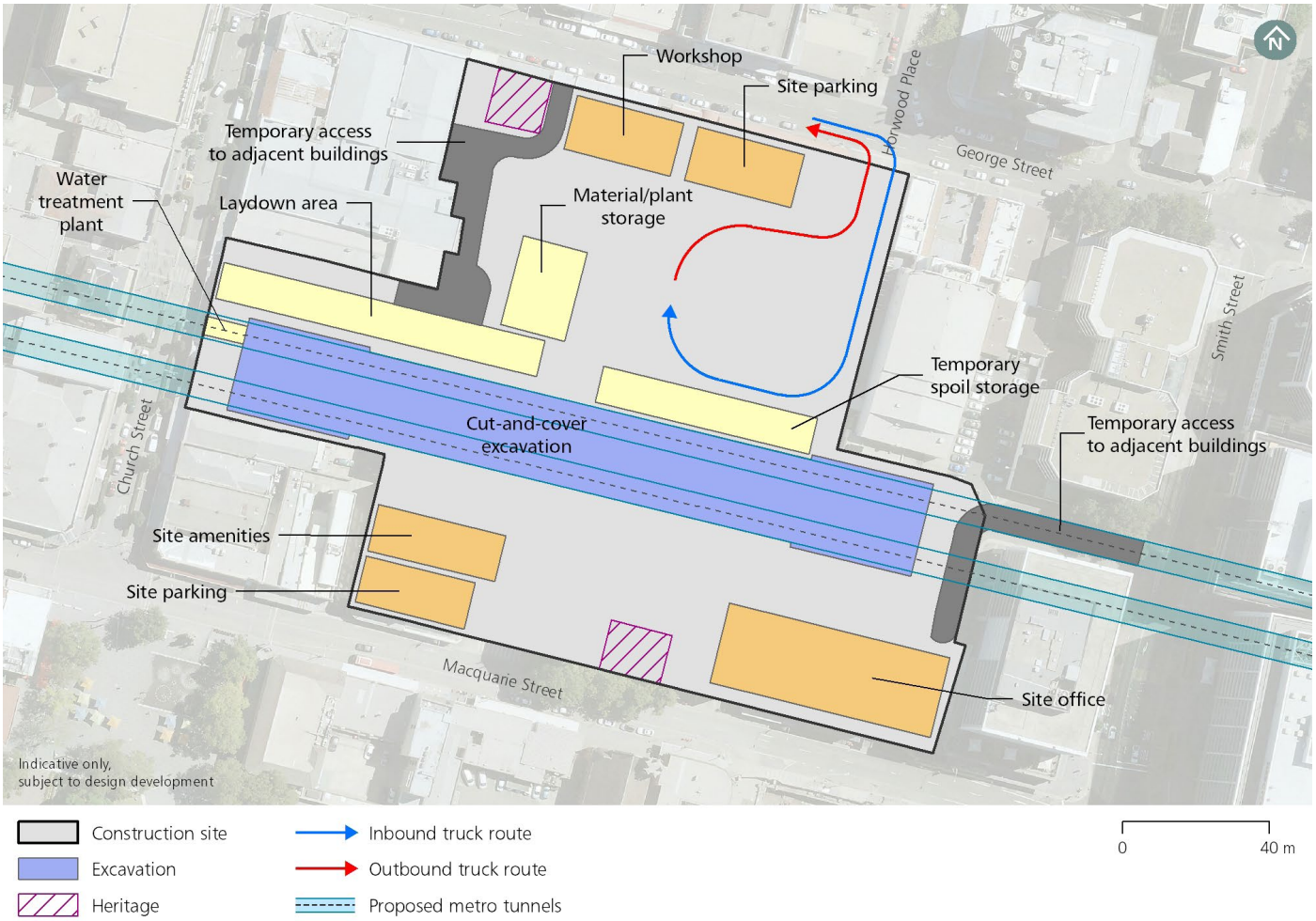
Overall, Stage 1 at the Parramatta metro station construction site would be carried out over about two years including enabling and demolition works and station box excavation.

The hours of construction would be as follows:

- Demolition and concrete deliveries would be carried out during standard hours
- Heavy plant delivery would be carried out after hours
- Underground and surface works would be carried out during standard hours and extended hours on Saturdays up to 6pm
- Spoil haulage would be carried out 24 hours, 7 days a week.

Figure 6-3 identifies the construction site layout and indicative location of these components.

FIGURE 6-3: PARRAMATTA METRO STATION CONSTRUCTION SITE LAYOUT



6.4 Assessment of landscape impact

The landscapes and public realm areas which may potentially be impacted by Stage 1 are:

- Church Street streetscape
- Macquarie and George Street streetscapes
- Horwood Place, Macquarie Lane and United Lane
- Centenary Square
- Parramatta Park.

The following section summarises the assessment of impact for each of these landscapes and public realm areas (refer to Table 2-7 for impact levels).

CHURCH STREET

6.4.1 Church Street streetscape

Existing conditions: Church Street provides north-south access through the Parramatta CBD, connecting Prince Alfred Square and Parramatta River in the north with Centenary Square in the south. Distinctive architectural features assist in wayfinding along the street, including several heritage buildings with decorative facades. Awnings, trees and garden beds, and high-quality urban furnishings provide comfort and amenity to the pedestrian areas of the streetscape. The street is activated along its length with retail frontages, street cafes and alfresco dining. An overhead art installation, spanning the roadway, provides diversity and a cultural legacy within the public realm. Church Street will be transformed by the Parramatta Light Rail (Stage 1) project, with the removal of vehicles and the introduction of several stops along its length.

Sensitivity: Church Street attracts residents, workers and visitors from across the region to its alfresco restaurants and cafes which are active both day and night. It is a main route to the Parramatta Station and commercial areas to the south of the Parramatta CBD. Because of its role as an axis and focal point of activity within the Parramatta CBD this streetscape has a **regional landscape sensitivity**.

Landscape impact: There would be no direct landscape impact on Church Street. The existing buildings at 220-238 Church Street (including 'Greenway Plaza') would be removed, however these buildings do not represent traditional building character, nor do they contribute positively to the character of the street. The loss of the buildings facing Church Street would cause a small break in the continuity of the built form and street level activation. These changes would also be experienced in the context of other construction activity including the approved tower development at 220-230 Church Street, and the Parramatta Light Rail (Stage 1) project. Overall, Stage 1 would result in no perceived change in landscape quality of the Church Street streetscape resulting in a **negligible landscape impact**.

6.4.2 Macquarie and George Street streetscapes

Existing conditions: Macquarie Street is a main east-west thoroughfare for traffic and pedestrians. This street contains a mix of contemporary and historic character built form and is activated in parts with retail frontages. Macquarie Street forms the northern boundary to Centenary Square. There are trees within the square and occasional street trees, including to the front of the heritage listed Kia Ora House. These trees and intermittent awnings provide some comfort and amenity to the public realm areas.

Parramatta Square development is currently under construction and will deliver a civic precinct located to the south of Macquarie Street. Parramatta Square will also provide a connection to the existing Parramatta Station in the south. The construction works for Parramatta Square have resulted in the demolition of large areas of built form which has reduced building continuity along the street and temporarily altered pedestrian movements along Macquarie Street. The Parramatta Light Rail (Stage 1) project will extend along Macquarie Street adjacent to the construction site. This will reduce traffic to one lane and there will be a light rail stop near Smith Street.

Parallel to Macquarie Street, George Street is characterised by a mix of modern and heritage buildings including the heritage listed Roxy Theatre and the sandstone Victorian terraces at 45 George Street. Some buildings with awnings and intermittent street trees contribute to the pedestrian amenity of this busy street.

Sensitivity: Macquarie and George Streets are one-way routes through the Parramatta CBD. These streets include several heritage listed buildings with west terminated by gatehouses in the historic Parramatta Park. These important views, however, are not present in the vicinity of the construction site. These streets attract people living, working, studying and visiting the Parramatta CBD. Overall,

1 MACQUARIE STREET AT CENTENARY SQUARE
2 SANDSTONE VICTORIAN TERRACES, GEORGE STREET
3 HERITAGE LISTED ROXY THEATRE, GEORGE STREET
4 GREENWAY PLAZA, MACQUARIE STREET
5 HERITAGE LISTED KIA-ORA HOUSE

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.4 Assessment of landscape impact

HORWOOD PLACE

these streetscapes are of **local landscape sensitivity** because of their important role within the city.

Landscape impact: The heritage listed sandstone terraced buildings at 45 George Street would remain, while the 'Parramall Shopping Centre' (55-67 George Street) would be removed. The Parramall Shopping Centre does not contribute positively to the visual character of the street, however, the loss of this building would create a large break in the continuity of the built form and street level activation.

A row of buildings along the north side of Macquarie Street, extending from United Lane to the corner building at Smith Street would be demolished. The heritage listed building at 62–64 Macquarie Street and adjoining mature London Plane street trees would be retained. While the removal of these buildings would create a 'gap' in the built form lining these streets, changing the rhythm of built form in the streetscape, the street would continue to be bookended by the existing corner buildings.

Overall, there would be a noticeable reduction in the quality of the Macquarie Street and George Streets streetscapes, due to changes in amenity and permeability. As these streets are of local sensitivity, this would result in a **minor adverse landscape impact**.

6.4.3 Horwood Place, Macquarie Lane and United Lane

Existing conditions: Horwood Place provides access between George and Macquarie Streets. The street is partially activated by commercial uses but has limited pedestrian amenity due to the presence of driveways, surface car park areas, service areas and a visually dominant multi-level car park. A few clusters of mature trees provide some shade and amenity within this streetscape. Macquarie Lane is a narrow two lane street which connects between Smith Street and Horwood Place. The urban laneway provides access to car parking areas and the rear of buildings along Macquarie and Smith Street. A mature London plane tree at the corner with Smith Street enhances the entry to the urban laneway. United Lane is a narrow two lane service lane that is accessed directly from Macquarie Street and contains limited pedestrian amenity.

Sensitivity: Horwood Place, Macquarie Lane and United Lane would attract less use than the surrounding roads and footpaths. They do, however, provide an important accessibility and permeability function and would be experienced mainly by workers and visitors accessing adjacent commercial buildings and car parking areas. These laneways are of **neighbourhood landscape sensitivity**.

Landscape impact: These laneways would be removed during construction, reducing pedestrian permeability within this area of the Parramatta CBD due to the removal of these midblock connections. The removal of vegetation within the site would not impact upon the visual character of the area as only a few trees would be affected that are mostly concealed from surrounding streets. Street

trees to George and Smith Street would not be removed. Overall, this would result in a considerable reduction in the quality of these laneways, which are of neighbourhood sensitivity, and a **minor adverse landscape impact**.

6.4.4 Centenary Square

Existing conditions: Centenary Square is an important civic square within the Parramatta CBD, providing a forecourt to the Parramatta Town Hall and St John's Anglican Cathedral. The square provides an important pedestrian thoroughfare within the Parramatta CBD connecting Macquarie Street through to Darcy Street and provides the setting for a series of activities. The heritage listed Centennial Memorial Clock provides a visual focus to the square. A mix of heritage and modern buildings frame the square together with London plane trees. The mature trees and an interactive water feature enhance the microclimate of the square and provide comfort for users. Lawn areas, garden beds, fixed and temporary seating areas, colourful shade umbrellas and high quality paving enhance the amenity of the square.

The presence of construction work from the Parramatta Square redevelopment project along the eastern boundary of the square is currently resulting in indirect impacts on the amenity of the square, particularly as this site is adjacent to the main pedestrian thoroughfare from the square to the existing Parramatta Station.

Sensitivity: Centenary Square is be experienced by residents and visitors from across the region as it provides a major focal point for events and activity within the Parramatta CBD. Centenary Square contains the historic Parramatta Town Hall and St John's Anglican Cathedral which are important civic buildings. Centenary Square is of **regional landscape sensitivity**.

Landscape impact: There would be no direct impact on Centenary Square during construction. Although the construction site would be visible from the square, there would

1 CENTENARY SQUARE
2 ST JOHN'S ANGLICAN CATHEDRAL
3 PLAZA SEATING AREA
4 CENTENNIAL MEMORIAL CLOCK
5 TOWN HALL

be no indirect impacts on the accessibility, legibility and permeability of the square. As a consequence, there would be no perceived change in the quality of this landscape, which is of regional sensitivity, resulting in a **negligible landscape impact**.

6.4.5 Parramatta Park

Existing conditions: Parramatta Park is a nationally important parkland featuring the World Heritage listed Old Government House and Domain. Located on the Parramatta River, the park forms the western edge and landscape frame to Parramatta CBD and provides an important open space and recreation area for the city. The park features open lawn and grassland areas, historic formal avenue planting, a rose garden, an open amphitheatre area beside the river (The Crescent), historical monuments, heritage listed buildings and formal gateway entries to surrounding streets. Old Government House is sited on a prominent ridgeline which slopes towards the river. Views from Old Government House and the grounds of Parramatta Park towards George Street are identified as important in the *Old Government House and Domain, Parramatta Park Management Plan* (2008).

FIGURE 6-4: VIEW TOWARDS THE PARRAMATTA METRO STATION CONSTRUCTION SITE FROM PARRAMATTA PARK, ON RAILWAY PARADE IN THE VICINITY OF THE OBSERVATORY

Sensitivity: Parramatta Park, The Old Government House and Domain are World Heritage listed and the landscape of Parramatta Park are of high importance. The landscape setting is identified as '*highly sensitive*' to development in the *Development in Parramatta City and the Impact on Old Government House and Domain's World and National Heritage Listed Values: Technical Report* (2012). The park attracts locals and visitors from across the region for the purpose of recreation. Landscape features within Parramatta Park are therefore considered to be of **national landscape sensitivity**.

Landscape impact: Stage 1 is not located within the Parramatta Park World Heritage site, therefore, there would be no direct impact upon the park as a result of the project. The power supply route for the construction site would, however, pass through the Parramatta Park buffer zone at O'Connell Street. Works within the buffer zone would be minor with no impact on the street trees or fences along this section of the route.

There are several identified key views, which extend beyond the buffer zone towards the Parramatta CBD. Stage 1 would not be visible in these views from Parramatta Park (refer also to Section 6.5 of this technical paper and Figures 6-4, 6-5 and 6-6).

Overall, there would be no perceived change to the landscape quality of Parramatta Park as a result of Stage 1 and therefore a **negligible landscape impact**.

FIGURE 6-5: VIEW TOWARDS THE PARRAMATTA METRO STATION CONSTRUCTION SITE FROM PARRAMATTA PARK, VIEW ALONG MACQUARIE STREET FROM THE MACQUARIE STREET GATEHOUSE

FIGURE 6-6: VIEW TOWARDS THE PARRAMATTA METRO STATION CONSTRUCTION SITE FROM PARRAMATTA PARK, IN THE VICINITY OF THE FORMER GOLF COURSE

1 OLD GOVERNMENT HOUSE
2 MACQUARIE STREET GATEHOUSE
3 GEORGE STREET GATEHOUSE

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.5 Assessment of daytime visual impact

6.5 Assessment of daytime visual impact

The Parramatta metro station construction site is visible from a limited visual catchment which is contained by the surrounding dense urban form of the city centre.

The existing site can be seen primarily from short distance views from surrounding streets and laneways which include Church Street, George Street, Smith Street, Macquarie Street, Horwood Place, United Lane and Macquarie Laneway. There are also close-range views from Centenary Square, from its frontage on Macquarie Street. There are possible views from the upper levels of nearby commercial tower development on surrounding streets.

The following viewing locations were selected as representative of the range of views to Parramatta metro station construction site:

- Viewpoint 1: View south-east along Church Street
- Viewpoint 2: View south-east along George Street
- Viewpoint 3: View west along George Street
- Viewpoint 4: View west from Smith Street

FIGURE 6-7: PARRAMATTA METRO STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS

- Viewpoint 5: View north-west along Macquarie Street at the corner with Smith Street
- Viewpoint 6: View north-west along Macquarie Street
- Viewpoint 7: View north-east along Macquarie Street from near Centenary Square.

Figure 6-7 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

6.5.1 Viewpoint 1: View south-east along Church Street

Existing conditions: In this view, Church Street consists of two lanes of traffic and a narrow single lane section with a pedestrian crossing which is defined by low clipped hedges and street trees (refer to Figure 6-8). Buildings are generally two to three storeys in height and comprise a mixture of commercial and retail buildings with shopfronts and awnings, including more elaborate historic buildings. This view includes the former Post Office and Commonwealth Bank building whose grand column flanked sandstone façade provides visual interest and character along Church Street (right of view). The overhead art installation 'Flock' can also be seen in the centre of the view, overhanging the street. The St John's Anglican Cathedral spire is visible, rising above Centenary Square, forming a visual feature in the background of this view.

Construction of Parramatta Square (previously known as Civic Place), located south of Macquarie Street, can be seen above the built form on Church Street. This view will be further transformed with the construction of the Parramatta Light Rail (Stage 1) project including a centrally located light rail and pedestrian zone along the street. This work will include the removal of the 'Flock' art installation.

Sensitivity: Views along the Church Street would be experienced by residents, workers

FIGURE 6-8: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG CHURCH STREET, EXISTING VIEW

FIGURE 6-9: VIEWPOINT 1 –VIEW SOUTH-EAST ALONG CHURCH STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

and visitors using this retail and commercial area. This view includes a number of visual features including heritage character buildings and the St John's Anglican Cathedral spire. Due to the number of receivers and visual features, this view is of **local visual sensitivity**.

Visual impact: Construction work would be visible in the middle ground of this view, as the construction site is established east of Church Street (centre of view). The commercial and retail buildings at 220-238 Church Street (including 'Greenway Plaza') would be demolished (refer to Figure 6-9). Hoardings would be erected along the property boundary, blocking views to the street level activity within the construction site. There may be works rising above the hoarding that would be seen within the context of the adjacent buildings. The construction site would also be seen in the context of the construction of Parramatta Square and the construction and operation of the Parramatta Light Rail (Stage 1) project, which would be located in the foreground of this view. There would be no haulage along Church Street.

The density of the surrounding built form would screen much of the construction site in this view. This density and the presence of construction work in the local area would allow the site to be absorbed into the urban setting. This would result in a noticeable reduction in the amenity of this view. As this view is of local sensitivity, there would be a **minor adverse visual impact**.

6.5.2 Viewpoint 2: View south-east along George Street

Existing conditions: In this view, George Street consists of two lanes of traffic, parallel parking and wide footpaths enclosed by awnings (refer to Figure 6-10). The built form comprises a mixture of two storey commercial and retail buildings which provide a consistent building line to the street. A two-storey Victorian sandstone commercial building at 45 George Street (right of view) provides visual interest and built form diversity to the streetscape. Taller commercial buildings, located on Smith Street, are visible within the background, rising above the built form on George Street.

Sensitivity: Views along George Street would be experienced by road users, residents, workers and visitors to the Parramatta CBD. This view includes heritage character buildings which are a local visual feature. Due to the number of receivers and visual features, this view is of **local visual sensitivity**.

Visual impact: A construction site would be established in the middle ground of the view, extending along the southern side of George Street, between the heritage building at 45 George Street and Horwood Place (refer to Figure 6-11). The 'Parramall Shopping Centre' building at 55-67 George Street and adjacent two storey retail and commercial buildings at 49-53 George Street (centre of view) would be demolished and replaced with a workshop building and site car park for construction staff. Hoardings would be erected along the site boundary, blocking views to the construction site and much of the workshop.

The heritage listed building at 45 George Street would be retained and a new temporary access road would be constructed adjacent to the building to provide vehicular access to the rear of properties along Church Street.

Construction traffic would be seen travelling along George Street, accessing the site at Horwood Place, between the Roxy Theatre and existing 'Parramall Shopping Centre' building. The spoil and plant storage areas may be visible, above the hoardings.

Overall, due to the extent of demolition and scale of works proposed, there would be a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

6.5 Assessment of daytime visual impact

FIGURE 6-10: VIEWPOINT 2 – VIEW SOUTH-EAST ALONG GEORGE STREET, EXISTING VIEW

FIGURE 6-11: VIEWPOINT 2 – VIEW SOUTH-EAST ALONG GEORGE STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.5 Assessment of daytime visual impact

FIGURE 6-12: VIEWPOINT 3 – VIEW WEST ALONG GEORGE STREET, EXISTING VIEW

FIGURE 6-13: VIEWPOINT 3 – VIEW WEST ALONG GEORGE STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

6.5.3 Viewpoint 3: View west along George Street

Existing conditions: The southern side of George Street comprises a mix of one and two storey commercial and retail buildings of varying styles and ages (refer to Figure 6-12). This includes the heritage listed Roxy Theatre (left of view) which has a distinctive architectural façade and contributes to the character of George Street. In this view, the street is broad and visually dominant due to the wide road pavement, generally low building profile, lack of street trees and flat terrain of this part of the Parramatta CBD. Taller commercial buildings within the Parramatta CBD are visible on the skyline contrasting with the low scaled development along this section of George Street. The gatehouse at the entry to Parramatta Park is located at the end of George Street but is not discernible from this location due to distance and intervening elements.

Sensitivity: Views along the George Street would be experienced by road users, residents, workers and visitors to the Parramatta CBD. This view includes heritage character buildings which are a local visual feature. Due to the number of receivers and visual features, this view is of **local visual sensitivity**.

Visual impact: A construction site would be established on the southern side of George Street, between Horwood Place and the heritage building at 45 George Street, occupying the centre of this view (refer to Figure 6-13). The 'Parramall Shopping Centre' building at 55-67 George Street and adjacent two storey retail and commercial buildings at 49-53 George Street would be demolished and replaced with a workshop building and site car park for construction staff adjacent to the street. Construction traffic would be seen travelling along George Street, and accessing the site via Horwood Place, which would be a dedicated site entry. Hoardings would be erected along the site boundary, partially blocking views to the construction site. The upper section of the workshop along Church

and Macquarie Streets, as well as the spoil and plant storage areas may be visible above the hoarding.

Overall, there would be a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

6.5.4 Viewpoint 4: View west from Smith Street

Existing conditions: In this view across Smith Street, two modern commercial buildings frame the entry to Macquarie Lane which is a minor side street (refer to Figure 6-14). A multi level car park is visible in the background of this view, at the end of the lane. The lane and built form on Smith Street are partially screened by a mature London Plane street tree (right of view).

Sensitivity: This view from Smith Street would be experienced by adjacent road users, students, workers and visitors to the Parramatta CBD. This is an incidental, framed view along a laneway, available near to an area of outdoor café seating. Due to the number of receivers this view is of **local visual sensitivity**.

Visual impact: The multi-level car park structure in the centre background of this view would be demolished, and a construction site established in its location (refer to Figure 6-15). The eastern section of Macquarie Lane (centre of view) would remain and be used to provide access during construction to the rear of properties along Macquarie Street. The commercial buildings and street tree on Smith Street, fronting Macquarie Lane, would be unaffected and screen the remainder of the construction site.

Overall, due to the limited visibility of the site, the works would be largely absorbed into this view. This would result in a noticeable reduction in the amenity of this view, which is of local sensitivity, and a **minor adverse visual impact**.

FIGURE 6-14: VIEWPOINT 4 – VIEW WEST FROM SMITH STREET, EXISTING VIEW

FIGURE 6-15: VIEWPOINT 4 – VIEW WEST FROM SMITH STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.5 Assessment of daytime visual impact

FIGURE 6-16: VIEWPOINT 5 – VIEW NORTH-WEST ALONG MACQUARIE STREET AT THE CORNER WITH SMITH STREET, EXISTING VIEW

FIGURE 6-17: VIEWPOINT 5 – VIEW NORTH-WEST ALONG MACQUARIE STREET AT THE CORNER WITH SMITH STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

6.5.5 Viewpoint 5: View north-west along Macquarie Street at the corner with Smith Street

Existing conditions: This view, from near the corner of Macquarie and Smith streets, is oriented along the street towards low to medium scale commercial development with some retail uses partially activating the street frontage (refer to Figure 6-16). Visual interest is created by the varied facades of these buildings, with a repeated pattern of windows and vertical lines. Construction works for the Parramatta Square development are visible to the south (left of view) which reduces the continuity of built form along the southern street frontage and has temporarily reduced the visual character of this part of Macquarie Street. Mature London Plane street trees, in front of the heritage listed Kia Ora House, can be seen in the background of the view. The street trees partially filter views to taller built form further along the street. The gatehouse at the entry to Parramatta Park is located at the end of Macquarie Street but is not discernible from this location on Macquarie Street due to intervening streetscape vegetation and the viewing distance.

Sensitivity: This view along Macquarie Street would be experienced by adjacent road users, residents, workers, students and visitors to Parramatta CBD. Due to the number of receivers, this view is of **local visual sensitivity**.

Visual impact: The construction site would require the demolition of the commercial and retail buildings at 58-60 and 68-74 Macquarie Street resulting in the loss of a large portion of the built form edge to the street (refer to Figure 6-17). The removal of the existing built form along the street would be seen in the context of the Parramatta Light Rail (Stage 1) project and Parramatta Square development which would both result in substantial changes to the streetscape character.

The heritage listed Kia Ora House building at 62–64 Macquarie Street and London Plane street trees would be retained and protected. While some trimming of the trees may be

required, these deciduous trees would soften views to the construction site during the summer months.

Hoardings would be installed along the perimeter of the site, obstructing street level views into the construction site. Some taller construction equipment and activities would be seen above the hoarding.

Due to the context of the new development, intervening built form and the visual absorption capacity of this view, there would be a noticeable reduction in the amenity of this view. As this is a view of local sensitivity, this would result in a **minor adverse visual impact**.

6.5.6 Viewpoint 6: View north-west along Macquarie Street

Existing conditions: This view is from the heritage listed Leigh Memorial Uniting Church (behind viewer) across Macquarie Street to a mix of modern commercial and heritage character buildings (refer to Figure 6-18). The two storey heritage listed Kia Ora House (right of view) is surrounded by three to seven storey buildings immediately adjacent, creating a strong juxtaposition in scale and character. Several distant high-rise buildings in Parramatta CBD form the backdrop to this street view, rising above the built form of the street. In this location, Macquarie Street includes two eastbound lanes and one parking lane with wide footpaths, occasional awnings and some mature street trees which add to the visual amenity of the streetscape.

The character of this view will change as Parramatta Light Rail (Stage 1) project is constructed along Macquarie Street, resulting in changes to the streetscape in the foreground of the view.

Sensitivity: This view along Macquarie Street would be experienced by adjacent road users, residents, workers, students and visitors to Parramatta CBD. The heritage character of Kia Ora House and mature street trees are features in this view. Due to the number of receivers, and local landscape features, this view is of **local visual sensitivity**.

FIGURE 6-18: VIEWPOINT 6 – VIEW NORTH-WEST ALONG MACQUARIE STREET, EXISTING VIEW

FIGURE 6-19: VIEWPOINT 6 – VIEW NORTH-WEST ALONG MACQUARIE STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Visual impact: A construction site would be established in the middle ground of this view, extending along the north side of Macquarie Street. The commercial and retail buildings at 48-50 and 58-60 Macquarie Street would be demolished (refer to Figure 6-19). Horwood Place would be used during construction to provide light vehicle access to the site. Hoarding would be installed along the site boundary, partially blocking views to the construction site. Site car parking, offices and amenities would be located along this street frontage with site offices set back from the street, but likely to be visible above the hoarding.

The historic Kia Ora House (right of view) would be retained, partially obstructing views to the construction site. The mature London Plane street trees would also remain with some minor trimming and would filter views to the site from this location during the summer months.

Stage 1 would be seen in the context of the final stages of construction and operation of the Parramatta Light Rail (Stage 1) project, adding new elements to the foreground of this view.

Overall, due to the intervening built form and visual absorption capacity of this view, there would be a noticeable reduction in the amenity of this view. As this is a view of local sensitivity, there would be a **minor adverse visual impact**.

6.5.7 Viewpoint 7: View north-east along Macquarie Street from near Centenary Square

Existing conditions: The heritage listed Centennial Memorial Clock in the foreground of this view provides a local landmark and visual focal point for both Macquarie Street and the adjacent Centenary Square (right of view) (refer to Figure 6-20). The Macquarie Street streetscape comprises two to three storey commercial and retail buildings which provides a continuous and somewhat uniform built edge to the street. A heritage listed building with a horse parapet façade adds visual interest to the skyline. The streetscape elevation is broken by a seven storey modern commercial building with contrasting scale, bulk and height. Further east along the street, the heritage listed Kia Ora House building is screened from view by a mature London plane tree.

The Parramatta Light Rail (Stage 1) project will result in substantial changes to the streetscape and foreground of this view. This will include a both construction and the operating of light rail vehicles alongside traffic along this section of Macquarie Street.

Sensitivity: This view along Macquarie Street would be experienced by adjacent road users, residents, workers, students, and visitors to Centenary Square and the Parramatta CBD. The heritage character of the Centennial Memorial Clock, and the heritage character facades of the buildings facing Macquarie Street are features in this view. Due to the large number of receivers and local landscape features in this view, it is of **local visual sensitivity**.

Visual impact: The three commercial and retail buildings (centre of view) would be demolished and replaced with a construction site (refer to Figure 6-21). The heritage listed Kia Ora House building and London plane trees would be retained. A view towards Kia Ora House would be opened up. This building and the adjacent plane trees would partly screen views of the construction site, along the northern side of the street.

Site car parking, offices and staff amenities would likely be located in this section of the construction site, with the site offices set back from Macquarie Street. There would be light vehicle access to the site via Horwood Place. Hoardings would be installed along the site boundary, partially blocking views into the construction site.

Due to the nearby construction work and the intended changes to the streetscape character from the Parramatta Light Rail (Stage 1) project, and the intervening built form, there would be a noticeable reduction in the amenity of this view. As this is a view of local sensitivity, this would result in a **minor adverse visual impact**.

FIGURE 6-20: VIEWPOINT 7 – VIEW NORTH-EAST ALONG MACQUARIE STREET FROM NEAR CENTENARY SQUARE, EXISTING VIEW

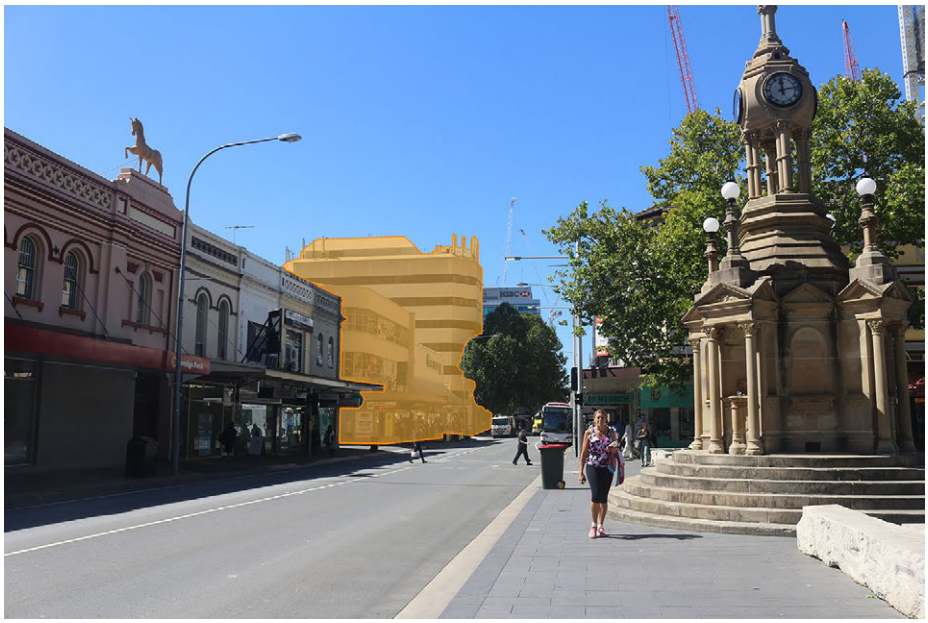


FIGURE 6-21: VIEWPOINT 7 – VIEW NORTH-EAST ALONG MACQUARIE STREET FROM NEAR CENTENARY SQUARE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

6. PARRAMATTA METRO STATION CONSTRUCTION SITE

6.5 Assessment of daytime visual impact

1 VIEW EAST ALONG O'CONNELL STREET
2 VIEW NORTH ALONG GEORGE STREET

6.5.8 Views to the power supply route

Existing conditions: Works to construct the power supply route between the Parramatta metro station construction site and the West Parramatta zone substation would be located within George, O'Connell and Macquarie Streets (refer to Figure 6-22). These streets are heavily trafficked routes within the Parramatta CBD, used by vehicles and pedestrians. The route would cross the Parramatta Light Rail (Stage 1) project at Church Street.

In westerly views along George and Macquarie Streets the historic gatehouses and Parramatta Park are visible. Other notable visual landmarks within these streets include the Brislington Medical and Nursing Museum at the corner of Marsden and Macquarie Streets and existing street trees, including a local heritage listed fig tree adjacent to the museum. The landform in this location is generally flat, with a grid street pattern, allowing the built form to channel views to the World Heritage listed landscape of Parramatta Park via east-west streets.

Views along O'Connell Street include the 'Murray Gardens' of Parramatta Park with heritage palisade fencing on a sandstone base, mature trees and the George Street Gatehouse.

Sensitivity: Views along George, O'Connell and Macquarie Streets are generally experienced by people living, working, studying and visiting the Parramatta CBD. Areas of George Street, east of Marsden Street, are identified within the views and settings plan in the *Development in Parramatta City and the Impact on Old Government House and Domain's World and National Heritage Listed Values: Technical Report* (2012) as 'sensitive'. George Street, west of Marsden Street, and the sections of O'Connell and Macquarie Streets that comprise the power supply route are identified as 'highly sensitive'. There are westerly views along George Street towards Parramatta Park gatehouse, a visual feature and identified view towards Parramatta Park. Overall, these views are of **local visual**

sensitivity to the east of Marsden Street, and **regional visual sensitivity** to the west of Marsden Street, due to the amenity values of Parramatta Park.

Visual impact: Construction of the power supply route to the West Parramatta zone substation would require temporary trenching works along George, O'Connell and Macquarie Streets. Views may include some minor road and footpath closures to accommodate the temporary works. Existing trees within the street and adjacent properties would be retained and protected where possible during construction. The gatehouses to Parramatta Park and other historic buildings and structures along the power supply route would be unaffected.

It is expected, due to the minor scale of these works, that there would be no perceived change in the amenity of views from George, O'Connell and Macquarie Streets, and adjacent properties. These views are of local and regional sensitivity and there would be a **negligible visual impact** during construction.

FIGURE 6-22: PARRAMATTA METRO STATION POWER SUPPLY ROUTE

6.6 Assessment of night-time visual impact

Existing conditions: The setting of the Parramatta metro station construction site is an area of **High district brightness (E4)**. This is due to the density of brightly lit commercial, retail, educational, government, hotels and residential apartment buildings within this highly urban city centre. The lighting along George, Macquarie and Church Streets and headlights from traffic within the Parramatta CBD contribute to night-time lighting levels, as would the brightly lit plazas including Centenary Square.

Visual impact: There would be night works required as part of Stage 1. These night works would be limited to haulage of spoil from the Parramatta metro station construction site. Some lighting would be required including lighting associated with site offices, car parking and construction support areas. This lighting would be mostly screened by surrounding buildings which would remain along George, Macquarie, Smith and Church Streets. There would also be 24-hour deliveries of large equipment.

Some residences and guests within the upper levels of tall apartment buildings and hotels nearby may potentially overlook these works, but it is expected that there would not be any direct light spill onto these properties. There may also be views from commercial properties which are in use at night.

It is expected that the additional light sources and skyglow that would be seen from these areas would be generally absorbed into the existing brightly lit night scene. Overall, it is expected that this lighting would create a noticeable reduction in the amenity of these areas, resulting in a **negligible visual impact** at night.

6.7 Summary of impact

Table 6-1, 6-2 and 6-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 6-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Church Street streetscape	Regional	No perceived change	Negligible
2	George and Macquarie Street streetscapes	Local	Noticeable reduction	Minor adverse
3	Horwood Place, Macquarie Lane and United Lane	Neighbourhood	Considerable reduction	Minor adverse
4	Centenary Square	Regional	No perceived change	Negligible
5	Parramatta Park	National	No perceived change	Negligible

TABLE 6-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south-east along Church Street	Local	Noticeable reduction	Minor adverse
2	View south-east along George Street	Local	Considerable reduction	Moderate adverse
3	View west along George Street	Local	Considerable reduction	Moderate adverse
4	View west from Smith Street	Local	Noticeable reduction	Minor adverse
5	View north-west along Macquarie Street at the corner with Smith Street	Local	Noticeable reduction	Minor adverse
6	View north-west along Macquarie Street	Local	Noticeable reduction	Minor adverse
7	View north-east along Macquarie Street from near Centenary Square	Local	Noticeable reduction	Minor adverse
	Views to the power supply route (areas east of Marsden Street)	Local	No perceived change	Negligible
	Views to the power supply route (areas west of Marsden Street)	Regional	No perceived change	Negligible

TABLE 6-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Parramatta metro station construction site	E4: High district brightness	Noticeable reduction	Negligible

7. CLYDE STABLING AND MAINTENANCE FACILITY

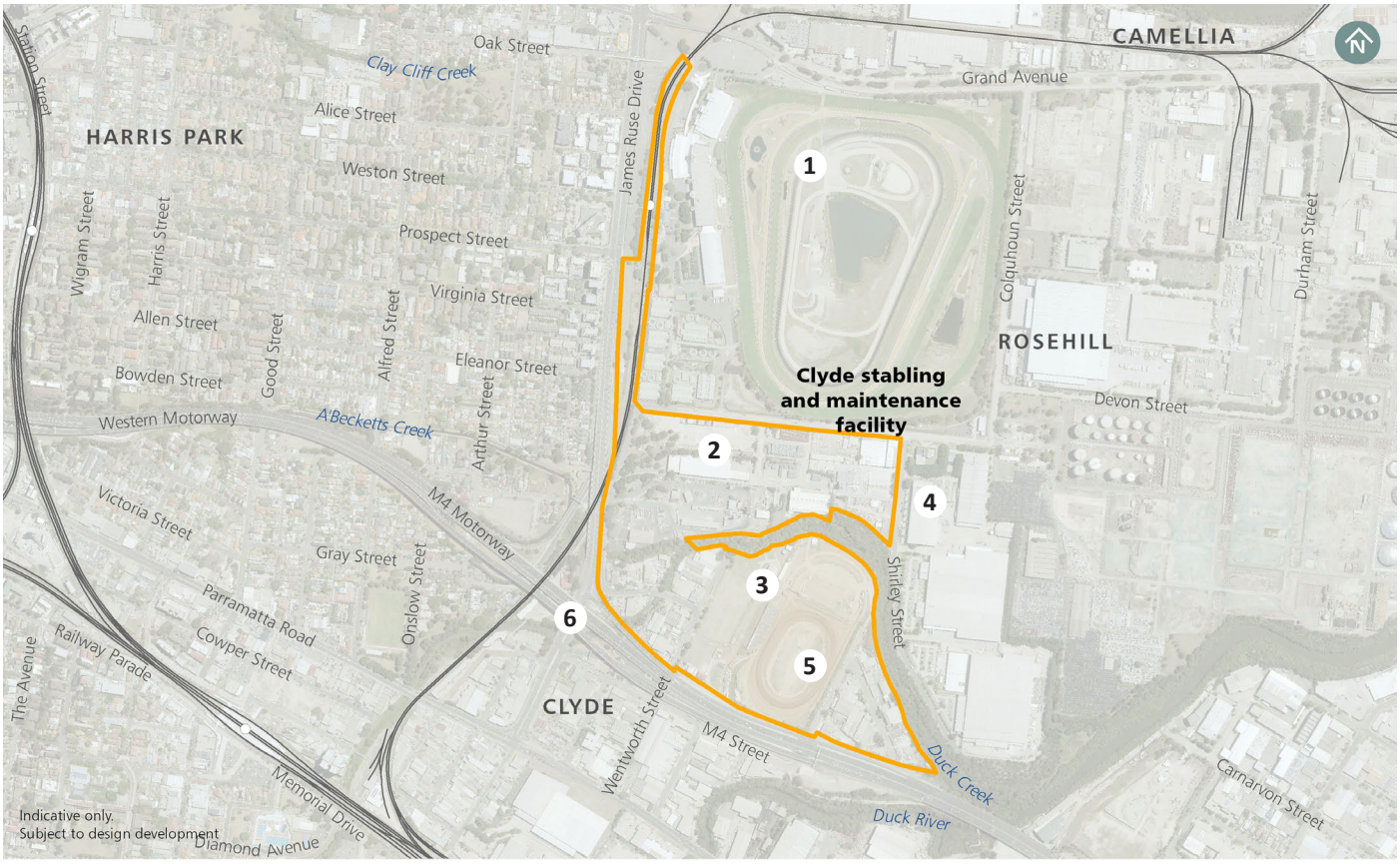
7.1 Existing environment

7.1 Existing environment

The Clyde stabling and maintenance facility construction site is situated generally between Unwin Street, Shirley Street, the Western Motorway M4 and James Ruse Drive, in Clyde (refer to Figure 7-1: Clyde stabling and maintenance facility – Landscape context). The construction site includes Sydney Speedway and a mix of general and heavy industrial uses. The site forms the southern part of the Camellia and Rydalmere strategic precinct, identified as a '*significant industrial hub*' in the *Parramatta Development Control Plan 2011*.

The site is divided by an east-west aligned section of Duck Creek, a tributary of the Duck River which flows into the Parramatta River. Mangroves line the eastern section of Duck Creek, to the east of the site, forming a visual and physical boundary through the industrial area. A'Becketts Creek, Duck Creek, and Duck River are identified as having local heritage value in the Parramatta Local Environmental

FIGURE 7-1: CLYDE STABLING AND MAINTENANCE FACILITY – LANDSCAPE CONTEXT



1. Rosehill Gardens racecourse
2. RTA Depot
3. Sydney Helicopters
4. 3–11 Shirley Street, Capral Aluminium
5. Sydney Speedway
6. M4 Western Motorway

Plan (2011). The sections of Duck Creek and A'Becketts Creek, which are located within the construction site, however, are largely dominated by weeds (refer to Technical Paper 3 (Non-Aboriginal heritage impact assessment) (Artefact Heritage, 2020b).

The southern part of the site is currently occupied by the Sydney Speedway, which includes a clay track motor vehicle racing venue, grandstand, associated amenities and surface parking. The speedway is identified as a '*major destination*' for visitors, tourists and the wider business community in the *Parramatta Development Control Plan 2011*. Views to the speedway from surrounding streets are generally screened by noise attenuation mounds, fencing and vegetation. Sydney Helicopters' Parramatta heliport facility and main operating base is located immediately north of the speedway, alongside Duck Creek. The heliport includes a helipad, hangers, a maintenance facility, administration building and car park, accessed via Wentworth Street.

There are a range of manufacturing, processing, logistics, storage and warehouse uses to the north, east and west of the raceway. To the north of Duck Creek, within the site, there are several large scale manufacturing plants and storage sites, including an asphalt works and a machinery hire business on Unwin Street. The industrial site within the north-western part of the site includes the heritage listed former depot (listed as 'RTA Depot') (City of Parramatta, 2018). The depot is representative of the historic importance of this area as a manufacturing centre during the second world war when the building was used as a machinery depot. Due to its size and function, it is a '*local landmark and strongly contributes to the streetscape*' (NSW Heritage Inventory, 2014b).

Rosehill Gardens racecourse is located immediately north of the site. The racecourse is identified as a major entertainment precinct and has the potential for future redevelopment under the *Draft Camellia Town Centre Master Plan* (2015). The racecourse is contained to the east and south by vegetated embankments, however, there would be elevated east and south-eastward views from the grandstand across the industrial areas of Rosehill and Clyde. These views would include distant views to the Parramatta Light Rail stabling facility (currently under construction), former Clyde Refinery and the industrial areas of the site, filtered through the racetrack perimeter trees.

