

15 Landscape character and visual amenity – Stage 1

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This chapter provides an assessment of the potential landscape character and visual amenity impacts as a result of Stage 1 and identifies mitigation measures to address these impacts. This chapter draws on information provided in Technical Paper 5 (Landscape and visual impact assessment).

15.1 Secretary’s Environmental Assessment Requirements

The Secretary’s Environmental Assessment Requirements relating to landscape character and visual amenity and where they have been addressed in the Environmental Impact Statement are outlined in Table 15-1.

Table 15-1: Secretary’s Environmental Assessment Requirements – Landscape character and visual amenity Stage 1

Reference	Secretary’s Environmental Assessment Requirements	Where addressed
Place and Design		
1.1	Visual and related amenity impacts of construction including on streetscapes, key sites and buildings (including existing landscape works, greenspace and tree canopy).	Sections 15.5 to 15.13
1.2	Open space and tree impacts, including: a. estimating the number of trees to be cleared that will not be covered by a biodiversity offset strategy; and	
	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.	

15.2 Legislative and policy context

The landscape character and visual impact assessment was undertaken with reference to the following guidelines, policies and standards:

- Transport for NSW Guidance note EIA-N04 Guidelines for Landscape Character and Visual Impact Assessment (2018)
- Guidance for Landscape and Visual Impact Assessment (Landscape Institute and Institute of Environmental Management & Assessment, 2013)
- Guidance Note for Landscape and Visual Assessment (Australian Institute of Landscape Architects, 2018)
- Guidance for the reduction of obtrusive light (United Kingdom Institution of Lighting Engineers, 2011)
- AS4282-1997 Control of the obtrusive effects of outdoor lighting.

A range of legislation, policies and planning strategies from international, federal, State and local government agencies were also considered in the assessment of potential landscape character and visual impacts.

15.3 Assessment approach

Landscape character and visual amenity were assessed to identify the likely impacts arising from Stage 1. The assessment methodology for landscape and visual impacts is outlined below and generally involved:

- A review of the relevant legislative and policy framework
- Identification of the existing environmental conditions
- Description of the components and character of Stage 1 works
- An assessment of landscape character impact during construction (refer to section 15.3.1)
- An assessment of the daytime visual impact during construction (refer to section 15.3.2)
- An assessment of night-time visual impact during construction (refer to section 15.3.3)
- Identification of mitigation measures.

The assessment of landscape character considers the impacts of Stage 1 on the built, natural and cultural character or sense of place of the surrounding area, whereas the visual impact assessment considers the impacts of Stage 1 on views.

Where acoustic measures are proposed at construction sites, the assessment has assumed the presence of an acoustic shed to assess the likely worse case visual impact. However, other acoustic measures (of a similar or smaller scale) could be implemented instead of acoustic sheds. Acoustic sheds are not proposed at Parramatta, Clyde, Silverwater or North Strathfield.

Photomontages from selected viewpoints are provided for most construction sites where acoustic sheds are proposed. Additional figures for all construction sites are provided in Technical Paper 5 (Landscape and visual impact assessment) showing the extent of each construction site from a range of viewpoints.

15.3.1 Landscape character impact assessment

The Transport for NSW 2018 guidance defines landscape as ‘all aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure’ and landscape character is defined as the ‘combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place’.

In an urban context, landscape refers not only to trees and areas of open space, but also the character and function of a place. This includes all elements within the public realm and the interrelationship between these elements and the people who use it.

Landscape sensitivity refers to the value placed on a landscape element or place and the level of service it provides to the community. The sensitivity of a landscape can reflect the frequency and volume of people that use the location but it can also be valued for characteristics such as visual relief or tranquillity. Council and State government master plans and planning guidance documents also reflect the value and importance of landscapes to the local, regional and state-wide community. There are no landscapes of Aboriginal cultural heritage value that would affect the landscape sensitivity levels. Non-Aboriginal cultural heritage values have been considered in the landscape sensitivity ratings as they contribute to landscape character and community values. Complete assessments of the impacts of Stage 1 on non-Aboriginal heritage are presented in Technical Paper 3 (Non-Aboriginal heritage).

Considering the broadest context of possible landscapes, the degree of sensitivity of each landscape element to change was identified as either neighbourhood, local, regional, State or national (see Table 15-2).

Table 15-2: Landscape sensitivity levels

Landscape sensitivity	Description
National	Landscape feature protected under national legislation or international policy, for example the World Heritage Listed Parramatta Park.
State	Landscape feature that is heavily used and/or is iconic to the State, for example Sydney Olympic Park stadium plaza.
Regional	Landscape feature that is heavily used and valued by residents of a major portion of the city or a non-metropolitan region, for example 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, for example the Five Dock Town Centre area and Fred Kelly Place.
Neighbourhood	Landscape feature valued and appreciated primarily by a small number of residents, for example 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.

To assess the changes to the landscape as a result of Stage 1, the proposed changes are assigned a ‘magnitude of change’ level. The magnitude assigned 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 and is defined in Table 15-3.

Table 15-3: Landscape magnitude of change

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 proposed 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.

To assess the landscape character impact of Stage 1, the sensitivity of the landscape (see Table 15-2) and the likely landscape magnitude of change (see Table 15-3) are combined (see Table 15-4).

Table 15-4: Landscape impact levels

Landscape magnitude of change	Landscape sensitivity				
	National	State	Regional	Local	Neighbourhood
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

15.3.2 Daytime visual amenity impact assessment

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

To address the potential impact of Stage 1 on visual amenity, assessments were carried out by identifying the:

- Existing visual conditions around the Stage 1 sites
- Views that are representative of these visual conditions
- Sensitivity of the view
- Magnitude of change to the view as a result of Stage 1
- Overall level of impact.

Stage 1 would occur for a temporary period and the level of visual magnitude of change assessed would only apply for the duration of Stage 1 and does not consider the subsequent stages of construction or operation. The sensitivity of a viewpoint is considered in the broadest context of possible views, ranging from national to neighbourhood importance (Table 15-5). The magnitude of change describes the extent of change expected from Stage 1 (Table 15-6). To assess the overall impact on daytime visual amenity, the visual sensitivity and magnitude of change assessments are combined (Table 15-7).

Table 15-5: Visual sensitivity levels – Daytime

Visual sensitivity	Description
National	Heavily experienced view to a national icon, for example the view to the Sydney Opera House from Circular Quay. There are no nationally sensitive views within Stage 1.
State	Heavily experienced view to a feature or landscape that is iconic to the State, for example 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, for example view to St John’s Anglican Cathedral Church in Centenary Square, view to Abattoir Heritage Precinct in Sydney Olympic Park.
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, 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	Views where visual amenity is appreciated by a small number of residents, not particularly valued by the wider community.

Table 15-6: Visual magnitude of change – Daytime

Visual magnitude of change	Description
Considerable reduction or improvement	Substantial part of the view is altered. Stage 1 contrasts substantially with the surrounding landscape.
Noticeable reduction or improvement	A small to moderate part of the view is altered. Stage 1 contrasts with the surrounding landscape.
No perceived reduction or improvement	Either the view is unchanged or if it is, the change in the view is generally unlikely to be perceived by viewers. Stage 1 does not contrast with the surrounding landscape.

Table 15-7: Visual impact levels – Daytime

Visual magnitude of change	Visual sensitivity (daytime)				
	National	State	Regional	Local	Neighbourhood
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

15.3.3 Night-time visual amenity impact assessment

The assessment of night-time visual amenity impacts was carried out with a similar methodology to the daytime assessment. The guidance note for the reduction of obtrusive light (United Kingdom Institution of Lighting Engineers, 2011) identifies environmental zones, useful for the categorising of night-time landscape settings. This broader approach to the assessment of obtrusive light is consistent with the detail available at a planning approval application of Stage 1 and is therefore the basis for the method applied to the night-time visual assessment contained within this report.

The first step includes identifying the environmental zone which best describes the existing night-time visual conditions for each site. 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 15-18. The visual magnitude of change that would be expected within the study area during night-time are described in Table 15-9 and are associated with sky glow (the brightening of the night sky), glare or brightness of a light source, and the extent of light intrusion on a sensitive receiver.

Table 15-10 shows the visual impact matrix used to assess the impact of Stage 1.

Table 15-8: Visual sensitivity levels – Night-time

Environmental zone	Description and level 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 15-9: Visual magnitude of change – Night-time

Magnitude of change	Description
Considerable reduction or improvement	Substantial change to the level of skyglow, glare or light intrusion would be expected. 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. Stage 1 does not contrast with the surrounding landscape at night.

Table 15-10: Visual impact levels – Night-time

Visual magnitude of change	Visual sensitivity (daytime)				
	National	State	Regional	Local	Neighbourhood
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

15.4 Avoidance and minimisation of impacts

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

- Locating the construction footprints at all sites to be broadly within the area that would be required for the operational footprint, where feasible and reasonable. This reduces the associated landscape character and visual impacts by minimising additional disturbance of land to establish construction sites
- Locating the stabling and maintenance facility construction site within an industrial area, where the landscape and visual sensitivity of receivers would be lower.

15.5 Westmead metro station construction site

15.5.1 Existing environment

The existing suburban and intercity rail corridor generally divides the landscape character of Westmead, running east-west through the suburb. The existing Westmead Station is located at the centre of Westmead. The character south of the rail corridor consists of a leafy low to medium density residential area. Streets are generally tree lined and include mature trees within larger residential garden frontages. Small scale commercial and community uses are scattered through this area, generally along or near Hawkesbury Road. This includes a strip of shops on the corner of Alexandra Avenue and Hawkesbury Road, and also at the corner of Alexandra Avenue and Hassall Street, with shopfronts also on Hassall Street. The locally heritage listed Westmead Public School (c1917) is also located on Hawkesbury Road. The former 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.

The character north of the rail corridor consists of a mixed use area with more intensive retail and office development, concentrated opposite Westmead Station and along Hawkesbury Road. A predominantly medium density residential area is located between the commercial area and Parramatta Park in the east. The character of Westmead is also currently affected by a number of key construction projects throughout the centre. Western Sydney University is currently redeveloping its Westmead campus site, transforming it into a retail, business and residential hub to support the surrounding health, medical and innovation district. Health Infrastructure NSW also plans to redevelop the Westmead Hospital precinct.

The Westmead metro station construction site is parallel to the rail corridor, south of the existing Westmead Station, and would be seen from the surrounding adjacent streets including Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street. Longer views to the site would be possible from Grand Avenue in the east and Bailey Street in the east, as a narrow view corridor. There are views from Railway Parade, south across the existing Westmead Station and the 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 towards the site from Parramatta Park and the former Parramatta Golf Course.

As part of Parramatta Light Rail Stage 1, a future light rail terminus stop will be constructed at the northern corner of Hawkesbury Road and Railway Parade, opposite and to the north of Westmead Station. The light rail alignment will extend north along Hawkesbury Road which will alter the streetscape of the local area north of the rail corridor.

The landscape character and visual sensitivity of the area surrounding the Westmead metro station construction site is summarised in Table 15-11.

Table 15-11: Westmead metro station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Westmead Station, Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes	Local

15.5.2 Potential impacts

Westmead metro station construction site would cover about 15,750 square metres within the block bound by the rail corridor, Hawkesbury Road, Bailey Street and Hassall Street. The site would be used to carry out the excavation of Westmead metro station and as a launch and support site for the two tunnel boring machines for the tunnel drive east to the Sydney Olympic Park metro station construction site.