The T6 Carlingford Line runs north-south, along the western boundary of the racecourse, and includes a station located in a vegetated cutting. This rail line and station were closed in early 2020 as part of the Parramatta Light Rail (Stage 1) project. Parallel and to the west of the rail corridor, James Ruse Drive is a six lane, heavily trafficked road. This corridor of road and rail infrastructure physically and visually separates the Rosehill Gardens racecourse from the residential areas of Rosehill, located further to the west. This includes some medium and high density residential and hotel towers which face east, over James Ruse Drive. The landform rises to the north-west of Clyde, so that these properties are located on a locally prominent rise and have broad views across James Ruse Drive, the Rosehill Gardens racecourse and industrial areas of Rosehill and Clyde. The M4 Western Motorway would also be visible from these properties, including a grade separated intersection at James Ruse Drive. The on ramp for the M4 Western Motorway forms the south-western corner of the site, and the M4 Western Motorway itself is elevated as it continues east, forming the southern boundary of the site.

1 JAMES RUSE DRIVE
2 VIRGINIA STREET, ROSEHILL
3 CAPRAL ALUMINIUM BUILDING
4 RTA DEPOT

7.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review identifies specific clauses in the local environmental plan and development control plan documents, as well as provisions in strategic and masterplanning documents, which relate to the landscape and visual impact assessment of the Clyde stabling and maintenance facility construction site.

7.2.1 Parramatta Local Environmental Plan 2011

Duck and A'Becketts creeks are zoned W1 Natural Waterways, which aims to protect the '*scenic values of natural waterways*'. The sections of the creek within the site, however, are dominated by weeds (Technical Paper 3 (Non-Aboriginal heritage impact assessment, Artefact, 2020b) and have little scenic value. There is an area, including the Sydney Helicopters site and Sydney Speedway, zoned RE2 Private Recreation, which aims to '*provide a range of recreational settings and activities and compatible land uses*'.

Areas north of the creek are zoned IN3 Heavy Industrial and the remaining areas to the south of the creek area zoned IN1 General Industrial. The objectives of these industrial zones do not relate to landscape character or visual amenity.

The maximum building height permitted within the construction site is 12 metres.

The construction site contains one large heritage property at the corner of Unwin Street, the former depot (RTA Depot), which has local heritage significance. The site also includes part of Duck Creek and A'Becketts Creek, which are a part of the Parramatta River wetlands, and have a local heritage listing.

7.2.2 Parramatta Development Control Plan 2011

The construction site for Clyde stabling and maintenance facility is in the Camellia and Rydalmere Precinct which is one of five strategic precincts in the development control plan. Objectives for this precinct which relate to this technical paper include:

- *To require development along the foreshore to be of a scale and character that is in keeping with its foreshore location, protection and enhancement of the unique visual and ecological qualities of the waterways and foreshore*
- *To conserve and enhance identified views and encourage the conservation and adaptive reuse of heritage items within the Camellia and Rydalmere Precincts and wider community use and access of these assets*
- *That buildings should make a positive contribution to the streetscape and the skyline*
- *That buildings that not significantly overshadow the public domain, vegetated riparian areas, environmental protection areas or adjoining properties*
- *To conserve heritage sites, their settings, identified views and their visual interconnections.* (City of Parramatta, 2018, s.4.3.1).

The construction site is not located within a Special Character Area (s.4.3.1.1) or a Heritage Conservation Area (s.4.4).

7.2.3 Camellia Precinct Land Use & Infrastructure Strategy, 2015

The site is part of Rosehill Industrial Area, which is identified as an area expected to experience significant growth to reinforce Parramatta's role as Sydney's second CBD (Department of Planning and Environment, 2015).

In relation to the visual environment of the site, the strategy sets out the following drivers for change:

- *The southern part of the site, including Sydney Helicopters and Sydney*

Speedway, which is identified as a Private Recreation Zone, with environmental protection along the margins of Duck Creek and A'Becketts Creek

- *The remainder of the construction site to provide an Employment Zone, where job density is expected to increase*
- *There is the potential for a new freight line relocation along Unwin Stree*t (refer to Figure 7-2).

7.2.4 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

Duck Creek traverses the centre of the Clyde stabling and maintenance facility construction site and is identified as an Environment Protection Zone (Zone No W2) under the Sydney Regional Environmental Plan.

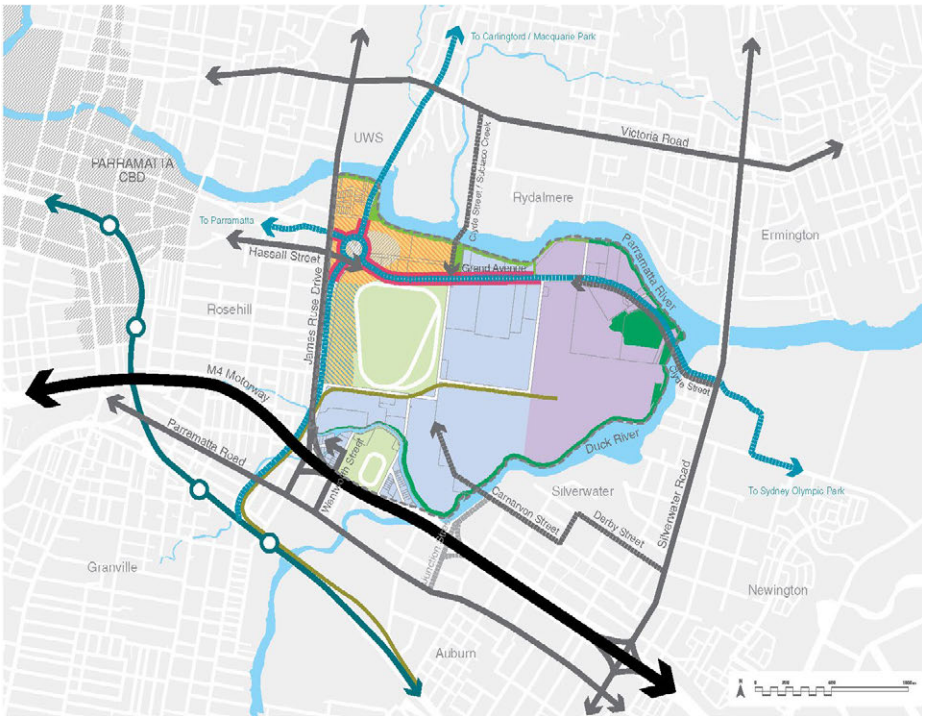
Aims of the *Sydney Regional Environmental Plan (Sydney Harbour Catchment)* 2005 which relate to visual amenity include:

- *To ensure that the catchment, foreshores, waterways and islands of Sydney Harbour are recognised, protected, enhanced and maintained:*
  - *As an outstanding natural asset*
  - *As a public asset of national and heritage significance, for existing and future generations*
- *To achieve a high quality and ecologically sustainable urban environment*
- *To ensure the protection, maintenance and rehabilitation of watercourses, wetlands, riparian lands, remnant vegetation and ecological connectivity.* (NSW Government, 2018, cl.2.1)

Objectives of the Environment Protection Zone which relate to this technical paper include:

- *To protect the natural and cultural values of waters in this zone*
- *To prevent damage or the possibility of longer term detrimental impacts to the natural and cultural values of waters in this zone and adjoining foreshores*
- *To give preference to enhancing and rehabilitating the natural and cultural values of waters in this zone and adjoining foreshores, to provide for the long term management of the natural and cultural values of waters in this zone and adjoining foreshores* (cl.17).

FIGURE 7-2: CAMELLIA PRECINCT LAND USE AND TRANSPORT DIAGRAM [SOURCE: DEPARTMENT OF PLANNING AND ENVIRONMENT, 2015, VOLUME 1, P.5]



7. CLYDE STABLING AND MAINTENANCE FACILITY

7.3 Character and components of Stage 1

7.3 Character and components of Stage 1

The Clyde stabling and maintenance facility construction site would cover about 380,000 square metres and include aboveground components in an area between the M4 Western Motorway, James Ruse Drive and Rosehill Gardens racecourse.

Stage 1 at the Clyde stabling and maintenance facility construction site would comprise surface and underground works including:

- The demolition of buildings and structures within the site excluding the façade of the heritage listed RTA Depot building
- Removal of about 300 trees and all other vegetation within the site including:
  - Several street trees on Unwin Street
  - All trees within the site including along sections of A'Becketts Creek and Duck Creek
- Earthworks and fill to raise the site to about 8.3 metres Australian Height Datum, including batters or retaining walls
- Realignment of Duck Creek and A'Becketts Creek (partly enclosed and part open to air)
- Contamination and ground improvement works as required
- Establishment of a concrete segment production facility including:
  - Segment production factory
  - Segment laydown and storage.
- Works for the Rosehill services facility including:
  - Shaft excavation
  - Site parking, site offices, and workshop
  - Spoil storage
  - Water treatment plant
- Construction of operational dive structure (about 250 metres long) adjacent to James Ruse Drive including:
  - Dive approach with retaining walls on piles
  - Open dive structure with concrete retaining walls on piles
  - Cut-and-cover portal
- Stabling and maintenance facility civil works including:
  - Land formation works
  - Construction of internal roads
  - Site access roadworks
- Road works including:
  - Realignment of Kay and Unwin Street around the construction site
  - Construction of a road bridge about 12 metres wide and rising to 11 metres high over Duck Creek and A'Becketts Creek and the stabling and maintenance facility access tracks
  - Site entry, access and haulage routes via Wentworth Street
- Works would include the use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs etc
- Hoardings and/or fencing surrounding the construction site, about three metres high.

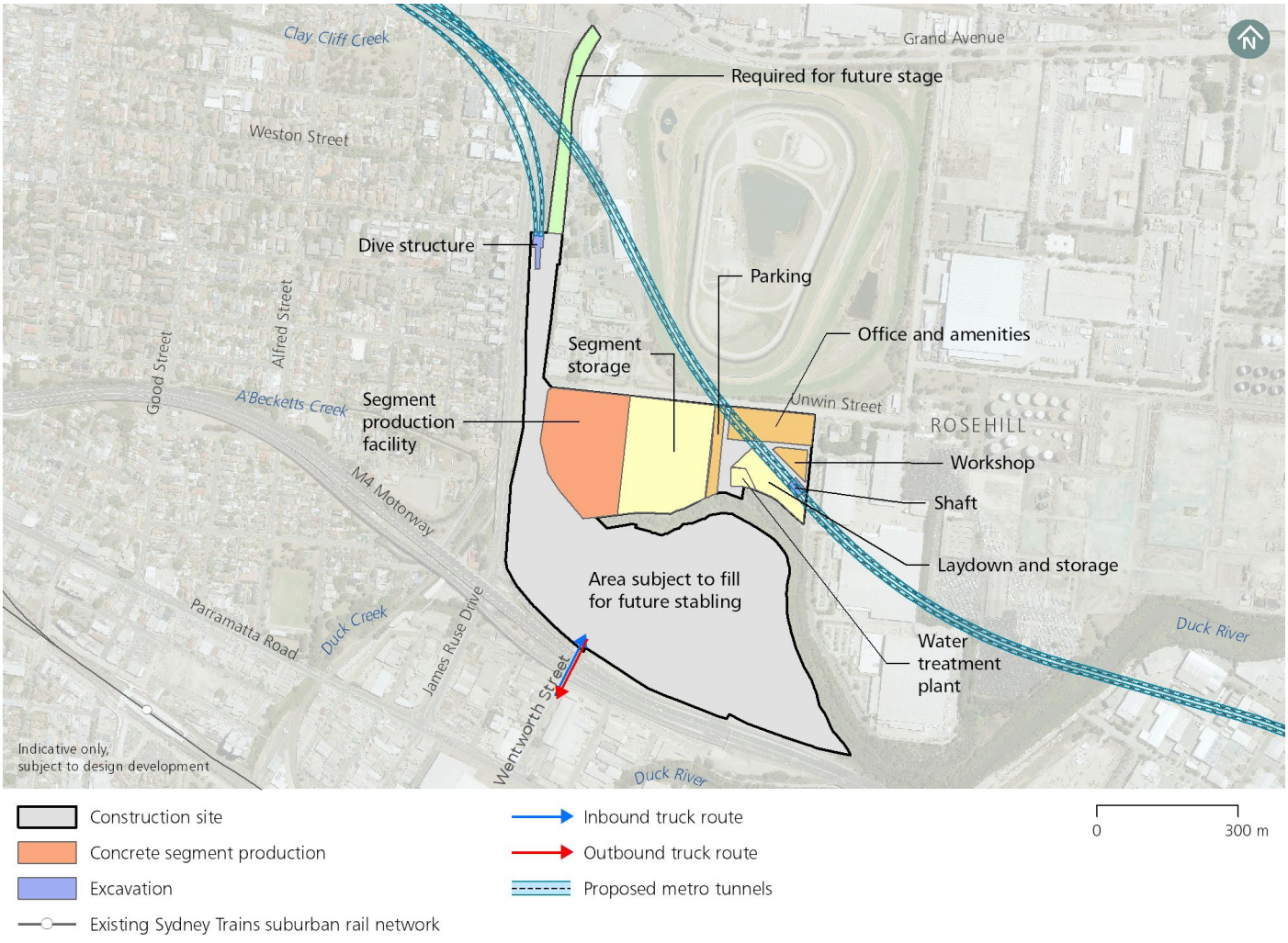
Overall, Stage 1 at the Clyde stabling and maintenance facility construction site would take about three years to complete including enabling and demolition works, land formation works, ventilation shaft excavation, dive structure excavation, connecting tunnel excavation, and concrete segment facility operations.

The hours of construction would be as follows:

- Demolition, earthworks and fill, civil construction works, shaft and dive excavation would be carried out during standard hours
- Heavy plant deliveries and spoil delivery would occur after hours
- The precast concrete segment production facility would operate 24 hours, 7 days a week.

Figure 7-3 identifies the construction site layout and indicative location of these components.

FIGURE 7-3: CLYDE STABLING AND MAINTENANCE FACILITY CONSTRUCTION SITE LAYOUT



7.4 Assessment of landscape impact

The landscape and public realm areas which may potentially be impacted by Stage 1 are:

- Rosehill Gardens racecourse
- Sydney Speedway
- A'Becketts Creek and Duck Creek
- The site and streetscapes including Unwin, Kay and Shirley Streets.

The following section summarises the assessment of impact for each of these landscape and public realm areas (refer to Table 2-7 for impact levels).

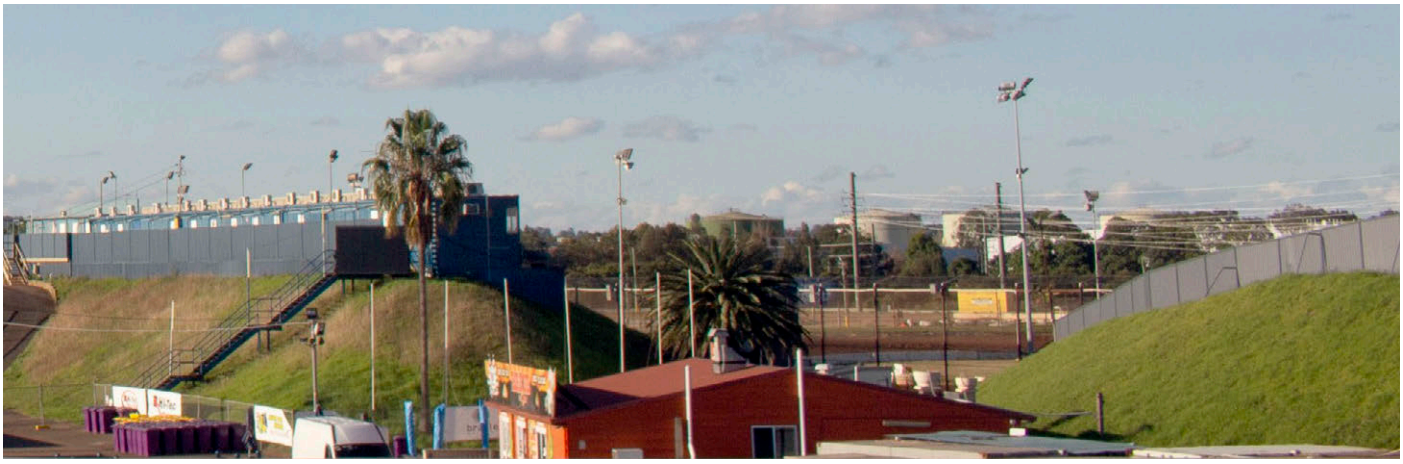
SPECTATOR STANDS AT ROSEHILL GARDENS RACECOURSE

7.4.1 Rosehill Gardens racecourse

Existing conditions: Rosehill Gardens racecourse is a premier racing venue with a specialist grass surface thoroughbred horse racing track. The main venue facilities, including several spectator stands, are located in the north-western corner of the venue. These spectator stands offer elevated views across the racetrack, towards the winning post, which is the focus of views and main area of visual interest to users. The grounds include well maintained gardens after which the venue is named.

Sensitivity: The Rosehill Gardens racecourse is a destination venue attracting racegoers from across the region. The landscape setting and amenity of the course is an important part of the venue particularly the rose gardens. Although this is a private facility, it is valued by the wider community as a sporting venue and has a **regional landscape sensitivity**.

Landscape impact: The site is located to the south of the Rosehill Gardens racecourse. The works to Unwin Street would be located outside the boundary of the Racecourse and there are no works proposed to extend into the Rosehill Gardens racecourse property. As there would be no direct impact on the Rosehill Gardens racecourse site or changes that would alter the use or amenity of any publicly accessible areas of this facility there would be no perceived change in the quality of this landscape. While this is a landscape of regional sensitivity there would be a **negligible landscape impact** overall.



VIEW TO SYDNEY SPEEDWAY FROM M4 WESTERN MOTORWAY

7.4.2 Sydney Speedway

Existing conditions: Sydney Speedway is a private sporting venue located on Crown land between the M4 Western Motorway and Duck Creek. The speedway attracts a large number of visitors. The facility includes a clay racing track, a 3,500-seat grandstand, a large grass hill area for the general admission of 6,500 people, administrative areas and outdoor surface parking for about 500 vehicles. The speedway is surrounded by noise attenuation mounds and embankments, enclosing the site and limiting views into the venue from surrounding areas.

Sensitivity: The Sydney Speedway attracts people for race related work, training, and events. The landform is heavily modified with the landform shaped to accommodate the track and large embankments surrounding the facility for spectator viewing. There are some small areas of green space with few trees. As the landscape is not particularly important to the functioning or enjoyment of the speedway the Sydney Speedway is of **neighbourhood landscape sensitivity**.

Landscape impact: The speedway would be closed and extensive, large scale earthworks would be carried out across the site. The landform would be filled and raised to around 8.3 metres AHD and there would be substantial perimeter embankments and retaining walls, raising the site above the adjacent Duck Creek landscape. This is a private sporting facility which already includes a substantially modified landscape to accommodate this high intensity and high impact land use. It does not contribute positively to the landscape character of surrounding areas. For these reasons there would be no perceived change in the quality of this landscape, which is of neighbourhood sensitivity, resulting in a **negligible landscape impact**.

7.4.3 A'Becketts Creek and Duck Creek

Existing conditions: A'Becketts is a tributary of Duck Creek which flows into the Duck River. These creeks meander through the local area in an easterly direction towards the Parramatta River and meet at a point within the centre of the site. While these creeks are locally heritage listed, they are both dominated by weed species *(*Technical Paper 3 (Non-Aboriginal heritage impact assessment) (Artefact 2020b). There is limited visibility to these creeks from public and pedestrian areas, with visual access limited to adjacent streetscapes, bridge crossings and private properties. Due to the limited visibility and industrial nature of the surrounding land uses, these creeks make only a small contribution to the character of the landscape.

Sensitivity: A'Becketts and Duck Creek are both heavily degraded where they cross the construction site, as such, they provide limited amenity to surrounding private and public realm areas. There is no public access or recreational function associated with these creeks. Overall, these creeks are of **neighbourhood landscape sensitivity**.

DUCK CREEK

VEGETATION ALONG DUCK CREEK

Landscape impact: A'Becketts Creek and Duck Creek, where they pass through the site would be altered and realigned during construction. The vegetation in some sections would be removed and structures would be installed over both watercourses. Works to realign Unwin Street would include an elevated bridge structure across Duck Creek which would also require some vegetation clearing. Areas of Duck Creek to the east of the site would be protected during construction. As there is generally no access to the foreshore of the creeks, there would be limited views available to these creeks other than from bridges or cul de sacs.

Overall, there would be a considerable reduction in the quality of A'Becketts Creek and Duck Creek as a segment of these waterways would be channelised. As this is a landscape of neighbourhood sensitivity, this would result in a **minor adverse landscape impact**.

7.4.4 The site and streetscapes including Unwin, Kay, Wentworth and Shirley Streets

Existing conditions: Streets within the construction site exhibit an industrial streetscape character being generally broad with wide vehicle crossovers, overhead power lines and grassed verges. These vehicle-dominated streetscapes have a high volume of heavy traffic movements with limited facilities and amenity for pedestrians and cyclists. Intermittent street trees and some landscaping within the private industrial properties enhance the visual character of these streetscapes somewhat.

Unwin Street includes a mix of street trees, including some trees which have been heavily pruned where they are located under powerlines. The dense mature she-oak trees along the western side of Unwin Street provide a landscape screen in views to and from James Ruse Drive.

Sensitivity: Unwin, Kay, Wentworth and Shirley Streets are heavily trafficked heavy vehicle routes which provide access to the surrounding industrial area. These streets and the site have some intermittent street trees and other scattered vegetation. The site and these streets are of **neighbourhood landscape sensitivity**.

Landscape impact: Extensive, large scale earthworks would be carried out across the site. All structures, buildings and vegetation would be demolished, except for the heritage listed former RTA depot building façade at Unwin Street and trees along sections of Unwin and Shirley Streets.

The landform in areas to the south of the site would be transformed as it would be raised to around 8.3 metres AHD. There would be large embankments and retaining walls constructed along the site perimeter, substantially changing the landscape character and transforming the scale and relationship of the site to the adjacent streets, Rosehill Gardens racecourse and Duck River.

There would be no public access to the site, however, Unwin and Shirley Streets would be used for construction access and haulage. Realignment of Unwin and Kay Streets via a ramping bridge structure, would require large scale construction works and transform the character of this street. Formation works would require the removal of street trees in the southern areas of Unwin Street.

Overall, there would be a considerable reduction in the quality of this landscape, which is of neighbourhood sensitivity, resulting in a **minor adverse landscape impact**.

UNWIN STREET

WENTWORTH STREET

7.5 Assessment of daytime visual impact

Due to the flat terrain, large scale built form of the surrounding industrial area, the M4 Western Motorway bridge structures and riparian vegetation along Duck River, the site currently has a relatively limited visual catchment.

Views are available from the immediate surrounding industrial areas including Unwin and Shirley Streets to the north and east of the site. There are also glimpses to the site along Wentworth and Deniehy Streets, in the south, through the bridges of the M4 Western Motorway. There are elevated views to the site, partly filtered by existing vegetation, from the elevated bridges of the M4 Western Motorway and James Ruse Drive, to the south and west of the site. There are also likely to be elevated views from the mid and high rise hotels and residential apartment buildings located to the north-west of the site in the vicinity of James Ruse Drive. To the north the buildings and spectator stands within the Rosehill Gardens racecourse would potentially have long range views across the site. These views would be screened in part by the existing vegetation and mounding located along the perimeter of the Rosehill Gardens racecourse.

The following viewing locations were selected as representative of the range of views to Stage 1:

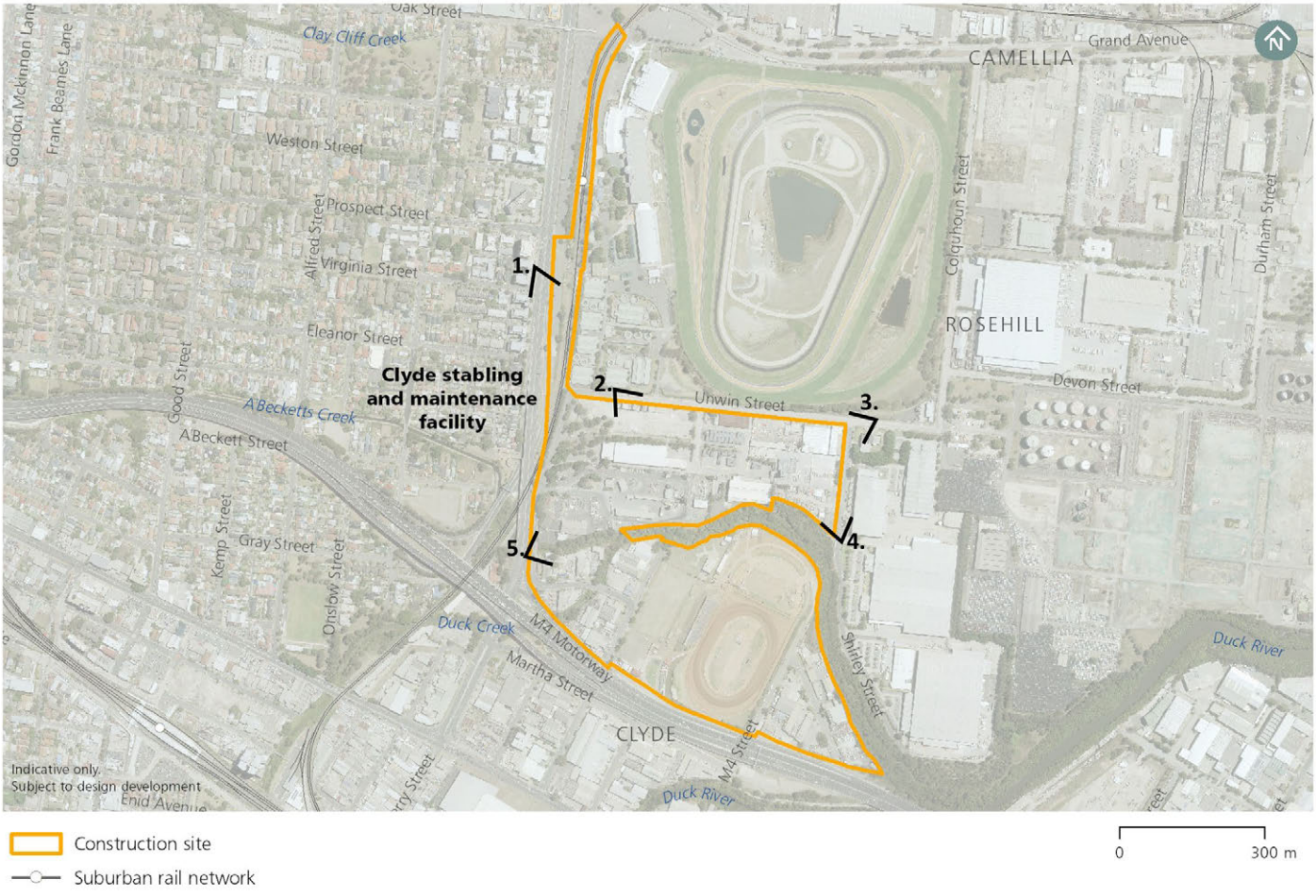
- Viewpoint 1: View south-east along James Ruse Drive
- Viewpoint 2: View south-east from Unwin Street
- Viewpoint 3: View south-west to the corner of Unwin and Shirley streets
- Viewpoint 4: View north along Shirley Street
- Viewpoint 5: View north-east from M4 Western Motorway on ramp
- Views from Rosehill Gardens racecourse.

Figure 7-4 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

1 M4 WESTERN MOTORWAY
2 JAMES RUSE DRIVE

FIGURE 7-4: CLYDE STABLING AND MAINTENANCE FACILITY CONSTRUCTION SITE – VIEWPOINT LOCATIONS



7. CLYDE STABLING AND MAINTENANCE FACILITY

7.5 Assessment of daytime visual impact

FIGURE 7-5: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG JAMES RUSE DRIVE, EXISTING VIEW

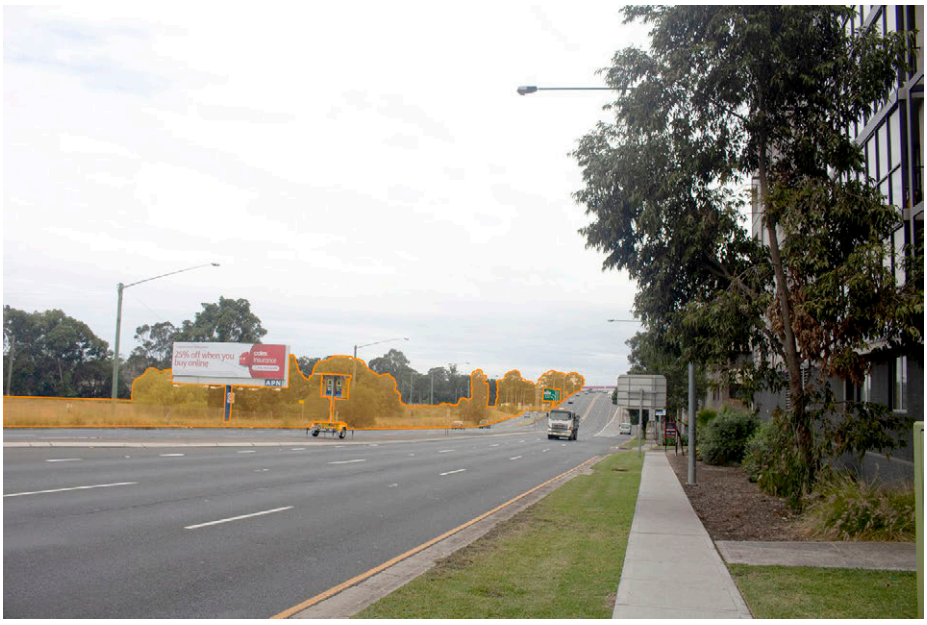


FIGURE 7-6: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG JAMES RUSE DRIVE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

7.5.1 Viewpoint 1: View south-east along James Ruse Drive

Existing conditions: This location represents street level views from James Ruse Drive, a busy north-south arterial route, which includes six lanes of traffic (refer to Figure 7-5). There are several medium rise hotels, apartments, and townhouses on the western side of the road (right of view), with rooms and balconies, overlooking Rosehill Gardens racecourse and the site. The site is visible to the south and east (left of view), in the background, and includes a narrow area of vacant land between the rail corridor and James Ruse Drive, in the middle ground, as well as in the background of the view. The site is viewed across the heavily trafficked James Ruse Drive. The site includes several mature trees. These trees, with vegetation on adjacent sites, create a vegetated skyline to this view, filtering views to the industrial areas of Clyde and Rosehill.

Sensitivity: Views along James Ruse Drive would be experienced by adjacent road users, residents and workers in adjacent commercial uses. These views do not include any landscape features of note, however, due to the number of potential receivers, would be considered to have a **local visual sensitivity**.

Visual impact: The vacant site between James Ruse Drive and the former T6 Carlingford Line would be used for the construction of a tunnel dive structure (left of view), including excavation of an open dive structure and construction of concrete retaining walls connecting to the cut-and-cover structure (further north, out of view) (refer to Figure 7-6). To the south, and in the background of the view, the main construction site would include the establishment of the segment production and storage facility at the former RTA depot site. Vegetation within the site would be removed. This would open up views to the construction of the future stabling and maintenance facility in the far background of this view, including extensive earthworks to raise the ground level of the site.

Works to realign Unwin Street would include the construction of a bridge structure over the future rail tracks which lead to the stabling and maintenance facility from the Rosehill dive structure and tunnel portal. This bridge structure would be a broad two-lane roadway that would rise above the adjacent M4 Western Motorway road, to about 11 metres above the existing ground level. This construction activities would extend across a large portion of this view and include several substantial construction works which would introduce an intensive construction character to this portion of the view. Overall this change would create a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

7.5.2 Viewpoint 2: View south-east from Unwin Street

Existing conditions: The heritage listed former RTA depot building can be seen in the centre of this view. The building is a '*local landmark and strongly contributes to the streetscape*' (NSW Heritage Inventory, 2014) (refer to Figure 7-7). The brick and concrete façade of this industrial workshop building would remain intact, however, the remainder of this building is dilapidated, with exposed remnants of the steel trusses which supported the former saw-tooth roof visible. Some existing mature trees can be seen within the depot site (right of view), softening views to the working areas of the depot. There are also several street trees along Unwin Street which provide some amenity to the streetscape.

Sensitivity: Views along Unwin Street would be experienced from adjacent roads and by workers in adjoining industrial areas. This view includes the heritage listed RTA depot building, which improves the quality of this view slightly. This view has a **local visual sensitivity**.

FIGURE 7-7: VIEWPOINT 2 – VIEW SOUTH-EAST FROM UNWIN STREET, EXISTING VIEW

FIGURE 7-8: VIEWPOINT 2 – VIEW SOUTH-EAST FROM UNWIN STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Visual impact: The façade of the RTA building would remain, however, the remnant structure behind the façade would be removed. A concrete segment production and storage facility would be established on the site. This would include stacked concrete tunnel lining segments. Mature trees within the site would be removed, opening up views into the site. Hoardings or fencing would be established along the construction site perimeter and would screen views to the lower areas of these construction works. The intermittent street trees along Unwin Street would be retained, and there would be additional construction vehicles seen accessing the site along the street (refer to Figure 7-8).

Due to the compatibility of the construction works with the existing industrial view, this would result in a noticeable reduction in the amenity of this view, which is of local sensitivity, and a **minor adverse visual impact**.

7.5.3 Viewpoint 3: View south-west to the corner of Unwin and Shirley streets

Existing conditions: This view along Unwin Street towards the intersection with Shirley Street includes the site in the middle ground (centre of view) (refer to Figure 7-9). A three storey art deco building, with its curved brickwork is a feature of this view, contrasting with the modern, large-scale steel industrial warehouse buildings beyond. The street trees in Unwin and Shirley Streets provide some visual relief and filter views to the buildings, structures and traffic within this industrial area. To the north (right of view), the vegetation and embankments along the southern boundary of Rosehill Gardens racecourse are visible, enclosing views to the racetrack and facilities.

Sensitivity: Views along Unwin Street would be experienced from adjacent roads and by workers in adjoining industrial areas. The three storey art deco building is a local visual feature within this streetscape, improving the quality of this view slightly. This view has a **local visual sensitivity**.

Visual impact: A construction site would be established in the middle ground of this view, extending west from the corner of Unwin and Shirley Streets. The industrial building in the centre of view would be removed and hoarding or fencing would be established on the perimeter of the site blocking views to the lower parts of the construction works and structures (refer to Figure 7-10). A site office, site amenities and workshops would be located in the centre of this view. The eastern side of Shirley Street (left of view), including the brick art deco building, would be unchanged. The street trees along Unwin and Shirley Streets would also be retained, filtering views to the structures within the site.

Works to realign Unwin Street would be visible in the background of this view, extending to the southwest, away from the viewer. This would involve the formation of embankments rising to a bridging structure in the far background of this view.

Overall, the scale and intensity of construction work in this view would result in a noticeable reduction in the amenity of this view, which is of local sensitivity, and a **minor adverse visual impact**.

FIGURE 7-9: VIEWPOINT 3 – VIEW SOUTH-WEST TO THE CORNER OF UNWIN AND SHIRLEY STREETS, EXISTING VIEW

FIGURE 7-10: VIEWPOINT 3 – VIEW SOUTH-WEST TO THE CORNER OF UNWIN AND SHIRLEY STREETS, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

7. CLYDE STABLING AND MAINTENANCE FACILITY

7.5 Assessment of daytime visual impact

FIGURE 7-11: VIEWPOINT 4 – VIEW NORTH ALONG SHIRLEY STREET, EXISTING VIEW

FIGURE 7-12: VIEWPOINT 4 – VIEW NORTH ALONG SHIRLEY STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

7.5.4 Viewpoint 4: View north along Shirley Street

Existing conditions: This view shows the outlook from vehicles, the footpath, and industrial properties facing the site on Shirley Street (refer to Figure 7-11). In this view, there are a mix of industrial sheds and buildings on the site, with gardens facing the street. The street trees along Shirley Street provide some amenity to the streetscape, filtering views to the industrial buildings somewhat.

The three storey art deco style brick industrial building to the east (right of view) includes mature palm trees which provide visual interest in this view. The brickwork of this building contrasts with the modern, large-scale steel industrial warehouse buildings on the site (left of view). The vegetation along Duck River is visible from this location (left, out of view), screening views to the Sydney Speedway beyond.

Sensitivity: Views along Shirley Street would be experienced from adjacent roads and by workers in adjoining industrial areas. The three storey art deco building and date palms are a local feature within this streetscape, improving the quality of this view slightly. This view has a **neighbourhood visual sensitivity**.

Visual impact: A construction site would be established on the western side of Shirley Street (left of view). The buildings and structures would be removed (refer to Figure 7-12) and a shaft construction area would be established close to the site boundary in the middle ground of this view. The site would be enclosed by hoarding or fencing, which would screen the lower level views into the site. The street trees would also be retained and filter views into the site.

Workshops, site offices and amenity buildings would also be visible, further to the north, near the corner of Unwin Street in the background of this view, partly screened by existing street trees. On the eastern side of Shirley Street, the brick art deco building and date palm trees would remain unchanged.

Overall, due to the scale and intensity of construction work there would be a noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

FIGURE 7-13: VIEWPOINT 5 – VIEW NORTH-EAST FROM M4 WESTERN MOTORWAY ONRAMP, EXISTING VIEW

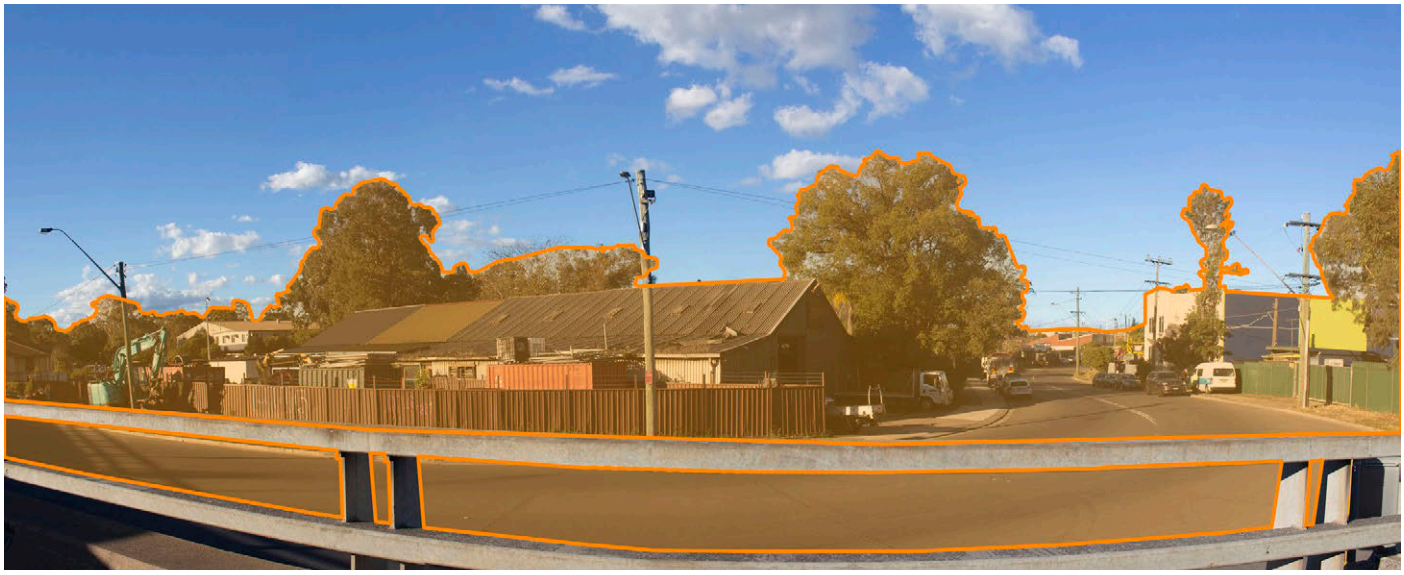


FIGURE 7-14: VIEWPOINT 5 – VIEW NORTH-EAST FROM M4 WESTERN MOTORWAY ONRAMP, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

7.5.5 Viewpoint 5: View north-east from M4 Western Motorway onramp

Existing conditions: This is a glimpsed view from the signalised entry ramp to the M4 Western Motorway from James Ruse Drive (refer to Figure 7-13). This view is mostly viewed at speed, as the road rises to meet the M4 Western Motorway. This view shows some low rise industrial development, at the corner of Kay and Unwin Streets, including mechanical and manufacturing workshops and machinery storage areas. The landform is flat and low lying, typical of the floodplain surrounding Duck River. There are glimpses to the vegetation on A'Becketts Creek and Duck Creek, to the north (left of view) and centre of this view, beyond the industrial buildings. This vegetation, and the intervening built form, obstructs views to the industrial buildings in the Clyde industrial area and Sydney Speedway beyond.

Sensitivity: Views from the M4 Western Motorway would be experienced by a large volume of road users moving along the highway at speed or paused at the traffic signals. While this location has somewhat of a gateway function as it is a major departure point for Parramatta, it does not include any visual features, and is an incidental view towards an industrial area. This view has a **local visual sensitivity**.

Visual impact: The buildings in the centre of view would be demolished and the industrial area beyond would become the construction site for the future stabling and maintenance facility (refer to Figure 7-14). All existing vegetation within the site would be removed and there would be extensive bulk earthworks carried out to raise the ground level of the site substantially. This work would include the construction of embankments and retaining walls along the site perimeter.

The works to realign Unwin Street would also be prominent in this view with the construction of a bridge structure, parallel to the view, passing over the future tracks to the stabling and maintenance facility, and rising above the viewer. Vegetation along A'Becketts Creek would be removed to realign the road and there would be hoarding or fencing installed on the site perimeter, on top of the embankments and retaining walls. This work would introduce extensive construction work into the foreground of this view.

Due to the elevated position, there would be extensive views across the site to the large scale works. This visibility combined with the scale of the construction works and vegetation removal, would alter a large portion of this view. While this is a glimpsed view, overall, there would be a considerable reduction in the amenity of this view, which is of local visual sensitivity, resulting in a **moderate adverse visual impact**.

7.5.6 Views from Rosehill Gardens racecourse

Existing conditions: The spectator stands at the Rosehill Gardens racecourse are located to the north-west of the racecourse. These spectator stands offer elevated views across the racetrack, towards the winning post, and include the broader industrial areas of Rosehill in the background. These views are mainly oriented to the east and away from the construction site, however, there would be peripheral views to the south towards the existing industrial areas of Clyde and the construction site.

Views from lower and ground level areas would be largely screened by vegetation and mounds located around the perimeter of the track. These mounds and vegetation provide a vegetated backdrop to these views allowing clear viewing of the race which is the main point of visual interest to spectators.

ENTRY TO ROSEHILL GARDENS RACECOURSE ON UNWIN STREET

Sensitivity: Views from the Rosehill Gardens racecourse are appreciated by race spectators. The primary focus of these views would be towards the racetrack and the site would be in the periphery of these views, which are less sensitive. However, the amenity of these views is an important part of the experience and are appreciated by a large number of people during events. These views are of **local landscape sensitivity**.

Visual impact: The site would be visible in the background of oblique views towards the site. While the works on the site would be substantial in scale and extend across a large portion of this industrial area, this would comprise a relatively small area of what would be broad panoramic views. The character of the construction work would be similar to the existing industrial development and would be seen in the context of other large infrastructure and industrial facilities including the Parramatta Light Rail (Stage 1) stabling and maintenance facility to the east. It is likely that areas to the north-east of the site would be partly screened by vegetation along the perimeter of the racecourse, and the vegetation that would be retained on Duck Creek would partly screen views to works on the southern areas of the site. Furthermore, Stage 1 would be viewed against the backdrop of the existing M4 motorway.

Overall, it is likely that there would be no perceived change in the amenity of this view, which is of local visual sensitivity, resulting in a **negligible visual impact**.

7.5.7 Views to power supply route

Existing conditions: The power supply route between the Clyde stabling and maintenance facility and the Rosehill Zone substation would be located within the Unwin Street road corridor (refer to Figure 7-15). Passing to the south of the Rosehill Gardens racecourse and

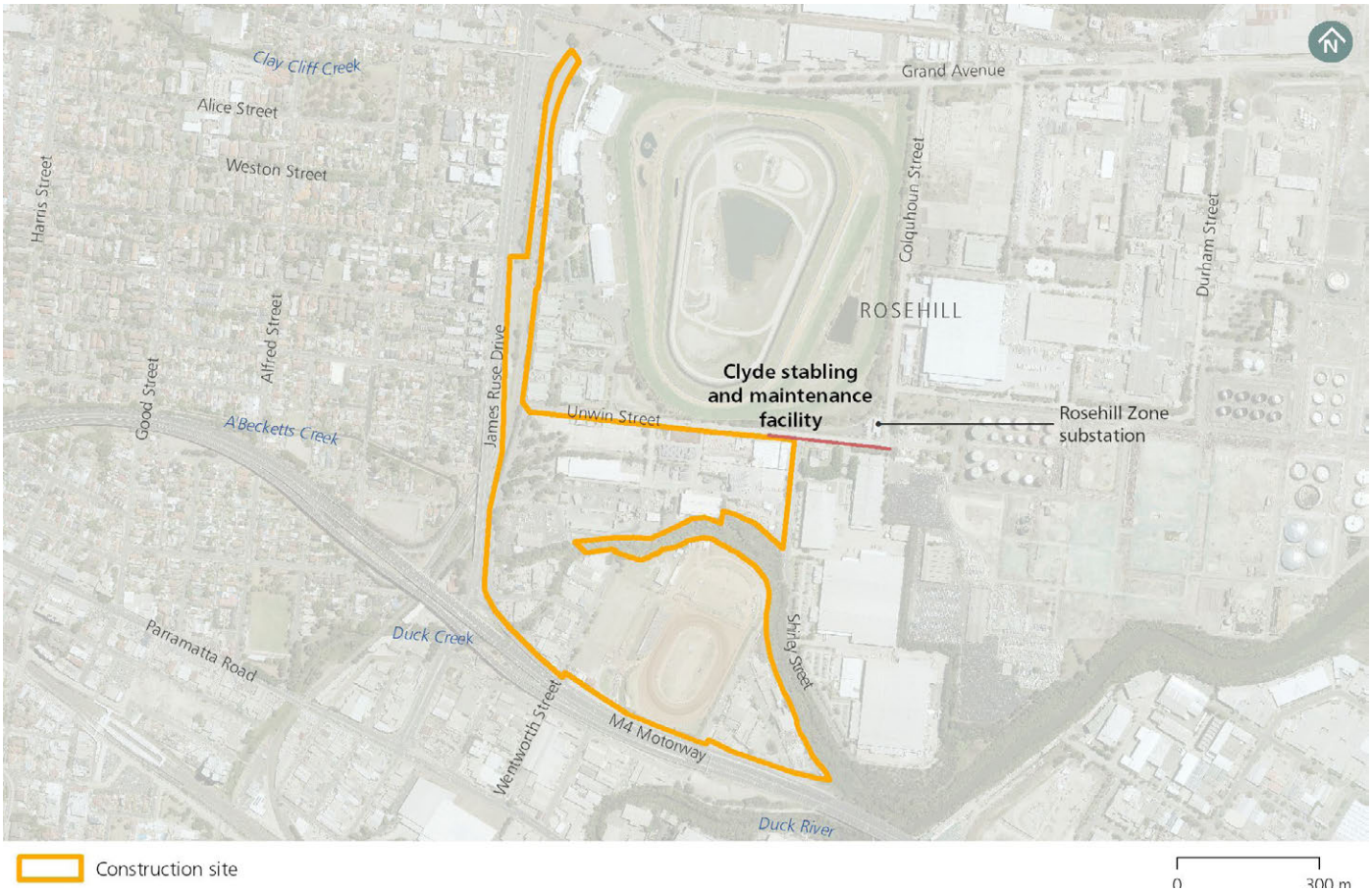
north of the Rosehill Industrial Area. Unwin Street in this location has a predominantly industrial character, with wide vehicle crossovers, overhead power lines and grassed verges. This vehicle-dominated streetscape has a high volume of heavy traffic movements with few footpaths and limited amenity for pedestrians and cyclists.

Sensitivity: Views along the power supply route are generally experienced by staff and visitors to the Rosehill industrial area and are of **neighbourhood visual sensitivity**.

Visual impact: There would be views to the power supply works along a short length of Unwin Street. This would include trenching within the road corridor or verge and temporary road and footpath closures to accommodate the temporary works. Existing trees within the verges would be retained and protected during construction where possible.

Due to the industrial character of this streetscape, minor scale and small extent of these works, there would be no perceived change in the amenity of views along this short section of Unwin Street and from adjacent industrial properties. There would be no visibility from Rosehill Gardens racecourse due to the roadside vegetation and mounding which screen Unwin Road from the venue. Views along the power supply route are of neighbourhood sensitivity and therefore this would result in a **negligible visual impact**.

FIGURE 7-15: CLYDE STABLING AND MAINTENANCE FACILITY POWER SUPPLY ROUTE



7.6 Assessment of night-time visual impact

Existing conditions: The setting of the Clyde stabling and maintenance facility construction site is **E3: Medium district brightness.** The construction site is located in an industrial area, which would be moderately lit at night, with lighting associated with the surrounding large scale industrial and commercial uses. This area includes several venues which would be brightly lit at night, including the Sydney Speedway, which is flood lit during night-time racing events, and Rosehill Gardens racecourse which would be brightly lit during evening track events and functions. The headlights from traffic moving along the M4 Western Motorway and James Ruse Drive would also contribute to the night-time setting of the site together with low level lighting along streets such as Unwin and Shirley Streets. While some of this lighting would be contained by the existing vegetation within and on the perimeter of the site, there would be a general skyglow above the site and numerous bright sources of light seen in this area.

Visual impact: Much of the work on the stabling and maintenance facility construction site would be carried out during standard work hours. There would be low-level security lighting within the site during these times. However, the precast concrete segment production facility, located at the northern part of the site, and also spoil delivery, at the southern parts of the site, would be undertaken 24 hours 7 days a week. There would also be some after hours delivery of large plant and equipment. This additional lighting would be readily absorbed into the existing moderately lit setting of industry at Clyde and Rosehill. Overall, this night construction work would not create a perceived change in the amenity of views at night, resulting in a **negligible visual impact** at night.

7.7 Summary of impact

Table 7-1, 7-2 and 7-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 7-1 LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Rosehill Gardens racecourse	Regional	No perceived change	Negligible
2	Sydney Speedway	Neighbourhood	No perceived change	Negligible
3	A'Becketts Creek and Duck Creek	Neighbourhood	Considerable reduction	Minor adverse
4	The site and streetscapes including Unwin, Kay, Wentworth and Shirley Streets	Neighbourhood	Considerable reduction	Minor adverse

TABLE 7-2 DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south-east along James Ruse Drive	Local	Considerable reduction	Moderate adverse
2	View south-east from Unwin Street	Local	Noticeable reduction	Minor adverse
3	View south-west to the corner of Unwin and Shirley streets	Local	Noticeable reduction	Minor adverse
4	View north along Shirley Street	Neighbourhood	Noticeable reduction	Negligible
5	View north-east from M4 Western Motorway onramp	Local	Considerable reduction	Moderate adverse
6	Views from Rosehill Gardens racecourse	Local	No perceived change	Negligible
	Views to the power supply route	Neighbourhood	No perceived change	Negligible

TABLE 7-3 NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Clyde stabling and maintenance facility constructionsite	E3: Medium district brightness	No percieved change	Negligible

8. SILVERWATER SERVICES FACILITY CONSTRUCTION SITE

8.1 Existing environment

8.1 Existing environment

The Silverwater services facility construction site is located on Silverwater Road, at the south-eastern corner with Derby Street (refer to Figure 8-1: Silverwater services facility – Landscape context).

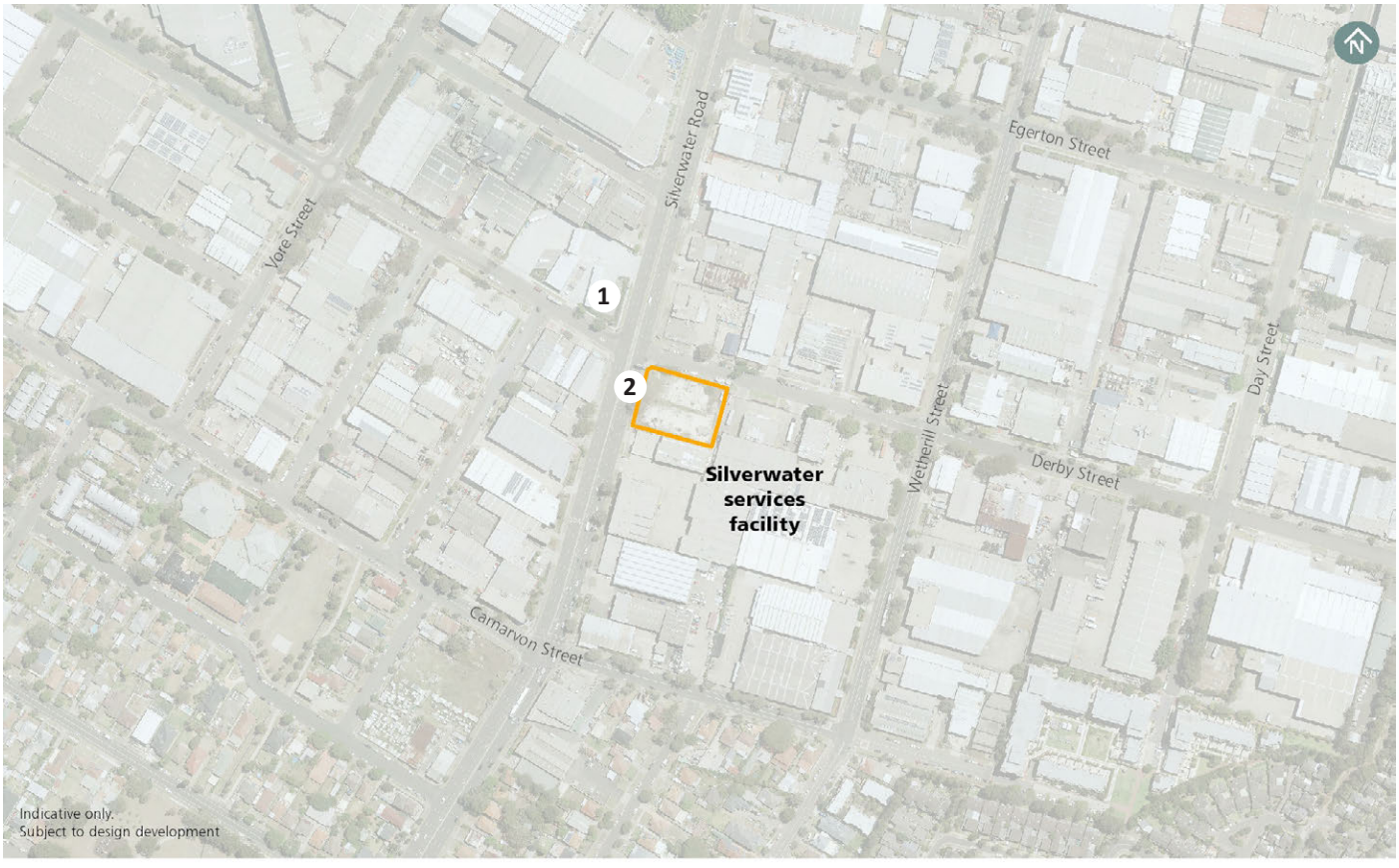
The site is located within a light industrial area, comprising of manufacturing and fabrication workshops, warehouse and storage facilities, packaging and repairing workshops, and some commercial and retail uses such as service stations. Buildings are typically one to three stories with large footprints and large areas for vehicle circulation, surface parking areas, loading docks and wide crossovers for service vehicle access, which are often visible to the street.

The landform of this area of Silverwater is predominantly flat.

Silverwater Road is a broad and heavily trafficked road. It is six lanes wide in this section and there is a large cantilevered gantry digital sign located adjacent to the site, facing Silverwater Road. There are several broad signalised intersections facilitating access by heavy vehicles along the road, however there is a central median strip at this intersection.

There are intermittent street trees on both Silverwater Road and Derby Street, including five street trees surrounding the site. There is also two mature gum trees within the site, which provides some visual relief in this section of Silverwater Road.

FIGURE 8-1: SILVERWATER SERVICES FACILITY – LANDSCAPE CONTEXT



8.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review identifies specific clauses in the local environmental plan and development control plan documents which relate to the landscape and visual impact assessment of the Silverwater services facility construction site.

8.2.1 Auburn Local Environmental Plan 2010

In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the local environmental plan identifies the site as being zoned IN1 General Industrial. The objectives of this land use zoning do not identify any intentions for visual amenity or landscape character.

8.2.2 Auburn Development Control Plan 2010

The following objectives provide guidance for built form, streetscape and urban character for Industrial Areas:

- *The form, scale, design and nature of development maintains and enhances the streetscape and visual quality of industrial areas*
- *The scale of any new industrial development is compatible with surrounding industrial buildings*
- *All new development is compatible with the existing and intended future character of the locality in which it is located*
- *To promote industrial development which is both functional and attractive in the context of its local environment through appropriate design*
- *To encourage innovative industrial design which adds to and enhances the quality of the existing industrial areas of the Auburn local government area while recognising the design attributes of traditional industrial development* (Auburn Council, 2017, Industrial Areas, p.2-3).

1 VIEW ACROSS SILVERWATER ROAD TO DERBY STREET
2 EXISTING TREES ON THE SITE
3 DERBY STREET

8. SILVERWATER SERVICES FACILITY CONSTRUCTION SITE

8.3 Character and components of Stage 1

8.3 Character and components of Stage 1

The Silverwater services facility construction site would cover about a 2,700 square metres and include aboveground components on the corner of Silverwater Road and Derby Street.

Stage 1 at the Silverwater services facility site would comprise surface and underground works including:

- Retention and protection of one mature gum tree within the site (on the Silverwater Road site boundary) and the street trees adjacent to the site on Silverwater Road
- Removal of about five trees and all other vegetation within the site including:
- Three street trees on Derby Street
- All other vegetation within the site including one mature gum tree
- The following construction elements and works:
- Establishment of hoardings surrounding the construction site about three metres high
- Services facility shaft excavation adjacent to Derby Street at the north-eastern corner of the site
- Temporary plant and material storage at south-east corner of the site

FIGURE 8-2: SILVERWATER SERVICES FACILITY CONSTRUCTION SITE LAYOUT

- Site office, amenities and workshop at south and south-western corner of the site adjacent to Silverwater Road
- Road, parking, and site access works including:
- Temporary removal of on street parking and the footpath on Derby Street, adjacent to the site
- Site access and egress at Derby Street
- Traffic and pedestrian management signage and structures around the perimeter of the site as required
- The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs.

Stage 1 at the Silverwater services facility construction site would take about one year to complete including enabling and demolition works, and ventilation shaft excavation.

The construction would be carried out during standard working hours, and extended out of hours on Saturdays to 6pm.

Figure 8-2 identifies the construction site layout and indicative location of these components.

8.4 Assessment of landscape impact

The landscape and public realm areas which may potentially be impacted by Stage 1 are:

- Trees within the site, Silverwater Road and Derby Street streetscapes.

The following section summarises the assessment of impact for each of these landscape and public realm areas (refer to Table 2-7 for impact levels).

8.4.1 Trees within the site, Silverwater Road and Derby Street streetscapes

Existing conditions: Silverwater Road is a heavily trafficked road. It is six lanes wide in the vicinity of the site with concrete footpaths and a grassed verge. Derby Street is a two-lane road, with a left in left out access, from Silverwater Road, providing access to the surrounding industrial areas of Silverwater. There are no footpaths along Derby Street. The site includes a mature gum tree and some smaller saplings, which provides some visual amenity to the adjacent areas.

Where there are street trees and landscaped areas along these streets, views to the bulky built form is softened and amenity is improved. In other areas, the streetscape is dominated by the character of the built form and heavy vehicle traffic with limited pedestrian comfort and amenity. The flat terrain and homogeneous building form generally reduce legibility and wayfinding within the industrial areas of Silverwater.

Sensitivity: Silverwater Road is a heavily trafficked heavy vehicle route and major roadway through the Silverwater Industrial area. It is a thoroughfare for local and district users as well as workers from the surrounding industrial areas. Derby Street is a less heavily used road, which provides access into the industrial areas. The landscape on the site, Silverwater Road and Derby Street provide limited amenity, and are of **neighbourhood landscape sensitivity**.

Landscape impact: A large mature gum tree would be retained and all other vegetation within the site would be removed. The otherwise vacant lot would be converted into a construction site. The existing street trees on Silverwater Road would be retained, and three street trees on Derby Street would be removed. The removal of these trees would reduce the amenity of this section of Silverwater Road somewhat for pedestrians and road users.

Excavation of the shaft, adjacent material storage, site amenities and workshop would transform the character of this property into a construction site. The road verge and street parking adjacent to the construction site along Derby Street would be temporarily closed during construction reducing pedestrian accessibility and legibility.

Overall, these changes would be localised and affect a small part of these streetscapes. There would be a noticeable reduction in the landscape quality of the site and the adjacent streetscapes, which are of neighbourhood sensitivity, resulting in a **negligible landscape impact**.

8.5 Assessment of daytime visual impact

Due to the flat topography of Silverwater and visual containment provided by the large scale built form, views to the construction site are generally limited to short and medium distance views from the street, footpaths and properties adjacent to the site on Derby Street and Silverwater Road.

The following viewing locations were selected as representative of the range of views to Stage 1:

- Viewpoint 1: View north-east along Silverwater Road
- Viewpoint 2: View south along Silverwater Road
- Viewpoint 3: View south-west along Derby Street.

Figure 8-3 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

8.5.1 Viewpoint 1: View north-east along Silverwater Road

Existing conditions: The site is visible in the middle to background of this view beyond Silverwater Road, which comprises six lanes of traffic and a central median strip, with overhead powerlines crossing Silverwater Road (refer to Figure 8-4). The built form adjacent to the site is mainly two storey light

FIGURE 8-3: SILVERWATER SERVICES FACILITY CONSTRUCTION SITE - VIEWPOINT LOCATIONS

industrial and commercial buildings, set back from Silverwater Road. A cluster of mature trees, including two large gums form a skyline feature, providing some visual relief in this highly urban setting. These, and a row of trees to the south of the site, screen views into the site which is otherwise vacant.

Sensitivity: This view along Silverwater Road would be experienced by workers in adjoining commercial and industrial properties, and a large volume of road users. This view includes a small group of mature trees and saplings which is a visual feature within this otherwise visually harsh industrial environment. This view is of **neighbourhood landscape sensitivity**.

Visual impact: The vacant lot (centre of view) at the corner of Derby Street and Silverwater Road would be transformed into a construction site (refer to Figure 8-5). One of the mature gum trees within the site would be removed, partially opening up views into the site where there would be site offices. The site would be enclosed by hoarding, obstructing views to works within the site. There would be equipment visible above the hoarding and construction vehicles would be seen travelling south on Silverwater Road.

Overall, the amount of vegetation would be reduced with the removal of one locally prominent tree and three small street trees. While the works would introduce a construction character to this view, this would be largely absorbed into the scale and character of this view, which has an industrial urban form and considerable traffic movement in the foreground. Overall, there would be a noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

FIGURE 8-4: VIEWPOINT 1 – VIEW NORTH-EAST ALONG SILVERWATER ROAD, EXISTING VIEW

FIGURE 8-5: VIEWPOINT 1 – VIEW NORTH-EAST ALONG SILVERWATER ROAD, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

8. SILVERWATER SERVICES FACILITY CONSTRUCTION SITE

8.5 Assessment of daytime visual impact

FIGURE 8-6: VIEWPOINT 2 – VIEW SOUTH ALONG SILVERWATER ROAD, EXISTING

FIGURE 8-7: VIEWPOINT 2 – VIEW SOUTH ALONG SILVERWATER ROAD, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

8.5.2 Viewpoint 2: View south along Silverwater Road

Existing conditions: The site is visible in the middle to background of this view beyond Silverwater Road, which comprises six lanes of traffic and a central grassed median, overhead powerlines, and street signs including a large cantilevered digital sign (refer to Figure 8-6). The built form in the background of the view includes mainly two storey light industrial and commercial buildings, set back from the street, with large format advertising signage oriented towards Silverwater Road. Several mature street trees can be seen along Derby Street and Silverwater Road which partly screen views into the site.

Sensitivity: This view along Silverwater Road would be experienced by a large volume of road users and workers in adjoining commercial and industrial properties. There are several scattered mature trees which provide some visual relief within this otherwise visually harsh industrial environment. This view is of **neighbourhood landscape sensitivity**.

Visual impact: Several small street trees on Derby Street would be removed (left of view) as would the smaller gum tree, to the south of the site (right of view and in the background) (refer to Figure 8-7). The larger more visually prominent gum tree within the site would be retained, as would the mature streetscape vegetation along Silverwater Road. While this vegetation would continue to partially screen views into the southwestern corner of the site where there would be site offices, the removal of the street trees on Derby Street would open up views towards the centre and eastern areas of the site. In this area there would be workshops and material storage. These elements would be visible rising above hoarding which would be erected along the site boundaries, Silverwater Road and Derby Street. Construction vehicles would be seen accessing the site via Derby Street, with vehicles exiting south onto Silverwater Road.

While the works would result in the loss of several trees and introduce a construction character to this view, the works would be absorbed into the scale and character of the surrounding industrial development and foreground movement of traffic on Silverwater Road. Overall, there would be a noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

8.5.3 Viewpoint 3: View south-west along Derby Street

Existing conditions: This view shows the site in the centre middle ground from Derby Street, east of Silverwater Road (refer to Figure 8-8). In this location the streetscape comprises a wide road pavement, grassed verges, powerlines along the northern side, wide driveway crossovers and surface car parking areas directly adjacent to the street. There are several street trees in this view, including a row of mature native trees at the corner of Silverwater Road alongside the site. There are several large gum trees seen in this view which are a local skyline feature. These trees filter and screen views to Silverwater Road and the industrial development beyond, including the concrete batching plant at Derby Street west.

Sensitivity: This view along Derby Street would be experienced by road users and workers from the surrounding commercial and industrial properties. This view includes several scattered mature trees which provide some amenity within this otherwise visually harsh industrial environment. This view is of **neighbourhood landscape sensitivity**.

Visual impact: The site (centre of view) would be transformed into a construction site (refer to Figure 8-9). This would include the removal of several street trees on Derby Street and other vegetation within the site including one mature gum tree in the background of the view. Hoarding would be established around the perimeter of the site and would screen views into the site at street level. Equipment and works required for shaft excavation would

FIGURE 8-8: VIEWPOINT 3 – VIEW SOUTH-WEST ALONG DERBY STREET, EXISTING VIEW

FIGURE 8-9: VIEWPOINT 3 – VIEW SOUTH-WEST ALONG DERBY STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

be seen in the middle ground of this view, rising above the site hoarding. Heavy vehicles would be seen in the foreground of this view, accessing the site at Derby Street.

Although the leafy character of this view would be reduced and the works would introduce a construction character to this view, the construction site would be generally absorbed into the scale and character of the industrial setting. Overall, there would be a noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

8.6 Assessment of night-time visual impact

Existing conditions: The Silverwater services facility construction site is an area of **Medium district brightness (E3)**. The facility is located in an industrial area that is moderately lit at night, including building, security and car park lighting. There would be streetlighting and headlights from traffic on Silverwater Road and surrounding streets. There would also be a general skyglow and bright sources of light seen in this area.

Visual impact: There would be low-level security lighting within the site, including at the site entrance, shaft, offices and construction support areas. While the majority of work on the services facility construction site would be carried out during standard work hours, there may be some after hours delivery of large plant and equipment. In the largely industrial area of Silverwater, it is expected that the additional light sources and skyglow would be absorbed into the night scene, where similarly lit industrial complexes exist.

Overall, this night construction work would not create a perceived change in the amenity of the Silverwater area at night, resulting in a **negligible visual impact**.

8.7 Summary of impact

Table 8-1, 8-2 and 8-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 8-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Trees within the site, Silverwater Road and Derby Street streetscapes	Neighbourhood	Noticeable reduction	Negligible

TABLE 8-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View north-east along Silverwater Road	Neighbourhood	Noticeable reduction	Negligible
2	View south along Silverwater Road	Neighbourhood	Noticeable reduction	Negligible
3	View southwest along Derby Street	Neighbourhood	Noticeable reduction	Negligible

TABLE 8-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Silverwater services facility construction site	E3: Medium district brightness	No perceived change	Negligible

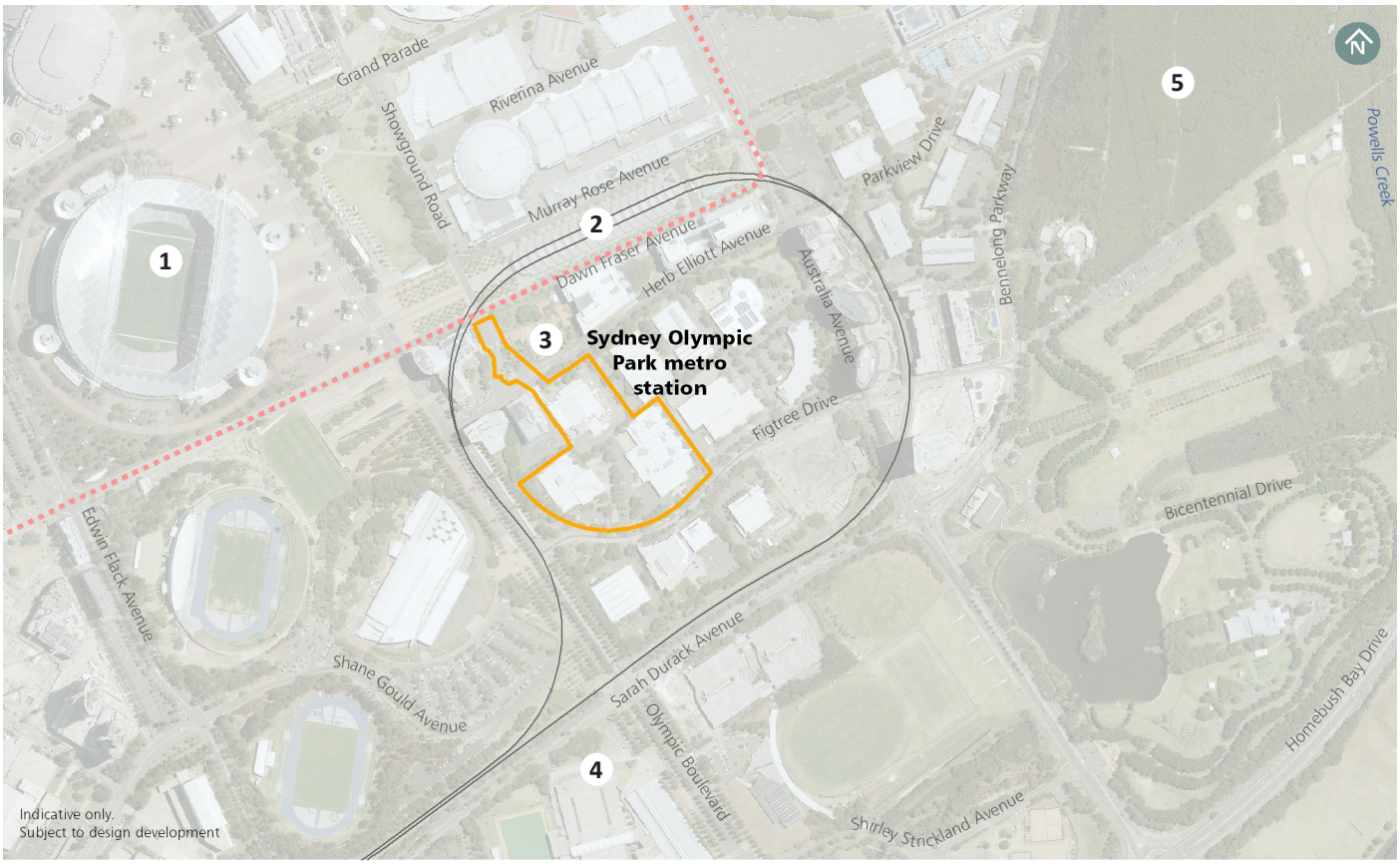
9. SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE

9.1 Existing environment

9.1 Existing environment

The International Olympic Committee selection of Sydney in 1993 to host the summer Olympics in 2000 provided the catalyst for the redevelopment of 640 hectares of land beside Homebush Bay in which Sydney Olympic Park is located. The derelict site was previously used for the State Brickworks and State Abattoirs and had a history of extensive wetland reclamation and landfilling. The urban renewal of Sydney Olympic Park represented one of the largest remediation projects in Australia and commenced with the construction of the Australia Centre, Sports Centre and Bicentennial Park (refer to Figure 9-1: Sydney Olympic Park metro station – Landscape context).

FIGURE 9-1: SYDNEY OLYMPIC PARK METRO STATION – LANDSCAPE CONTEXT



Construction site

Planned Parramatta Light Rail - Stage 2

Suburban rail network

1. ANZ Stadium
2. Olympic Park Station
3. Abattoir Heritage Precinct
4. Quaycentre
5. Bicentennial Park

The legacy of the Sydney 2000 Olympic and Paralympic Games at Sydney Olympic Park resulted in the creation of a series of iconic sporting and recreational facilities, including the ANZ Stadium, formerly known as the Olympic Stadium. The major event facilities are arranged around two principles axes; Olympic Boulevard and Dawn Fraser Avenue which provide grand ceremonial vistas between the various destinations. Built form and public realms areas within Sydney Olympic Park are required to exhibit design excellence. This is reflected in the high standard of architecture of the Olympic Park Station which contributes to the distinctive character and unique identity of Sydney Olympic Park.

Sydney Olympic Park is framed by extensive areas of green space which border two tributaries of the Parramatta River (Powells Creek and Haslams Creek). The parklands physically separate the development from nearby urban areas. A series of large scale landform markers known as the Sydney Olympic Park Markers are located within the greenspace areas and provide iconic visual landmarks and reference points assisting with legibility within Sydney Olympic Park. This includes the Bicentennial Marker on Australia Avenue. In addition, a diverse range of public art is dispersed throughout Sydney Olympic Park reflecting previous industrial uses and referencing the Sydney 2000 Olympic and Paralympic Games.

The construction site for Stage 1 is located to the south of Herb Elliott Avenue, an east-west aligned street, south of the Olympic Park Station. The site is within a business park setting which has a leafy streetscape character which contrasts with the sporting, recreation and entertainment areas adjacent to ANZ Stadium.

The northern part of the Sydney Olympic Park metro station footprint extends into the locally heritage listed Abattoir Heritage Precinct which comprises a collection of five Federation era buildings located within an attractive garden setting that is representative

1 ANZ STADIUM
2 AUSTRALIA AVENUE
3 OLYMPIC PARK STATION, DAWN FRASER AVENUE
4 SHOWGROUNDS DRIVE, VIEW TO HIGH RISE RESIDENTIAL AND HOTEL BUILDINGS

9. SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE

9.1 Existing environment

1 ABATTOIR HERITAGE PRECINCT
2 VIEW ALONG SHOWGROUNDS ROAD
3 FORMER GATEHOUSE

of Federation period landscaping. Many of the old buildings have now been demolished to make way for new facilities, however the original administration building (c.1913) has been restored and is currently used for office space.

The construction footprint includes the former Gatehouse (c.1918), *'a small single storey face brick building with a hipped terracotta shingled roof'* located on a prominent corner site at the junction of Showgrounds Road and Herb Elliott Avenue (NSW Public Works, 2013, p99). The construction site also includes part of the former carriage loop, which encircles a large palm grove including visually prominent *Washingtonia robusta* specimens.

The business park is intended to be converted into a high density mixed use town centre under the Sydney Olympic Park Master Plan 2030. This transformation is underway with the current construction of a mixed use development at 2 Figtree Drive, which is identified as a State Significant Development. Four buildings ranging in height from nine to 35 storeys will be constructed together with a new access road, landscaped podium and involve significant tree relocation.

Other future tall buildings near to the Sydney Olympic Park construction site include:

- An approved four and five storey commercial building with ground level retail on the corner of Sarah Durack Avenue and Olympic Boulevard
- Two 30 storey mixed use towers at proposed at 2A and 2B Australia Avenue
- An approved mixed use development including a 38 storey tower on the corner of Sarah Durack Avenue and Olympic Boulevard
- An approved mixed use development tower on the corner of Bennelong Parkway and Australia Avenue
- An approved eight storey mixed commercial and retail development on the corner of Australia Avenue and Herb Elliott Avenue.

Other future redevelopment plans within Sydney Olympic Park includes the proposed refurbishment of the ANZ stadium into a rectangular stadium by the NSW Government. Since hosting the Sydney 2000 Summer Olympics, the stadium has been used for a series of major events including the Rugby World Cup, the Asian Cup Final, the NRL, State of Origin and the AFL. Redevelopment works will be completed by mid 2021 and the stadium will host the NRL Grand Final for the next 25 years.

The proposed route of the future planned Parramatta Light Rail (Stage 2) would extend along Australia Avenue and Dawn Fraser Avenue and provide a further catalyst for redevelopment of Sydney Olympic Park.

1 HERB ELLIOTT AVENUE
2 HERB ELLIOTT AVENUE
3 FIGTREE DRIVE

9.2 Planning guidance

Te Sydney Olympic Park metro station is designated as a State significant precinct and is excluded from Council planning documents. Further to the planning review carried out in Section 3 of this technical paper, the following review identifies specific clauses in the State Environmental Planning Policy documents, as well as provisions in strategic and masterplanning documents, which relate to the landscape and visual impact assessment of the Sydney Olympic Park metro station construction site.

9.2.1 Sydney Regional Environmental Plan No 24—Homebush Bay Area, 2017

The Sydney Olympic Park metro station construction site is located within the Homebush Bay Area under the Sydney Regional Environmental Plan No 24—Homebush Bay Area. The State Abattoirs, located within the northern part of the site, is identified as a heritage conservation area. Under Part 4, s30.1, key considerations in relation to development within a heritage conservation area include whether:

'the features of the proposed building will be compatible with the heritage significance of the heritage conservation area, having regard to the form of, and materials used in, buildings that contribute to the heritage significance of the heritage conservation area.' (Part 1, cl.30 (1)))

Additionally, consideration is required as to*:*

- *The pitch and form of the roof (if any)*
- *The style, size, proportion and position of the openings for windows or doors (if any)*
- *The colour, texture, style, size and type of finish of the materials to be used on the exterior of the building*
- *The landscaped area of the site.* (Part 4, cl.30.2)

9.2.2 State Environmental Planning Policy (State Significant Precincts) 2005

Sydney Olympic Park is identified as a State Significant Precinct under Schedule 3, Part 23.

A key aim of this State Environmental Planning Policy is '*to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State'* (Part 1, cl.2(c)).

A number of clauses relate to this technical paper, these include:

Land use zoning

The construction site is zoned B4 Mixed Use. Objectives for this zone which relate to this technical paper include:

- *To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling*
- *To ensure that the Sydney Olympic Park site becomes an active and vibrant town centre within metropolitan Sydney*. (Division 2, cl.9.1).

Building heights

Maximum building heights within the construction site along Herb Elliott Avenue are permitted to reach 33 metres. Maximum building heights within the remainder of the construction site extending to Figtree Drive are permitted to reach 74 metres. The State Abattoirs has a maximum building height of nine metres.

Design excellence

Development in Sydney Olympic Park is required to exhibit design excellence which includes consideration of:

- *Whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved*
- *Whether the form and external appearance of the building will improve the quality and amenity of the public domain.* (Division 2, cl.30.2)

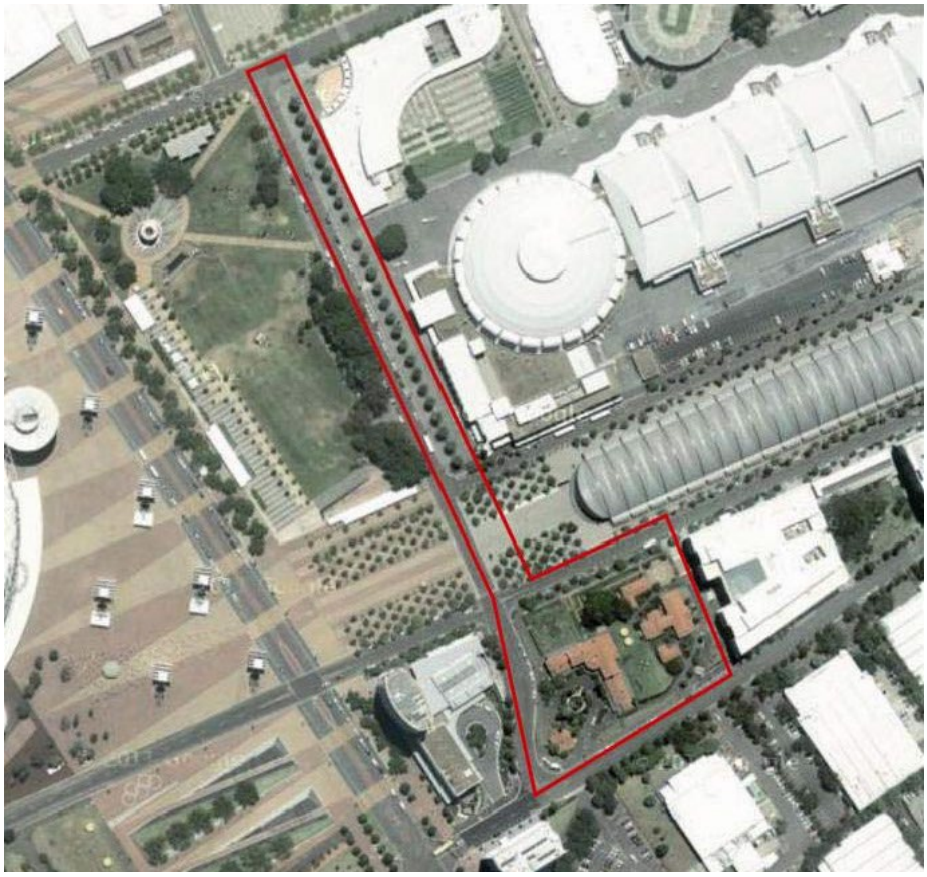
9.2.3 Abattoir Heritage Precinct Sydney Olympic Park: Conservation Management Plan, 2013

The Abattoir Heritage Precinct is bound by Herb Elliott Avenue, Showground Road and Dawn Fraser Avenue and includes an avenue of palm trees to the north along Showground Road (refer to Figure 9-2). The curtilage for the precinct includes '*the width of adjoining streets to ensure a visual buffer is retained, as well as the extant close-range views to the site*' (Part 4, s.4.2, p.64). The Conservation Management Plan proposes a revised curtilage of the precinct involving removing the avenue of palms from the precinct. This area of palms extends north and away from the site.

The Conservation Management Plan provides general conservation policies (Part 3, s.3.1, p.33), some of which relate to this technical paper, these include:

- *Any proposed new large-scale development in the vicinity should not overshadow the open spaces in the Abattoir Heritage Precinct* (Policy 8, p.40)
- *Where landscape elements require replacement due to growth or senescence, replant with species to match existing, in the existing layout, or one determined by further research* (Policy 16, p.43)

FIGURE 9-2 ABATTOIR HERITAGE PRECINCT (SOURCE: ABATTOIR HERITAGE PRECINCT SYDNEY OLYMPIC PARK: CONSERVATION MANAGEMENT PLAN, 2013, P.63)



- *External signage and new services (such as lighting) should be in harmony with the overall character of the place and complement the historic character of the building on which it is mounted* (Policy 28, p.53).

9. SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE

9.2 Planning guidance

FIGURE 9-3: TOWN CENTRE PRECINCT ILLUSTRATIVE PLAN (SOURCE: SYDNEY OLYMPIC PARK AUTHORITY, 2018)

9.2.4 Sydney Olympic Park Master Plan 2030, 2018

This document aims to '*provide a comprehensive approach to the development of Sydney Olympic Park*' (NSW Government Sydney Olympic Park Authority, 2018, p.6). A development proposal that contains a variation to any provision in this Master Plan may still be considered to be consistent with the Master Plan if the variation is '*justified in terms of the principles, strategies and intent*' of the Master Plan, including the ability to demonstrate that the proposal would deliver '*high quality urban amenity*' and '*design excellence*' (p.6).

The Sydney Olympic Park metro station construction site is located in the '*Central Precinct*', which is intended to be transformed into *'a vibrant, high density mixed use Town Centre with a strong commercial office and retail area to the north and a residential character along Figtree Drive*' (NSW Government Sydney Olympic Park Authority, 2018, p.121). The concept plan intends for the existing commercial lots within the construction site to be broken down into a series of smaller lots connected by a grid of new streets. Future uses include a new public open space 'Central Park' (refer to Figure 9-3 and 9-5) to be located adjacent to Herb Elliott Avenue and surrounded by commercial uses up to eight storeys. This would transition to mixed use and residential uses beside Figtree Drive within towers up to 20 storeys.

Important views to and from the town centre are identified in Figure 9-4 including a vista across the Heritage Abattoir gardens and Sydney Olympic Park Station metro construction site.