The key elements that would be seen would include:

- Demolition of retail, mixed use and residential buildings
- Removal of vegetation and about 100 trees within the construction footprint and some street trees
- A metal clad acoustic shed (about 15 metres in height) or other acoustic measures
- Material, plant and spoil storage areas, although these may be screened by the acoustic shed or other measures
- A car park, laydown area, workshops, dangerous goods storage, wheel wash, site offices and staff amenities
- Tunnel boring machine launch
- Segment storage
- Roadworks, road closures, footpath and bus stop relocation within the area surrounding the site
- Hoardings surrounding the construction sites, about three metres high.

Six representative viewpoints to assess potential visual amenity impacts of the Westmead metro station construction site are shown in Figure 15-1.



Figure 15-1: Westmead metro station construction site – Representative viewpoints

Landscape character impacts

The Westmead metro station construction site would require the demolition of low and medium-density residential buildings and some small scale commercial properties which contribute to the streetscape. 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, changing the streetscape of the residential areas to the south and south-east of the station. Vegetation removal within the rail corridor, which would be required to maintain existing pedestrian access to Westmead Station, would reduce the level of comfort and amenity for pedestrians approaching the station from the south.

Following completion 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 resulting in improved pedestrian permeability. During the closure of Alexandra Avenue, temporary alterations to footpaths and bus stops and loss of a locally prominent building at the corner of Hawkesbury Road and Alexandra Avenue would affect wayfinding and legibility within the neighbourhood.

The landscape character impact of Stage 1 on the Westmead Station, Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscape is provided in Table 15-12.

Table 15-12: Westmead metro station construction site – Landscape character impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Westmead Station, Hawkesbury Road, Alexandra Avenue, Hassall Street and Bailey Street streetscapes	Local	Considerable reduction	Moderate adverse

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-13. A comparison of the existing view from Viewpoints 4 and 6 with the indicative views resulting from Stage 1 are provided in Figure 15-2 to Figure 15-5.

Generally, there would be minor and moderate visual impacts due to the proposed demolition and construction activities associated with Stage 1. This is considered in context of the construction site location, which is to the south of the existing Westmead Station. Construction traffic would also be visible entering and leaving the site. There would be a noticeable reduction in the amenity of views from streets, open space and properties which overlook construction of the power supply route.

Potential cumulative impacts are discussed in Section 15.14. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-13: Westmead metro station construction site – Daytime visual amenity impacts

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



Figure 15-2: Westmead metro station construction site – Existing view from viewpoint 4, west from Alexandra Avenue and Hassall Street



Figure 15-3: Westmead metro station construction site – Photomontage from viewpoint 4, west from Alexandra Avenue and Hassall Street



Figure 15-4: Westmead metro station construction site – Existing view from viewpoint 6, north-east from Hawkesbury Road



Figure 15-5: Westmead metro station construction site – Photomontage from viewpoint 6, north-east from Hawkesbury Road

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-14.

The area around the Westmead metro station construction site is well lit due to the existing Westmead Station, and lights associated with the town centre, which means construction works would generally be absorbed into the surrounding area. In this location, Stage 1 would result in a negligible night-time visual impact.

In residential areas which are removed from and less well-lit than Westmead Station, night works would contrast with the existing lower levels of light. Night works in this location would result in considerable reduction in the amenity of these areas and moderate adverse night-time visual impacts. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-14: Westmead metro station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Westmead Station and Alexandra Avenue	E4: High district brightness	Noticeable reduction	Negligible
Bailey Street, Hawkesbury Road and Hassall Street residential area	E3: Medium district brightness	Considerable reduction	Moderate adverse

15.6 Parramatta metro station construction site

15.6.1 Existing environment

The Parramatta CBD comprises a diverse mix of contemporary and historic building forms and uses, reflective of the colonial settlement history of Parramatta. The Parramatta CBD is generally flat and features a grid street pattern with north-south aligned streets that channel views to the Parramatta River and east-west streets that channel views to Parramatta Park.

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. Along the activated street, several features such as awnings, an overhead art installation, trees and garden beds, and high-quality furnishings provide comfort and amenity to the pedestrian areas of the streetscape.

George Street and Macquarie Street run east-west through the Parramatta CBD and contain a mix of contemporary and historic character built form. The streets are activated in parts and include intermittent street trees and awnings improving the amenity to pedestrians. Smith Street contains a series of tall and bulky commercial buildings although the street is generally less activated than Macquarie and Church Streets. Construction works for Parramatta Square have resulted in the demolition of large areas of built form which has reduced building continuity along the street.

Connecting laneways such as Horwood Place, Macquarie Lane and United Lane have limited activation and generally include commercial driveways and access to parking. The laneways contain some street trees however pedestrian amenity is limited.

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. Centenary Square includes a mix of heritage and modern buildings, mature trees and an interactive water feature. Lawn areas, garden beds, fixed and temporary seating areas, colourful shade umbrellas and high quality paving enhance the amenity of the square.

Parramatta Park is a nationally important parkland featuring the World Heritage listed Old Government House and Domain. 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, remnants, heritage listed buildings and formal gateway entries to surrounding streets.

The Parramatta metro station construction site would be visible from a limited visual catchment which is contained by the surrounding dense urban form of the city centre. The site would be seen primarily from short distance views from surrounding streets and laneways including Church Street, George Street, Smith Street, Macquarie Street, Horwood Place, United Lane and Macquarie Laneway. There would also be close-range views from Centenary Square, from its frontage on Macquarie Street. There would be possible views from the upper levels of nearby commercial tower developments on surrounding streets.

The landscape character and visual sensitivity of the area surrounding the Parramatta metro station construction site is summarised in Table 15-15.