FIGURE 9-4: VIEWS TO AND FROM THE TOWN CENTRE (SOURCE: SYDNEY OLYMPIC PARK AUTHORITY, 2018)

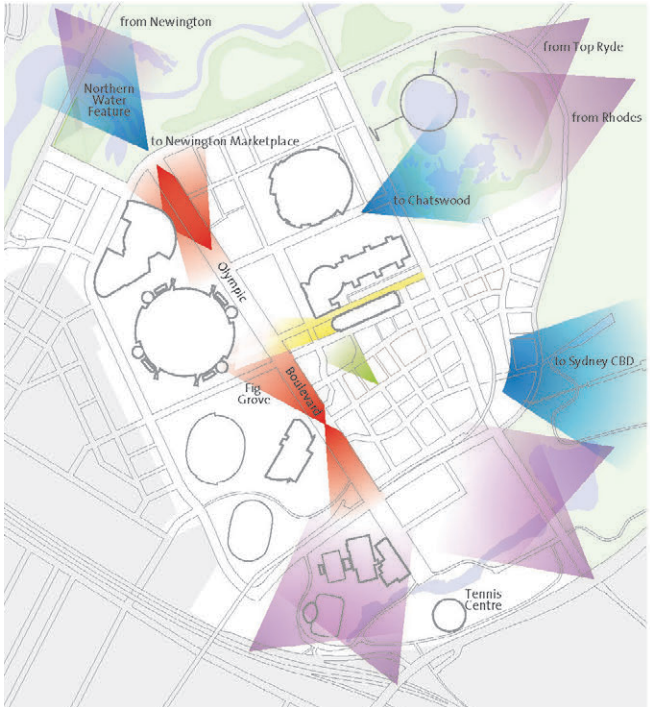


FIGURE 9-5: LANDSCAPE STRATEGY (SOURCE: SYDNEY OLYMPIC PARK AUTHORITY, 2018)

9. SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE

9.3 Character and components of Stage 1

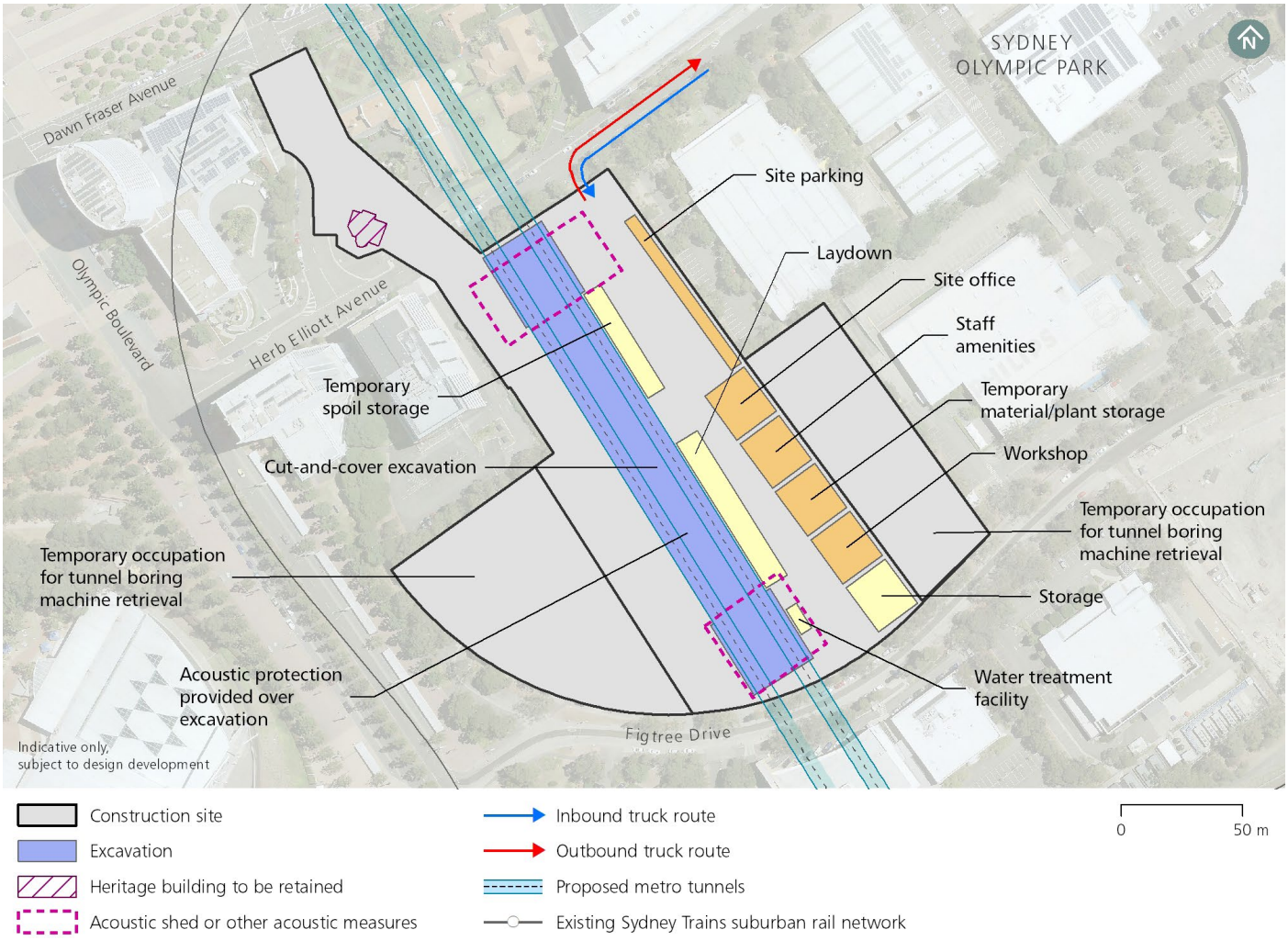
9.3 Character and components of Stage 1

The Sydney Olympic Park metro station construction site would cover about 23,900 square metres and include aboveground components on a site one block to the east of Olympic Boulevard, between Herb Elliott Avenue in the north and Figtree Drive to the south.

The key works and components that would be seen at this site include:

- Demolition of the following buildings and structures:
  - 8 Herb Elliott Avenue
  - 5 and 7 Figtree Drive
- The heritage listed former Gatehouse building would be protected during construction

FIGURE 9-6: SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE LAYOUT



- Removal of about 100 trees and all other vegetation within the site including:
  - Part of the Abattoir Heritage Precinct gardens adjacent to Buildings A and E (Administration building and Gatehouse), including part of the carriage loop planting and mature palm grove
  - Trees within the construction site, including within the car parks, site boundaries and entrance gardens
  - About two trees at Figtree Drive, located at the south-east and south-west corner of the construction site
- Construction elements and works:
  - Workshop, temporary material and plant store along the south eastern site boundary of the site
  - A metal clad acoustic shed on Herb Elliot Avenue (about 15 metres high)
  - A metal clad acoustic shed on Figtree Drive (about 15 metres high)
  - Temporary spoil storage and laydown areas to the centre of the site, north of the cut-and-cover works
  - Site offices, site parking and amenities to the north-east of the site
  - Tunnel boring machine retrieval
- Road network changes:
  - Temporary and short term closure of Herb Elliot Avenue
  - Temporary relocation of taxi rank on Herb Elliot Avenue
  - Pedestrianisation of Showground Road at the intersection with Dawn Fraser Avenue
- Site entry/exit on Herb Elliot Avenue
- Cut-and-cover station excavation and support. Would include the use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs etc
- Hoardings surrounding the construction site, about three metres high
- Traffic and pedestrian management signage and structures around the perimeter of sites as required.

Overall, Stage 1 at the Sydney Olympic Park metro station construction site would be carried out over about three and a half years, including enabling and demolition works, and station box excavation, and tunnel boring machine retrieval.

The hours of construction would be as follows:

- Demolition and concrete deliveries would be carried out during standard hours
- Underground works (within shafts and under the acoustic shed if required), spoil haulage and tunnel boring machine retrieval would be carried out 24 hours, 7 days a week.

Figure 9-6 identifies the construction site layout and indicative location of these components.

9.4 Assessment of landscape impact

The landscapes and public realm areas which may potentially be impacted by Stage 1 are:

- Herb Elliott Avenue and Showgrounds Avenue streetscape
- The Abattoir Heritage Precinct gardens
- Figtree Drive streetscape.

The following section summarises the assessment of impact for each of these landscapes and public realm areas (refer to Table 2-7 for impact levels).

9.4.1 Herb Elliott Avenue and Showground Road streetscapes

Existing conditions: The mature native street trees along much of Herb Elliott Avenue contribute to a leafy streetscape character and visually soften the scale and bulk of the adjacent commercial buildings. Built form along the southern side of the street is mostly setback from the street with generous garden areas, whereas buildings along the northern side of the street are generally located close to the street creating a more urban street interface.

SHOWGROUNDS ROAD

The Abattoir Heritage Precinct is located to the south of Herb Elliott Avenue, on the corner of Showground Road. The heritage buildings, landscaped gardens and a heritage listed palm grove within the Abattoir Heritage Precinct provide a visual contrast to the surrounding urban setting. The curtilage of the Abattoir Heritage Precinct extends across Herb Elliott Avenue and Showground Road to provide a visual buffer and maintain short distance views to the precinct.

A small pocket park, with sculptural art referencing the Olympic Games in Ancient Greece known as 'Discobolus', is located adjacent to the street and adds to the diversity of the streetscape.

Herb Elliott Avenue provides east west pedestrian connectivity, linking Olympic Boulevard and Australia Avenue. The grid street layout provides some permeability to the north of the Abattoir Heritage Precinct, however, the large block layout south of Herb Elliott Avenue forms a barrier for pedestrians. Showground Road connects Herb Elliott Avenue and the Abattoir Heritage Precinct to Dawn Fraser Avenue, the existing Olympic Park Station and Sydney Olympic Stadium. The streetscape and built form pattern along Herb Elliott Avenue will be transformed into a high density mixed use town centre in the future as a part of the *Sydney Olympic Park Master Plan 2030*.

Sensitivity: The Herb Elliott Avenue and Showground Road streetscapes provides east west and north south access within this area of Sydney Olympic Park for residents, workers from within the business park, and visitors to events within Sydney Olympic Park. The street trees along Herb Elliott Avenue are fundamental to the character of this street, providing shelter, shade and amenity for pedestrians and road users. These streetscapes adjoin the Abattoir Heritage precinct whose gardens have a landscape value within the local area providing visual

interest, shade and amenity. Showground Road has some heritage significance, but this is not apparent in the streetscape in this area. Overall, these streetscapes are of **local visual sensitivity**.

Landscape impact: Stage 1 would be located to the north and south of Herb Elliott Avenue, east of the intersection with Showground Road. To the north of Herb Elliott Avenue the construction site would be established on part of the Abattoir Heritage Precinct. To the south of Herb Elliott Avenue, the site would adjoin the road verge and the single row of street trees would be retained. The low-rise office building and trees within the site would be removed, and noise barriers and hoarding would be installed along the site boundary.

An acoustic shed would be installed, changing the streetscape character in this location. Construction vehicles accessing the site would also temporarily disrupt pedestrian movement along Herb Elliott Avenue, impacting accessibility in this area. The loss of trees within the site, particularly along the street front, would reduce the leafy character and level of comfort and amenity for pedestrians using adjacent pathways.

Showground Road would be closed to vehicular traffic and access to properties on this street would be diverted. This would reduce the permeability of this area and accessibility to the existing station and stadium forecourt.

There would be a changed character in this area with the loss of close range views to the heritage character buildings and leafy streetscape. The perimeter fencing may also reduce east west pedestrian connectivity along the street. Although only a small portion of this streetscape would change, the impacts would extend across both sides of the road in this section. Overall, there would be a considerable reduction in the quality of the streetscape of Herb Elliott Avenue, which is of local sensitivity, and a **moderate adverse landscape impact**.

HERB ELLIOTT AVENUE

HERB ELLIOTT AVENUE

9. SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE

9.4 Assessment of landscape impact

9.4.2 The Abattoir Heritage Precinct gardens

Existing conditions: Although its context has been dramatically altered since the development of Sydney Olympic Park, the Abattoir Heritage Precinct reflects the scale and historic importance of the State Abattoir which was constructed during the early twentieth century. Designed in a Federation style, the collection of buildings is set within landscaped gardens and lawns. The gardens provide an important setting to the buildings and comprise formal rose gardens, a palm grove, avenue planting and succulent gardens.

The palm grove is located in the centre of a carriage loop, between the Administration Building (Building A) and the Gatehouse (Building E) and comprises densely planted trees including mature fan palms (*Washingtonia robusta*). The palm trees create a distinctive skyline feature and a reference point assisting with legibility and wayfinding within this part of Sydney Olympic Park.

ABATTOIR HERITAGE PRECINCT GARDENS

Due to the extensive redevelopment works which have been carried out at Sydney Olympic Park, the abattoir buildings and gardens are one of the few remaining visual reminders of the site's former history.

Sensitivity: The Abattoir Heritage Precinct gardens are a local landscape feature, providing amenity, shade and the opportunity for passive recreation, within this area of Sydney Olympic Park. While it would not attract a large number of visitors, it would be appreciated incidentally by local residents, workers and visitors to the park during events. The Abattoir Heritage Precinct gardens are of **local landscape sensitivity**.

Landscape impact: The construction site would extend north from Herb Elliott Avenue, between Buildings A and E, towards Showgrounds Road. Although the buildings would be retained, the gardens separating them would be partially removed, including the southern portion of the palm grove and surrounding carriage loop gardens. The construction site would effectively sever the garden, losing the overall symmetry of the design. Removal of the mature fan palm trees *(Washingtonia robusta)* would change the skyline in this area and reduce the amenity and legibility of the precinct. The location of the construction site would also require the temporary diversion of footpaths and connections to ANZ Stadium, the existing station and Dawn Fraser Avenue, further affecting accessibility and legibility of the area.

An acoustic shed would be located directly opposite adjacent to the street front and would appear as about five times the height of the Gatehouse building. The large scale temporary structure would alter the visual relationship between the built form on the site and the heritage precinct. This juxtaposition would, however, be in character with future intents for taller development on the construction site. As the shed is located to the south of the Abattoir Heritage Precinct, overshadowing to open spaces within the precinct would be unlikely.

Overall, the presence of construction work and loss of the gardens, which provide an important setting to the Gatehouse and old Administration building, would result in a considerable reduction in the quality of this landscape, which is of local sensitivity, resulting in a **moderate adverse landscape impact**.

9.4.3 Figtree Drive streetscape

Existing conditions: Figtree Drive is a narrow low speed street with two traffic lanes, indented parking areas, planted verges and footpaths on both sides.

Similar to Herb Elliott Avenue, the streetscape character of Figtree Drive is characterised by tree lined streets which assist in unifying the low scale built form of the business park setting. The trees form a consistent landscape element within this part of Sydney Olympic Park. They contribute to the amenity and sense of place of the streetscape and provide shade and comfort for pedestrians.

Figtree Drive provides east-west connectivity between Olympic Boulevard and Australia Avenue. The curved nature of the streetscape and varying topography adds to the visual interest of the streetscape but reduces sightlines to adjacent major spine roads, thus reducing legibility for pedestrians along the street.

Land uses along Herb Elliott Avenue are intended to be transformed into a high density mixed use town centre. The construction of a mixed use tower development at 2 Figtree Drive is a part of this transition.

Sensitivity: The Figtree Drive streetscape provides east-west access through the business park and would be used by workers and residents from surrounding areas. The street trees are fundamental to the character of this street, providing shade and amenity. This streetscape is of **local visual sensitivity**.

FIG TREE DRIVE

Landscape impact: The construction site would be established along the northern side of Figtree Drive, extending across the properties at 5-7 Figtree Drive. The low-rise office buildings would be removed, and noise barriers and hoarding would be installed along the site boundary. An acoustic shed would be installed beside Figtree Drive, changing the scale of built form, set back and streetscape character in this location. Although the single row of street trees would be retained, the mature trees and shrubs within the site, including the car parks, property boundaries and landscape setbacks would be removed. Pedestrian movement along the street may change periodically, impacting accessibility in this area.

Overall, the leafy streetscape character of Figtree Drive would be largely maintained and only a small portion of this streetscape would change, resulting in a noticeable reduction in the quality of this landscape, which is of neighbourhood sensitivity. This would result in a **negligible landscape impact**.

9. SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE

9.5 Assessment of visual impact

9.5 Assessment of daytime visual impact

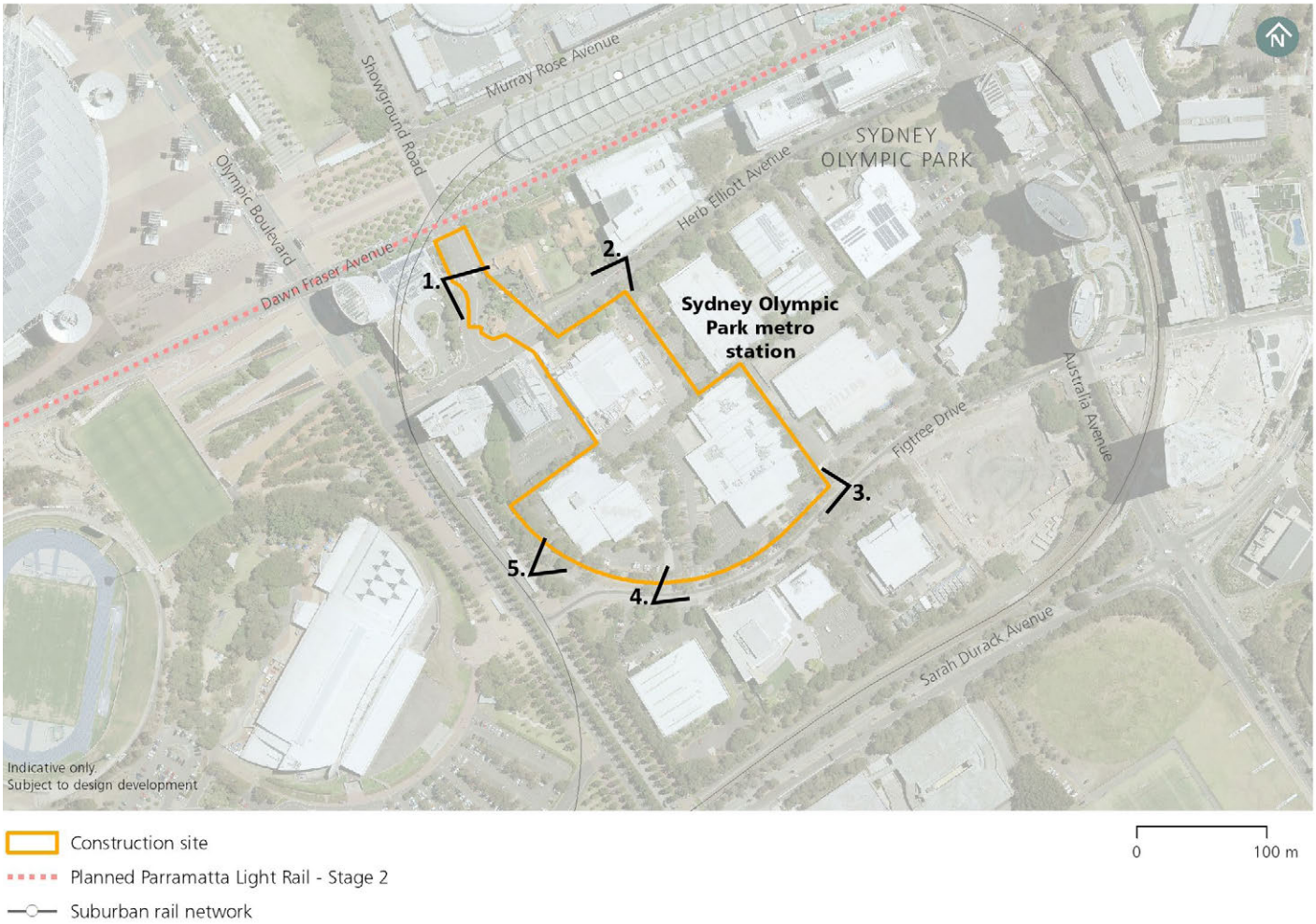
The Sydney Olympic Park metro station construction site would be visible from the immediate surrounding streets within the south-eastern part of the urban renewal area where large scale built form and vegetation does not screen views. This includes parts of Herb Elliott Avenue, Figtree Drive and Showground Road. More distant views are available from near Dawn Fraser Avenue along Showground Road, due to the wide, open nature of this street and heritage curtilage of the adjacent Abattoir Heritage Precinct.

Possible elevated views are available from the upper levels of nearby hotels, tall commercial buildings and residential towers. Views may also be available from the Gantry Walk at the ANZ Stadium and Bicentennial Marker on Australia Avenue.

The following viewing locations were selected as representative of the range of views to Stage 1:

- Viewpoint 1: View south-east along Showground Road
- Viewpoint 2: View south-west along Herb Elliott Avenue
- Viewpoint 3: View north-west along Figtree Drive

FIGURE 9-7: SYDNEY OLYMPIC PARK METRO STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS



- Viewpoint 4: View east along Figtree Drive
- Viewpoint 5: View north-east from Olympic Boulevard.

Figure 9-7 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

9.5.1 Viewpoint 1: View south-east along Showground Road

Existing conditions: In this view, the gardens and palm grove within the Abattoir Heritage Precinct provide a distinctive setting to the heritage buildings and gatehouse near the corner of Showground Road and Herb Elliott Avenue (refer to Figure 9-8). This heritage setting is juxtaposed with a modern commercial building which dominates the skyline in the background (right of view). The low rise commercial buildings within the construction site are screened from view by the gatehouse (centre of view) and adjoining mature vegetation. In the future the background of this view is intended to be transformed into a high density mixed use town centre as a part of the *Sydney Olympic Park Master Plan 2030*.

Sensitivity: This view along Showground Road would be experienced by adjacent road users and from visitors to the adjacent hotels. This view includes the Abattoir Heritage Precinct gardens which are a local visual feature. This view is therefore of **local landscape sensitivity**.

Visual impact: A construction site would be established in the middle and foreground of this view, extending between Showground Road and Herb Elliott Avenue (refer to Figure 9-9). Showground Road would be closed and noise barriers and hoardings would be installed along the construction site boundary, partially blocking views to the construction works.

Although the historic gatehouse building would remain, part of the landscaped gardens

FIGURE 9-8: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG SHOWGROUND ROAD, EXISTING VIEW

FIGURE 9-9: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG SHOWGROUND ROAD, INDICATIVE EXTENT OF CONSTRUCTION SITE (DEMOLITION AND TREE REMOVAL SHOWN BY ORANGE SHADING)

FIGURE 9-10: VIEWPOINT 2 – VIEW SOUTH-WEST ALONG HERB ELLIOTT AVENUE, EXISTING VIEW

FIGURE 9-11: VIEWPOINT 2 – VIEW SOUTH-WEST ALONG HERB ELLIOTT AVENUE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

that provide a distinctive setting and skyline to this section of the Abattoir Heritage Precinct would be removed, including the palm grove. The curtilage and visual buffer around the Abattoir Heritage Precinct streetscape would be visually obstructed from the noise barriers and hoardings.

The acoustic shed established to the south of Herb Elliott Avenue, would be visible in the background of this view, rising above the gatehouse. The shed would rise about half the height of the adjacent hotel building.

The loss of visually important vegetation, obstruction to the visual buffer around the heritage area and the presence of construction work within the heritage precinct, would result in a considerable reduction in the amenity of this view, which is of local sensitivity. Overall, there would be a **moderate adverse visual impact** to this view.

9.5.2 Viewpoint 2: View south-west along Herb Elliott Avenue

Existing conditions: This section of Herb Elliott Avenue is characterised by an avenue of native street trees which provide a leafy character and filter views to low rise commercial uses along the southern side of the street (left of view) (refer to Figure 9-10). This low scale built form contrasts somewhat with taller development which is visible further west along the street (background).

This view demonstrates the variation in street interfaces between the low rise commercial uses which are located behind a generous landscaped setback on the southern side of Herb Elliott Avenue and commercial built form which directly abuts the street front boundary with no setback (right of view).

Sensitivity: This view along Herb Elliott Avenue would be experienced by adjacent road users and from visitors to the adjacent hotels, residential and commercial properties. This view includes a glimpse to the Abattoir Heritage Precinct gardens which are a local visual feature. This view is of **local landscape sensitivity**.

FIGURE 9-12: VIEWPOINT 2 – VIEW SOUTH-WEST ALONG HERB ELLIOTT AVENUE, PHOTOMONTAGE

Visual impact: A construction site would be established along the southern side of Herb Elliott Avenue, extending across much of the centre of this view (refer to Figure 9-11). The low-rise commercial buildings (centre of view) would be demolished and replaced with an acoustic shed (refer to Figure 9-12), which would be located close to the street and rise more than double the height of the existing building. Mature street trees and vegetation within the construction site would be removed, reducing the leafy streetscape character of the view. The existing driveway to this property (left of view) would be closed and converted into the main site access point during construction, with heavy vehicle haulage travelling east towards Australia Avenue. Noise barriers and hoardings would be erected along the site boundary, partially blocking views to the construction site. The upper section of the acoustic sheds and possibly the spoil and plant storage areas would be visible above the hoarding. The increase in built form scale would, however, be in context with a future high density town centre proposed for this location in the *Sydney Olympic Park Master Plan 2030*.

Overall, there would be a considerable reduction to the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

FIGURE 9-13: VIEWPOINT 3 – VIEW NORTH-WEST ALONG FIGTREE DRIVE, EXISTING VIEW

FIGURE 9-14: VIEWPOINT 3 – VIEW NORTH-WEST ALONG FIGTREE DRIVE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

9.5.3 Viewpoint 3: View north-west along Figtree Drive

Existing conditions: Figtree Drive contains large low rise commercial buildings which are setback from the street behind a landscaped setting. The tree lined streets filter views to adjoining built form and surface car parking areas (refer to Figure 9-13). In this view, the commercial buildings on the northern side (right of view) are located on a small rise. The landform slopes to the east and south. The curvilinear form of the streetscape reduces the length of vistas along the street. The low rise business park is intended to be transformed into a future high density mixed use town centre according to the *Sydney Olympic Park Master Plan 2030*.

Sensitivity: This view along Figtree Drive would be experienced by adjacent road users and from within the surrounding footpaths and buildings within the business park. This view is of **neighbourhood landscape sensitivity**.

Visual impact: The southern end of the construction site would be established in the middle ground of this view, along the northern side of Figtree Drive. The low rise commercial building at 5 Figtree Drive (right of view) would be demolished and the adjacent car park would be removed (refer to Figure 9-14). While the street trees would remain, all vegetation within the site would be removed.

An acoustic shed would be installed in the background of this view, extending over the cut-and-cover works. The shed would appear more than double the size of the existing low rise built form and the appearance of this structure would be exaggerated due to the slight rising landform on the site. However, this new built form would be in character with current construction works nearby and future high density development intended in the business park.

Hoarding would be installed along the construction site boundary along Figtree Drive, partially blocking views to the shed and construction facilities along the eastern site boundary, including the workshop building, water treatment plant and plant storage area.

As the visual bulk of the temporary structures would be comparable to the existing built form and the leafy character of the streetscape would be largely maintained, the works would result in a noticeable reduction in the amenity of this view. This view is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

9.5.4 Viewpoint 4: View east along Figtree Drive

Existing conditions: From this viewpoint in Figtree Drive, commercial built form is set back from the street behind large surface car parking areas and landscaped areas (refer to Figure 9-15). Mature native street trees and vegetation within private properties reinforce the leafy streetscape character and filter views to the existing built form. The tree lined avenue is broken in part by wide driveway entries to these commercial properties.

Existing high-density development in the background, and future high rise development which can be seen under construction in this view (right of view), signify the changing urban character of this part of Sydney Olympic Park. The visual character of the built form and streetscape character of the business park is currently undergoing change and is intended to be further intensified in the future.

Sensitivity: This view along Figtree Drive would be experienced by adjacent road users and from within the surrounding footpaths and buildings within the business park. This view is of **neighbourhood landscape sensitivity**.

FIGURE 9-15: VIEWPOINT 4 – VIEW EAST ALONG FIGTREE DRIVE, EXISTING VIEW

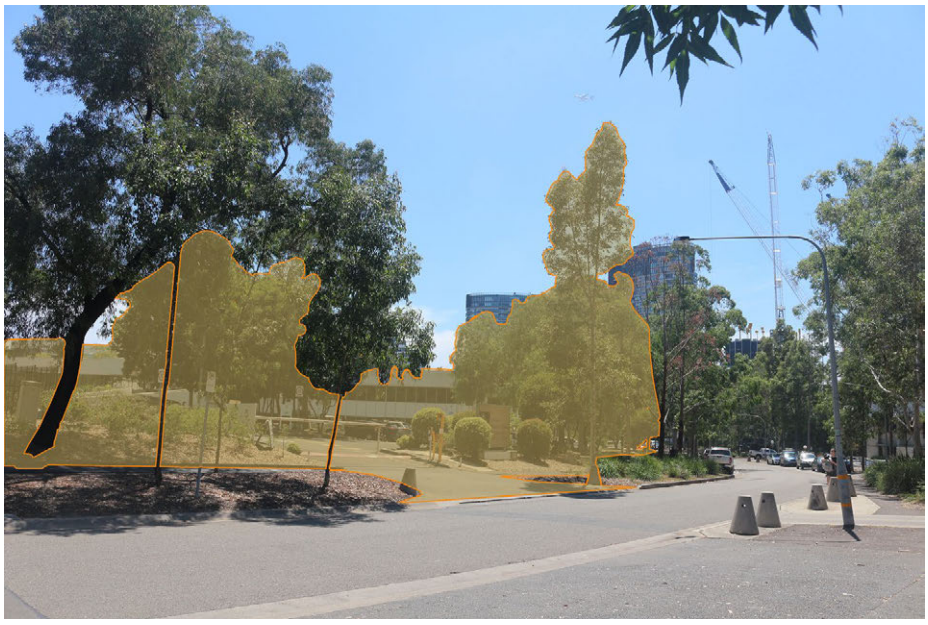


FIGURE 9-16: VIEWPOINT 4 – VIEW EAST ALONG FIGTREE DRIVE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Visual impact: The southern end of the construction site would be seen in the middle ground of this view, north of Figtree Drive. The low-rise commercial building at 5 Figtree Drive (centre of view) and adjacent building at 7 Figtree Drive (out of view) would be demolished (refer to Figure 9-16). The car parks and trees between these buildings would be removed and replaced with an acoustic shed. The acoustic shed would rise more than double the height of the existing built form on the site, but be viewed in the context of the high rise development which forms a backdrop to this view.

The leafy streetscape character of this view would be largely maintained apart from the removal of one street tree within the view. Noise barriers and hoarding would be installed along the construction site boundary along Figtree Drive, filtering views to the lower parts of the shed and facilities beyond, which would include workshops, water treatment plant and a laydown area.

The construction works would be generally absorbed into the view and overall changing character of the business park setting. This would result in a noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, and a **negligible visual impact**.

9.5.5 Viewpoint 5: View north-east from Olympic Boulevard

Existing conditions: This view is from a wide pedestrian plaza adjacent to a row of bus stops on Sydney Olympic Boulevard (refer to Figure 9-17). A shady grove of trees and shrubs filter views to a driveway and a large low rise commercial building (centre and right of view). To the north (left of view) there is a high rise hotel at the corner of Herb Elliott Avenue. The site is identified to be transformed into a future high density mixed use town centre in the *Sydney Olympic Park Master Plan 2030*.

Sensitivity: Views along Olympic Boulevard would be experienced by bus interchange users, road users, workers within adjoining commercial development and visitors to events within Sydney Olympic Park. While views along the ceremonial Boulevard are of regional importance, this incidental view from the rear of the bus stop area is of lesser importance and is therefore of **local visual sensitivity**.

Visual impact: The construction site would be established in the middle ground of this view, between the broad Olympic Boulevard footpath and Figtree Drive. The low rise commercial building at 7 Figtree Drive (right and centre of view) would be demolished (refer to Figure 9-18). Although vegetation within the site would be removed, the street trees along Olympic Boulevard and the adjacent grove of native trees and shrubs would remain, therefore maintaining the leafy character of Olympic Boulevard and filtering views to the construction site.

An acoustic shed would be installed in the background of this view, extending over the cut-and-cover works beside Figtree Drive. The shed would appear more than double the size of the existing low rise built form, rising above the grove of trees, in the background of this view. Hoarding would be installed along the construction site boundary along Olympic Boulevard and Figtree Drive, further blocking views to the shed and construction facilities along the south-western site boundary, including the lower part of the shed. This temporary new built form would be in character with current construction works nearby in Figtree Drive and future construction of high density development proposed.

Overall, the works would result in a noticeable reduction in the amenity of this view, due to the retention of streetscape vegetation and consistency with the scale of the existing and future development intended for this part of Sydney Olympic Park. This view is of local sensitivity, resulting in a **minor adverse visual impact**.

FIGURE 9-17: VIEWPOINT 5 – VIEW NORTH-EAST FROM OLYMPIC BOULEVARD, EXISTING VIEW

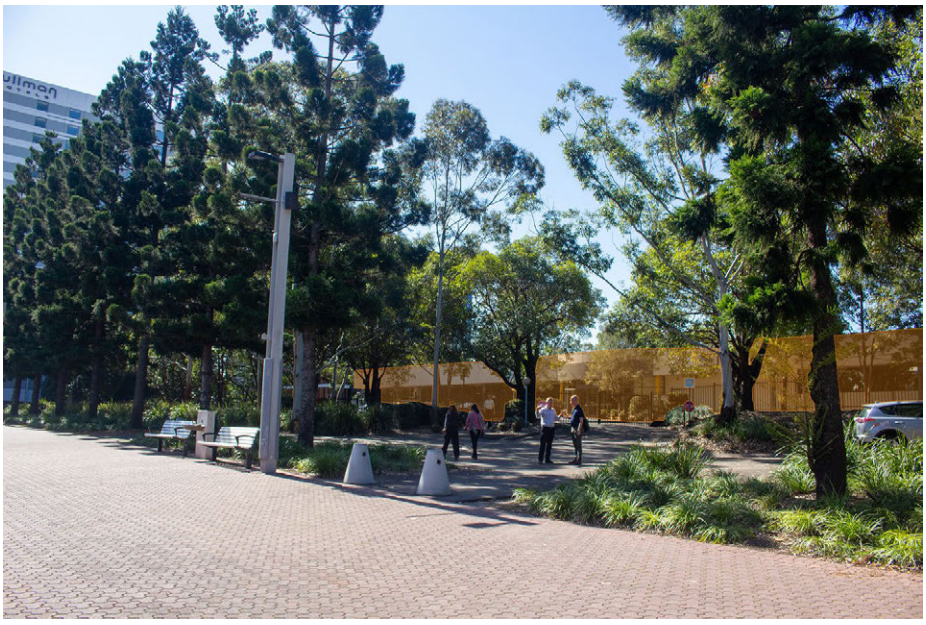


FIGURE 9-18: VIEWPOINT 5 – VIEW NORTH-EAST FROM OLYMPIC BOULEVARD, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

9.6 Assessment of night-time visual impact

Existing conditions: The Sydney Olympic Park metro station construction site is an area of **Medium district brightness (E3)**. This is due to the concentration of hotels and low rise commercial buildings within this location and adjacent residential towers. Brightly lit sporting, recreational, entertainment and major transport facilities nearby such as the ANZ Stadium and the existing Olympic Park Station contribute to the night-time lighting levels. Streetlights and headlights from traffic particularly during major events would further add light to the night scene. The mature vegetation on Herb Elliott Avenue and Figtree Drive somewhat contain the light from streetlights and traffic on these streets.

Visual impact: There would be night works required within the Sydney Olympic Park metro station construction site during construction. This would be for underground works and would be mostly contained within an acoustic shed. However, there would be some lighting required outside of these areas including lighting associated with site offices, car parking and construction support areas. This lighting would be somewhat screened by the site hoarding, street trees and some adjacent buildings. Near the Abattoir Heritage Precinct this lighting would contrast with the lower light levels of this place. If alternative acoustic measures are provided instead of an acoustic shed, all lighting would be designed to minimise light spill and skyglow.

The removal of mature vegetation within the construction site would also potentially allow adjacent elevated hotels and nearby residential towers, which overlook the site, to view night-time works and construction vehicle movement along Herb Elliott Avenue. These works would be generally in character with the nearby brightly lit facilities from events within Sydney Olympic Park and the associated heavy traffic that occurs along major roads during these occasions. The additional light sources and skyglow that would be seen from these areas would be generally absorbed into the existing moderately lit night scene.

Overall, there would be a noticeable reduction in visual amenity at night to the Sydney Olympic Park metro station construction site, which is a medium district brightness environment. This would result in a **minor adverse visual impact** at night.

9.7 Summary of impact

Table 9-1, 9-2 and 9-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 9-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Herb Elliott Avenue and Showground Road streetscapes	Local	Considerable reduction	Moderate adverse
2	The Abattoir Heritage Precinct gardens	Local	Considerable reduction	Moderate adverse
3	Figtree Drive streetscape	Local	Noticeable reduction	Negligible

TABLE 9-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south-east along Showground Road	Local	Considerable reduction	Moderate adverse
2	View south-west along Herb Elliott Avenue	Local	Considerable reduction	Moderate adverse
3	View north-west along Figtree Drive	Neighbourhood	Noticeable reduction	Negligible
4	View east along Figtree Drive	Neighbourhood	Noticeable reduction	Negligible
5	View north-east from Olympic Boulevard	Local	Noticeable reduction	Minor adverse

TABLE 9-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Sydney Olympic Park metro station construction site	E3: Medium district brightness	Noticeable reduction	Minor adverse

10. NORTH STRATHFIELD METRO STATION CONSTRUCTION SITE

10.1 Existing environment

10.1 Existing environment

The North Strathfield metro station construction site is situated in the rail corridor and on Queen Street, generally between Pomeroy and Wellbank Streets, in North Strathfield (refer to Figure 10-1: North Strathfield metro station – Landscape context).

The North Strathfield neighbourhood centre is located on Queen Street, which is aligned generally north to south, and parallel to the existing North Strathfield Station and rail corridor. A block of early twentieth century two-storey commercial terrace buildings, with retail and offices at street level and some residences above, address the street and form the local centre. Mature street trees along Queen Street create a strong north south visual boundary, screening the station and rail corridor from the adjacent residential area.

A heritage listed garden is located on Queen Street, at the eastern entrance to the existing

FIGURE 10-1: NORTH STRATHFIELD METRO STATION – LANDSCAPE CONTEXT

Construction site

Suburban rail network

1. North Strathfield Station
2. Railway Heritage Gardens
3. North Strathfield neighbourhood centre
4. North Strathfield Educational precinct
5. North Strathfield 'Bakehouse Quarter'

0 100 m

North Strathfield station. This is a local landscape and visual feature considered to add … '*greatly to the suburban setting of Queen Street'* (NSW State Heritage Inventory, 2009). Extending south from these gardens along the rail side of Queen Street, a mature row of street trees are also heritage listed.

The existing North Strathfield Station is within a cutting set below the level of Queen Street. The s170 heritage listed station (c. 1918) is characterised by a distinctive single storey Victorian style red brick platform building with a gabled roof, wide corrugated metal awnings and decorative timber valances at either end of the awnings. A contemporary steel and concrete footbridge, and lift has recently been constructed and provides access to the existing North Strathfield Station from Queen Street, via the heritage garden.

The existing station is surrounded by single storey detached residential properties and low rise residential apartment and townhouse buildings to the east and a mix of schools and other commercial uses to the west. To the north of the existing station, the Pomeroy Street over bridge provides east-west connectivity across the rail line and elevated views over the station.

Further to the south, the commercial core of North Strathfield is located between the rail corridor and George Street, including the '*Bakehouse Quarter'*, located in the historic former Arnott's complex.

Works for the North Strathfield Rail Underpass project have resulted in the clearing of vegetation along the rail cuttings which have since been revegetated. A maintenance area in the construction site was also constructed as part of that project and is partly screened by the street trees along the western verge of Queen Street.

1 ORNAMENTAL GARDEN AT EASTERN ENTRANCE TO NORTH STRATHFIELD METRO STATION

2 NORTH STRATHFIELD NEIGHBOURHOOD CENTRE, QUEEN STREET

3 HERITAGE LISTED LOPHOSTEMON CONFERTUS TREES, QUEEN STREET

4 VIEW TO POMEROY STREET OVERBRIDGE

10. NORTH STRATHFIELD METRO STATION CONSTRUCTION SITE

10.2 Planning guidance

10.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review identifies specific clauses in the local environmental plan and development control plan documents, as well as provisions in strategic and masterplanning documents which are of note to the landscape and visual impact assessment of the North Strathfield metro station construction site.

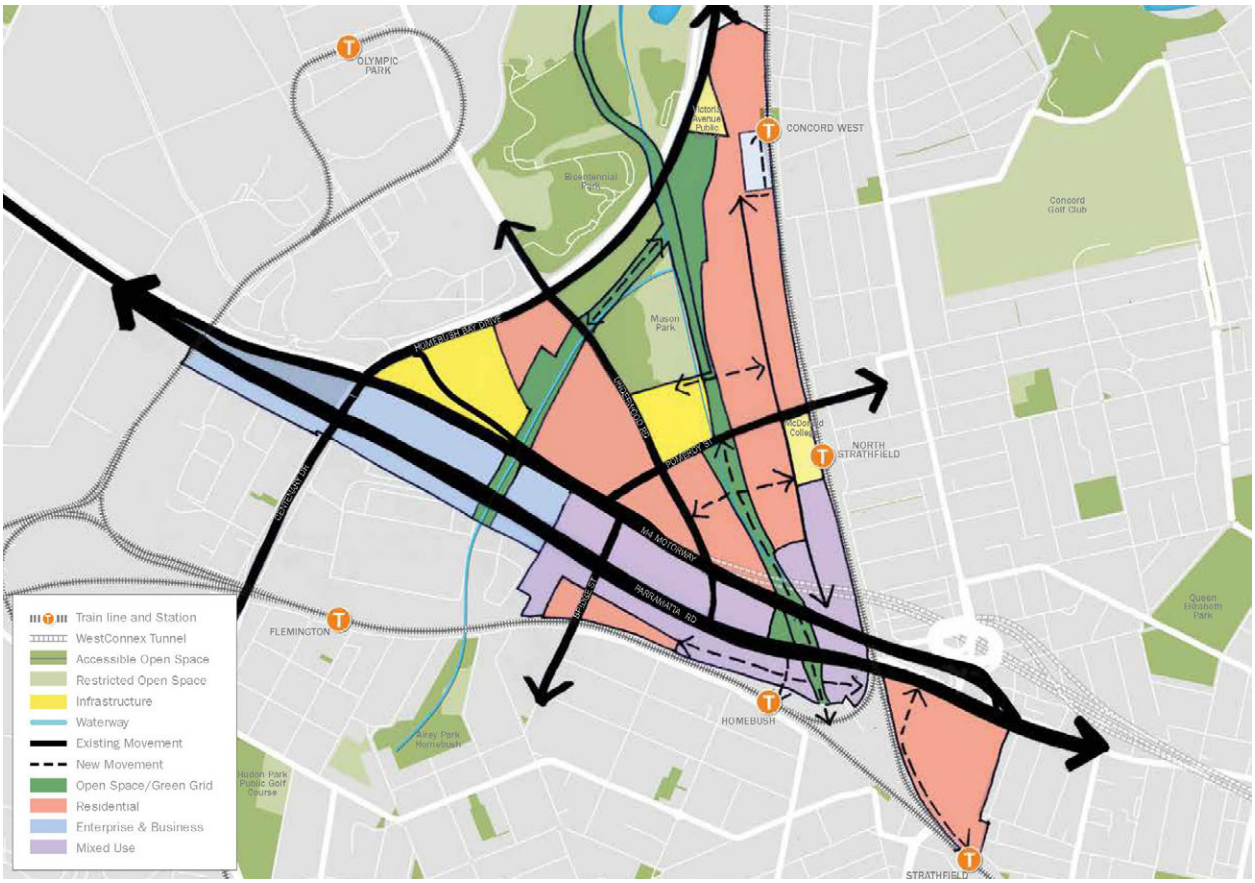
10.2.1 Canada Bay Local Environmental Plan 2013

In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the following is of note:

Land use zoning

The construction site along Queen Street, between Waratah and Wellbank Streets is zoned B1 Neighbourhood Centre. The construction site west of Queen Street, alongside the rail corridor, is zoned SP2 Railway Infrastructure. To the west of the rail corridor, the construction site is zoned R2 Low Density Residential between Pomeroy, George and Malta streets. The objectives for these zones do not relate to maintaining or enhancing visual amenity or landscape character.

FIGURE 10-2: HOMEBUSH STRUCTURE PLAN (SOURCE: PARRAMATTA ROAD CORRIDOR URBAN TRANSFORMATION PLANNING AND DESIGN GUIDELINES - IMPLEMENTATION TOOL KIT, 2016, P.129)



Building heights

Maximum building heights along Queen Street are permitted to reach 8.5 metres, reflecting the character of one to two storey development in the North Strathfield neighbourhood centre. To the west of the rail corridor, maximum building heights within the construction site are capped at 8.5 metres, reflecting this low density residential area.

Heritage

The northern construction site contains a '*landscaped park and ornamental garden'* along Queen Street which is listed as a local heritage item and also on the s170 register. This area includes low shrub planting and two rows of native trees (*Lophostemon confertus,* 'Brushbox') along Queen Street which are also heritage listed. The southern construction site adjoins a small stand of heritage listed native street trees adjacent to the corner of Shipley Avenue and Queen Street.

10.2.2 Canada Bay Development Control Plan 2017

The construction site is located in a low density residential area. The development control plan includes the following objectives regarding 'access to views' in residential areas:

- *To protect and enhance opportunities for vistas and public views from streets and public places*
- *To ensure views to and from the site are considered at the site analysis stage*
- *To recognise the value of views from private dwellings and encourage view sharing*
- *To recognise the value of view sharing whilst not restricting the reasonable development potential of the site.* (City of Canada Bay, 2017, Part E.2.5).