Table 15-15: Parramatta metro station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Church Street streetscape	Regional
Macquarie Street and George Street streetscapes	Local
Horwood Place, Macquarie Lane and United Lane	Neighbourhood
Centenary Square	Regional
Parramatta Park, including Old Government House and Domain	National

15.6.2 Potential impacts

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

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

- Demolition of retail and commercial buildings and structures
- Removal of all vegetation and six trees within the site, including the removal of several trees along Horwood Place and trimming of trees to the front of 60-64 Macquarie Street
- Site offices, site parking, workshops and amenities within the construction footprint
- Water treatment and laydown area to the west
- Temporary spoil storage in the centre of the site
- Road network changes on Horwood Place and adjustments to public transport and footpaths
- Hoardings surrounding the construction site, about three metres high.

Seven representative viewpoints to assess visual amenity impacts from the Parramatta metro station construction site are shown in Figure 15-6.



Figure 15-6: Parramatta metro station construction site – Representative viewpoints

Landscape character impacts

There would be changes to the existing streetscape in the Parramatta CBD from Stage 1, including the removal of existing buildings and an existing multi-storey car parking structure, creating a ‘gap’ in the building form. The heritage building at 45 George Street and Kia Ora on Macquarie Street would remain. However, the buildings adjacent to these heritage items at 220-230 Church Street and 55-67 George Street generally do not represent traditional building character and do not contribute positively to the visual character of the street.

The construction site would also temporarily reduce pedestrian access and permeability within the city by removing laneways and restricting midblock pedestrian movements.

Street trees on George and Smith Streets would not be removed. The removal of isolated trees within the site would not impact on the visual character of the area as only a few trees would be affected that are mostly concealed from surrounding streets.

Construction activity would also be visible from Centenary Square and Parramatta Park however would not result in any direct landscape impacts.

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-16.

Table 15-16: Parramatta metro station construction site – Landscape impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Church Street streetscapes	Regional	No perceived change	Negligible
Macquarie Street and George Street streetscapes	Local	Noticeable reduction	Minor adverse
Horwood Place, Macquarie Lane and United Lane	Neighbourhood	Considerable reduction	Minor adverse
Centenary Square	Regional	No perceived change	Negligible
Parramatta Park including Old Government House and Domain	National	No perceived change	Negligible

Daytime visual amenity impacts

The anticipated daytime visual amenity impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-17.

Hoardings would be erected along the property boundary partially blocking views to the construction site, regardless Stage 1 would temporarily result in visible construction activity in Parramatta. Existing buildings would be demolished at the site which would also be noticeable.

The site would also be viewed in the context of Parramatta Light Rail Stage 1, which would occupy views of Church Street and Macquarie Street. Construction traffic would be seen travelling along George Street, accessing the Parramatta metro station construction site. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-17: Parramatta metro station construction site – Daytime visual amenity impacts

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

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-18.

The urban context of the Parramatta CBD comprises a high district brightness, featuring brightly lit buildings and public domain areas, as well as light from traffic.

Although there would be night works requiring the use of lighting, the impacts of the lighting would generally be screened by surrounding buildings. The well-lit nature of the surrounding area would mean that Stage 1 would result in a negligible night-time visual impact, however it is expected there would potentially be some noticeable impacts. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-18: Parramatta metro station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Parramatta metro station construction site	E4: High district brightness	Noticeable reduction	Negligible

15.7 Clyde stabling and maintenance facility construction site

15.7.1 Existing environment

The Clyde stabling and maintenance facility construction site is divided generally into north and south by A’Becketts Creek and Duck Creek which flows into the Duck River. There is limited visibility to these creeks from public and pedestrian areas, with visual access limited to where public roads cross the creeks and private properties. Due to the limited visibility and industrial nature of the surrounding land uses, these creeks do not contribute to the character of the landscape.

The southern part of the site is mainly currently leased by Sydney Speedway on NSW Government owned land. The speedway is surrounded by noise attenuation mounds and embankments, enclosing the raceway site from surrounding industrial areas and limiting views into the venue from surrounding areas.

The northern part of the site generally includes several large scale manufacturing plants. Streets within the area have an industrial streetscape character being generally broad with wide vehicle crossovers, overhead power lines and grassed verges. Dense mature sheoak trees along the western side of Unwin Street provide a landscape screen of views to and from James Ruse Drive.

Views would be available from the immediate surrounding industrial areas including Unwin and Shirley Streets to the north and east of the site. There would also be 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 at distance to the north-west within Rosehill, near James Ruse Drive. To the north the buildings and spectator stands within 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 along the perimeter of the Rosehill Gardens racecourse.

The landscape character and visual sensitivity of the area surrounding Clyde stabling and maintenance facility construction site is summarised in Table 15-19.

Table 15-19: Clyde stabling and maintenance facility construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Rosehill Gardens racecourse	Regional
Sydney Speedway	Neighbourhood
A’Becketts Creek and Duck Creek	Neighbourhood
The site and streetscapes including Unwin, Kay and Shirley Streets	Neighbourhood

15.7.2 Potential impacts

The Clyde stabling and maintenance facility construction site would cover about 380,000 square metres between the M4 Motorway, James Ruse Drive and Rosehill Gardens racecourse.

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

- The demolition of buildings and structures within the site excluding the façade of the heritage listed RTA Depot building
- Removal of vegetation and about 300 trees including several street trees in Unwin Street West and trees within the site and removal of vegetation along some sections of A’Becketts Creek and Duck Creek to the south-east of the site
- Realignment of Duck Creek and A’Becketts Creek (to be partly enclosed in proposed culverts and remainder to be retained as a naturalised channel)
- Contamination and ground improvement works as required
- Establishment of a concrete segment production facility, segment laydown, site offices and spoil storage along Unwin Street to the north of the site
- Construction of an open dive structure (about 250 metres long)
- Earthworks and fill to raise the stabling and maintenance facility site to about 8.3 metres Australian Height Datum (AHD), including batters and retaining walls to support filling
- Construction of structures over A’Becketts Creek in the vicinity of the stabling area
- Works to realign Kay and Unwin Street
- Works would include the use of machinery and equipment such as mobile cranes, excavators, concrete pumps and piling rigs
- Hoardings and/or fencing surrounding the construction site, about three metres high.

Five representative viewpoints to assess visual amenity impacts from the Clyde stabling and maintenance facility construction site are shown in Figure 15-7.

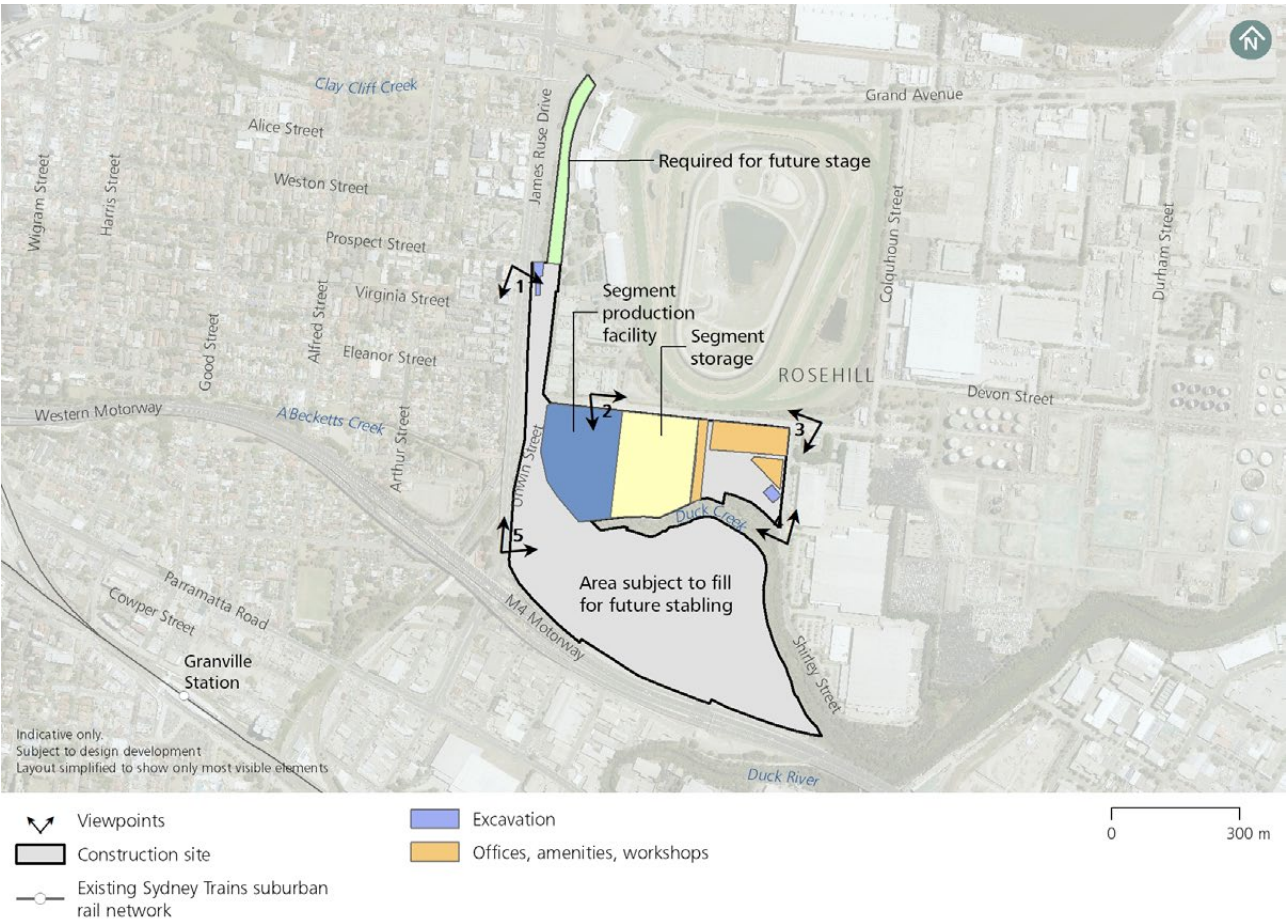


Figure 15-7: Clyde stabling and maintenance facility construction site – Representative viewpoints

Landscape character impacts

A’Becketts Creek and Duck Creek, where they pass through the site would be altered during construction. The vegetation would be removed and structures would be installed over both watercourses resulting in a noticeable reduction in the quality of A’Becketts Creek and Duck Creek landscape which is generally not publicly accessible.

The NSW Government owned land currently leased by Sydney Speedway, includes a substantially modified landscape and does not contribute positively to the landscape character of surrounding areas. Stage 1 would not result in a perceived change in the quality of this landscape.

Extensive, large scale earthworks would be carried out across the Unwin Road and Shirley Road streetscapes including the removal of structures, buildings and vegetation. Embankments and retaining walls would be constructed along the perimeter of the site substantially changing the landscape character and transforming the scale and relationship of the site to the adjacent streets, Rosehill Gardens racecourse and Duck River.

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-20.

Table 15-20: Clyde stabling and maintenance facility construction site – Landscape character impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Rosehill Gardens racecourse	Regional	No perceived change	Negligible
Sydney Speedway	Neighbourhood	No perceived change	Negligible
A’Becketts Creek and Duck Creek	Neighbourhood	Considerable reduction	Minor adverse
The site and streetscapes including Unwin, Kay and Shirley Streets	Neighbourhood	Considerable reduction	Minor adverse

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-21.