The construction site is not within a 'special precinct', however, it is adjacent to '*Concord West Precinct*', a '*transit oriented community which features higher densities that maximise site renewal opportunities*', (s.2.15) which is located north of Pomeroy Street.

10.2.3 Parramatta Road Urban Transformation Strategy, 2016

This document prepared by Urban Growth NSW provides a 30 year strategy to guide growth along a section of Parramatta Road corridor which extends for 20 kilometres from Granville to Camperdown and includes a number of local government areas. The strategy includes land along the Parramatta Road corridor together with a series of precincts which have been identified for urban renewal.

The North Strathfield metro station construction site is located within the Homebush precinct which is adjacent to an activity hub comprising mixed use development which extends to Homebush Station. This area is intended to contain high density development and have a *'revitalised and active urban mixed-use character*' (Urban Growth NSW, p.96).

The strategy is supported by *Planning and Design Guidelines* (2016) for Parramatta Road which provide a structure plan for the Homebush precinct demonstrating these principles as shown in Figure 10-2.

10.3 Character and components of Stage 1

Stage 1 would include aboveground components on two sites, one to the north-east of the existing North Strathfield Station, which is predominately within the rail corridor and Queen Street (the northern construction site, covering about 6,500 square metres), and a smaller site to the south-east of the existing station (the southern construction site, covering about 1,000 square metres).

At the **northern construction site** the key works and components that would be seen include:

- Removal of about 30 trees and all other vegetation within the site including:
  - The northern garden beds and trees within the heritage listed ornamental gardens
  - Street trees along the western side of Queen Street, beside the northern construction site
  - All vegetation within the northern construction site
- Construction elements and works:
  - Water treatment plant to the north-east of the site
  - laydown area and temporary spoil piles within the centre of the site
  - Material and plant storage area at the southern part of site
  - The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs etc
  - Site fencing and hoarding surrounding the construction site, about three metres high
- Adjustments to parking, pedestrian and public transport access:
  - Temporary closure of the western footpath on Queen Street between the existing station and Pomeroy Street
  - Temporary relocation of the bus stop and a kiss-and-ride area on the western side of Queen Street north of Wellbank Street
  - Temporary relocation of the zebra crossing across Queen Street from the north of Wellbank Street to the south of Wellbank Street
  - Traffic and pedestrian management signage and structures around the perimeter of sites as required.

At the **southern construction site** the key works and components that would be seen include:

- the following construction elements and works:
  - Site fencing
  - Construction site parking
  - Double stacked site offices and amenities
  - Site access via the existing site entry on Queen Street.

In total the duration of Stage 1 at this location would be about one and a half years including enabling and demolition works and station excavation.

The construction would generally be carried out during standard working hours.

Figure 10-3 identifies the construction site layout and indicative location of these components.

FIGURE 10-3: NORTH STRATHFIELD METRO STATION CONSTRUCTION SITE LAYOUT

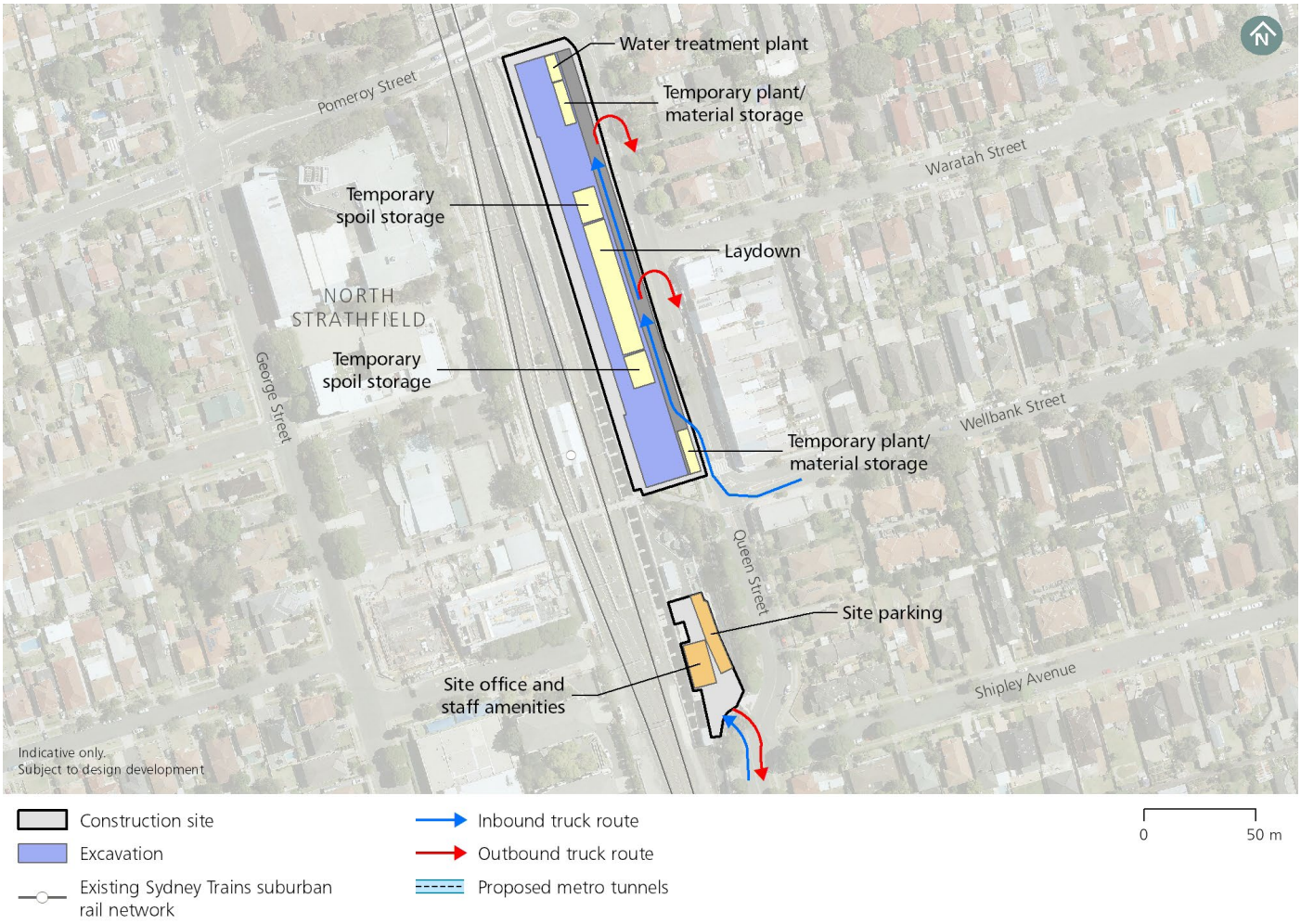


FIGURE 10-4: HERITAGE GARDENS, VIEW FROM THE EXISTING STATION FOOTBRIDGE

FIGURE 10-5: HERITAGE GARDENS, VIEW FROM THE EXISTING STATION FOOTBRIDGE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

10.4 Assessment of landscape impact

The landscapes and public realm areas which may potentially be impacted by Stage 1 are:

- Railway heritage gardens
- Queen Street streetscape.

The following section summarises the assessment of impact for each of these landscapes and public realm areas (refer to Table 2-7 for impact levels).

10.4.1 Railway heritage gardens

Existing conditions: This small ornamental garden (refer to Figure 10-4) contributes to the local identity of the North Strathfield neighbourhood centre, providing a visual feature which marks the entry to the existing station. The garden has a formal layout with straight pathways forming triangular garden areas, lined with low manicured hedges and containing roses and other decorative plants. The gardens are framed by trees. These gardens provide pedestrian access from Queen Street to the existing station. The pathways are well lit to provide for pedestrian usage at night-time.

Sensitivity: The railway heritage gardens are a local landscape feature providing amenity, shade and the opportunity for passive recreation. They contribute to the sense of place and identity of this neighbourhood centre. These gardens are experienced by a large number of commuters, as well as contributing to the character of the surrounding streets and neighbourhood centre. The Railway heritage gardens are of **local landscape sensitivity**.

Landscape impact: The construction site would extend across the northern half of the gardens and the trees, clipped hedges and ornamental plantings would be removed (refer to Figure 10-5). This change would reduce the legibility, accessibility and sense of place in this location. The loss of this vegetation and tree canopy would adversely affect the level of shade and comfort at the existing station entrance. The pedestrian

crossing at Queen Street, which provides a direct link between the existing station and local shops, would be relocated to the south of Wellbank Street, further affecting the legibility of this area.

The gardens, which provide a setting to the existing station and local centre would be partially removed, resulting in a considerable reduction in the landscape quality. This is a landscape of local sensitivity, resulting in a **moderate adverse landscape impact**.

10.4.2 Queen Street streetscape

Existing conditions: Queen Street forms the main street for the North Strathfield neighbourhood centre and is characterised by an avenue of mature Brushbox trees which have a local heritage listing. The trees contribute to a leafy streetscape character enhancing the amenity of the surrounding residential area.

Pedestrian connectivity to the existing station is strengthened by footpaths to both sides of Queen Street and a centrally located pedestrian crossing near the station entrance. Street trees and continuous awnings to the front of the neighbourhood centre provide shade and comfort for pedestrians. A secure bike locker area is located adjacent to the railway gardens, supporting cycle access to the station.

The railway gardens and distinctive architectural facades of the commercial terrace buildings are local visual landmarks and contribute to the legibility of the area. Legibility is further reinforced by the grid pattern of the surrounding residential streets which channel views towards Queen Street and the station.

Sensitivity: Queen Street provides a focal point for this community and includes the heritage character local centre. This streetscape is used by a large number of commuters and local residents, workers and visitors to the local area and North Strathfield Station. Queen Street is of **local landscape sensitivity**.

1 HERITAGE LISTED LOPHOSTEMON CONFERTUS TREES
2 MATURE TREE PLANTING ALONG QUEEN STREET
3 TERRACE BUILDINGS ALONG QUEEN STREET
4 VIEW SOUTH ALONG QUEEN STREET

Landscape impact: The northern construction site would be located to the west verge of Queen Street, between the existing station entrance and Pomeroy Street. Construction vehicles would share the local road network, accessing the site from both Queen Street and Pomeroy Street. The street trees along this section of Queen Street, and the group of mature trees and seating at the corner of Pomeroy Street, would be removed, reducing the level of shade and comfort in this area. This tree loss combined with the concentration of activity within the construction site and movement along the haulage route would adversely affect the character of this streetscape. North-south access along the western verge, and east-west pedestrian connectivity with the station, would be reduced during Stage 1. Overall, there would be a considerable reduction in the character and quality of this landscape, which is of local sensitivity, resulting in a **moderate adverse landscape impact**.

10. NORTH STRATHFIELD METRO STATION CONSTRUCTION SITE

10.5 Assessment of daytime visual impact

10.5 Assessment of daytime visual impact

The North Strathfield metro station construction site is located on elevated land which falls in a westerly direction towards Powells Creek. The visual catchment is mostly contained by surrounding urban built form and vegetation adjacent to the rail corridor. There are short range views from the adjacent existing North Strathfield Station and adjacent residential streets on the eastern side of the construction site including Queen, Beronga, Wellbank and Waratah Streets.

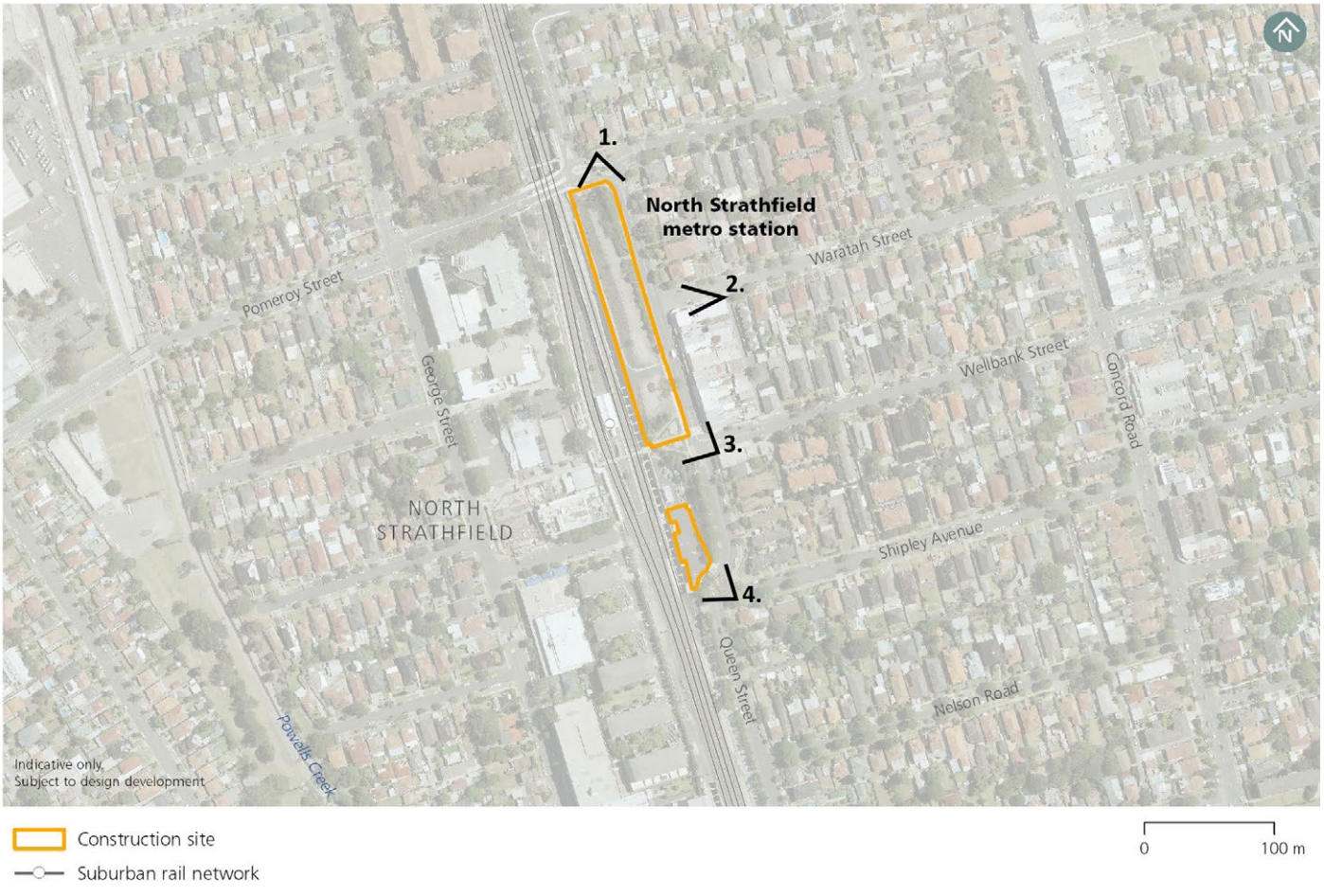
From the west, glimpsed views are possible from Hamilton Street East, and there would be elevated views from nearby residential, educational and commercial multi-storey buildings which overlook the rail corridor.

The following viewing locations were selected as representative of the range of views to Stage 1:

- Viewpoint 1: View south along Queen Street and Beronga Street
- Viewpoint 2: View west from Waratah Street
- Viewpoint 3: View north-west from the corner of Queen and Wellbank Streets
- Viewpoint 4: View north-west from Queen Street.

Figure 10-6 identifies the location of these viewpoints.

FIGURE 10-6: NORTH STRATHFIELD METRO STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS



The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

10.5.1 Viewpoint 1: View south along Queen Street and Beronga Street

Existing conditions: This view along Queen Street represents views from the residential properties to the north of the site, on Pomeroy Street and areas of Queen Street (left of view) (refer to Figure 10-7). This view includes a small landscaped roundabout in the foreground, with Queen Street extending south from this roundabout (centre of view). A row of mature street trees along the southern verge of Queen Street encloses this view from the existing railway station, which is located in a cutting and out of view. Street trees to the east of Queen Street partly screen views to the low density residential properties which are located to the west of Queen Street (left of view).

Sensitivity: This view along Queen Street is seen from a concentration of residential properties, and adjacent road users. The mature vegetation in this view is a local visual feature. This view has a **local visual sensitivity**.

Visual impact: A construction site would be established in the middle ground of this view, extending along the western side of Queen Street (centre and right of view). The vegetation along this section of Queen Street, between Pomeroy Street and the existing station entrance, would be removed, reducing the leafy character of the view (refer to Figure 10-8). A laydown area, temporary spoil storage and a water treatment plant would be seen at the north-western corner of the site (centre of view). Two-way traffic access and existing on street car parking along Queen Street would be maintained. Construction vehicles would be seen entering and exiting the site at Queen Street, in the centre of this view. Strengthening works to Pomeroy Street bridge (if required) would also be seen. Hoardings would be installed along the site boundary, partially blocking views to

FIGURE 10-7: VIEWPOINT 1 – VIEW SOUTH ALONG QUEEN STREET AND BERONGA STREET, EXISTING VIEW

FIGURE 10-8: VIEWPOINT 1 – VIEW SOUTH ALONG QUEEN STREET AND BERONGA STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

FIGURE 10-9: VIEWPOINT 2 – VIEW WEST ALONG WARATAH STREET, EXISTING VIEW

FIGURE 10-10: VIEWPOINT 2 – VIEW WEST ALONG WARATAH STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

the site facilities. Overall, there would be a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact.**

10.5.2 Viewpoint 2: View west along Waratah Street

Existing conditions: This view from Waratah Street illustrates the view from the residential properties along this section of Queen Street, and the side streets which extend perpendicular to the site (refer to Figure 10-9). Waratah Street comprises predominantly low rise detached properties (right of view) and also two storey shopfronts facing Queen Street (left of view). The existing street trees along the southern verge of Queen Street and vegetation within the rail corridor provide a vegetated backdrop to this view. The rail corridor and North Strathfield Station buildings are screened from view as they are set below the level of the street in a cutting. The mature street trees along both Queen and Waratah Streets contribute to a leafy streetscape character.

Sensitivity: Views from Waratah Street are seen from a concentration of residents and their visitors, road users, and locals approaching the local commercial area and existing station. The mature vegetation in this view are a local visual feature. This view is of **local visual sensitivity**.

Visual impact: The construction site would be established between Queen Street and the rail corridor (refer to Figure 10-10). The existing vegetation within the rail corridor and the street trees along the western road verge of Queen Street would be removed, reducing the leafy character of this view. The existing street trees on the eastern side of Queen Street and along Waratah Street would be retained and somewhat filter views to the site from the adjacent detached residential properties (right of view).

Hoardings would be located along the site boundary and would screen views to the lower areas of the site. Construction vehicles would also be seen travelling along Queen Street in the foreground of this view.

Overall, due to the removal of vegetation and scale of the construction activity, Stage 1 would create a considerable reduction in the amenity of this view. As this is a view of local sensitivity this would result in a **moderate adverse visual impact**.

10.5.3 Viewpoint 3: View north-west from the corner of Queen and Wellbank Streets

Existing conditions: The railway heritage garden at the eastern entry to the existing North Strathfield station entry (left of view) can be seen across the intersection at the corner of Queen and Wellbank Streets (refer to Figure 10-11). The existing station is located in a cutting and screened from view by the existing trees which form a part of the railway heritage gardens. The previous construction site for the North Strathfield station accessibility upgrade (part of the Transport Accessibility Program) is visible in the middle and background (centre) of this view (now completed). Temporary site offices and temporary site security fencing can be seen in this construction site. To the east (right of view) commercial terrace buildings line Queen Street with awnings and wide footpaths, channelling the view along the streetscape.

Sensitivity: This view from Queen and Wellbank Streets is seen by a concentration of residents and local road users, local workers and visitors accessing the existing North Strathfield station and Queen Street neighbourhood centre. The locally heritage listed Railway heritage gardens are a local landscape feature and are seen in the centre of this view. These views are of **local visual sensitivity**.

Visual impact: A linear construction site would be established in the middle ground of this view, between Queen Street and the rail corridor. The northern half of the railway heritage gardens would be demolished, including the trees which visually enclose the gardens (refer to Figure 10-12). The street trees along the western verge of

FIGURE 10-11: VIEWPOINT 3 – VIEW NORTH-WEST FROM THE CORNER OF QUEEN AND WELLBANK STREETS, EXISTING VIEW

FIGURE 10-12: VIEWPOINT 3 – VIEW NORTH-WEST FROM THE CORNER OF QUEEN AND WELLBANK STREETS, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Queen Street and within the construction site would also be removed, substantially reducing the leafy character of this section of Queen Street. This tree removal would allow views between the terrace buildings and the construction site, as well as opening up views to the existing rail corridor beyond.

Site access would be located immediately north of the railway heritage gardens, and heavy vehicles would be seen travelling west along Wellbank Street, and along Queen Street. The pedestrian crossing in the foreground of this view, would be removed and relocated further south.

Overall, the loss of vegetation and extent of the construction activity would create a noticeable reduction in the amenity of this view. As this is a view of local sensitivity it would result in a **minor adverse visual impact**.

10.5.4 Viewpoint 4: View north-west from Queen Street

Existing conditions: From the corner of Queen Street and Shipley Avenue, a row of heritage listed native street trees can be seen on the southern verge of Queen Street (centre of view) (refer to Figure 10-13). These mature trees contribute to the leafy character of the southern end of Queen Street and screen most views towards the existing North Strathfield station entrance. The heritage character terrace buildings on the northern side of Queen Street are visible in the background of the view (right of view). The entry to the rail maintenance area is visible in the centre of this view, where there is a break in the trees. This allows views into the rail corridor, over the existing station and to a vegetated skyline in the distance.

Sensitivity: This view north from Queen Street is seen by a concentration of local residents, road users, local workers and visitors accessing the existing North Strathfield Station and the Queen Street neighbourhood centre. The heritage character terrace buildings on Queen Street, which are a local visual feature, can be seen in the background of this view. These views are therefore of **local visual sensitivity**.

Visual impact: The site would extend across the rail maintenance area (centre of view) and would include double stacked construction site offices and amenity buildings, which would obstruct long range views across the existing station and to the vegetated background (refer to Figure 10-14). Light vehicles would be seen accessing the site and site car parking area. The existing gates, security fence and heritage listed brushbox trees along Queen Street would be retained. These trees would screen views to the northern construction site, which would be located in the background of this view. This vegetation would also continue to partly screen the construction site from nearby residences.

Overall, the scale of construction in this view would be somewhat absorbed into the character of the existing rail corridor and maintenance facility. There would be a noticeable reduction in the amenity of this view, which is a view of local sensitivity, and a **minor adverse visual impact**.

FIGURE 10-13: VIEWPOINT 4 – VIEW NORTH-WEST FROM QUEEN STREET, EXISTING VIEW

FIGURE 10-14: VIEWPOINT 4 – VIEW NORTH-WEST FROM QUEEN STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

10.6 Assessment of night-time visual impact

Existing conditions: The setting of the North Strathfield metro station construction site is an area of **Medium district brightness (E3)**. While the residential areas would include some lighting from properties and local streets, the lighting levels would increase in the North Strathfield commercial area on Queen Street. The existing North Strathfield Station, schools and a mix of other commercial uses to the west of the station also add to the brightly lit night sky. Mature vegetation within the site and along adjacent streets would assist in reducing light intrusion into adjacent residential areas. Works for the North Strathfield Station upgrade, which are currently being carried out from the construction site, have involved occasional night-time works including excavation works.

Visual impact: There would generally be no night works required at the North Strathfield metro station construction site. There may, however, be some oversized deliveries at night and there would be some security lighting at the northern site.

The removal of the mature street trees and vegetation along Queen Street would open up views to the site, and also to the brightly lit areas to the west of the site including the existing station. The lighting within the site would, however, be somewhat contained by perimeter site fencing and/or hoarding in views from the residential properties opposite the site.

There would also be some security lighting at the southern site for the site offices and car parking area. This additional lighting would be partly screened by the existing vegetation which would be retained in the vicinity of the southern construction site.

Overall, the removal of trees would open up views to the site, which may include some additional lighting at night. This additional lighting would be seen in the context of the brightly lit station, rail corridor and commercial area on Queen Street. This would result a noticeable reduction in the amenity of views from surrounding streets and a **minor adverse visual impact** at night.

10.7 Summary of impact

Table 10-1, 10-2 and 10-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 10-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Railway heritage gardens	Local	Considerable reduction	Moderate adverse
2	Queen Street streetscape	Local	Considerable reduction	Moderate adverse

TABLE 10-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south along Queen Street and Beronga Street	Local	Considerable reduction	Moderate adverse
2	View west along Waratah Street	Local	Considerable reduction	Moderate adverse
3	View north-west from the corner of Queen and Wellbank Streets	Local	Noticeable reduction	Minor adverse
4	View north-west from Queen Street	Local	Noticeable reduction	Minor adverse

TABLE 10-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	itude	
1	North Strathfield metro station construction site	E3: Medium district brightness	Noticeable reduction	Minor adverse

11. BURWOOD NORTH STATION CONSTRUCTION SITE

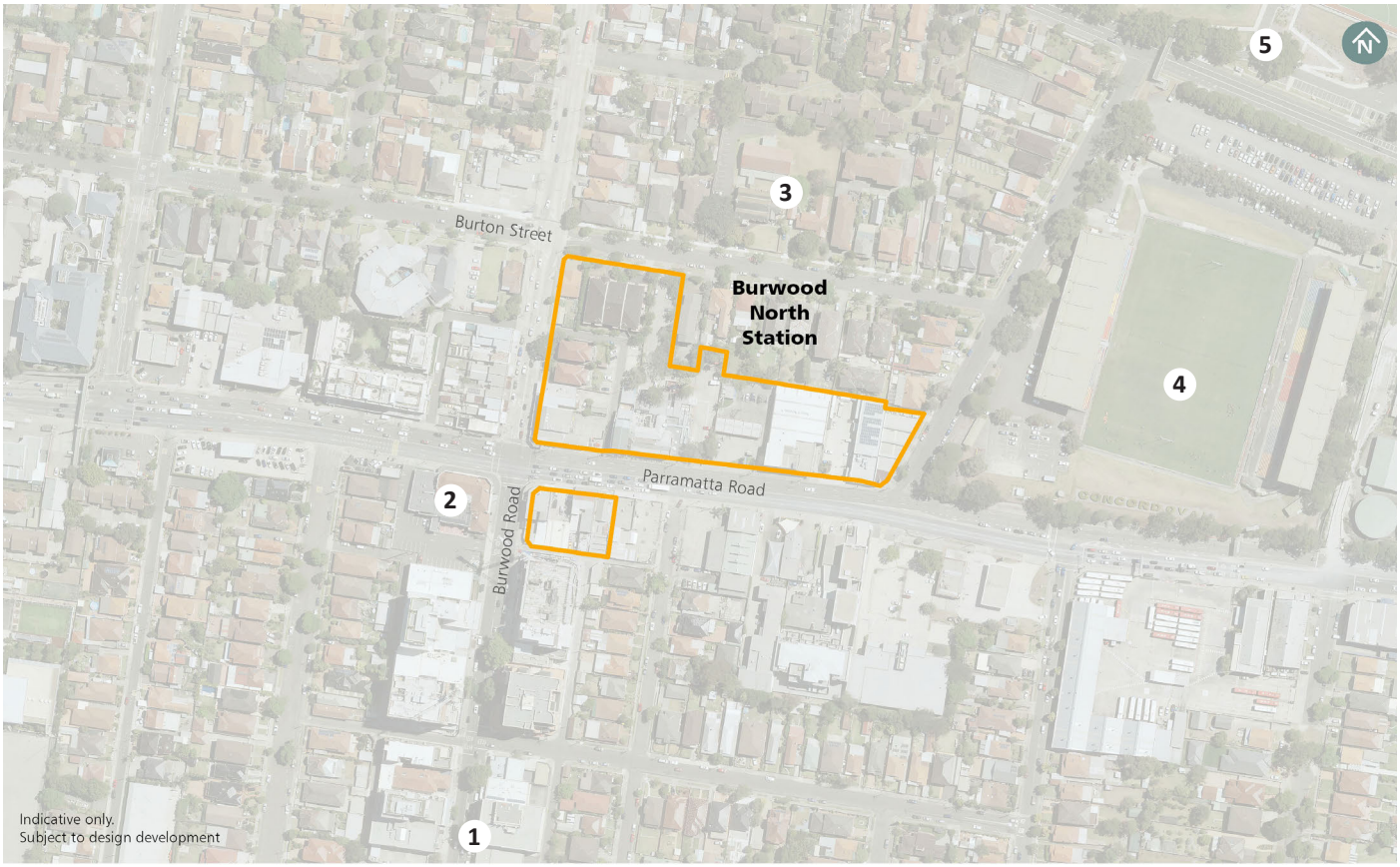
11.1 Existing environment

11.1 Existing environment

The Burwood North Station construction site is situated on two sites, generally between Burwood Road and Loftus Street. One construction site would be to the north of Parramatta Road (northern construction site) and the second to the south of Parramatta Road (southern construction site) (refer to Figure 11-1: Burwood North Station – Landscape context).

Parramatta Road extends from Parramatta CBD to Sydney CBD. This heavily trafficked road physically and visually separates the urban communities of Burwood and Concord. Within the vicinity of the Burwood North Station construction site, the road corridor is six lanes wide and heavily trafficked. It comprises a variety of retail, commercial, light industrial, medium density development and open space uses. This road presents a visually harsh streetscape with few street trees, poor pedestrian environments and vehicle dominated uses.

FIGURE 11-1: BURWOOD NORTH STATION – LANDSCAPE CONTEXT



Construction site

1. Burwood town centre
2. Bath Arms Hotel
3. St Luke's Anglican Church
4. Concord Oval
5. Cintra Park hockey field

0 100 m

The urban form along this section of Parramatta Road is largely fragmented. It contains some remnant buildings which exhibit a traditional main street character, such as the local heritage listed Bath Arms Hotel on the corner of Parramatta Road and Burwood Road. This intersection is identified as a gateway to the Burwood town centre to the south in the *Burwood Local Environmental Plan 2012.* At this location, three buildings with a heritage character address the intersection, contributing to the visual character and legibility of this area.

Burwood Road is a busy north-south road which is currently undergoing increased intensification with the recent construction of medium density development near Parramatta Road. This changing character is intended to continue along the Parramatta Road corridor. The construction site is located within the Burwood–Concord precinct, which is identified as a future mixed use corridor with a mix of tall to mid rise residential development in the *Parramatta Road Urban Transformation Strategy* (2016). The intersection of Parramatta Road and Burwood Road is also identified as a future major centre.

Nearby, the local heritage listed St Luke's Anglican Church directly opposite the construction site on Burton Street forms a notable local visual feature. The church is located in an attractive landscaped setting and contributes to the amenity of the residential area to the north of the construction site.

Concord Oval, located on the corner of Loftus Street and Parramatta Road, is an important regional sporting facility. Concord Oval contains a local heritage listed gate and five mature fig trees which were once the entrance to St Luke's Park. The Oval is intended to be redeveloped by the City of Canada Bay Council, including the construction of a new indoor recreation centre and passive recreation areas.

1 INTERSECTION OF BURWOOD AND PARRAMATTA ROAD
2 ST LUKES ANGLICAN CHURCH
3 CONCORD OVAL
4 BURTON STREET

11. BURWOOD NORTH STATION CONSTRUCTION SITE

11.2 Planning context

11.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review identifies specific clauses in the local environmental plan and development control plan documents, as well as provisions in strategic and masterplanning documents, which are related to the landscape and visual impact assessment of the Burwood North construction site.

11.2.1 Canada Bay Local Environmental Plan 2013

In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the following provisions of relevance to the northern construction site

Land use zoning

Part of the northern construction site, adjacent to Parramatta Road, is zoned B6 Enterprise Corridor. The remainder of the northern construction site, adjacent to Burton Street, is zoned R3 Medium Density Residential. The objectives for these zones do not specifically include any which relate to visual amenity or landscape character.

Building heights

Building heights at the northern construction site along Parramatta Road are permitted to reach 12 metres. Building heights within the remainder of this site to Burton Street are capped at 8.5 metres, reflecting the character of this residential area.

Heritage

The St Luke's Park entrance gates and trees within Concord Oval, and the St Luke's Anglican Church and grounds at 19 Burton Street, both opposite the northern construction site, are heritage items.

11.2.2 Canada Bay Development Control Plan 2013

The Burwood North Station northern construction site is not located within any specific development control area or public domain plan. There are also no specific controls under the Canada Bay Development Control Plan for the Parramatta Road Enterprise Corridor in which the site is partly located.

Provisions for the northern part of the construction site along Burton Road are set out in Section E1.1, under Residential Development. Objectives for this area which relate to this technical paper include:

- *To reflect the dominant building pattern of the streetscape with regard to the location, spacing and proportion of built elements in the streetscape*
- *To complement and conserve the visual character of the street and neighbourhood through appropriate building scale, form, detail and finish*
- *To reinforce existing streetscape features such as building setbacks, alignments, heights and fence design*
- *To ensure that development conserves and respects significant streetscape items (such as street tree planting) and points of interest (such as views to waterways).* (City of Canada Bay Council, 2013, s.E1.1, p.E-81)

11.2.3 Burwood Local Environmental Plan 2012

In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the following is of relevance to the southern construction site:

Land use zoning

The construction site along Parramatta Road is zoned B6 Enterprise Corridor. The objectives for these zones do not relate to maintaining or enhancing visual amenity or landscape character.

Building heights

Maximum building heights are permitted to reach 15 metres on the southern construction site.

Heritage

The construction site contains no heritage properties or conservation areas, however, the site is opposite the local heritage listed Bath Arms Hotel at 352–354 Parramatta Road.

11.2.4 Burwood Development Control Plan 2013

The construction site is located within the 'Parramatta Road Enterprise Corridor', a '*linear urban strip from Broadway in Sydney City to Church Street in Parramatta*' reaching one allotment deep (City of Burwood Council, 2013, s.3.6). Objectives for this area include:

- *To support change and improvement in the character and quality of the corridor, its land uses, amenity and local environment*
- *To provide appropriate protection through the design and location of buildings in the corridor to the amenity, solar access and privacy of adjoining low density residential land to the south*
- *To provide space for landscaping and improve local amenity* (s.3.6 p.90).

11.2.5 Parramatta Road Urban Transformation Strategy, 2016

This document, prepared by Urban Growth NSW, provides a 30 year strategy to guide growth along a section of Parramatta Road corridor which includes the Burwood–Concord precinct in which the Burwood North construction site is located.

In the Burwood-Concord precinct the strategy intends to create:

- *A major centre for the corridor*
- *A mixed use corridor with 'tall and medium-density residential buildings' extending along Parramatta Road and transitioning to lower scale residential to the north and south*
- *A mid block open space area and access connection from Parramatta Road to Gipps Street in north*
- *A gateway to Burwood Town Centre at the intersection of Parramatta Road and Burwood Road*
- *Future development that responds to existing character, heritage and open space areas* (Urban Growth NSW, 2016, p.99-101).

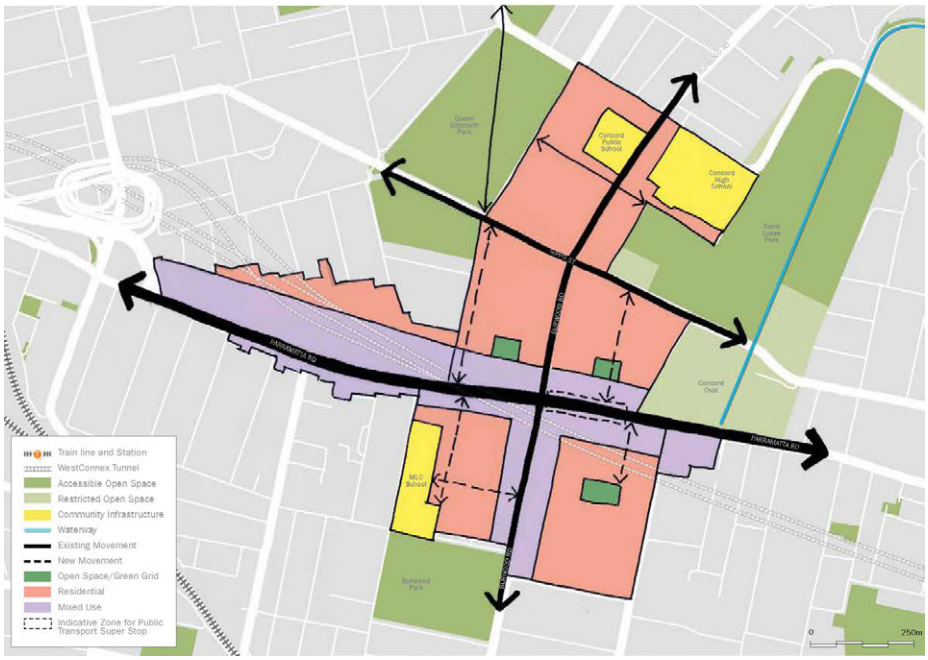
This strategy is further demonstrated in the structure plan for the Burwood–Concord precinct (refer to Figure 11-2).

11.2.6 Parramatta Road Corridor Urban Transformation Urban Amenity Improvement Plan- Implementation Tool Kit, 2016

This document identifies amenity improvement works to assist with the urban renewal of the corridor outlined in the Parramatta Road Urban Transformation Strategy.

The redevelopment of Concord Oval precinct is identified as an Urban Amenity Improvement Work in the Burwood–Concord precinct which is relevant to the Burwood North Station construction site.

FIGURE 11-2: BURWOOD CONCORD STRUCTURE PLAN (SOURCE: PARRAMATTA ROAD URBAN TRANSFORMATION STRATEGY, 2016A, P98-99)



11. BURWOOD NORTH STATION CONSTRUCTION SITE

11.3 Character and components of Stage 1

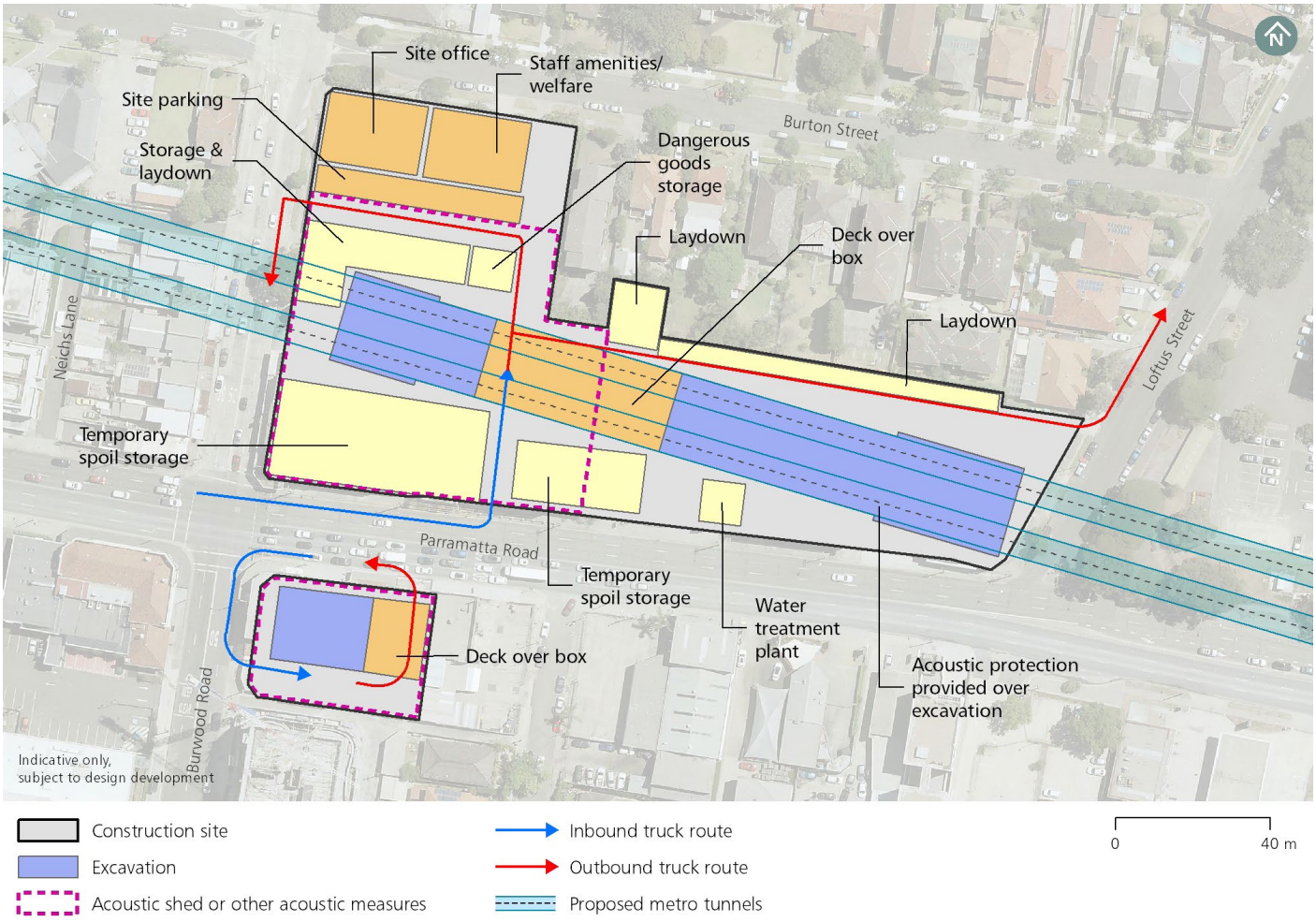
11.3 Character and components of Stage 1

The construction footprint would include surface and underground components on sites to the north and south of Parramatta Road. North of Parramatta Road the northern construction site would extend from Burwood Road to Loftus Street in the west, covering about 12,900 square metres. To the south of Parramatta Road, the southern construction site would extend east from Burwood Road across two commercial properties, covering about 1,400 square metres.

At the **northern construction site** the key works and components of Stage 1 would include:

- The demolition of the following buildings and structures:
  - Commercial buildings at 1-23a Parramatta Road (including rear easement access to Burton Road)
  - Commercial buildings at 3-9 Burwood Road
  - Residential buildings at 11-13 Burwood Road
  - Residential buildings at 20-26 Burton Street

FIGURE 11-3: BURWOOD NORTH STATION CONSTRUCTION SITE LAYOUT



- Removal of about 60 trees and all other vegetation within the site including:
  - Trees within the car parking areas and commercial properties along Parramatta Road
  - The gardens of the residential properties at 20-26 Burton Street
  - The rear garden of the units at 14 Burton Street
  - Several mature trees and shrubs within the property at 14 Burton Street
  - Trimming trees that overhang the site on Neichs Lane and 18 Burton Street
- The following construction elements and works:
  - Site offices and amenities and site parking at the north western corner of the site at the corner of Burwood Road and Burton Street
  - A metal clad acoustic shed (about 15 metres high) on the western end of the site at the corner of Burwood and Parramatta Roads
  - Station box cut-and-cover excavation works and support
  - Temporary spoil storage adjacent to Parramatta Road
  - Laydown area to the north of the site to the rear of the residential properties on Burton Street
  - Water treatment plant along Parramatta Road
- The following road network changes, adjustments to parking, public transport and pedestrian access:
  - Permanent closure of Neichs Lane between Parramatta Road and Burwood Road
  - Site entry at Parramatta Road, and egress onto Loftus Street and Burwood Road (heavy vehicles only)
  - Site access and egress at Burton Street (for light vehicles only)
  - Relocation of bus stops adjacent to the construction site on Parramatta and Burwood Roads
  - Temporary removal of on-street parking spaces on Loftus Street adjacent to the construction site.

At the **southern construction site** the key works and components of Stage 1 would include:

- The demolition of buildings and structures:
  - Commercial buildings at 338-342, 342-340, 336b Parramatta Road
  - Commercial building at 2 Burwood Road
- The following construction elements and works:
  - A metal clad acoustic shed (about 15 metres high) to the south of Parramatta Road, set back from the east and western construction site boundaries
  - Shaft excavation works and support
- Adjustments to parking, public transport and pedestrian access:
  - Site entry at Burwood Street and exit at Parramatta Road.
  - Temporary relocation of bus stops adjacent to the construction site on Parramatta Road and Burwood Road.
- Across all construction sites there would be:
  - Noise barriers and hoardings surrounding the construction site about three metres high
  - Traffic and pedestrian management signage and structures around the perimeter of sites as required
  - The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs.

Overall, Stage 1 at North Burwood would take about two years to complete including enabling and demolition works, station excavation, and turnback cavern excavation.

The hours of construction would be as follows:

- Demolition and concrete deliveries would be carried out during standard hours
- Heavy plant deliveries after hours
- Underground works (within shafts and under the acoustic shed) and spoil haulage 24 hours, 7 days a week.

Figure 11-3 identifies the construction site layout and indicative location of these components.

11.4 Assessment of landscape impact

The landscape and public realm areas which may potentially be impacted by Stage 1 are:

- Parramatta Road and Burwood Road streetscapes
- Burton Street, Loftus Street and Niches Laneway streetscapes.

The following section summarises the assessment of impact for each of these landscapes and public realm areas (refer to Table 2-7 for impact levels).

11.4.1 Parramatta Road and Burwood Road streetscapes

Existing conditions: Parramatta Road is a major east-west heavily trafficked route which creates the boundary between the suburbs of Concord and Burwood. The width and presence of heavy traffic along Parramatta Road reduces pedestrian amenity and the connectivity between the two suburbs. There is an absence of trees along this section of Parramatta Road and the lack of a continuous awning due to varied building setbacks creates a harsh pedestrian environment and unattractive streetscape.

VIEW WEST ALONG PARRAMATTA ROAD

This section of Parramatta Road is lined with a mix of commercial developments including remnant terraced shopfronts, heritage character corner buildings, and warehouse scale commercial buildings, intermixed with vehicular dominated commercial development such as car yards and service stations. The result is a discordant mix of building styles, heights, character and use.

The heritage listed Bath Arms Hotel at the intersection of Parramatta Road and Burwood Road, enhances the visual character of this intersection. This building, along with two other character buildings on the north-eastern and south-eastern corners of the intersection, address the corner and assist with defining the entry to Burwood to the south.

Burwood Road is also a major north south route which connects Concord with Burwood. A mix of retail, commercial and residential uses to the south of the intersection with Parramatta Road creates a disjointed streetscape whereas to the north of the intersection terraced shopfronts with awnings frame and activate the street. A strong built edge and awnings provide visual enclosure to this section of the streetscape. However, there are few trees along Burwood Road in the vicinity of the site. Both Parramatta Road and Burwood Road are undergoing urban renewal including the recent construction of medium rise residential development.

Sensitivity: While they offer a poor-quality pedestrian environment, have limited tree cover and few landscape features, the Parramatta Road and Burwood Road streetscapes are important local and district access routes. These streets are of **local landscape sensitivity**.

Landscape impact: The northern construction site would require demolition of an entire block of buildings along the northern side of Parramatta Road, between Burwood Road and Loftus Street, including several traditional scale commercial terrace buildings and a locally prominent corner building. The southern construction site would also require demolition of buildings of a similar scale, including a second corner building that addresses and frames the Burwood Road intersection. The loss of these buildings would result in a large gap and a break in the rhythm of built form. The consistency in the building line, scale, setback and repetition of awnings would be lost, affecting the sense of place and identity of the area.

The scale of the acoustic shed on the southern site would result in some temporary overshadowing of the existing medium density residential property located directly to the south of the construction site. This overshadowing would extend to a greater number of properties than the overshadowing by the existing building on this site but would be consistent with what could be expected with further medium density buildings being developed as a part of the precinct's urban renewal.

The construction sites may include alterations to footpaths during some periods of construction, further affecting the legibility and accessibility of this area. Although the trees at the corner of Loftus Street and Parramatta Road would be retained, a number of trees would be removed in the northern construction site, altering the amenity of adjacent properties somewhat.

Overall, there would be a considerable reduction in the quality of these streetscapes, which are of local sensitivity, resulting in a **moderate adverse landscape impact**.

1 VIEW NORTH ALONG BURWOOD ROAD
2 VIEW ACROSS PARRAMATTA ROAD TO BURWOOD ROAD
3 VIEW NORTH FROM BURWOOD ROAD TO PARRAMATTA ROAD INTERSECTION

11. BURWOOD NORTH STATION CONSTRUCTION SITE

11.4 Assessment of landscape impact

11.4.2 Burton Street, Loftus Street and Neichs laneway streetscapes

Existing conditions: Burton and Loftus Streets comprise a mix of detached properties and small residential apartment blocks with landscaped front gardens. The streets contain grassed verges with footpaths to both sides, overhead powerlines and intermittent mature street trees. The heritage listed St Luke's Anglican Church, located midway along Burton Street, is framed by mature trees and ornamental gardens. It is a local visual landmark and local landscape feature which contributes to the character of this residential area.

There are several mature trees on the corner of Loftus Street and Parramatta Road located within the Concord Oval precinct. These trees frame the prominent street corner and together with the nearby heritage listed fig trees are important contributors to the leafy streetscape character of Loftus Street.

LOFTUS STREET

Neichs Laneway is a narrow urban laneway which provides rear access and car park access for commercial uses which front Burwood Road and Parramatta Road and also vehicular access for residential properties fronting Burwood Road and Burton Street. There are some mature trees adjacent to the laneway but these are mostly within adjacent private property.

Sensitivity: Burton Street, Loftus Street and Niches Laneway streetscapes are used by local residents and visitors. St Luke's Anglican Church attracts parishioners from the local area and is a local landscape and visual feature. These streetscapes are of **local visual sensitivity**.

Landscape impact: Establishment of the northern construction site would require removal of all trees and shrubs within the site including several residential gardens facing Burton Street near the intersection with Burwood Road. While this would reduce the leafy streetscape character, canopy cover, level of comfort and amenity of the adjacent footpaths in this section of Burton Street, the remainder of the street would be largely maintained.

There would not be any direct landscape impact on Loftus Street, however, there may be some minor changes to pedestrian accessibility alongside the site where there is vehicle access to the construction site. Neichs Laneway would be permanently closed, removing this mid-block vehicular and pedestrian route.

Light vehicle access to the northern construction site at Burton and Loftus Streets, would adversely affect the sense of comfort and amenity, as well as the accessibility along these suburban residential streets.

Overall, there would be a noticeable reduction in the quality of these streetscapes, which are of local sensitivity, resulting in a **minor adverse landscape impact**.

ST LUKE'S ANGLICAN CHURCH

BURTON STREET

11. BURWOOD NORTH STATION CONSTRUCTION SITE

11.5 Assessment of daytime visual impact

11.5 Assessment of daytime visual impact

Views to the Burwood North Station construction site are limited to the immediate surrounding major roads and streets due to the visual containment provided by built form, particularly along the Parramatta Road corridor, and due to visual buffering from mature vegetation within the Concord Oval precinct.

Short distance views to the northern construction site are possible from Parramatta Road, Burwood Road, Burton Street, Loftus Street, Neichs Lane and Esher Lane.

The southern construction site can be seen from Parramatta Road, Burwood Road, Webster Lane and Esher Lane. It is also possible that there would be elevated views from nearby multi-storey residential buildings on Burwood and Parramatta Roads.

The following viewing locations were selected as representative of the range of views to Stage 1:

- Viewpoint 1: View south along Burwood Road
- Viewpoint 2: View south across the intersection of Burwood Road and Burton Street
- Viewpoint 3: View south-west along Burton Street
- Viewpoint 4: View south-west along Loftus Street
- Viewpoint 5: View north-west along Parramatta Road

FIGURE 11-4: BURWOOD NORTH STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS

- Viewpoint 6: View east across the intersection of Parramatta and Burwood Roads
- Viewpoint 7: View south-east from the intersection of Parramatta and Burwood Roads.

Figure 11-4 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

11.5.1 Viewpoint 1: View south along Burwood Road

Existing conditions: In this view from near the intersection with Burton Street, medium density development along Burwood Road and Parramatta Road is visible on the skyline and contrasts with the predominantly two storey commercial and residential built form in the foreground (refer to Figure 11-5). The articulated facades and street level awnings of the terraced commercial buildings provide visual interest and improve the character of this otherwise vehicular dominated view. Intermittent mature street trees and vegetation within private properties assists with softening the scale of the taller built form from this viewpoint. The mix of uses provides an activated street frontage which is enhanced by the fine-grain built form, wide footpaths and traditional awnings.

Sensitivity: This view along Burwood Road is visible from a concentration of road users, commercial and residential properties. The terraced commercial buildings are a local visual feature. This view has a **local visual sensitivity**.

Visual impact: The northern construction site would be established in the middle ground of this view, along the eastern side of Burwood Road. The row of commercial terrace buildings extending north and south from the corner of Parramatta Road would be demolished, including two prominent corner buildings (refer to Figure 11-6). Although these buildings are not listed as local heritage

FIGURE 11-5: VIEWPOINT 1 – VIEW SOUTH ALONG BURWOOD ROAD, EXISTING VIEW

FIGURE 11-6: VIEWPOINT 1 – VIEW SOUTH ALONG BURWOOD ROAD, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

items, their removal would create a gap in the streetscape, which is characterised by consistent rows of single and double storey rendered brick (Victorian period) terrace buildings facing the street.

Two acoustic sheds would be seen in this view, one in the middle ground, extending along the site frontage to the corner of Parramatta Road, and the second in the background, on the southern corner of Parramatta and Burwood Roads. These structures would be twice the height of the existing double storey terraced commercial buildings on Burwood Road. They would contrast with the scale and character of the streetscape. Heavy vehicles would be seen existing the site on Burwood Road and travelling along Parramatta Road and to the south of the intersection.

The loss of visual interest in the built form and introduction of large scale construction elements would result in a considerable reduction in the amenity of this view. As this is a view of local sensitivity, there would be a **moderate adverse visual impact**.

FIGURE 11-7: VIEWPOINT 2 – VIEW SOUTH ACROSS THE INTERSECTION OF BURWOOD ROAD AND BURTON STREET, EXISTING VIEW

11.5.2 Viewpoint 2: View south across the intersection of Burwood Road and Burton Street

Existing conditions: This view along Burwood Road is from the footpath adjacent to residential properties on Burwood Road (refer to Figure 11-7). In this location Burwood Road two lanes wide with on street car parking to both sides and heavily trafficked. The road includes overhead powerlines, and a collection of signage including a large format sign to the west (right of view) marking the entry to a service station, and a small bus stop located on the western side of Burwood Road.

From this slightly elevated position the low density residential properties to the east (left of view) can be seen in the foreground amongst intermittent garden trees. The intersection of Burwood Road and Burton Street forms a roundabout in the centre middle ground of this view. Beyond this, the commercial and larger scale medium density residential properties which cluster around Parramatta Road are located in the middle to background of this view. This includes medium density residential buildings and several taller medium scale towers to the south of the intersection towards the Burwood town centre. Intermittent mature street trees and vegetation within private properties assists with softening the scale of the taller buildings from this viewpoint.

Sensitivity: This view along Burwood Road is visible from a concentration of road users and residential properties. The intersection of Parramatta Road and Burwood Road are a local gateway with views to the commercial centre being important for local identity and wayfinding. This view has a **local visual sensitivity**.

FIGURE 11-8: VIEWPOINT 2 – VIEW SOUTH ACROSS THE INTERSECTION OF BURWOOD ROAD AND BURTON STREET, PHOTOMONTAGE

Visual impact: The northern construction site would be established in the middle ground of this view, along the eastern side of Burwood Road replacing all of the residential and commercial properties. In particular this would include the removal of several trees which filter and soften the transition between the residential and commercial areas of the urban centre in this view.

An acoustic shed would be seen in this view, located on the north-east corner of the intersection of Burwood and Parramatta Roads in the background of the view (refer to Figure 11-8). In the middle ground of the view, extending east along the site frontage of Burton Street and south along Burwood Road, there would be site offices and amenity buildings. Beyond this, a large acoustic shed would extend south from these structures to the intersection with Parramatta Road, and east behind the rear gardens of one property on Burton Street. This shed would rise about twice the height of the existing commercial buildings on the corner of this site, which would be visually similar in height with the scale of the medium density beyond. This structure would be about four times the height of the residential properties which face Burton Street, however, it would be set back from this residential street in this location, and so the scale difference would appear less severe. The overall scale of the

acoustic shed would be large with a footprint that extends across half of the view. This structure would also not have any vertical or horizontal articulation so that it would appear flat and with a heavy visual mass which would contrast with the finer grain built form currently seen from this location. Due to its scale it would form a dominant visual element in this view, rising above the skyline.

The second acoustic shed would be located in the background, on the south-eastern corner of Parramatta and Burwood Roads. This structure would be a similar height to the adjacent built form and would be largely screened in this view by the acoustic shed on the northern site. Heavy vehicles would be seen travelling along Burwood Road, exiting the site from the northern corner of the acoustic shed on the northern site.

The loss of vegetation which softens this view and visual interest in the built form, and the introduction of large scale construction elements would result in a considerable reduction in the amenity of this view. As this is a view of local sensitivity, there would be a **moderate adverse visual impact**.

11.5.3 Viewpoint 3: View south-west along Burton Street

Existing conditions: This view is available from the footpaths adjacent to the heritage listed St Luke's Anglican Church (refer to Figure 11-9). This is a leafy residential character view, with most residential and medium density residential buildings along Burton Street partly concealed by the existing mature garden and street trees. The street comprises two lanes and kerbside parking with powerlines, grassed verges and concrete footpaths which are partially shaded by intermittent street trees.

Sensitivity: This view along Burton Street is seen from a concentration of local residences. The St Luke's Church would attract parishioners from across the local area and the amenity of this setting is of increased importance to the local community due to the nature of this community gathering place. These views are therefore of **local visual sensitivity**.

Visual impact: The residential properties between the car park entrance to the hotel at 19 Parramatta Road (centre of view) and Burwood Road (right of view) would be demolished (refer to Figure 11-10). These properties would be replaced with site offices and amenities buildings. All vegetation within these properties would be removed, opening up views to into the site from neighbouring residential properties. The street trees and trees adjacent to the eastern site boundary (centre of view) would be trimmed and continue to provide some filtering of views to the site from the street and adjacent residential properties. The acoustic shed at the northern construction site on Burwood Road would be visible in the background of this view. It would be about four times the height of the adjacent low set residential buildings and seen rising above the built form and vegetation within the street. In views from the rear (southern boundary) of adjacent properties on Burton Street the scale of the acoustic shed would appear greater due to the closer proximity. The character of the acoustic shed would contrast with the residential character of this street.

Overall, the removal of built form and view of the acoustic shed within the middle ground of the view would result in a considerable reduction in the amenity of this view, which is of local visual sensitivity, and a **moderate adverse visual impact**.

FIGURE 11-9: VIEWPOINT 3 – VIEW SOUTH-WEST ALONG BURTON STREET, EXISTING VIEW

FIGURE 11-10: VIEWPOINT 3 – VIEW SOUTH-WEST ALONG BURTON STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

FIGURE 11-11: VIEWPOINT 4 – VIEW SOUTH-WEST ALONG LOFTUS STREET, EXISTING VIEW

FIGURE 11-12: VIEWPOINT 4 – VIEW SOUTH-WEST ALONG LOFTUS STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

11.5.4 Viewpoint 4: View south-west along Loftus Street

Existing conditions: This view is available from the footpath in front of Concord Oval (refer to Figure 11-11). The existing street trees along Loftus Street filter views to the detached residential properties located on the western side of Loftus Street (right of view). The streetscape transitions to light industrial uses near the corner with Parramatta Road. Several multi storey residential towers, south of Parramatta Road, are visible in the background and terminate views along Loftus Street.

Sensitivity: This view from Loftus Street is seen from a concentration of local residences, and by sporting and recreation users at the adjacent Concord Oval. The trees on the corner of the Concord Oval are an important local visual feature. These views are of **local visual sensitivity**.

Visual impact: The northern construction site (centre of view) would be established in the middle ground of this view (refer to Figure 11-12). The commercial warehousing buildings located at the corner of Parramatta Road and Loftus Street would be removed and replaced with a construction site containing works associated with the excavation of the station box. The site is located adjacent to a detached house. The mature street tree outside this property would be retained, as would the trees on the eastern side of the street (left of view), therefore retaining the leafy character of the street and filtering views to the construction site.

A site vehicle exit would be located at the north-eastern corner of the site (centre of view), and heavy vehicles would be seen exiting the construction site and travelling along Loftus Street during standard construction hours.

Overall, there would be a noticeable reduction in the amenity of this view, which is of local sensitivity, resulting in a **minor adverse visual impact**.

11.5.5 Viewpoint 5: View north-west along Parramatta Road

Existing conditions: In this view, the northern side of Parramatta Road comprises a mix of low rise commercial development interspersed with driveways and surface car park areas (refer to Figure 11-13). This built form contrasts with the traditional character of the buildings at the intersection of Parramatta Road and Burwood Road (background of view). The wide, heavily trafficked Parramatta Road dominates the foreground of this view, and there is visual clutter from overhead powerlines and visually prominent signage structures. This combined with a lack of streetscape planting reduces the amenity of Parramatta Road in this view.

Sensitivity: This view along Parramatta Road is seen from a large volume of road users, and concentrations of commercial and residential properties including the medium density residential properties to the south of Parramatta Road. The trees on the corner of the Concord Oval are an important local visual feature. These views are of **local visual sensitivity**.

Visual impact: All buildings and vegetation along the northern side of Parramatta Road would be removed between Loftus Street (right of view) and Burwood Road (left of view) (refer to Figure 11-14). An acoustic shed would be established in the background of this view, at the intersection with Burwood Road (left of view). This shed would extend almost halfway along the block (towards the viewer) and rise about twice the height of the existing buildings on the site. The mass and scale of this shed would contrast with the adjacent streetscape and form a visually dominant vertical wall in close proximity to Parramatta Road.

Hoarding would be established along the site boundaries and would partially obstruct views at street level to construction work within the eastern areas of the site (left of view). Heavy vehicles would be seen travelling along Parramatta Road and accessing the construction site (left of view). These vehicle

FIGURE 11-13: VIEWPOINT 5 – VIEW NORTH-WEST ALONG PARRAMATTA ROAD, EXISTING VIEW

FIGURE 11-14: VIEWPOINT 5 – VIEW NORTH-WEST ALONG PARRAMATTA ROAD, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

movements would be generally absorbed into the existing vehicular dominated character of Parramatta Road.

Despite the scale and extent of the changes resulting from Stage 1, this section of Parramatta Road has limited visual amenity and a highly urban character due to the existing built form style, high traffic volumes and poor streetscape environment. Overall, this would result in a noticeable reduction in the amenity of this view, which is of local sensitivity, and a **minor adverse visual impact.**

FIGURE 11-15: VIEWPOINT 6 – VIEW EAST ACROSS THE INTERSECTION OF PARRAMATTA AND BURWOOD ROADS, EXISTING VIEW

11.5.6 Viewpoint 6: View east across the intersection of Parramatta and Burwood Roads

Existing conditions: This view from the footpath in front of the heritage listed Bath Arms Hotel is towards the heavily trafficked intersection of Parramatta and Burwood Roads (refer to Figure 11-15). The busy road is defined by a continuous line of single and double storey small scale commercial buildings, with similar setbacks, varied façades and awnings, which enclose the street. The urban streetscape contains wide footpaths, a mix of signage, traffic lights and overhead powerlines which contribute to the urban clutter of this scene.

Sensitivity: This view along Parramatta Road is seen from a large volume of road users, and a concentration of commercial properties. The corner buildings are an important local visual feature. These views are therefore of **local visual sensitivity**.

Visual impact: The northern construction site would be seen extending along the northern side of Parramatta Road, between Burwood Road and Loftus Street. A whole block of buildings would be demolished, forming a large gap in the built fabric of the streetscape (refer to Figure 11-16). This would include the loss of the locally prominent corner building (centre of view). An acoustic shed would be established on the north-eastern corner of the intersection, in the middle ground of the view. It would rise about double the height of the existing commercial buildings and extend half way along the block towards Loftus Street (centre of view).

The southern construction site would also be seen from this location, extending south along Burwood Road and east along Parramatta Road. A second corner building at the intersection of Burwood and Parramatta Road, in the middle ground of this view, would be removed and a second acoustic shed established on this site.

Site perimeter hoarding would enclose views and partially conceal the construction work

FIGURE 11-16: VIEWPOINT 6 – VIEW EAST TO THE INTERSECTION OF PARRAMATTA AND BURWOOD ROADS, PHOTOMONTAGE

within these sites, however, there would also be heavy vehicles visible travelling along Parramatta Road and accessing the construction sites at Burwood Road (far right of view), exiting the southern site and entering the northern site via Parramatta Road (centre of view).

The loss of traditional scale commercial development along Parramatta and Burwood Roads, particularly the loss of two distinctive corner buildings that address this important corner, would adversely affect this view. Overall the loss of built form and scale of construction work seen in this view would result in a considerable reduction in the amenity of this view, which is of local sensitivity, and a **moderate adverse visual impact**.

11.5.7 Viewpoint 7: View south-east from the intersection of Parramatta and Burwood Roads

Existing conditions: This view across the busy intersection at Burwood and Parramatta Roads comprises two storey mixed use development (refer to Figure 11-17). The awnings on these buildings frame the intersection and positively contribute to the character of the streetscape including the heritage listed Bath Arms Hotel (right of view). These low scale buildings contrast with more contemporary multi-storey development of varying heights further south along Burwood Road. This prominent intersection forms an important gateway to the urban area of Burwood in the background of this view.

Sensitivity: This view along Burwood Road is seen by a large volume of road users, and concentrations of commercial and residential properties. The corner buildings are in important local visual feature and the Bath Arms Hotel is heritage listed. This view is of **local visual sensitivity**.

Visual impact: The southern construction site would be established at the corner of Burwood and Parramatta Roads (left of this view), extending south to Esher Lane (refer to Figure 11-18). The character corner building and adjacent commercial terrace buildings would be demolished, and an acoustic shed installed over the site. Noise barriers and hoarding would enclose the site and there would be heavy vehicles entering the site via Burwood Road (right of view) and exiting via Parramatta Road (left of view). The acoustic shed would appear as about twice the height of the existing heritage listed Bath Arms Hotel opposite. The loss of these buildings, particularly the corner building, would change the traditional scale of development in this location, altering the relationship between Bath Arms Hotel and built form on the construction site. The acoustic shed would, however, be generally in scale with the apartments on Burwood Road in the background.

The change in character caused by the removal of the corner building would result in a considerable reduction in the amenity of this view, which is of local sensitivity, and a **moderate adverse visual impact**.

FIGURE 11-17: VIEWPOINT 7 – VIEW SOUTH-EAST FROM THE INTERSECTION OF PARRAMATTA AND BURWOOD ROADS, EXISTING VIEW

FIGURE 11-18: VIEWPOINT 7 – VIEW SOUTH-EAST FROM THE INTERSECTION OF PARRAMATTA AND BURWOOD ROADS, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

11.6 Assessment of night-time visual impact

Existing conditions: The setting of the Burwood North Station construction site is an area of **E3: Medium district brightness**. This is due to the concentration of brightly lit commercial, industrial, retail and medium density residential buildings. The two construction sites have direct frontage to Parramatta Road which is one of Sydney's major arterial roads. Streetlights and headlights from heavy traffic along Parramatta Road and the busy Burwood Road would be seen moving along this corridor and contribute to the skyglow of the area.

The northern construction site is located adjacent to a predominantly detached residential setting with some small scale residential apartment and townhouse buildings in Concord which exhibit a lower level of lighting. The setting includes the heritage listed St Luke's Anglican Church.

Nearby Concord Oval provides a venue for local and regional sporting activities which would be brightly lit during night events.

Visual impact: There would be night works required at the northern and southern construction sites. This work would include underground construction works within the station box and shaft excavations, which would be largely contained by acoustic sheds. There would also be some lighting required outside of the shed including lighting associated with construction support areas and haulage on Parramatta and Burwood Roads. If an acoustic shed is not required, all lighting would be designed to minimise light spill and skyglow.

The removal of mature vegetation within the northern construction site near Burton Street would potentially allow adjacent residential properties, including multi-storey units, which overlook the works to view the night activity. Measures would be put in place so that there would not be any direct light spill onto these properties.

There would be some security lighting at the northern construction site for the site offices and car parking area, and night-time works for underground works. This additional lighting would be partly screened by the existing vegetation which would be retained on Loftus Street and Parramatta Road. In views from residential areas on Loftus Street, this lighting would be seen in the context of the brightly lit Parramatta Road and the Concord Oval precinct when in use for night-time events.

There may also be views to the night-time works and construction vehicle movement from the commercial properties along Parramatta Road and Burwood Road. This would also include views from the medium rise residential properties on Burwood and Parramatta Roads. However, from these locations there would be a brightly lit night scene, and these works would be largely absorbed into the surrounding intense urban development.

Overall, there would be a noticeable reduction in visual amenity at night from particularly residential areas which overlook the site. This is a medium district brightness environment, resulting in a **minor adverse visual impact** at night.

11.7 Summary of impact

Table 11-1, 11-2 and 11-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 11-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Parramatta Road and Burwood Road streetscapes	Local	Considerable reduction	Moderate adverse
2	Burton Street, Loftus Street and Niches Laneway streetscapes	Local	Noticeable reduction	Minor adverse

TABLE 11-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south along Burwood Road	Local	Considerable reduction	Moderate adverse
2	View south across the intersection of Burwood Road and Burton Street	Local	Considerable reduction	Moderate adverse
3	View south-west along Burton Street	Local	Considerable reduction	Moderate adverse
4	View south-west along Loftus Street	Local	Noticeable reduction	Minor adverse
5	View north-west along Parramatta Road	Local	Noticeable reduction	Minor adverse
6	View east across the intersection of Parramatta and Burwood Roads	Local	Considerable reduction	Moderate adverse
7	View south-east from the intersection of Parramatta and Burwood Roads	Local	Considerable reduction	Moderate adverse

TABLE 11-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Burwood North Station construction site	E3: Medium level brightness	Noticeable reduction	Minor adverse

12. FIVE DOCK STATION CONSTRUCTION SITE

12.1 Existing environment

12.1 Existing environment

The Five Dock Station construction site would be situated on two sites, one construction site between Great North Road and East Street (the western construction site), and a second construction site on the corner of Waterview Street and Second Avenue (the eastern construction site) (refer to Figure 12-1: Five Dock Station – Landscape context).

Five Dock has a vibrant town centre located on Great North Road. The town centre contains a mix of commercial, retail, community, residential and civic open space uses and has a traditional main street character. The building styles are mixed in this centre with contemporary, inter-war and heritage buildings. These buildings create a continuous line of low rise built form with similar setbacks and building scale. Remnant heritage buildings such as the local heritage listed Five Dock Hotel and St Alban's Anglican Church (c.1923) add to the character of the main street. The church and adjacent hall and rectory are set in '*attractive grounds, reminiscent of English village churches'*, and is '*one of the area's first substantial buildings'* (NSW Heritage Inventory, 2009b).

The town centre is surrounded by low rise detached residential properties, apartments and townhouse buildings together with a mix of schools including the heritage listed Five Dock Public School. The local heritage listed Five Dock Park to the east of the town centre is an important civic open space in the vicinity of the site. The park is arranged in a formal structure focusing on a War Memorial and is framed by a mix of mature palms, Cypress and native trees.

Five Dock Town Centre is intended to be revitalised into a vibrant destination with a diverse mix of uses under the *City of Canada Bay Development Control Plan* (2018). This plan includes the formation of new laneways and public open spaces, as well as a new town square at Fred Kelly Place.

There are also streetscape improvements proposed for Great North Road including landscape and pavement improvements to public realm areas between Queens Road and Garfield Street. The '*Five Dock Streetscape upgrade'* project is a direct outcome from the *Five Dock Town Centre Urban Design Study Recommendations* study (2014). The streetscape works are expected to be completed by early 2020.

GREAT NORTH ROAD

1 FIVE DOCK PARK
2 DOMREMY CATHOLIC COLLEGE, VIEW FROM FIVE DOCK PARK

FIGURE 12-1: FIVE DOCK STATION – LANDSCAPE CONTEXT

Construction site

1. Five Dock Public School
2. St Alban's Anglican Church
3. Fred Kelly Place
4. Australia Post civic space
5. Five Dock Hotel
6. Five Dock Park
7. Domremy Catholic College

12. FIVE DOCK STATION CONSTRUCTION SITE

12.2 Planning guidance

12.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review identifies specific clauses in the local environmental plan and development control plan documents, as well as provisions in strategic and masterplanning documents which are of note to the landscape and visual impact assessment of the Five Dock Station construction site.

12.2.1 Canada Bay Local Environmental Plan 2013

In addition to the local environmental plan provisions identified in Section 3 of this technical paper, the following is of note:

Land use zoning

Both construction sites are zoned B4 Mixed Use Zone. There is a narrow parcel of land identified as RE1 Public Recreation between Great North Road and East Street adjacent to Fred Kelly Place. This land is also identified for acquisition as Local Open Space in the local environmental plan.

The local environmental plan also identifies active street frontages for building frontages adjoining Fred Kelly Place.

Building heights

The local environmental plan allows for building heights, between East Street and Great North Road, of up to 15 and 17 metres. On the corner of Second Avenue and Waterview Street, building heights are permitted to reach 17 metres.

Heritage

Although the construction sites contain no heritage properties or conservation areas, the western construction site is adjacent to the local heritage listed St Alban's Anglican Church, Rectory and Hall which adjoins the northern boundary of the site.

12.2.2 City of Canada Bay Development Control Plan 2018

Under the provisions of the development control plan it is intended that the Five Dock town centre will become … '*a place where new buildings, alterations and additions contribute to the local 'village character' and heritage values through appropriate building forms, setbacks and heights'* (City of Canada Bay Council, 2018, Part F.2.2).

The development control plan includes the following future character performance criteria:

- ***Mixed use****: New developments and alterations add to the centre's function as a vibrant destination for the local community and visitors, by providing a diverse mix of uses including retail, hospitality, residential and recreational facilities*
- ***Well-proportioned streetscapes****: The bulk and scale of new development and alterations ensures good access to sunlight and natural ventilation is retained along the centre's streets and to areas of public open space. Built form will also create consistent street wall heights, especially along Great North Road, and ensure the bulk and scale steps down towards adjoining residential areas*
- ***Quality built form****: New buildings and alterations display a high level of architectural design quality with construction methods and materials that are proven to be durable over time, colours that integrate with the context and building articulation that is sympathetic with adjoining built form and the local 'village character'*
- ***Safety and surveillance****: New buildings and alterations support street level activity by paying particular attention to the design of ground floors, facades, signage and awnings and by providing opportunities for passive surveillance of the public domain from upper levels*

- ***Access and mobility**: New development supports accessibility of the centre by reinforcing, and where possible adding to, a permeable and attractive network of streets, lanes, footpaths and pedestrian links.* (Part F.2.2, p.F-144).

The development control plan includes a public domain plan for the town centre which identifies the following 'New laneways':

- Existing public open space on Great North Road (Fred Kelly Place) to be increased in size (Fred Kelly Place extension), the plans show this extension occupying the southern areas of the western construction site as shown in Figure 12-2
- A new town square is proposed on the eastern side of Great North Road opposite Fred Kelly Place
- A proposed laneway is identified at the rear and southern boundary of the eastern construction site which will provide connectivity between a new town square beside Great North Road and adjoining streets, as shown in Figure 12-2. The north south laneway aligns with an existing car park located within the eastern construction site which is intended to be pedestrianised.

Building heights

The development control plan provides further guidance regarding building heights. At the western construction site, building heights are permitted to reach 15 metres on the site adjacent to Great North Road and 17 metres in an area set back from Great North Road. Built form adjoining Fred Kelly Place is permitted to reach 11.5 metres.

At the eastern construction site, on the corner of Second Avenue and Waterview Street, building heights are permitted to reach 17 metres in the centre and 15 metres along the perimeter. The development control plan allows built form along the southern boundary to reach 11.5 metres in height.

FIGURE 12-2: FIVE DOCK PUBLIC DOMAIN (SOURCE: CITY OF CANADA BAY DEVELOPMENT CONTROL PLAN 2018)

Mixed use objectives

As the majority of the construction site is within the mixed-use precinct, the following general objectives for mixed use areas relate to this assessment:

- *To encourage the revitalisation of commercial areas by enabling mixed use development including residential in certain areas*
- *To ensure development contributes to the improvement and amenity of public spaces*
- *To ensure infill development is well articulated, makes a positive contribution to the streetscape and responds to local urban character*
- *To ensure development presents a clear and visually interesting address to the street*
- *To retain the use of awnings as visually dominant and co-ordinating townscape features*
- *To ensure new development maintains a pedestrian scale …*
- *To ensure front setbacks maintain the continuity of setbacks in the street*
- *To ensure buildings are of a height and scale which is consistent with the character of the area*
- *To maintain the privacy and amenity of adjoining and nearby residential developments.* (Part F.1.1, F.1.2 and F1.7).

There are no site specific development control plans or Special Planning Areas relevant to the construction sites.

12.2.3 Five Dock Town Centre Urban Design Study Recommendations, 2014

This study was prepared for the City of Canada Bay and outlines the vision and future direction for the Five Dock Town Centre. The vision for the Five Dock Town Centre is based around a series of objectives which aim to:

- *Achieve a high standard of sustainable development*
- *Improve the visual and aesthetic qualities, amenity, liveability and attractiveness of Five Dock*
- *Ensure that building envelopes respect height, scale and massing of surrounding buildings.* (Arup, Hill PDA and Studio GL, 2014, p10).

Relevant urban design intents for the Five Dock Station which are identified in the urban design framework and proposed planning and built form controls as shown in Figure 12-3 include:

- The potential expansion of Fred Kelly Place
- Lot boundary corners adjoining Fred Kelly Place and 106 Great North Road with Great North Road are identified as significant for local character
- The intersection of Great North Road and Second Avenue is identified as a prominent corner which is significant for local character and located on the axis of directional views from Second Avenue
- The corner of Waterview Street and Second Avenue in which the eastern construction site is located is identified as a prominent corner
- New laneways from Great North Road east to Waterview Street and west to Lancelot Street.

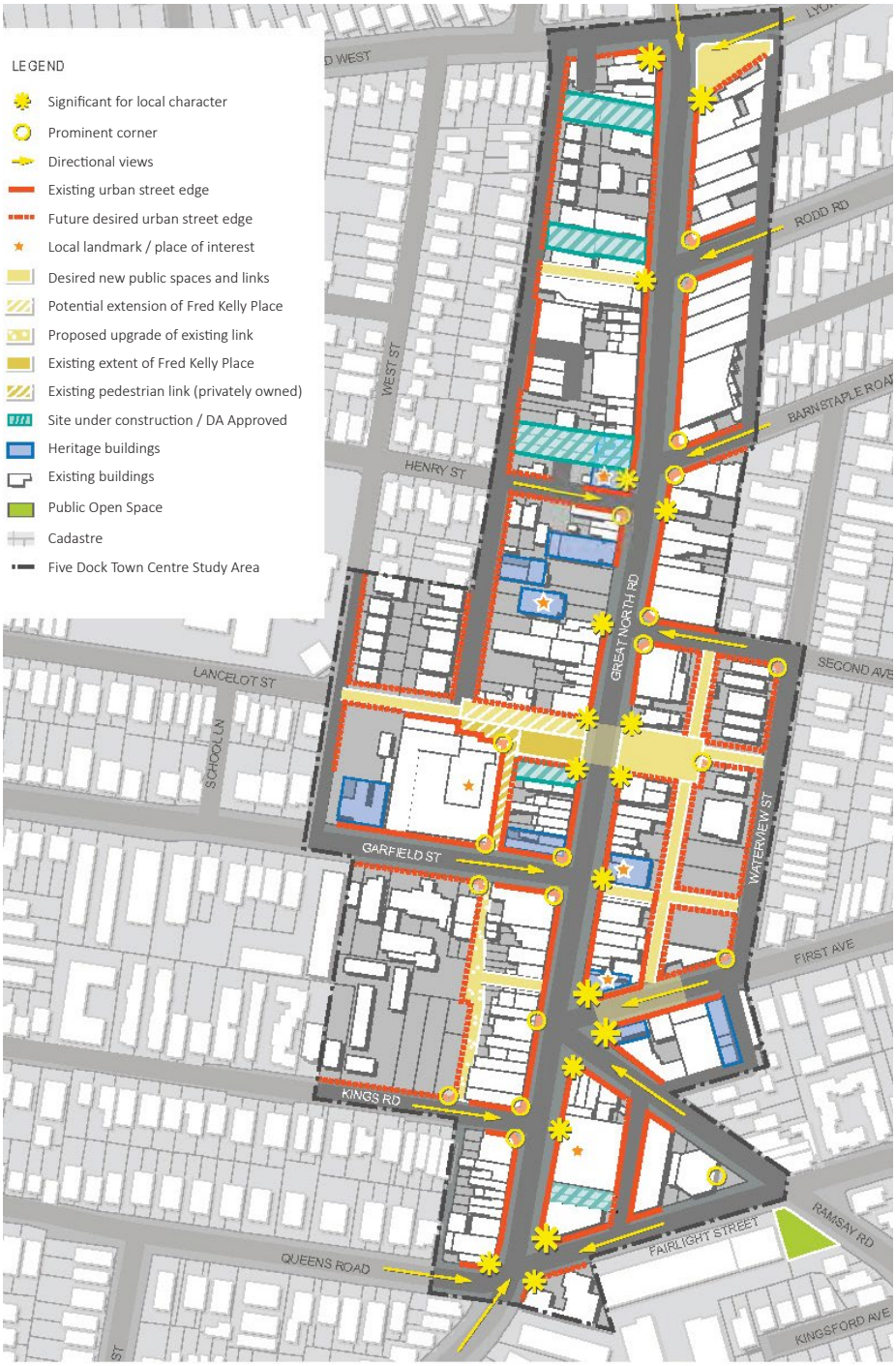


FIGURE 12-3: FIVE DOCK TOWN CENTRE URBAN AND BUILT FORM FRAMEWORK (SOURCE: ARUP, HILL PDA AND STUDIO GL, 2014, P25)

12. FIVE DOCK STATION CONSTRUCTION SITE

12.3 Character and components of Stage 1

12.3 Character and components of Stage 1

Stage 1 would include surface components on two construction sites in Five Dock. The Five Dock Station western construction site would cover about 4,150 square metres and be located to the west of Great North Road, between Fred Kelly Place and St Alban's Anglican Church. The Five Dock Station eastern construction site would cover about 2,150 square metres and be located to the east of Great North Road at the corner of Second Avenue and Waterview Street.

At the **western construction site** the key works and components of Stage 1 would include:

- Demolition of buildings and structures:
  - Five commercial buildings at 155-169 Great North Road
  - Structures and car parks at 2-8 East Street
  - Commercial building at 146 First Avenue
- Removal of about eight trees and all other vegetation within the site including:
  - Several small trees facing East Street

FIGURE 12-4: FIVE DOCK STATION CONSTRUCTION SITE LAYOUT

12.3 Character and components of Stage 1

- The possible trimming of trees which overhang the site including:
  - To the side boundary of 151 Great North Road
  - To the side boundary of St Alban's Anglican Church
  - At 171-173 Great North Road which border the construction site
- The following construction elements and works:
  - Laydown area and a water treatment plant to the north of Fred Kelly Place
  - A metal clad acoustic shed (about 15 metres high) extending from Great North Road to East Street and set back from Fred Kelly Place
  - Station shaft excavation works and support
  - Station cavern excavation and temporary spoil storage
- Site access and haulage routes:
  - Site entry and exit longitudinally on Great North Road
  - Temporary removal of on-street car parking along Great North Road adjacent to the western construction site
  - Haulage via Great North Road.

At the **eastern construction site** the key works and components of Stage 1 would include:

- The demolition of buildings and structures:
  - Five residential buildings and structures at 23-31 Waterview Street
  - Car parks at 3 Second Avenue
  - The removal of about seven trees within 23 and 25 Waterview Street
- The possible trimming of trees to the rear of 108 and 106 Great North Road which overhang the construction site.
- The following construction elements and works:
  - Office and staff amenities double stacked along Waterview Street
  - Water treatment plant along Waterview Street with a workshop and materials storage area located to the rear of the site
  - A metal clad acoustic shed (about 15 metres high) on the corner of Waterview Street and Second Avenue
  - Station shaft excavation works and support
  - Station cavern excavation and temporary spoil storage
- Site access and haulage routes:
  - Site entry at Waterview Street and exit on Second Avenue
  - Haulage via Great North Road
  - Adjustments to parking, public transport and pedestrian access:
  - Temporary removal of on street parking at Great North Road, Second Avenue and Waterview Street and a car park at Second Avenue
- Due to construction site envelope constraints, site office and parking would be leased in the local area.
- Across both construction sites there would be:
  - Hoardings surrounding the construction site about three metres high
  - Traffic and pedestrian management signage and structures around the perimeter of sites as required
  - The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs.

Overall, Stage 1 at both construction sites for Five Dock Station would take about two years to complete including enabling and demolition works, cut-and-cover shaft excavation and station cavern excavation.

The hours of construction would be as follows:

- Demolition and concrete deliveries would be carried out during standard hours
- Heavy plant deliveries after hours
- Underground works (within shafts and under the acoustic shed) and spoil haulage 24 hours, 7 days a week.

Figure 12-4 identifies the construction site layout and indicative location of these components.

12.4 Assessment of landscape impact

The landscape and public realm areas which may potentially be impacted by Stage 1 are:

- Great North Road streetscape
- East Street, Second Avenue and Waterview Street streetscapes
- Fred Kelly Place and Australia Post open space.

The following section summarises the assessment of impact for each of these landscapes and public realm areas (refer to Table 2-7 for impact levels).

GREAT NORTH ROAD

12.4.1 Great North Road streetscape

Existing conditions: Great North Road is a busy main street which forms a central spine for the Five Dock town centre and access for the residential area of Five Dock. The main street extends for about 700 metres in a north south direction and comprises a diverse mix of uses.

The legibility of the town centre is reinforced by the low rise building scale, reduced building setbacks and generally fine grained built form character of the street. The street comprises a mix of modern and heritage buildings with distinctive decorative façades which assist in wayfinding along the street. Wide footpaths to both sides of the street, intermittent street trees and continuous lengths of awnings provide shade and comfort for pedestrians.

Recent streetscape improvement works have been carried out to the northern end of Great North Road. New street trees, gardens, high quality street furniture and new footpath treatments have enhanced the streetscape character. Future streetscape improvement works are intended for the southern section of the street which currently contains a mix of pavement types.

The street is highly activated with retail frontages, street cafes and alfresco dining areas. Pedestrian connectivity and legibility is assisted by the grid layout of the town centre and laneway connections to nearby streets. The City of Canada Bay Council plan intends to further improve permeability of the town centre through the future provision of east west connections including widening of some existing laneways. Pedestrian crossings and signalised pedestrian crossings further enhance pedestrian connectivity across the busy street.

While St Alban's Anglican Church is set back from the street, its spire and garden setting provide amenity and visual relief within this section of the otherwise urban streetscape.

Sensitivity: The Great North Road streetscape is the commercial and civic heart of Five Dock which attracts people from across the district. It is a highly activated streetscape in the vicinity of the site, with a focus on pedestrian amenity, high quality gardens and street trees. The Great North Road is therefore of **local landscape sensitivity**.

Landscape impact: Part of the Great North Road streetscape would be required for the western construction site and construction vehicle access. This work would include the possible narrowing and diversion of the adjacent footpath during some periods of construction. Due to the site's location centrally within the town centre street and the extent of street frontage that would be interacting with construction vehicles, it is likely that north south pedestrian connectivity would be reduced at times. Consequently, local connectivity and legibility would be reduced somewhat.