The Stage 1 construction works are generally in character with the existing and former heavy industrial character of the site and generally visual impacts would be minor. However, the proposed works would result in a changed visual amenity at the site, particularly in the context of the scale of works in this location.

Removal of vegetation within the site would open up views from James Ruse Drive to the construction site. Works to realign Unwin Street including the construction of a bridge structure over the proposed future rail tracks to the stabling and maintenance facility would be visible from James Ruse Drive. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-21: Clyde stabling and maintenance facility construction site – Daytime visual amenity impacts

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

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-22.

Lighting visible at night would be associated with security lighting, lighting from deliveries and the concrete segment production facility. This would be readily absorbed into the existing moderately lit setting of adjacent industrial facilities.

Table 15-22: Clyde stabling and maintenance facility construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Clyde stabling and maintenance facility construction site	E3: Medium district brightness	No perceived change	Negligible

15.8 Silverwater services facility construction site

15.8.1 Existing environment

Silverwater Road is a heavily trafficked road, six lanes wide and with concrete footpaths in a grassed verge near the site. 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 two mature gum trees and some smaller saplings, which provides some visual amenity to the adjacent areas.

Where there are street trees and landscaped areas along these streets, the streetscape of commercial buildings is softened and visual amenity is improved. In other areas, the streetscape is dominated by the character of commercial buildings and heavy vehicle traffic with limited pedestrian amenity. The flat land and consistent building design reduces pedestrian wayfinding within the industrial areas of Silverwater.

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

The landscape character and visual sensitivity of the area surrounding Silverwater services facility construction site is summarised in Table 15-23.

Table 15-23 Silverwater services facility construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Trees within the site, Silverwater Road and Derby Street streetscapes	Neighbourhood

15.8.2 Potential impacts

The Silverwater services facility construction site would cover about 2,700 square metres on the corner of Silverwater Road and Derby Street. The site is currently a vacant lot.

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

- Removal of five trees including three street trees on Derby Street and vegetation within the site including one of the two mature gum trees
- Establishment of hoardings surrounding the construction site, about three metres high
- Service facility shaft excavation adjacent to Derby Street at the north-east corner of the site
- Temporary plant and material storage at the south-east corner of the site
- Site office, amenities and workshop at the south and south-west corner of the site adjacent to Silverwater Road
- Adjustments to parking, public transport and pedestrian access
- The use of machinery and equipment such as mobile cranes, excavators, concrete pumps, piling rigs.

Three representative viewpoints to assess visual amenity impacts from the Silverwater services facility construction site are shown in Figure 15-8.



Figure 15-8: Silverwater services facility construction site – Representative viewpoints

Landscape character impacts

Landscape impacts anticipated as a result of Stage 1 are summarised in Table 15-24.

Stage 1 would require the removal of one of the two mature gum trees and three street trees on Derby Street resulting in a reduction in amenity 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. These changes would be localised and affect only a small part of these streetscapes.

Table 15-24: Silverwater services facility construction site – Landscape impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Trees within the site, Silverwater Road and Derby Street streetscapes	Neighbourhood	Noticeable reduction	Negligible

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-25.

The removal of vegetation and establishment of a construction site would introduce a construction character to views along Silverwater Road and Derby Street. This would largely be absorbed into the scale and character of the area which has an industrial urban form with considerable traffic movement.

Table 15-25: Silverwater services facility construction site – Daytime visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Viewpoint 1: View north-east along Silverwater Road	Neighbourhood	Noticeable reduction	Negligible
Viewpoint 2: View south along Silverwater Road	Neighbourhood	Noticeable reduction	Negligible
Viewpoint 3: View south-west along Derby Street	Neighbourhood	Noticeable reduction	Negligible

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-26.

While most work at the services facility site would be carried out during standard construction hours, there may be some after hours delivery of large plant and equipment. Security, vehicle and task lighting would be visible within the site at night, however it is expected that the additional light sources and skyglow would be absorbed into the night scene, where similarly lit industrial complexes exist. Surrounding land uses are primarily industrial and commercial properties where there would be little activity at night, and therefore few receivers, which reduces the night-time visual sensitivity of this location.

Table 15-26: Silverwater services facility construction site – Night-time visual amenity impacts

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

15.9 Sydney Olympic Park metro station construction site

15.9.1 Existing environment

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 ANZ Stadium, formerly known as the Olympic Stadium. The major event facilities are arranged around two principle axes; Olympic Boulevard and Dawn Fraser Avenue which provide grand ceremonial vistas between the various destinations.

Herb Elliot Avenue, running adjacent to Dawn Fraser Avenue, contains mature native street trees that contribute to a leafy streetscape character and visually softens adjacent commercial buildings that are set back from and include generous garden areas. 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 part of the Sydney Olympic Park Master Plan 2030.

The Abattoir Heritage Precinct located off Herb Elliot Avenue, is designed in a Federation style with a collection of buildings set within landscaped gardens and lawns. The gardens provide an important setting to the buildings and include formal rose gardens, a palm grove, avenue planting and succulent gardens. 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.

Figtree Drive is a narrow local traffic street with two traffic lanes, indented parking areas, planted verges and footpaths on both sides. Trees form a consistent landscape element and contribute to the amenity and sense of place of the streetscape and provide shade and comfort for pedestrians. Land uses along Herb Elliott Avenue are intended to be transformed into a high density mixed use town centre as shown by the current construction of a mixed use tower development at 2 Figtree Drive.

The Sydney Olympic Park metro station construction site would be visible from the immediate surrounding streets within the south-east part of the urban renewal area where views would not be screened by large scale built form and mature vegetation within private properties and public realm areas. This includes parts of Herb Elliott Avenue, Figtree Drive and Showground Road. More distant views would be 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 landscape character and visual sensitivity of the area surrounding the Sydney Olympic Park metro station construction site is summarised in Table 15-27.