An acoustic shed would be installed extending along the street, between Fred Kelly Place and the St Alban's Anglican Church. This shed would be a distinct change in the scale of built form and streetscape character in this location. Wayfinding within the vicinity of the site would also be altered due to the loss of the continuous line of two storey built form, which would remove the visual cues provided by the varied urban form in this location.

Overall it is expected that there would be a considerable reduction in the landscape quality of this streetscape which is of local sensitivity. As this is a landscape of local sensitivity this would result in a **moderate adverse landscape impact**.

GREAT NORTH ROAD

12. FIVE DOCK STATION CONSTRUCTION SITE

12.4 Assessment of landscape impact

12.4.2 East Street, Second Avenue and Waterview Street streetscapes

Existing conditions: East Street adjoins the western construction site and is a narrow neighbourhood street with footpaths on either side but no street trees. This street provides service access and car parking areas for the mixed use development fronting Great North Road and the main access for detached residential properties on the western side of the street. It also provides an important pedestrian link for nearby residents accessing the Five Dock Council Library and Five Dock town centre via Fred Kelly Place.

Second Avenue forms the northern boundary of the eastern construction site. It comprises a mix of mixed use development in the vicinity of the town centre and transitions into a mix of medium and low density residential uses near Five Dock Park. It has continuous footpaths within narrow grassed verges and intermittent street trees on the eastern side of the road in the vicinity of the site.

EAST STREET

Waterview Street borders the eastern construction site to the east and is lined by predominantly one to two storey detached properties and low rise multi storey residential apartment blocks. The eastern construction site is currently occupied by five detached properties which face Waterview Street. There are no street trees on the verge of Waterview Street in the vicinity of the eastern construction site, however, there are intermittent street trees to the front of residential properties along the remainder of Waterview Street which enhance the streetscape character.

The City of Canada Bay intends to improve the pedestrian permeability in this area through the provision of a future laneway connecting to Great North Road along the southern boundary of the construction site.

Sensitivity: The East Street, Second Avenue and Waterview Street streetscapes serve an important function in providing access to Great North Road and the commercial centre of Five Dock. These streets are used by local residents their visitors, workers and visitors to the commercial properties in and surrounding the town centre. The residential gardens and intermittent street trees provide some shade and amenity for pedestrians. Due to their proximity to the centre of town and level of use, these streetscapes are of **local landscape sensitivity**.

Landscape impact: While the western construction site would adjoin East Street, there is no construction site access proposed nor any impacts to pedestrian connectivity likely along this street.

On Second Avenue, work at the eastern construction site may at times require the diversion of the adjacent footpath which would reduce pedestrian connectivity between the town centre, Five Dock Park and the surrounding residential areas of Five Dock at times. The demolition of buildings upon the site would result in a gap in this residential streetscape, however these buildings do not currently form a strong visual cue for wayfinding. There would also not be any street tree removal required, as this section of Second Avenue does not contain street trees.

Waterview Street would be used by construction vehicles accessing the eastern construction site. This construction work would require the possible reduction and diversion of footpaths during some periods of construction. However, there are currently no street trees along this street frontage. An acoustic shed would be installed beside the street, changing the scale of built form and streetscape character in this location.

The acoustic shed on the western site may result in some overshadowing of the properties on East Street, located to the west of the shed, during the morning. However, the existing buildings on the site would already block access to morning sun during mid-winter. At the eastern site, the acoustic shed may result in some additional overshadowing of the rear gardens of properties to the south-west where the shed would extend to the site boundary. The shed would, however, be set back from the southern site boundary where it adjoins the existing residential property on Waterview Street and therefore have less potential for an increase in overshadowing from the existing buildings.

Overall, there would be a noticeable reduction in the landscape quality of these streets which are of local sensitivity. This would result in a **minor adverse landscape impact**.

SECOND AVENUE

WATERVIEW STREET

12.4.3 Fred Kelly Place and Australia Post open space

Existing conditions: Fred Kelly Place forms a major activity hub for the town centre and is activated by adjoining cafes, shops and commercial uses including the Five Dock Library which is located at the western end of the square. A small playground area, mature trees, garden beds in raised planters, high-quality urban furnishings and quality paving provide comfort and amenity to the square. Sculptural art with the signage 'Fred Kelly Place' beside the main street provides a visual focus for the street and adds to the legibility of the area. This plaza provides access between Great North Road and the residential areas to the west, along East Street and to Garfield Street via a narrow laneway.

To the east and directly opposite Fred Kelly Place, there is a small pocket park located to the front of the Australia Post Office at 106 Great North Road. This park includes lawn area and mature trees. The City of Canada Bay Council intends to develop a future town square on this site.

Sensitivity: Fred Kelly Place and the Australia Post open space are important civic places within the town centre, providing pedestrian amenity, and opportunities for passive recreation. They attract groups of people due to their location within the town centre and are landscapes appreciated by the local community. These places have a **local landscape sensitivity**.

FRED KELLY PLACE

Landscape impact: There would be no direct impact on Fred Kelly Place as the Stage 1 western construction site would not encroach onto the square and pedestrian connectivity within the square and connections to adjacent laneways and streets would be maintained. However, the western construction site would be adjacent to the northern edge of the square and would impact on the level of comfort for recreational users and pedestrians, resulting in the square being less desirable to use. Some of the trees within the square may be trimmed where they overhang the construction site. However, these mature trees along the northern boundary of the square would soften and reduce some of the amenity impacts from the adjacent intensive construction work.

The eastern construction site would be located diagonally to the rear of the Australia Post open space and would also not result in a direct impact upon the pocket park. Existing trees bordering the open space would assist with screening possible views to the nearby construction site from within the park, however, the large acoustic shed may be visible from street views, rising about double the height of the existing two storey built form. There may also be some trees within the site removed and trimming of trees which overhang the construction site, which would reduce the leafy skyline somewhat.

While the existing buildings on the site would currently cause some overshadowing of Fred Kelly Place, particularly during mid-winter, the additional height of the acoustic shed compared to this existing building, would be likely to increase this effect, particularly during winter. This effect would most likely be experienced in areas to the centre of the plaza, as the western end of the site would be overshadowed by the existing buildings to the west during the afternoon.

The acoustic shed on the eastern site is set back from the Australia Post open space and would not be likely cause any overshadowing of this open space.

AUSTRALIA POST OPEN SPACE

Due to these changes, it is expected that there would be a noticeable reduction in the landscape quality of Fred Kelly Place and the Australia Post open space which are of local sensitivity. This would result in a **minor adverse landscape impact**.

12.5 Assessment of daytime visual impact

Views to the Five Dock Station western construction site are generally confined to short distance views from adjacent streets due to the density of the surrounding urban form within the Five Dock town centre. The western construction site would be visible from East Street, Great North Road, Fred Kelly Place and Second Avenue. There would also be elevated views across the site from the forecourt area surrounding the first floor level library, and nearby multi-storey residential buildings which currently overlook Fred Kelly Place and the construction site.

The eastern construction site would be seen from Waterview Street, Second Avenue and parts of Great North Road. There may also be elevated views across the site from the nearby multi-storey residential buildings.

SECOND AVENUE

The following viewing locations were selected as representative of the range of views to Stage 1:

- Viewpoint 1: View south-east along East Street
- Viewpoint 2: View south-west along Great North Road
- Viewpoint 3: View north along Great North Road
- Viewpoint 4: View east towards Australia Post open space
- Viewpoint 5: View south-east from corner of Great North Road and Second Avenue
- Viewpoint 6: View south-west along Waterview Street
- Viewpoint 7: View north-west along Waterview Street
- Viewpoint 8: View west along Second Avenue from Five Dock Park.

Figure 12-5 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

1 BUILDINGS ON SECOND AVENUE
2 ST ALBAN'S ANGLICAN CHURCH

FIGURE 12-5: FIVE DOCK STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS

12. FIVE DOCK STATION CONSTRUCTION SITE

12.5 Assessment of daytime visual impact

FIGURE 12-6: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG EAST STREET, EXISTING VIEW

FIGURE 12-7: VIEWPOINT 1 – VIEW SOUTH-EAST ALONG EAST STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

12.5.1 Viewpoint 1: View south-east along East Street

Existing conditions: This view along East Street shows the intersection of several land uses with the local heritage listed St Alban's Anglican Church (left of view), mixed use commercial development (centre of view), and low density residential areas to the west (right of view) (refer to Figure 12-6). The built form steps up from one to two storey detached residential properties towards the town centre, with a five storey modern mixed use development terminating this view at the end of East Street.

The street itself is narrow, with parallel parking on both sides and narrow footpaths. There are a few trees within the church grounds and front gardens of the residential properties.

Sensitivity: Views along East Street would be experienced by a concentration of local residences as well as workers and visitors accessing the town centre and St Alban's Anglican Church. This is, however, a rear entrance to the town centre and church. Overall, this view is of **local visual sensitivity**.

Visual impact: The brick and masonry buildings adjacent to the church, on the eastern side of the street (centre of view), would be demolished and replaced with an acoustic shed (refer to Figure 12-7). The acoustic shed would be comparable in scale with the mixed-use development at the end of the street, and it would contrast in scale and bulk with the adjacent heritage church buildings. However, it would be set back about 10 metres from the church and consistent in scale with the existing midrise built form.

The site would be enclosed by hoardings, blocking views to lower areas of the construction site, however taller equipment may be seen above these barriers.

Mature trees within the St Alban's Anglican Church property which border the construction site may be pruned, where they overhang the site. All other trees within the church property would remain unaffected, filtering some street views to the construction site.

Stage 1 would extend across a large area of this view and introduce a construction character to what is a mixed quality view. The scale of the existing buildings on the construction site are similar in character and scale to the acoustic shed and therefore would be somewhat absorbed into the character of this view. Overall, this change would result in a noticeable reduction in the amenity of this view, which is local sensitivity, and result in a **minor adverse visual impact.**

FIGURE 12-8: VIEWPOINT 2 – VIEW SOUTH-WEST ALONG GREAT NORTH ROAD, EXISTING VIEW

FIGURE 12-9: VIEWPOINT 2 – VIEW SOUTH-WEST ALONG GREAT NORTH ROAD, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

12.5.2 Viewpoint 2: View south-west along Great North Road

Existing conditions: In this view the heritage listed St Alban's Anglican Church, which is located within a picturesque setting, can be seen set back from the street and contrasting in character with the adjoining commercial built form along Great North Road (refer to Figure 12-8). This section of Five Dock town centre exhibits a unified built form character due to the consistency of building scale, building line, awnings, varied facades, streetlights and banners. The traditional street front is reflected on both sides of the street which provides strong visual enclosure to the street.

Mature vegetation and landscape areas surrounding the church together with intermittent street trees further along the street soften the highly urban built form and enhance the streetscape character and amenity of Great North Road.

Sensitivity: This view along Great North Road features the spire and gardens which surround the St Alban's Anglican church, which are a local feature and visual landmark within the town centre. This view would be experienced by a large concentration of people visiting and working within the town centre. This view is therefore of **local visual sensitivity**.

Visual impact: The row of commercial buildings in the foreground, between Fred Kelly Place and the St Alban's Anglican Church (centre of view), would be demolished and replaced with the construction site (refer to Figure 12-9). This would include a metal clad acoustic shed which would extend across much of the site and rise about double the height of the existing built form. Heavy vehicles would be seen accessing and departing the site along Great North Road.

The mature trees within the church property would remain with some minor trimming, maintaining the setting of the heritage listed church somewhat. These trees would assist with reducing the scale difference of the

acoustic shed adjacent to the church. The character of the plain facades of the acoustic shed would contrast with architectural detail of the church and character of the streetscape.

This construction work would be seen in close proximity and extend across the central portion of this view. It would result in the removal of a consistent urban street edge to Great North Road which is identified as significant for local character under the Five Dock Town Centre Urban Design Study Recommendations (2014).

Overall, this change would create a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact**.

12.5.3 Viewpoint 3: View north along Great North Road

Existing conditions: This view across Great North Road incudes Fred Kelly Place in the middle ground of the view (refer to Figure 12-10). There is an active frontage of shops and cafes to the southern side of the plaza (left of view) and mature tree planting on the northern side (right of view) beside a row of low rise commercial buildings. Fred Kelly Place provides important visual relief for the busy urban setting and enhances the amenity of the streetscape.

Sensitivity: This view along Great North Road includes Fred Kelly Place and a section of high quality streetscape which are local visual features within the town centre. This view would be experienced by a large concentration of people visiting and working within the town centre. This view is therefore of **local visual sensitivity**.

Visual impact: The row of commercial buildings which form the northern boundary to Fred Kelly Place (centre of view) would be demolished and replaced with the construction site (refer to Figure 12-11). This would include a laydown area and water treatment plant alongside the park with noise barriers and hoardings on the site boundary. There would also be an acoustic shed

FIGURE 12-10: VIEWPOINT 3 – VIEW NORTH ALONG GREAT NORTH ROAD, EXISTING VIEW

FIGURE 12-11: VIEWPOINT 3 – VIEW NORTH ALONG GREAT NORTH ROAD, PHOTOMONTAGE

FIGURE 12-12: VIEWPOINT 4 – VIEW EAST TOWARDS AUSTRALIA POST OPEN SPACE, EXISTING VIEW

established on the site, extending from Great North Road to East Street. While the acoustic shed would be set back from the adjoining boundary with Fred Kelly Place, it would be about double the height of the adjacent built form along Great North Road, contrasting in scale and character.

The trees within Fred Kelly Place would remain with some minor trimming where they overhang the site. This vegetation would screen the edge of the construction site somewhat. Construction traffic would be seen crossing this view and accessing the construction site via an entry off Great North Road.

The works would introduce a construction character which would comprise a large portion of this view and result in the loss of a continuous line of one to two storey commercial buildings. The removal of these buildings would create a substantial gap in the streetscape. Overall this change would create a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse visual impact** during construction.

12.5.4 Viewpoint 4: View east towards Australia Post open space

Existing conditions: This view is from the signalised pedestrian crossing on Great North Road, opposite Fred Kelly Place (refer to Figure 12-12). It includes a small open space adjacent to two single storey buildings in which the Australia Post Office and a commercial use. The buildings obstruct views to a surface car park to the rear of the buildings which is accessed from a narrow driveway (right of view). This open space provides some visual relief within the busy urban streetscape. In particular, the mature trees along the northern side of the open space contribute to the character of this view.

Sensitivity: This view includes the Australia Post open space framed by mature trees which are local visual features. This view would be experienced by a large concentration of people visiting and working within the town centre and is therefore of **local visual sensitivity**.

Visual impact: The construction site would adjoin the north-west corner of the Australia Post open space, however, the existing mature trees within the pocket park would mostly screen views of the construction works and structures from within the park. This vegetation would remain within the park, however, there may be some reduction in the extent of tree canopy visible in the background where trees on the site are removed or trimming is carried out for trees which overhang the site.

An acoustic shed would be established on the construction site and may be visible, glimpsed between the trees in the background of this view, as it would rise about twice the height of existing two storey built form (left of view). Construction traffic would be seen travelling along Great North Road, in the foreground of this view, approaching the western construction site and departing the eastern construction site.

Overall, this change would be largely absorbed into this view. There would be no perceived change in the amenity of this view, which is local sensitivity, and result in a **negligible visual impact.**

12.5.5 Viewpoint 5: View south-east from corner of Great North Road and Second Avenue

Existing conditions: This view is framed by mixed use development which faces Great North Road (refer to Figure 12-13). In the middle and background of the view the scale of the built form steps down to a mix of detached and multi-storey residential properties. Beyond this, the mature trees in Five Dock Park can be seen in the centre background of the view. A surface car park separates the detached houses from commercial uses. The mature trees within Five Dock Park together with intermittent street trees contribute to a leafy character along the northern side of Second Avenue (centre of view). By contrast, there are no street trees on the southern street verge. The street is characterised by narrow verges, a mix of pavement types and parallel parking.

Sensitivity: This view includes a distant glimpse of Five Dock Park which is a local visual feature. This view is an incidental rather than a designed view, however, it would be experienced by a large concentration of people visiting and working within the town centre and is therefore of **local visual sensitivity**.

Visual impact: The construction site would occupy the rear car park and three detached residential properties at 27, 29 and 33 Waterview Street on the southern side of the road (centre of view) (refer to Figure 12-14). An acoustic shed would be established on the site and would rise about one and a half storeys above the adjacent existing mixed use buildings but with a comparable visual bulk. Other construction works and structures within the construction site would be screened from view by the acoustic shed. The site would be otherwise enclosed by

FIGURE 12-13: VIEWPOINT 5 – VIEW SOUTH-EAST FROM CORNER OF GREAT NORTH ROAD AND SECOND AVENUE, EXISTING VIEW

FIGURE 12-14: VIEWPOINT 5 – VIEW SOUTH-EAST FROM CORNER OF GREAT NORTH ROAD AND SECOND AVENUE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

FIGURE 12-15: VIEWPOINT 6 – VIEW SOUTH-WEST ALONG WATERVIEW STREET, EXISTING VIEW

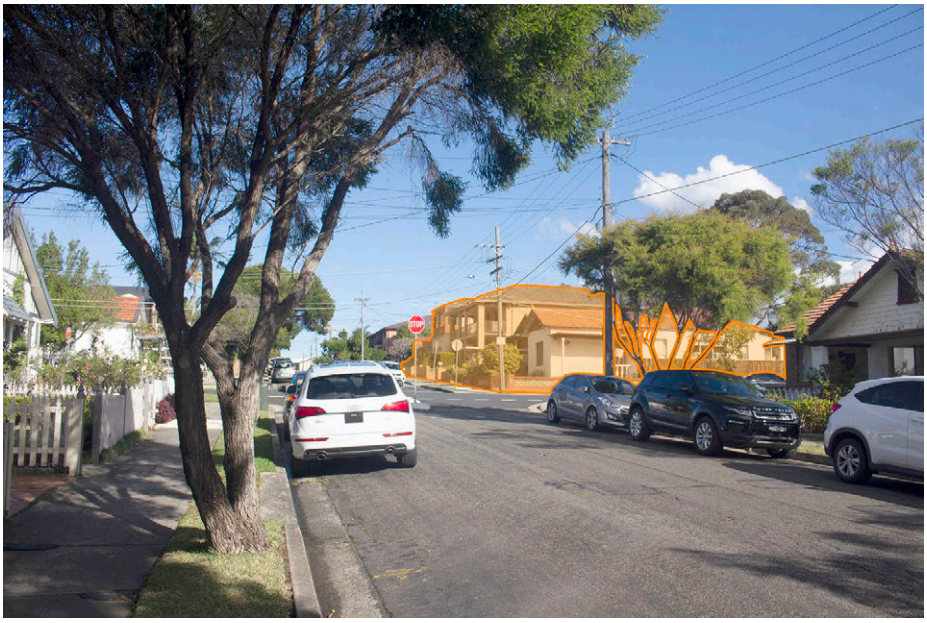


FIGURE 12-16: VIEWPOINT 6 – VIEW SOUTH-WEST ALONG WATERVIEW STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

hoardings to the street boundary, screening ground level views into the site. There would be no removal of street trees required along Second Avenue and the existing leafy character in the centre of the view would be unchanged.

While the acoustic shed would be a large component in this view it would be somewhat consistent with the scale and character of the adjacent commercial uses. Overall, this would create a noticeable reduction to the amenity of this view which is of local sensitivity, and result in a **minor adverse visual impact.**

12.5.6 Viewpoint 6: View south-west along Waterview Street

Existing conditions: This view along Waterview Street towards an intersection with Second Avenue is characterised by a mix of one and two storey detached residential properties of varying building styles and ages (refer to Figure 12-15). Landscaped gardens and low fences contribute to this residential setting which is enhanced by some occasional street trees and mature trees in private properties. The street rises gently towards the southern section of Waterview Street (centre of view).

Sensitivity: Views south-west from Waterview Street would be experienced by a concentration of local residents, in low and medium density residential properties, visitors approaching the town centre and road users. These views are of **local visual sensitivity**.

Visual impact: A row of detached properties in the centre of the view at 23 to 31 Waterview Street would be demolished and replaced with an acoustic shed, water treatment plant, office and workshop building (refer to Figure 12-16 and Figure 12-17). The acoustic shed would dominate the street corner which is identified as a prominent corner by the City of Canada Bay Council. The shed would appear as about two and half times the height of the two storey properties visible within this view. While the topography of the street would exaggerate the scale of

FIGURE 12-17: VIEWPOINT 6 – VIEW SOUTH-WEST ALONG WATERVIEW STREET, PHOTOMONTAGE

the shed in relation to the built form on this lower area of Waterview Street, the existing street trees would filter this view. There are no street trees adjacent to the construction site, however, views to the visible canopy of the existing trees, in the background, would be obstructed.

Overall, Stage 1 would introduce a construction character to this residential setting. Due to the scale of the acoustic shed in this view, there would be a considerable reduction in the amenity of this view, which is of local sensitivity, and result in a **moderate adverse visual impact.**

12. FIVE DOCK STATION CONSTRUCTION SITE

12.5 Assessment of daytime visual impact

FIGURE 12-18: VIEWPOINT 7 – VIEW NORTH-WEST ALONG WATERVIEW STREET, EXISTING VIEW

FIGURE 12-19: VIEWPOINT 7 – VIEW NORTH-WEST ALONG WATERVIEW STREET, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

12.5.7 Viewpoint 7: View north-west along Waterview Street

Existing conditions: This view from Waterview Street has a suburban residential character (refer to Figure 12-18). It comprises a mix of predominantly one to two storey detached residential properties together with a two storey multi-residential building (right of view). The streetscape is defined by low walls and fences with occasional street trees and landscaped gardens. This viewpoint is near a highpoint and the street slopes gently downwards towards the north (centre of view).

Sensitivity: Views south-west from Waterview Street would be experienced by a concentration of local residents, in low and medium density residential properties, visitors approaching the town centre and road users. These views are of **local visual sensitivity**.

Visual impact: The five residential properties at 23 to 31 Waterview Street (left of view) would be demolished and the site would be enclosed by hoarding (refer to Figure 12-19). An acoustic shed, water treatment plant, office and workshop building would be established on the site. The shed would rise about two and half times the height of the existing two storey residential properties. This structure would become a prominent feature in this view and contrast with the existing predominantly residential streetscape character of this view. Construction vehicles would be seen travelling along Waterview Street and accessing the site.

Overall, this change would result in a considerable reduction in the amenity of this view, which is local sensitivity, and result in a **moderate adverse visual impact.**

12.5.8 Viewpoint 8: View west along Second Avenue from Five Dock Park

Existing conditions: This view from Five Dock Park is oriented west along Second Avenue towards the Five Dock Town Centre and the St Alban's Anglican Church (refer to Figure 12-20). While the church is partially screened by mature vegetation within the church grounds (centre of view), the roofline is visible and provides visual interest in the background of this view. The church adjoins a low scaled commercial building which forms part of the western construction site. Three storey mixed use development within the town centre can also be seen at the far end of the street.

The eastern construction site is out of view, but is located south of Second Avenue, in the background of the view. The western construction site terminates this view. Second Avenue is bordered by a mix of two to four story medium density buildings and one to two storey detached residential properties in this view. The street trees on the northern side of Waterview Street (right of view) soften the view to this built form and provide a leafy character to the northern side of the street. There is limited vegetation on the opposite verge (left of view) which includes overhead powerlines which create a strong linear element within the street.

Sensitivity: This is an incidental view to the town centre from Five Dock Park which would be experienced by a small number of recreational users of the park. There are however, a concentration of local residents, in low and medium density residential properties, who would appreciate similar views from parts of Second Avenue. These views are therefore of **local visual sensitivity**.

FIGURE 12-20: VIEWPOINT 8 – VIEW WEST ALONG SECOND AVENUE FROM FIVE DOCK PARK, EXISTING VIEW

FIGURE 12-21: VIEWPOINT 8 – VIEW WEST ALONG SECOND AVENUE FROM FIVE DOCK PARK, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Visual impact: The built form in the centre background of this view would be removed and an acoustic shed would be constructed on the western construction site which terminates this view (refer to Figure 12-21). A second acoustic shed would be established on the eastern construction site, in the background of this view, towards the western end of Second Avenue. These structures would rise about one and a half storeys higher than the adjacent mixed use buildings. Construction vehicles would also be seen accessing the site.

These acoustic sheds would be viewed in the context of existing multi-storey residential and mixed use development, while they would rise above the predominant building height, they would not create a visually dominant skyline feature. These structures would contrast in character with the surrounding residential areas and the architectural detail of the adjacent church.

Overall, due to the distance, this change would result in a noticeable reduction in the amenity of this view, which is local sensitivity, and result in a **minor adverse visual impact.**

12.6 Assessment of night-time visual impact

Existing condition: The setting of the Five Dock Station construction site is an area of **Medium district brightness (E3)**. This is due to the to the moderately lit town centre with commercial and retail buildings up to four storeys intermixed with multi storey residential properties. Headlights from traffic, lighting from traffic lights and streetlights contribute to the night-time lighting levels. Mature vegetation along Great North Road and adjacent streets would assist with reducing light spill from the Five Dock town centre to adjacent residential areas.

Visual impact: Night works would be required at the construction sites during construction. This work would include underground construction works within the shafts, which would be largely contained by acoustic sheds. Lighting associated with underground works would be largely contained within the acoustic shed. However, there would be security, vehicle and task lighting within the remaining areas of the site to support this underground work. Construction vehicle movement would also introduce additional vehicle lighting that may be perceived in addition to existing night traffic. If an acoustic shed is not required, all lighting would be designed to minimise light spill and skyglow.

Overall, there would be a noticeable reduction in visual amenity at night, particularly in residential areas on East Street, Second Avenue and Waterview Street and elevated multi-storey residential buildings along Great North Road. Commercial properties within the Five Dock Town Centre may also view night-time works and construction vehicle movement. This is a medium district brightness environment, resulting in a **minor adverse visual impact** at night.

12.7 Summary of impact

Table 12-1, 12-2 and 12-3 summarise the potential landscape and visual impacts of Stage 1.

TABLE 12-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Great North Road streetscape	Local	Considerable reduction	Moderate adverse
2	East Street, Second Avenue and Waterview Street streetscapes	Local	Noticeable reduction	Minor adverse
3	Fred Kelly Place and Australia Post open space	Local	Noticeable reduction	Minor adverse

TABLE 12-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south-east along East Street	Local	Noticeable reduction	Minor adverse
2	View south-west along Great North Road	Local	Considerable reduction	Moderate adverse
3	View north along Great North Road	Local	Considerable reduction	Moderate adverse
4	View east towards Australia Post open space	Local	No perceived change	Negligible
5	View south-east from corner of Great North Road and Second Avenue	Local	Noticeable reduction	Minor adverse
6	View south-west along Waterview Street	Local	Considerable reduction	Moderate adverse
7	View north-west along Waterview Street	Local	Considerable reduction	Moderate adverse
8	View west along Second Street from Five Dock Park	Local	Noticeable reduction	Minor adverse

TABLE 12-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	Five Dock Station construction site	E3: Medium level brightness	Noticeable reduction	Minor adverse

13. THE BAYS STATION CONSTRUCTION SITE

13.1 Existing environment

13.1 Existing environment

The Bays Station construction site would be located on a south-western foreshore area of White Bay which forms part of The Bays as identified by the NSW Government. The Bays comprises 5.5 kilometres of harbour front land and about 100 hectares of largely government-owned land, about two kilometres east of the Sydney CBD (refer to Figure 13-1: The Bays Station – Landscape context).

The Bays has a rich history of maritime, industrial and infrastructure uses and '*played a part in Sydney's significant transformation in the 20th Century'* (Urban Growth NSW Development Corporation, 2015, p.5). This area has been used to support maritime trade and industry since European settlement. In White Bay there are a number of important features, including the former White Bay Power Station, which was opened in 1913; the Glebe Island grain silos, which were constructed in 1975; and the White Bay Cruise Terminal, which was opened in 2013. The heritage listed former White Bay Power Station (a State heritage item) and the Glebe Island Silos (of local heritage significance) provide dominant visual landmarks and physical reminders of the site's industrial history. These industrial elements are identified as a '*key visual landscape'* with a '*townscape role'* in the Leichhardt Development Control Plan 2013 (Appendix C-3, A.2.2).

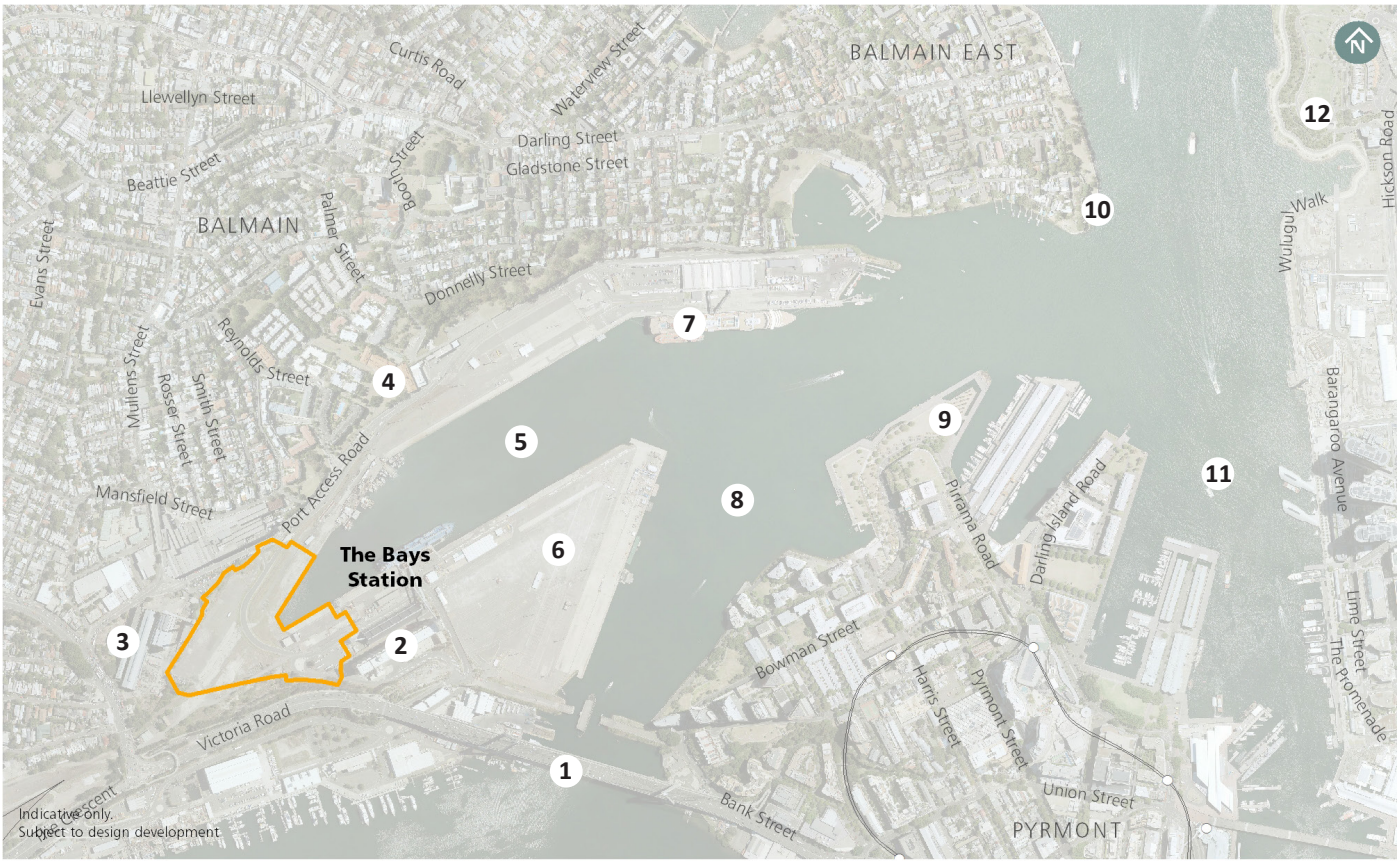
WHITE BAY CRUISE TERMINAL

As White Bay and Glebe Island are the only deep-water wharves to the west of the Sydney Harbour Bridge, these areas provide the main port freight and logistics services for the harbour. Current uses include a mix of maritime, port, industrial and commercial activities. The White Bay Cruise terminal functions as Sydney's second cruise ship terminal. Glebe Island, which adjoins the construction site, is currently occupied by a concrete batching plant and previous uses included a car import terminal. The former White Bay Power Station is currently disused and surrounded by vacant foreshore land in which the construction site would be located.

White Bay is located on the flat foreshore areas of Sydney Harbour and framed by the elevated suburbs of Balmain, Balmain East and Rozelle to the north which slope down to the bay. These suburbs comprise predominantly residential uses and form the backdrop to most views north across White Bay. There are pockets of open space on the ridgetop and hillslopes in Balmain. Public access to the foreshore areas around White Bay is restricted to certain periods during cruise ship days and further restricted during port activities. Foreshore public open space areas form the edges to Jones Bay and Johnstons Bay at Pyrmont and Balmain East which includes Peacock Point. Views are available from the waterfront areas of White Bay to Sydney Harbour Bridge and to foreshore areas at Barangaroo.

1 ANZAC BRIDGE
2 GLEBE ISLAND SILOS

FIGURE 13-1: THE BAYS STATION – LANDSCAPE CONTEXT



Construction site
Suburban rail network

1. Anzac Bridge
2. Glebe Island Silos
3. White Bay Power Station
4. Mansfield Street Open Space
5. White Bay
6. Glebe Island
7. White Bay International Passenger Terminal
8. Jones Bay
9. Johnstons Bay
10. Peacock Point Reserve
11. Darling Harbour
12. Barangaroo Reserve

13. THE BAYS STATION CONSTRUCTION SITE

13.1 Existing environment

Ferries within this part of Sydney Harbour operate between ferry stops at Balmain East, Barangaroo and Pyrmont Bay and offer water views from near Barangaroo into White Bay.

Victoria Road, a major multi-lane road, is located on elevated land to the west and south of the site and separates the site from the residential suburb of Lilyfield to the west of Victoria Road. Victoria Road provides an important connection between north-western suburbs to Sydney CBD via the nearby Anzac Bridge. The iconic bridge crosses Glebe Island parallel to the State heritage listed Glebe Island Bridge and provides another important visual landmark within the area due to its prominent concrete pylons and suspension cabling. Bus stops are located along Victoria Road near the former White Bay Power Station and also nearby on Robert Street.

ROBERT STREET

The Bays is intended to undergo urban renewal. Several major projects are underway both within and adjacent to the precinct. The Bays includes a temporary truck marshalling facility ('White Bay truck marshalling yard') for the Sydney Metro City & Southwest (Chatswood to Sydenham) project which is expected to be used until 2020, WestConnex M4-M5 link project which is expected to be completed in 2023, and the proposed Western Harbour Tunnel project, which is proposed to commence construction in 2023.

There are several major infrastructure projects planned for the study area. The WestConnex M4-M5 link is a State Significant Infrastructure project and involves the construction of a new underground motorway interchange nearby at Rozelle. The M4-M5 Link Rozelle Interchange and Iron Cove Link will provide an underground bypass of Victoria Road between Iron Cove Bridge and Anzac Bridge and provide connectivity to the proposed Western Harbour Tunnel project. The M4-M5 Link Rozelle Interchange project will involve the provision of a new open space within the former Rozelle Rail Yards, demolition of the existing Victoria Road bridge and replacement with a new structure, realignment, widening and resurfacing of the intersection of The Crescent and Victoria Road, construction of a pedestrian and cycle underpass below Victoria Road, and planting of proposed trees along Victoria Road south of former White Bay Power Station (AECOM, 2017).

The proposed Western Harbour Tunnel is also part of a State Significant Infrastructure project (the Western Harbour Tunnel and Warringah Freeway Upgrade project) which would comprise a new crossing of Sydney Harbour via tolled motorway tunnels connecting the existing Warringah Freeway at North Sydney and WestConnex at Rozelle. The Western Harbour Tunnel component would connect to the M4-M5 Link at the Rozelle interchange. Secretary's Environmental Assessment Requirements were issued for the project in 2017. A construction site for

13.1 Existing environment

Western Harbour Tunnel is proposed to be located in the former Rozelle Rail Yards. Construction sites are also proposed to occupy foreshore areas at Glebe Island and along the northern waterfront area at White Bay.

The approved Port Authority of NSW Glebe Island multi-user facility project will be located on the eastern side of Glebe Island and will enable dry bulk materials critical for construction works within Sydney to be imported by water, stored and distributed more easily. A concrete batching plant and aggregate handling facility is also proposed on Glebe Island which would comprise the construction of silos, warehouses, weigh bridges, ancillary uses and car parking areas. Both facilities on Glebe Island would operate seven days a week and 24 hours per day.

Nearby and adjacent to the Anzac Bridge, a proposed extension to a commercial building (Longitude Office Building) at 36 James Craig Road would involve the addition of a 5-8 storey extension with vertical green elements to the facades and roof.

1 ROBERT STREET, WHITE BAY
2 WHITE BAY POWER STATION
3 LILYFIELD ROAD, ROZELLE
4 VIEW TO VICTORIA ROAD AND THE WHITE BAY POWER STATION
5 DONNELLY STREET, BALMAIN

13.2 Planning guidance

Further to the planning review carried out in Section 3 of this technical paper, the following review identifies relevant provisions in strategic and masterplanning documents, which are of note to the landscape and visual impact assessment of The Bays Station construction site.

13.2.1 The Bays Precinct Project

The urban renewal of land within The Bays was identified as a State Significant Precinct and 'Growth Centre' by the NSW Government in 2017.

The construction site for The Bays Station is located within the 'Bays West' area, which includes White Bay, the former White Bay Power Station, Glebe Island, Rozelle Bay and the former Rozelle Rail Yards.

This area will be: '*a showcase of old and new – with heritage assets mixed amongst new open public spaces, community facilities, commercial and residential sites, and important port and working harbour uses*' (UrbanGrowth NSW Development Corporation, 2018).

The Bays intends to deliver eight destinations in three phases including the former White Bay Power Station, Bays Market District, Bays Waterfront Promenade, Wentworth Park, Glebe Island, White Bay, Rozelle Rail Yards, Rozelle Bay and Bays Waterways. As outlined in the '*The Transformation Plan: The Bays Precinct, Sydney*' (UrbanGrowth NSW Development Corporation, 2018), the former White Bay Power Station and surrounds is intended … '*to create a hub for knowledge-intensive and advanced technological industries*'.

The Bays Waterfront Promenade, which includes the foreshore areas of the construction site, is intended to provide '*a continuous, staged waterfront promenade from Balmain to Pyrmont connecting all Destinations through to the CBD and Woolloomooloo*'. Glebe Island will provide an opportunity to support the 'economic activities of the port and maritime industries, potentially combining with a technological and innovation campus. White Bay, which includes the White Bay Cruise terminal, will '*enhance the experience at White Bay through a mix of port, maritime, recreation and employment uses*'. (UrbanGrowth NSW Development Corporation, 2018)

The strategy outlines a 25 year program. Redevelopment of the former White Bay Power Station has been identified as an '*immediate priority*', whereas the works at Glebe Island and White Bay would commence in the longer-term.

Sydney Metro West is identified as a key project in the Bays West Area: '*With a station at The Bays, Sydney Metro West will facilitate the NSW Government's commitment to urban renewal and creation of jobs in the precinct'* (UrbanGrowth NSW Development Corporation, 2018).

13.2.2 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 Sydney Harbour Catchment Map (Amendment), 2016

Under the Sydney Regional Environmental Plan (2016), the site is located within Leichhardt Council area which has since been amalgamated with other neighbouring council areas to form the Inner West Council. Under the Leichhardt Local Environmental Plan 2013 Zoning Map the construction site is identified as '*Ports and Employment Area'.*

13.2.3 Sydney Regional Environmental Plan No 26—City West, 2017

The construction site is located within the Ports and Employment Area as defined in Sydney Regional Environmental Plan No 26—City West (2017). The City West area is divided into four precincts under Sydney Regional Environmental Plan No 26 and the construction site is located within The Bays.

Planning principles

Under Division 3, the planning principles which relate to visual amenity for The Bays include the following:

Role and land use activities:

- Development should reinforce and complement the role of The Bays as a major inner-harbour port and maritime location. Development should recognise that the port operates for 24 hours of the day and that the generation of noise, lighting and traffic movement is necessarily associated with its operation
- Development in The Bays is to provide for a mixture of commercial port, port-related, employment, waterfront and recreational uses, but is not to include residential development. The existing diversity and maritime character of The Bays, particularly the mixed use of waterfront areas, should be retained
- Development is to encourage the conservation of and adaptation for re-use of existing heritage items and structures for uses compatible with new development.

Urban design:

- Design principles to be developed in detailed planning should recognise the working industrial nature of The Bays in close proximity to residential areas
- Development along The Bays boundary should relate to and not adversely affect the adjoining street systems and built forms
- The siting and form of development in all areas must consider impacts on views from within, to and across The Bays from surrounding areas.

Public domain:

- The siting and form of development must consider creating, retaining and enhancing views and vistas from the water and public domain
- Development should help to create a high quality public domain in The Bays
- Masterplans for all areas should identify opportunities for public recreation, public access through sites and links to adjoining pedestrian and cyclist networks.

Land use zoning

The site is located within the Ports and Employment Zone. There are no objectives for this zone which relate to landscape character and visual amenity. Under Division 4 Zoning (Clause 20C), the relevant objectives of this zone are: '*to provide pedestrian and cyclist links with surrounding public access networks'.*

13. THE BAYS STATION CONSTRUCTION SITE

13.3 Character and components of Stage 1

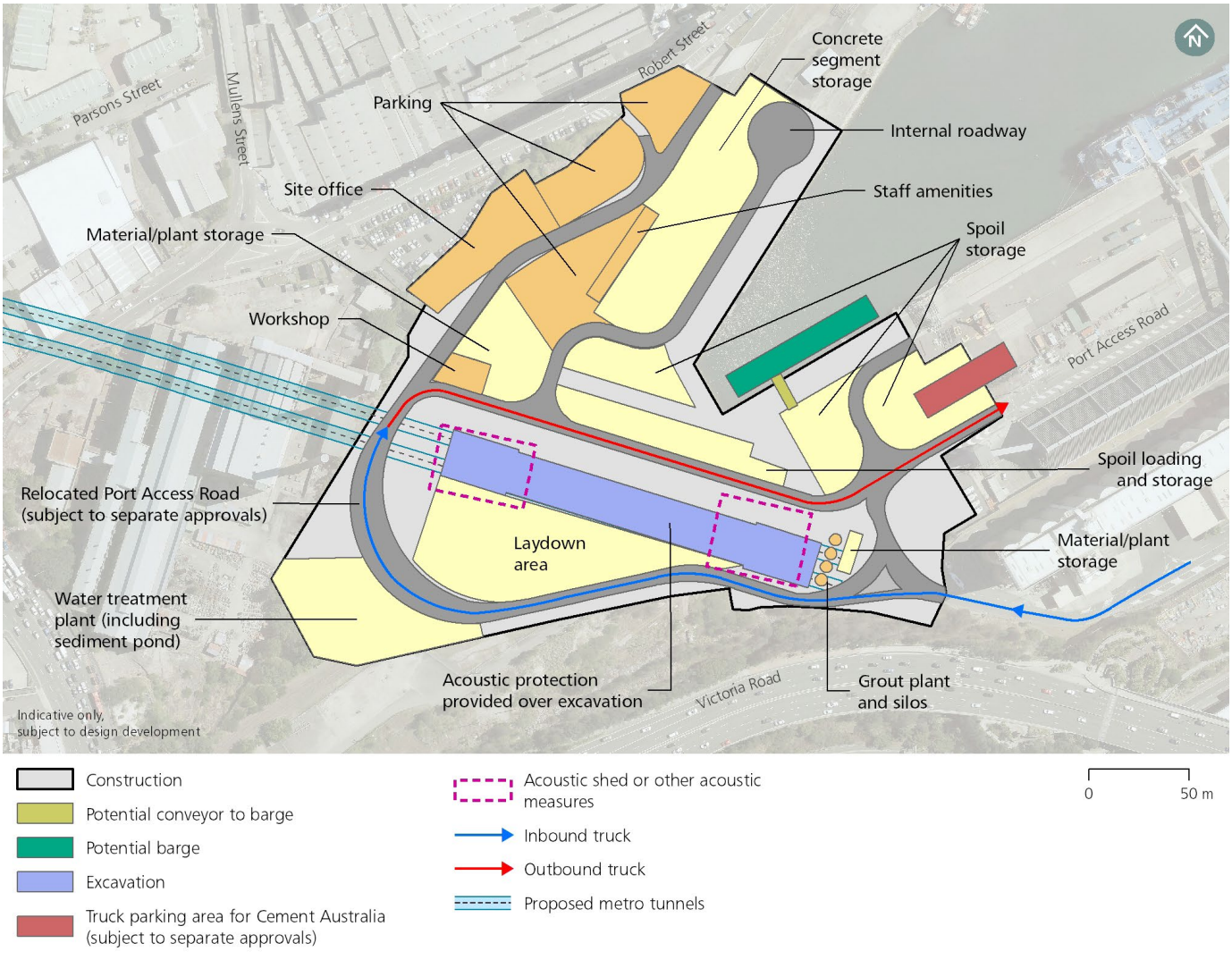
13.3 Character and components of Stage 1

A construction site would be established adjacent to the former White Bay Power Station, covering about 61,200 square metres.