Table 15-27: Sydney Olympic Park metro station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Herb Elliott Avenue and Showground Road streetscape	Local
The Abattoir Heritage Precinct gardens	Local
Figtree Drive streetscape	Local

15.9.2 Potential impacts

The Sydney Olympic Park Station construction site would cover about 23,900 square metres between Herb Elliot Avenue and Figtree Drive.

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

- Demolition of buildings at 8 Herb Elliott Avenue, and 5 and 7 Figtree Drive
- Removal of 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. Sydney Metro is investigating the feasibility of design and construction options to avoid direct impacts to this heritage item
- Removal of about 100 trees and shrubs within the construction site, including within the car parks, site boundaries and entrance gardens and two trees on Figtree Drive, located at the south-east and south-west corner of the construction site
- Two metal clad acoustic sheds (around 15 metres high) or other acoustic measures on Figtree drive and on Herb Elliot Avenue, temporary spoil storage and laydown areas and tunnel boring machine retrieval site
- Establishment of site offices, parking area, amenities, workshops, material/plant storage areas, dangerous goods storage and water treatment plant.

Five representative viewpoints to assess visual amenity impacts from the Sydney Olympic Park metro station construction site are shown in Figure 15-9.

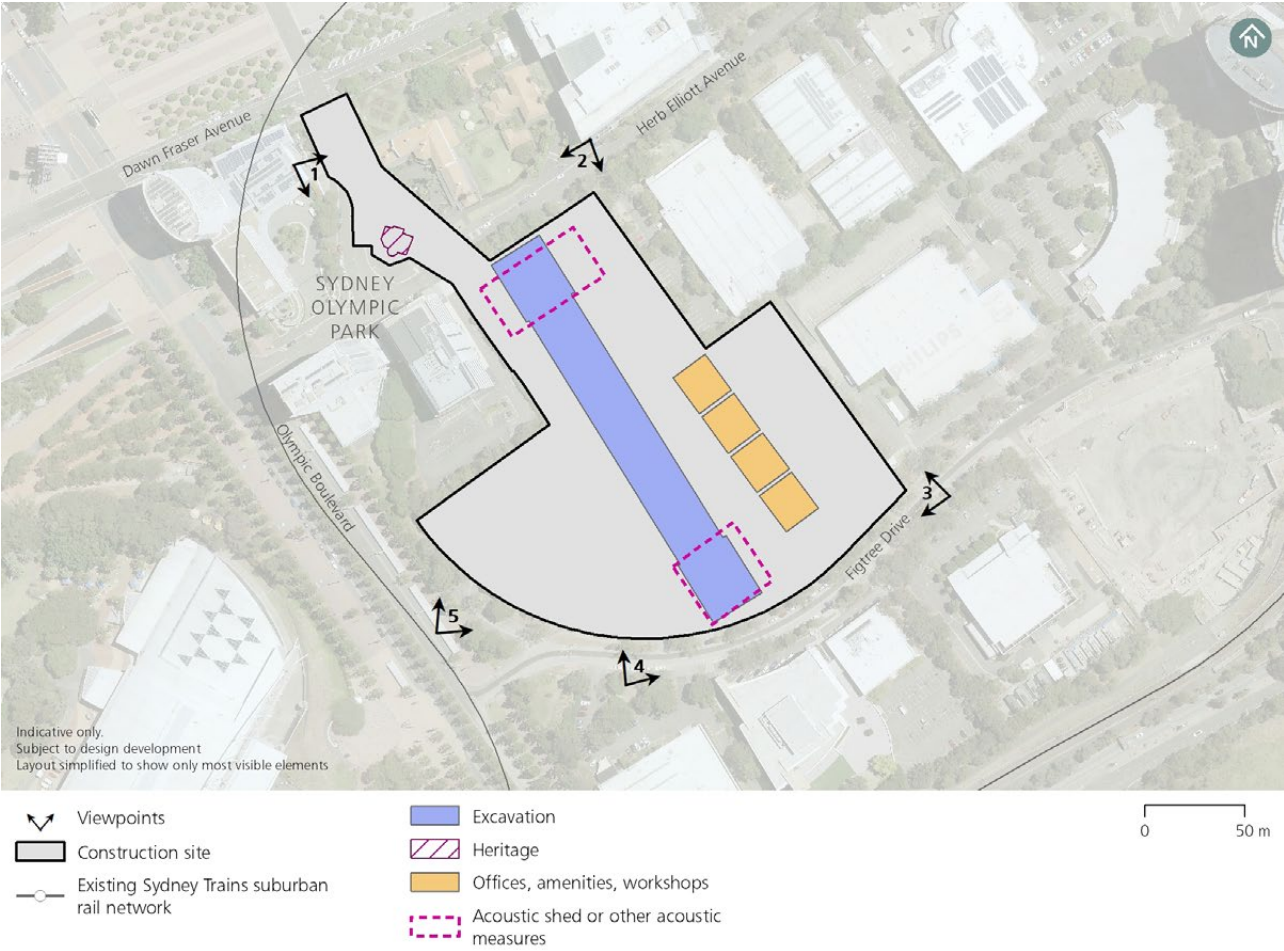


Figure 15-9: Sydney Olympic Park metro station construction site – Representative viewpoints

Landscape character impacts

The landscape character of the site would be altered by the proposed Stage 1 works. Key changes surrounding the site include the closure of Showground Road at the intersection with Dawn Fraser Avenue. The proposed construction site would be established over part of the Abattoir Heritage Precinct, and would involve the removal of a number of mature trees and shrubs from within the site.