The key works and components that would be seen at this site include:

- Removal of buildings and structures including:
  - Two industrial buildings near the corner of Port Access Road and Solomons Way adjacent to the port
  - Removal of about 30 trees and all other vegetation within the site
- Construction elements and works:
  - Establishment of parking areas, site offices, amenities, workshops, material/plant storage areas, laydown areas, an elevated conveyor, and water treatment plant and other works
  - A metal clad acoustic shed (about 15 metres high) at the south-western part of construction site
  - A metal clad acoustic shed (about 15 metres high) at the south-eastern part of construction site
  - Station excavation works and support

FIGURE 13-2: THE BAYS STATION CONSTRUCTION SITE LAYOUT



- Temporary spoil storage
- Tunnel boring machine launch

- Primary site access and haulage routes:
  - Site entry via Solomons Way to the east
  - Site exit via Port Access Road to the east
- Works would include the use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs etc
- Noise barriers and hoardings surrounding the construction sites, about three metres high.
- Overall, Stage 1 would take about three years to complete including enabling and demolition works, station excavation, and tunnel boring machine excavation.

The hours of construction would be as follows:

- Demolition, concrete deliveries, and remediation works would be carried out during standard hours
- Heavy plant deliveries after hours.
- Underground works and tunnel boring machine launch, truck loading and spoil haulage 24 hours, 7 days a week.

Figure 13-2 identifies the construction site layout and indicative location of these components.

GLEBE ISLAND PORTSIDE LAND

13.4 Assessment of landscape impact

The landscape elements and public realm areas which may potentially be impacted by Stage 1 are:

- The site and Glebe Island portside industrial and commercial areas.

The following section summarises the assessment of impact for this landscape and public realm area (refer to Table 2-7 for impact levels).

13.4.1 The site and Glebe Island portside industrial and commercial areas

Existing conditions: The Glebe Island portside industrial and commercial areas are a predominantly working landscape. The landform is highly modified and largely cleared for the purposes of portside industrial activity. The site is framed to the south-west by some vegetation on sloping land and there are some intermittent trees within the site along the boundary with Robert Street. These trees are located behind fences so that they provide little contribution to the shade and amenity of the adjacent portside industrial and commercial areas.

Sensitivity: The Glebe Island portside industrial and commercial areas provide a setting for the industrial activities and are used mainly by workers from this area. The landscape is not a highly valued feature of this environment which has a primarily working function. The site and Glebe Island portside industrial and commercial areas are of **neighbourhood landscape sensitivity**.

Landscape impact: All vegetation within the construction site would be removed. However, as there is limited public access to these areas this change would not affect the level of comfort and amenity for users of the area, including the adjacent streets and parking areas along Robert Street. Overall, this change would be contained and localised, and result in no perceived change in the landscape quality of the site and Glebe Island portside industrial and commercial areas, which are a landscape of neighbourhood sensitivity. This would result in a **negligible landscape impact**.

13. THE BAYS STATION CONSTRUCTION SITE

13.5 Assessment of daytime visual impact

13.5 Assessment of daytime visual impact

The Bays Station construction site would be visible from a wide visual catchment which extends from nearby industrial, commercial and portside areas in Rozelle and Glebe Island, residential areas to the north in Rozelle, residential areas along the lower slopes of Balmain and Balmain East. There are distant views from Barangaroo Reserve and elevated areas of Millers Point including from the Sydney Observatory about 2.4 kilometres away.

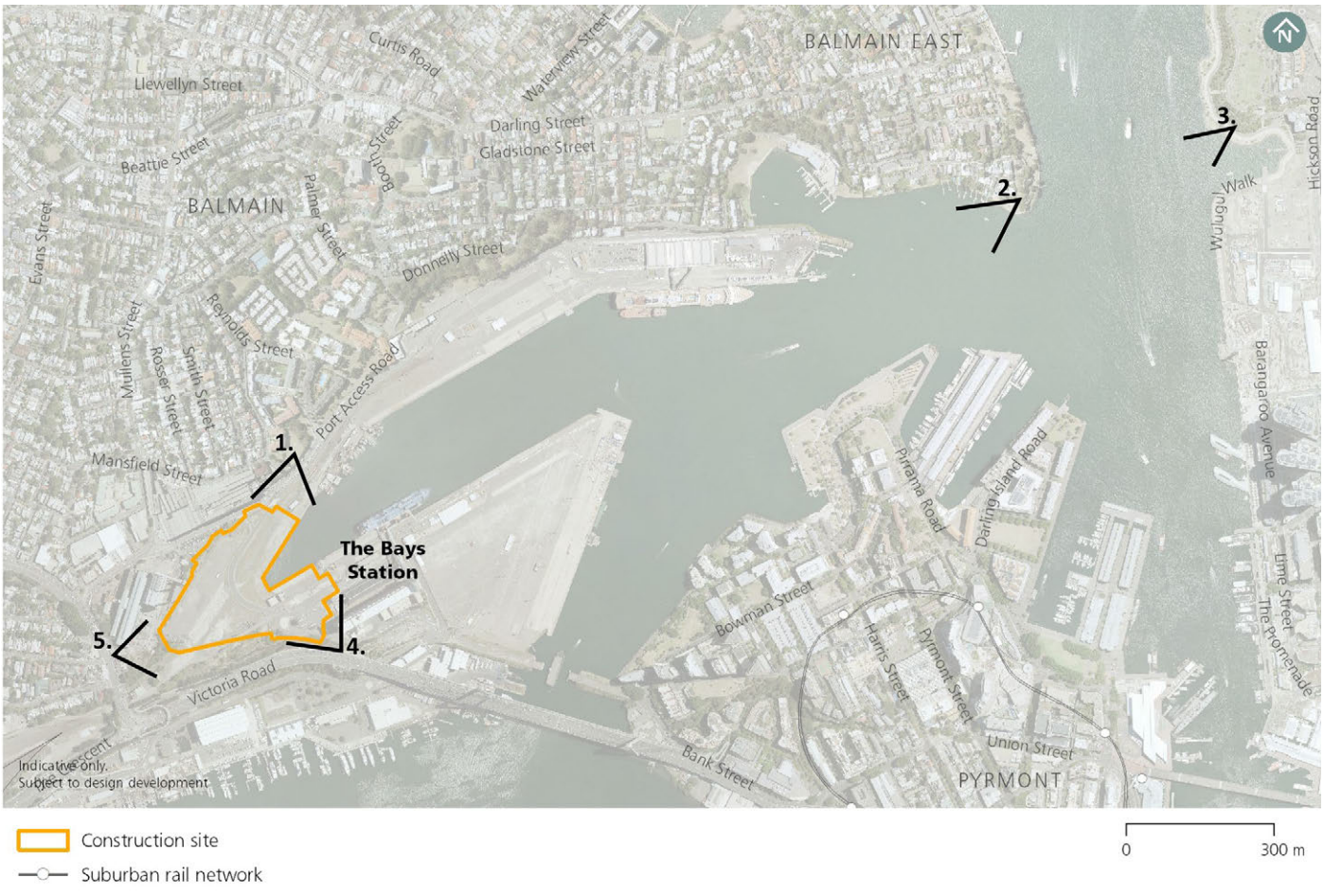
There would also be elevated views from the south-west facing windows of the high density residential and commercial developments within Barangaroo and Pyrmont. Water based views to the site can be seen from public ferries travelling between Barangaroo, Pyrmont Bay and Balmain East, and from other watercraft using this part of Sydney Harbour.

From the west and south, views to the site are mostly obstructed by Victoria Road which is on elevated land as it rises to the Anzac Bridge and includes some areas of dense roadside vegetation.

The following viewing locations were selected as representative of the range of views to Stage 1:

- Viewpoint 1: View south from Mansfield Street open space, Rozelle

FIGURE 13-3: THE BAYS STATION CONSTRUCTION SITE - VIEWPOINT LOCATIONS



- Viewpoint 2: View south-west from Peacock Point Reserve, Balmain East
- Viewpoint 3: View south-west from Barangaroo Reserve, Barangaroo
- Viewpoint 4: View north-west from Victoria Road pedestrian path near Anzac bridge
- Viewpoint 5: View east from Victoria Road, Rozelle.

Figure 13-3 identifies the location of these viewpoints.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment.

13.5.1 Viewpoint 1: View south from Mansfield Street open space, Rozelle

Existing conditions: This view from an open space area near Mansfield Street represents the view from this residential area of Rozelle (refer to Figure 13-4). The site is framed by the iconic twin chimney stacks of the former White Bay Power Station (right of view) and the Glebe Island Silos (left of view) which each rise above the skyline. The vegetation bordering Victoria Road forms a predominantly vegetated backdrop to this view.

The port areas and White Bay is surrounded by areas of vacant land, car park areas, roads and ancillary structures. A truck marshalling area for Sydney Metro City & Southwest project can be seen within the construction site, adjacent to the White Bay port lands. The urban renewal of The Bays as intended by Urban Growth NSW Development Corporation would result in changes to the foreshore areas and overall character of White Bay.

Sensitivity: This view from the Mansfield Street open space is experienced mainly by local residents and their visitors. This location is used for passive recreation, however, this is an incidental view without any particular landscape features. This view is of **local visual sensitivity**.

FIGURE 13-4: VIEWPOINT 1 – VIEW SOUTH FROM MANSFIELD STREET OPEN SPACE, ROZELLE, EXISTING VIEW

FIGURE 13-5: VIEWPOINT 1 – VIEW SOUTH FROM MANSFIELD STREET OPEN SPACE, ROZELLE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

FIGURE 13-6: VIEWPOINT 2 – VIEW SOUTH-WEST FROM PEACOCK POINT RESERVE, BALMAIN EAST, EXISTING VIEW

FIGURE 13-7: VIEWPOINT 2 – VIEW SOUTH-WEST FROM PEACOCK POINT RESERVE, BALMAIN EAST, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

Visual impact: The construction site would be visible extending across a large portion of the middle to background of this view, extending from the water towards Victoria Road in the background (refer to Figure 13-5). Works within this site would include laydown areas, office, amenities and workshop buildings and car parking areas. Two acoustic sheds would be established on the south-east and south-western part of the site, set back from the water edge (middle ground), similar in scale with the nearby marine warehouse development at Rozelle Bay (background of view). These sheds would rise above the vegetated backdrop which would be otherwise retained, enclosing the view. Taller construction elements such as material and spoil storage and a water treatment plant would also be seen adjacent to the two sheds.

Due to the elevated viewing position and angle of view, more of the construction work would be seen across the site. However, this view has a high visual absorption capacity for this construction work due to the existing industrial scale uses and ongoing use of The Bays for construction work on other major infrastructure projects.

Overall, despite the scale of the construction work that would be visible in this view, due to the distance and visual absorption capacity of the existing setting, there would be a noticeable reduction in the amenity of this view. As this is a view of local sensitivity, this would result in a **minor adverse visual impact**.

13.5.2 Viewpoint 2: View south-west from Peacock Point Reserve, Balmain East

Existing conditions: This view from Peacock Point Reserve represents views from an area of waterfront open space in Balmain East (refer to Figure 13-6). Located on the southern corner of a peninsula, Peacock Point Reserve provides panoramic water views across Sydney Harbour towards Jones Bay and White Bay to the south-west (centre of view) and east towards the high rise development

within Barangaroo and Sydney CBD (out of view). The chimney stacks of the former White Bay Power Station, adjacent to the construction site, are visible on the skyline in the background of the view, together with the distinctive forms of the Anzac Bridge and Glebe Island Silos. White Bay is frequented by large cruise ships which form dominant elements on the skyline (right of view), obstructing views to the industrial and residential areas beyond. When in port, these ships rise above the surrounding horizon line.

Sensitivity: This view from Peacock Point Reserve includes the waters of Sydney Harbour and White Bay. While it is a largely industrial view, it includes a number of local visual features including the stacks of the former White Bay Power Station, the Anzac Bridge and Glebe Island Silos. This view is experienced by local recreational users for the appreciation of views. This view is of **local visual sensitivity**.

Visual impact: The construction site would be visible in the background of this view, partly screened by Glebe Island and the Glebe Island grain silos (refer to Figure 13-7). There would be two acoustic sheds established on the south-east and south-western part of the site, set back from the water edge and in the far background of the view. While these structures and other tall equipment used on the site would be of a similar scale to some of the adjacent industrial buildings, they would be absorbed into the surrounding industrial landscape, and unlikely to be differentiated from the ongoing use of The Bays for construction work on other major infrastructure projects.

Overall, due to the distance and visual compatibility of the construction work with the character of this area of the view, there would be no perceived change in the amenity of this view. This is a view of local sensitivity and there would be a **negligible visual impact** from this location.

FIGURE 13-8: VIEWPOINT 3 – VIEW SOUTH-WEST FROM BARANGAROO RESERVE, BARANGAROO, EXISTING VIEW

13.5.3 Viewpoint 3: View south-west from Barangaroo Reserve, Barangaroo

Existing conditions: The western foreshore of the Barangaroo Reserve offers spectacular views across the open waters of the harbour to the suburb of Balmain East and urban areas of Pyrmont (refer to Figure 13-8). Glimpses are available towards Jones Bay and White Bay with the iconic Anzac Bridge, Glebe Island Silos and the former White Bay Power Station visible on the skyline in the distance.

The construction site for the Sydney Metro City & Southwest project can be seen in the middle ground of this view (left) including an acoustic shed, conveyor belt, and barge.

The waters of Sydney Harbour between Barangaroo and Balmain East, seen in this view, are frequented by a range of vessels from small boats, yachts and ferries, to cruise ships. This creates an active and dynamic character to the harbour, which varies throughout the day, week and year.

Sensitivity: Views from Barangaroo Reserve would be experienced by high volumes of recreational users using the foreshore promenade. This reserve is an important regional destination and is the venue for important city-wide events. This view has a few interesting features but is largely an incidental view across the harbour waters. Consequently, these views have a **regional visual sensitivity**.

Visual impact: The construction site would be visible in the far background of this view, mostly screened by Glebe Island and the Glebe Island grain silos. The structures and other tall equipment used at the construction site would be of a similar scale to some of the adjacent industrial buildings, and would be absorbed into the surrounding industrial landscape, and unlikely to be distinguished from other construction work in this view.

Overall, due to the distance and visual compatibility of the construction work with the character of this view, there would be no perceived change in the amenity of this view. While this is a view of regional sensitivity, there would be a **negligible visual impact**.

FIGURE 13-9: VIEWPOINT 4 – VIEW NORTH-WEST FROM PEDESTRIAN PATH NEAR ANZAC BRIDGE, EXISTING VIEW

FIGURE 13-10: VIEWPOINT 4 – VIEW NORTH-WEST FROM PEDESTRIAN PATH NEAR ANZAC BRIDGE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

13.5.4 Viewpoint 4: View north-west from pedestrian path near Anzac bridge

Existing conditions: This view from the footpath on the western approach to the Anzac Bridge is elevated above the surrounding industrial areas of The Bays (refer to Figure 13-9). The construction site is mostly screened by dense roadside vegetation. However, the twin chimney stacks of the former White Bay Power Station can be seen, rising above this vegetation (left of view).

White Bay and the surrounding land are characterised by a mix of industrial and commercial buildings together with vacant portside land and other infrastructure. There are several heritage character saw tooth brick sheds in the background of the view, transitioning the scale of land use to the leafy residential areas of Rozelle, which are visible on the skyline in the background of the view.

Sensitivity: This view from the pedestrian path near Anzac Bridge is appreciated by pedestrians and adjacent road users. While this is a local pedestrian route and is on the approach to the Anzac Bridge, it is an incidental view without any particular landscape features. This is a view of **local visual sensitivity**.

Visual impact: There would be a slot view to the site, between the roadside trees and Glebe Island grain silos (refer to Figure 13-10). Due to the elevated viewing position, there would be several construction works visible including the eastern acoustic shed and spoil storage areas. The acoustic shed structure would rise several stories above the site and screen views to the industrial buildings and residential areas in the background. The spoil storage areas would intermittently screen views to a new road, car parking areas and other buildings beside the port.

The construction site would be absorbed into the surrounding context of industrial scale uses and ongoing use of The Bays for construction work on other major infrastructure projects.

Overall, despite the scale of the construction work that would be visible in this view, due to the screening by roadside vegetation and the Glebe Island grain silos, and the visual absorption capacity of the existing setting, there would be no perceived change in the amenity of this view. This is a view of local sensitivity, and there would be a **negligible visual impact**.

13.5.5 Viewpoint 5: View east from Victoria Road, Rozelle

Existing conditions: In this view from a bus stop on Victoria Road the site is mostly concealed by the former White Bay Power Station (left of view) and adjacent vegetation (right of view) (refer to Figure 13-11). There are glimpses to the water at White Bay, and the upper arch and southern pylons of the Sydney Harbour Bridge is visible in the distant background. Two large visiting cruise ships at White Bay Cruise Terminal (left of view) can be seen in the middle to background of this view and obstruct views to the residential peninsula of Balmain. In this view they dwarf the Sydney Harbour Bridge and block the view to the northern pylons. The Glebe Island grain silos (right of view) rise prominently in the middle to background of this view, obstructing views to the Barangaroo and Sydney CBD skyline beyond.

The derelict former White Bay Power Station forms a dominant visual structure within the foreground of the view which together with the nearby vertical forms of the Glebe Island silos reinforce the industrial character of White Bay.

Works associated with other major infrastructure projects, including the Sydney Metro City & Southwest project and other future construction works, can be seen in the middle ground of this view. Several major road projects and future urban renewal

FIGURE 13-11: VIEWPOINT 5 – VIEW EAST FROM VICTORIA ROAD, ROZELLE, EXISTING VIEW

FIGURE 13-12: VIEWPOINT 5 – VIEW EAST FROM VICTORIA ROAD, ROZELLE, INDICATIVE EXTENT OF CONSTRUCTION SITE (SHOWN BY ORANGE SHADING)

strategies in The Bays will result in substantial changes to the character of White Bay and the streetscape character of Victoria Road.

Sensitivity: This view from Victoria Road is an incidental view available to pedestrians and commuters at the adjacent bus stop. While this view offers a glimpse to the Sydney CBD and Sydney Harbour Bridge, there are a small number of potential viewers. This view is of **neighbourhood visual sensitivity**.

Visual impact: A construction site would be established in the centre, middle ground of this view (refer to Figure 13-12). The south-western acoustic shed would be seen in this view, rising several stories above the site. This temporary structure would obstruct the glimpses to the bay and Sydney Harbour Bridge.

Existing vegetation adjacent to the former White Bay Power Station would partially conceal views to office buildings, car parking, laydown areas and other construction works. Taller construction elements such as material and spoil storage and a water treatment plant would be seen in the middle ground of this view.

While the construction site would be seen extending across the middle ground of this view, intensifying the industrial character of this area, it would be consistent in character with the surrounding industrial landscape. Overall this change would create a noticeable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible visual impact**.

13.5.6 Views to power supply route

Existing conditions: The power supply route between The Bay Station construction site and Rozelle substation on Manning Street (refer to Figure 13-13) would pass through the low density character residential areas of Rozelle, between Mullens and Merton Streets, south-west along Darling Street. This part of the route is located within The Valley Conservation Area (*Leichhardt Local Environmental Plan 2013*). This conservation area includes small industrial and warehouse buildings near White Bay, heritage character one and two storey terraces and cottages in Rozelle, and Victorian commercial terraces and corner buildings along Darling Street, forming a traditional main street.

The route continues through residential areas northwest along Waterloo, Moodie, McCleer and Callan Streets. These are predominantly low density residential areas, with heritage character one and two storey terraces and cottages, predominantly on narrow streets. The Rozelle substation is located adjacent to the Callan Park Conservation Area, a '*Historic Landscape*' on both the National Trust of Australia register and State heritage register. This conservation area … '*contributes visually and socially to the local identity and sense of place*' of Rozelle and has '*commanding views over Iron Cove*' (NSW Heritage Inventory, 2017).

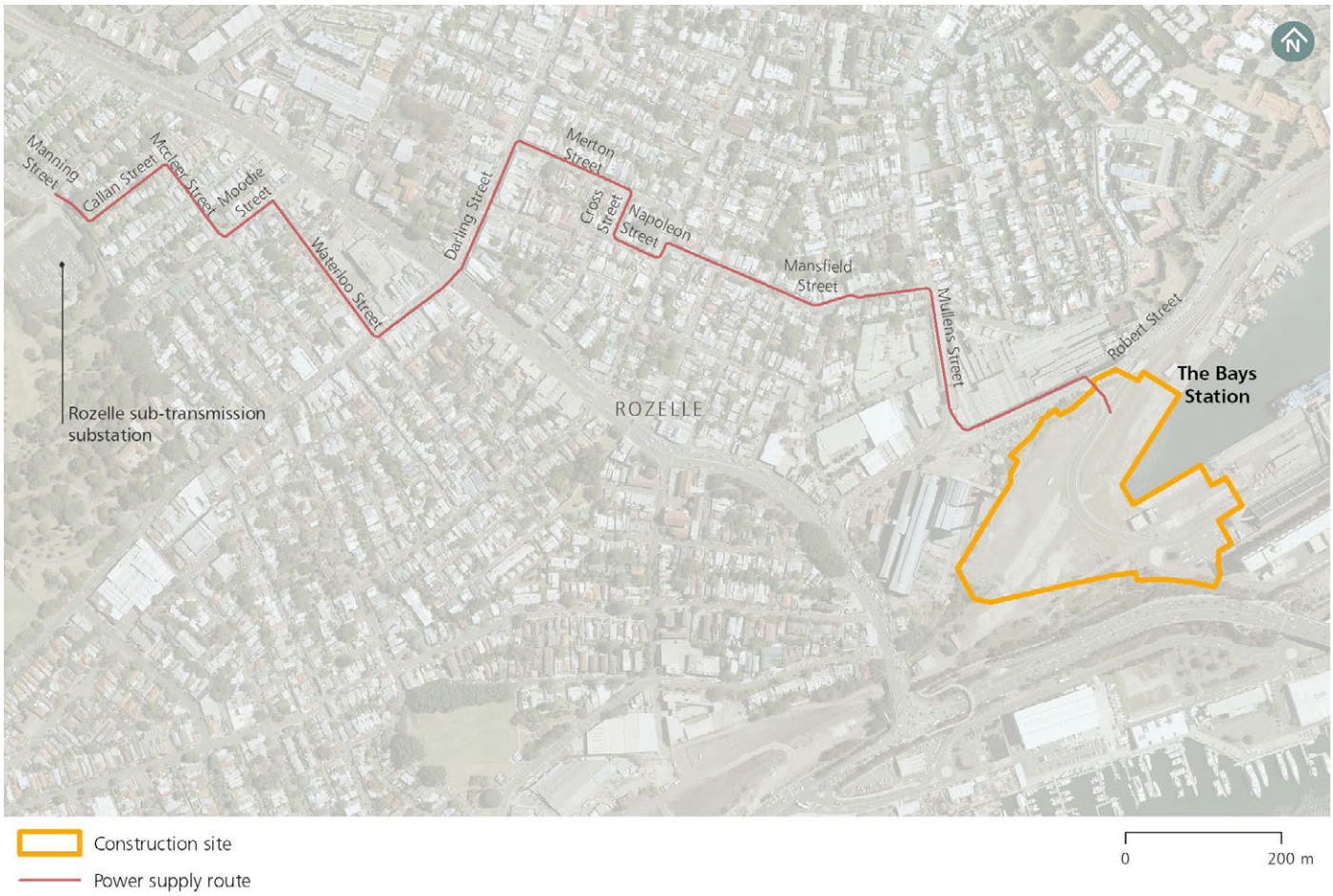
Sensitivity: Views along the power supply route would generally be experienced by local residents, workers and visitors to Rozelle. This would include elevated and street level views from the streetscape, residences, offices, restaurants, cafes and retail outlets overlooking the route. Views is this area include areas of The Valley Conservation Area (Leichhardt Local Environmental Plan 2013), and the substation is adjacent to the Callan Park Conservation Area. Overall the views along this route are of **local visual sensitivity**.

Visual impact: Views to construction of power supply route would include relatively small scale construction activities including trenching works within the road corridors, temporary road and footpath closures. The existing trees would be retained and protected during construction.

This work would be absorbed into views within the industrial area at White Bay, and within the main commercial areas of Rozelle as these are vehicle dominated locations with dense development and street level activity. Within the residential road corridors the construction activity would be more prominent, however, in the residential areas, where there is built form of a smaller scale and less busy streets.

Overall, due to the minor scale of these works, there would be a noticeable reduction in the amenity of views from the streets and adjacent properties along the power supply route. These views are of local sensitivity and this would result in **minor visual impact** during construction.

FIGURE 13-13: THE BAYS STATION POWER SUPPLY ROUTE



13.6 Assessment of night-time visual impact

The setting of The Bays Station construction site is an area of **Medium district brightness (E3).** The footprint is located in the 'Bays West' area, which is moderately lit by security lighting at the former White Bay Power Station and the maritime and harbour industries at Rozelle Bay, White Bay and Glebe Island. Visiting ships at the White Bay Cruise Terminal and other maritime vessels would add to night-time lighting levels.

Headlights from heavy traffic and street lighting along the Victoria Road and Anzac Bridge provide additional light sources adding to the brightness of the night sky. However, mature vegetation along Victoria Road and adjacent to the site would assist with reducing light spill from the port to adjacent areas. The nearby high density areas of the Sydney CBD and Pyrmont would further contribute to a high level of sky glow in this part of Sydney.

Visual impact: There would be night works required at the construction site during construction. This would include tunnelling works being carried out on a 24 hour basis. While the lighting associated with the underground works would be largely contained within the acoustic sheds, there would also be lighting within the remaining areas of the site to support this underground work.

The site is somewhat contained by landform, major roads and existing industrial buildings, so that the lighting of the site would be out of view, including from the elevated residential areas of Balmain and Rozelle. If an acoustic shed is not required, all lighting would be designed to minimise light spill and skyglow.

Construction vehicle movement would also introduce additional vehicle lighting, however, this is unlikely to be perceived in addition to existing heavy traffic in the vicinity of the site.

Overall, as this is an area of medium district brightness and the lighting would be consistent with the existing uses on the site, there would be no perceived change in the visual amenity of this area at night. This would result in a **negligible visual impact** at night.

13.7 Summary of impact

Table 13-1, 13-2 and 13-3 summarise the potential visual impacts of Stage 1.

TABLE 13-1: LANDSCAPE IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	The site and Glebe Island portside industrial and commercial areas	Neighbourhood	No perceived change	Negligible

TABLE 13-2: DAYTIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	View south from Mansfield Street Open Space, Rozelle	Local	Noticeable reduction	Minor adverse
2	View south-west from Peacock Point Reserve, Balmain East	Local	No perceived change	Negligible
3	View south-west from Barangaroo Reserve, Barangaroo	Regional	No perceived change	Negligible
4	View north-west from pedestrian path near Anzac bridge	Local	No perceived change	Negligible
5	View east from Victoria Road, Rozelle	Neighbourhood	Noticeable reduction	Negligible
	Views to the power supply route	Local	Noticeable reduction	Minor adverse

TABLE 13-3: NIGHT-TIME VISUAL IMPACT SUMMARY

No.	Location	Sensitivity	Magnitude	Impact
1	The Bays Station construction site	E3: Medium district brightness	No perceived change	Negligible

14. CUMULATIVE IMPACTS

The following section provides a summary of the potential cumulative landscape and visual impacts of Stage 1 in conjunction with other developments. Refer to Appendix G of the Environmental Impact Statement for a full description of projects included in the cumulative assessment. This assessment considers projects that would be in the vicinity of the construction sites for Stage 1 and are likely to have a landscape impact or in view of Stage 1 activities.

WESTMEAD SHOPPING VILLAGE, WESTMEAD

14.1 Westmead metro station

The Westmead metro station construction site would be in close proximity to:

- Parramatta Light Rail (Stage 1) project, which would be located on Hawkesbury Road, north of the station, including construction of a terminus stop on the corner of Railway Parade and the alignment expending north-east along Hawkesbury Road
- The proposed 16 storey tower development at 24-26 Railway Parade Westmead, which involves the demolition of the 'Westmead Shopping Village' and trees within this site.

Landscape impact

Construction activity at all three sites may require alterations to the existing road network, affecting accessibility, as well as legibility and wayfinding in the vicinity of the existing Westmead Station. The combined removal of vegetation across these sites may result in an increased landscape impact due to canopy loss and the resulting effect on the level of comfort and amenity in areas surrounding the existing Westmead Station.

Overall, there may be an increased landscape impact in areas surrounding the existing Westmead Station and residential properties to the north of Station Street.

Visual impact

The Westmead metro station construction site may be seen in the background of views to the Parramatta Light Rail (Stage 1) project and the proposed 16-storey development at 24-26 Railway Parade. All three construction sites may be visible from the existing Westmead Station, so that views to construction activity may surround the station at times. Similarly, there may be views from adjacent streets, houses, medium rise residential apartment buildings and commercial and retail buildings towards more than one construction site so that the extent of construction seen in these views may be increased.

Overall, there may be an increased visual impact from locations where these projects are seen concurrently.

14.2 Parramatta metro station

The Parramatta metro Station construction site would be in close proximity to the construction of Parramatta Light Rail (Stage 1) project, which would be constructed within the road corridor of Church and Macquarie Streets. Other major nearby construction sites include a 56 storey commercial tower at 6-7 Parramatta Square and a 14 storey mixed use development at 99- 119 Macquarie Street.

Landscape impact

In combination, the work at these sites may reduce the level of comfort and amenity for pedestrians using Church and Macquarie Streets due to there being multiple locations where footpaths may be reduced in width or diverted. Furthermore, there may be a further reduction in legibility and permeability within this area of the CBD due to the closure of laneways as a result of Stage 1 and also the works for Parramatta Light Rail (Stage 1) within the adjacent road corridors.

The removal of several buildings as a part of the commercial and mix use tower developments, in combination with the removal of buildings for Stage 1 would also result in a cumulative effect with the creation of temporary gaps in the built form and reduced visual continuity of streetscapes.

While there may be street trees impacted for other projects, Stage 1 would not contribute to this effect as the street trees in the vicinity of the construction site would be retained and protected.

Overall, there may be an increased landscape impact in this area of the Parramatta CBD.

MACQUARIE STREET, PARRAMATTA

Visual impact

The Stage 1 Parramatta metro station construction site would be seen in the context of three other nearby major construction sites, all of which would include large scale construction equipment and activities.
In particular, Stage 1 and construction of Parramatta Light Rail (Stage 1) project would be seen in views from Centenary Square and Macquarie Streets, including from public realm areas, commercial and retail uses at street level, and from elevated medium and high rise residential and commercial buildings. There would be a cumulative visual effect in these views due to the increased extent of the construction activity that would be seen, extending across a large area.

Overall, there may be an increased visual impact in this area of the Parramatta CBD, particularly in views from Centenary Square and Macquarie Street.

14. CUMULATIVE IMPACTS

14.3 Clyde stabling and maintenance facility

The Clyde stabling and maintenance facility construction site would be in close proximity to two other major construction projects, both to east of the site. These are the Clyde Terminal Conversion Project and Viva Energy Clyde Western Area Remediation Project. These projects would involve the removal of redundant crude oil refinery and import facilities and remediation works to facilitate future development of the land for other purposes.

Landscape impact

The collective extent of these construction works would cover a large area. The removal of the built form on these sites in combination with Stage 1, which may also include the temporary closure and diversion of roads, may have a cumulative effect on accessibility and legibility within this industrial area.

VIEW TO UNWIN STREET FROM JAMES RUSE DRIVE

There would also be a potential cumulative effect on the level of comfort and amenity within the Rosehill and Clyde industrial areas as a result of the removal of existing vegetation and tree canopy cover across several sites within this area.

Overall, there may be an increased landscape impact across the industrial areas of Rosehill and Clyde due particularly to the removal of vegetation.

Visual impact

Due to their close proximity, the Clyde stabling and maintenance facility construction site would be seen in the context of the construction of Clyde Terminal Conversion Project and Viva Energy Clyde Western Area Remediation Project from some locations.

In particular there may be a cumulative visual effect in views from adjacent streets and properties, including Unwin, Shirley and Colquhoun streets where works would be seen together and in succession. While this would result in an increased magnitude of change in these views, the existing industrial setting would reduce the overall effect

These projects would also be seen in combination in views from the mid-rise residential properties and hotels on the western side of the James Ruse Drive, from windows and balconies orientated east, overlooking Rosehill Gardens racecourse, and also from the grandstands at Rosehill Gardens racecourse. In these views these projects would be seen in combination with Stage 1 so that a greater area of construction would be seen.

Overall, as these projects would include construction activities of a similar or less intensive character, it is expected that there would not be a cumulative effect that results in an increased visual impact.

14.4 Silverwater services facility

There are no projects identified within view or nearby to the Silverwater services facility construction site and therefore no cumulative landscape or visual impact is anticipated at this location.

14.5 Sydney Olympic Park metro station

The Sydney Olympic Park metro station construction site is located in a business park setting, adjacent to the sporting and recreational facilities established for the Sydney Olympic Games. This landscape is in transition, with several major construction sites proposed in close proximity, including multi-storey mixed-use development for residential, commercial and retail uses along Australia Avenue, Figtree Drive, Herb Elliot Avenue and Olympic Boulevard. The proposed Parramatta Light Rail (Stage 2) project would also be located along Dawn Fraser Avenue, north of the Sydney Olympic Park metro station construction site.

Landscape impact

There would be a cumulative landscape impact due to the collective loss of trees within Stage 1 and on surrounding projects, which may reduce the leafy character, tree canopy cover, level of comfort and amenity in this area of the Sydney Olympic Park.

The combined effect of temporary footpath diversions and closures during construction may also, reduce accessibility, permeability and legibility within the local area resulting in a potential cumulative landscape impact.

Overall, there may be an increased landscape impact on the streets surrounding the site in Sydney Olympic Park. No further changes to the Abattoir Heritage Precinct gardens are anticipated so there is not expected to be a cumulative landscape impact on this landscape.

DAWN FRASER AVENUE

Visual impact

The Sydney Olympic Park metro station construction site would be seen in the context of several other construction sites, along Australia Avenue, Figtree Drive, Herb Elliot Avenue and Olympic Boulevard. In views from adjacent streets, and surrounding residential and commercial buildings, there would be views where these projects are seen together. This would increase the extent of construction activity seen, particularly from elevated locations. In particular, where street trees and trees within these sites are removed, the visibility of these sites would be increased, and a temporary cumulative visual impact may be experienced.

Overall, there may be a temporary increased visual impact where these projects are seen in the same view.

14.6 North Strathfield metro station

There are no major projects identified within view or nearby to North Strathfield metro station construction site that would be under construction and therefore no cumulative landscape or visual impact is anticipated at this location.

14. CUMULATIVE IMPACTS

GREAT NORTH ROAD

14.7 Burwood North Station

The Burwood North Station construction site would be located adjacent to the Concord Oval redevelopment site at Loftus Street. The Concord Oval redevelopment project would involve demolition works, and the construction of multi-use indoor and outdoor community and sport facilities, covered seating, informal outdoor sports areas and shared use paths.

Landscape impact

There may be a cumulative effect from the removal of trees within these sites, reducing the tree canopy cover within both sites. Together this may reduce the level of comfort and amenity of the adjacent footpaths on surrounding residential streets.

The combined effect of the construction vehicle haulage along Loftus Street would also adversely affect the level of accessibility and comfort for pedestrians along this suburban residential street.

Overall, there may be an increased landscape impact in the vicinity of the site between the Burwood North Station construction site and Concord Oval.

Visual impact

The Burwood North Station construction site would be seen in the context of the Concord Oval redevelopment site in views from the residential areas on Loftus Street, and from commercial areas and from vehicles and pedestrians along Parramatta Road. When viewed together, these projects would include construction activity potentially extending across a greater portion of views and an increased number of construction vehicle movements.

In views from Parramatta Road there may be an increased visual impact with construction activity potentially extending along a greater frontage of the road and seen in sequence.

14.8 Five Dock Station

Stage 2 of the Five Dock Streetscape Upgrade along Great North Road, between Queens Road and Henry Street, would be located between the Five Dock Station eastern and western construction sites. The streetscape upgrade works would include works to install new pavements and street furnishings, street tree and garden planting, and drainage improvements.

Landscape impact

These projects may both require narrowing and diversion of the adjacent footpaths during some periods of construction. In combination this would have a cumulative effect on pedestrian connectivity and legibility along Great North Road between Queens Road and Henry Street at times. There would not be any tree removal of note as a result of these projects.

Overall, there would not be an increased landscape impact expected in the vicinity of the Five Dock Station construction site as a result of these cumulative effects.

Visual impact

In views from the footpaths and adjacent commercial, retail and residential properties on Great North Road, Fred Kelly Place, the Australia Post open space, and St Alban's Church both the Five Dock Station eastern

construction site and construction of Stage 2 of the Five Dock Streetscape Upgrade project may be visible. When viewed in combination, there would be a cumulative effect as construction activity would extend across a greater area of these views, and there may be construction traffic from both projects seen along Great North Road.

While there may be a cumulative effect this is unlikely to result in an increased adverse visual impact in views in the vicinity of the Five Dock Station construction site due to the minor scale and relatively short duration of the streetscape upgrade works.

14.9 The Bays Station

The Bays Station construction site would be located near several other construction sites, including:

- The M4-M5 Link surface upgrade works at Victoria Road including a bridge upgrade, widening and realignment of Victoria Road
- The Bays Road Relocation Works proposal, which would relocate the Port Access Road in the vicinity The Bays Station construction site
- Western Harbour Tunnel, including construction activities at Rozelle Rail Yards and White Bay
- Glebe Island concrete batching plant and aggregate handling facility located at the southern end of Glebe Island, adjacent to Glebe Island bridge, including installation of aggregate silos, conveyors and a large warehouse facility
- Glebe Island Multi-User Facility, located on the eastern side of Glebe Island, including a ship off-loading, storage and dispatch facility for bulk construction materials
- Construction of an office building at 36 James Craig Road, located in Rozelle Bay Marina Precinct, on the northern side of James Craig Road adjacent to (and beneath) the western approaches to the Anzac Bridge, including alternations and a 5-8 storey extension to an existing office building.

TRUCK MARSHALLING AREA AT THE BAYS STATION CONSTRUCTION SITE

Landscape impact

There would be a potential cumulative effect as a result of the removal of vegetation across The Bays by subsequent projects. While there is limited vegetation on the site, there may be a reduction in tree canopy cover and the level of comfort and amenity where these trees are currently in the vicinity or in view of residential and commercial areas, roads and footpaths.

There would be some temporary road and footpaths diversions and closures, as well as the construction traffic associated with these projects in combination and in succession. This may result in a cumulative effect on accessibility, permeability and legibility.

Overall, there is not likely to be an increased adverse landscape impact as the site has limited landscape value and the impacts of each project are similar and would be somewhat consistent with the surrounding industrial setting.

Visual impact

The Bays Station construction site would be seen in the context of a range of other major infrastructure projects in combination and succession. These sites would be visible from a wide visual catchment, including nearby industrial, commercial and portside areas in Rozelle and Glebe Island, residential areas to the north and west in Rozelle and Balmain, as well as high density residential and commercial developments within Barangaroo, Pyrmont and Millers Point.

While the works would be located in an existing industrial setting, the collective extent of the construction sites would spread across a large area, and have an adverse cumulative effect on visual amenity.

15. MITIGATION MEASURES

This section identifies recommended mitigation measures which would avoid, reduce and manage the identified potential adverse landscape and visual impacts resulting from Stage 1.

These measures include mitigation of potential day and night time impacts.

The following table 15-1 lists these measures and the location where this measure would apply.

TABLE 15-1: MITIGATION MEASURES

ID	Impact	Mitigation measure	Application location(s)
LV1	Visual impacts	Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts (for example storing materials and machinery behind fencing).	All
LV2	Visual impacts	The design and maintenance of construction site hoardings would aim to minimise visual amenity and landscape character impact.	All
LV3	Visual impacts	Graffiti would be removed promptly from hoardings and any other aspects of construction sites.	All
LV4	Visual impacts	All structures (including acoustic sheds or other acoustic measures, site offices and workshop sheds) would be finished in a colour which aims to minimise their visual impact, if visible from areas external to the construction site. This finish is to be applied to all visible fixtures and fittings (including exposed downpipes).	WMS, PMS, SOPMS, SNMS, BNS, FDS
LV5	Lighting impacts	Lighting of construction sites would be orientated to minimise glare and light spill impacts on adjacent receivers.	All
LV6	Public art	Public art would be adopted on temporary hoarding, particularly around future station precincts. Implementation would be as soon as feasible and reasonable after the commencement of construction, and any public art would remain for the duration of the construction period.	All
LV7	Visual impacts affecting events	Works would be coordinated with the Department of Planning, Industry and Environment to manage the potential impact of construction on sporting events in other areas of Sydney Olympic Park.	SOPMS
LV8	Visual impacts affecting events	Works would be coordinated with City of Canada Bay Council to manage the potential impact of construction on sporting events at Concord Oval.	BNS
LV9	Overshadowing	Where feasible and reasonable the location and height of the acoustic shed at the Five Dock Station (if required) would be designed to minimise overshadowing of Fred Kelly Place between 10am and 3pm in mid-winter.	FDS
LV10	Activation of streetscapes	Opportunities to provide temporary activation in the vicinity of the Five Dock Station western construction site during construction would be explored in consultation with the City of Canada Bay Council.	FDS

ID	Impact	Mitigation measure	Application location(s)
LV11	Trees	Opportunities for the retention and protection of existing street trees and trees within the site would be identified during detailed construction planning.	All
LV12	Trees	Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties.	All
LV13	Trees	Trees removed by Stage 1 would be replaced to achieve no net loss to tree numbers and/or canopy in proximity to the site as a minimum in the long term (and part of future stages of Metro West).	All
LV14	Trees	Opportunities would be investigated with the relevant local council to provide plantings in proximity to the impacted areas prior to construction commencing where feasible and reasonable.	All

Key: WMS: Westmead metro station; PMS: Parramatta metro station; CSMF: Clyde stabling and maintenance facility; SSF: Silverwater services facility; SOPMS: Sydney Olympic Park metro station; NSMS: North Strathfield metro station; BNS: Burwood North Station; FDS: Five Dock Station; TBS: The Bays Station; Metro rail tunnels: Metro rail tunnels not related to other sites (eg tunnel boring machine works); PSR: Power supply routes.

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