The extension of the construction site to the north and south through the Abattoir Heritage Precinct gardens would have a considerable impact on landscape character. The heritage buildings would be retained, however the gardens separating them would be partially removed. This includes the southern portion of the palm grove and surrounding carriage loop gardens. The impact of the construction works would be that the symmetrical design of the garden would be lost, although parts of the garden would also be retained. This impact could be lessened with the reinstatement of the gardens with appropriate similar species and plantings in keeping with the provisions of the Conservation Management Plan. Sydney Metro is also investigating the feasibility of design and construction options to avoid direct impacts to this heritage item.

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-28. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-28: Sydney Olympic Park metro station construction site – Landscape character impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Herb Elliott Avenue and Showground Road streetscape	Local	Considerable reduction	Moderate adverse
The Abattoir Heritage Precinct gardens	Local	Considerable reduction	Moderate adverse
Figtree Drive streetscape	Local	Noticeable reduction	Negligible

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-29. A comparison of the existing view from viewpoints 2 with the indicative view from Stage 1 is provided in Figure 15-10 and Figure 15-11.

The proposed construction site would occupy much of the centre of views across Showground Road and Herb Elliott Avenue. The removal of trees would change the leafy streetscape character of viewpoints 1 and 2.

Temporary construction vehicles and access points, as well as acoustic sheds (or other acoustic measures) and barriers in the construction area would substantially change the character of the area within the site. This would also be affected by the closure of Showground Road at Dawn Fraser Avenue. However, these changes would occur in the context of ongoing development and changes within Sydney Olympic Park. The visual bulk of temporary structures is generally consistent with the changing visual context of the town centre more broadly, including other construction works. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-29: Sydney Olympic Park metro station construction site – Daytime visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Viewpoint 1: View south-east along Showground Road	Local	Considerable reduction	Moderate adverse
Viewpoint 2: View south-west along Herb Elliott Avenue	Local	Considerable reduction	Moderate adverse
Viewpoint 3: View north-west along Figtree Drive	Neighbourhood	Noticeable reduction	Negligible
Viewpoint 4: View east along Figtree Drive	Neighbourhood	Noticeable reduction	Negligible
Viewpoint 5: View north-east from Olympic Boulevard	Local	Noticeable reduction	Minor adverse



Figure 15-10: Sydney Olympic Park metro station construction site – Existing view from viewpoint 2, south-west from Herb Elliott Avenue



Figure 15-11: Sydney Olympic Park metro station construction site – Photomontage from viewpoint 2, south-west from Herb Elliott Avenue

Night-time visual amenity impacts

Night works would be required at the site during construction. Although most works would be contained and underground there would be some lighting required outside these areas. This includes lighting associated with site offices, car parking and construction support areas. The proposed screening, as well as street trees and some adjacent buildings would provide screening of the site lighting. In the case of the Abattoir Heritage Precinct, this lighting would contrast with the lower light levels of the precinct.

Removal of some vegetation would also contribute to impact through the loss of natural screening, however overall, the impact would be absorbed into the existing moderately lit night scene.

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-30. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-30: Sydney Olympic Park metro station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Sydney Olympic Park metro station construction site	E3: Medium district brightness	Noticeable reduction	Minor adverse

15.10 North Strathfield metro station construction site

15.10.1 Existing environment

The North Strathfield local centre is centred on Queen Street, which runs north-south adjacent to the existing North Strathfield Station and the rail corridor. The local centre includes a block of early twentieth century two-storey commercial terrace buildings, with retail and offices at street level and some residences above. Queen Street is characterised by an avenue of mature Brushbox trees that have a local heritage listing and create a strong north south visual boundary, screening the station and rail corridor from the adjacent residential area. The trees contribute to a leafy streetscape character enhancing the amenity of the surrounding residential area. Pedestrian connectivity to the existing station is provided by footpaths to both sides of Queen Street and a centrally located pedestrian crossing near the station entrance.

A heritage listed garden is located on Queen Street, at the eastern entrance to the existing North Strathfield Station. This small ornamental garden contributes to the local identity of the North Strathfield neighbourhood centre, providing a visual feature that marks the entry to the existing railway 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 semi-mature trees. South of this garden is a row of heritage street trees.

Legibility of North Strathfield Station and the gardens is reinforced by the grid pattern of the surrounding residential streets, which channels views towards Queen Street and the station.

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 would be short range views to the construction site from the adjacent North Strathfield Station and residential streets on the eastern side including Queen, Beronga, Wellbank and Waratah Streets.

From the west, some views would be 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 landscape character and visual sensitivity of the area surrounding the North Strathfield metro station construction site is summarised in Table 15-31.

Table 15-31: North Strathfield metro station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Railway heritage gardens	Local
Queen Street streetscape	Local

15.10.2 Potential impacts

The construction of North Strathfield metro station would require two sites:

- The North Strathfield metro station northern construction site would cover about 6,500 square metres between the existing North Strathfield Station and Queen Street, bounded by Pomeroy Street to the north and the pedestrian entrance to the existing North Strathfield Station to the south
- The North Strathfield metro station southern construction site would cover about 1,000 square metres and occupy land between the existing North Strathfield Station and Queen Street, bounded by Shipley Avenue to the south and the pedestrian entrance to the existing North Strathfield Station to the north.

The key activities and components that would be seen at the North Strathfield metro station construction sites would include:

- Removal of about 30 trees and vegetation including the northern garden bed and trees within the heritage listed ornamental gardens and street trees along the west side of Queen street and all vegetation within the northern construction site
- A workshop, material and plant storage area, dangerous goods storage and water treatment plant
- Adjustments to parking, pedestrian and public transport access
- Use of machinery and equipment such as mobile cranes, excavators, concrete pumps and piling rigs
- Site fencing and hoarding surrounding the construction site, about three metres high
- Construction site parking
- Double stacked site offices and amenities.

Four representative viewpoints to assess visual amenity impacts from the North Strathfield metro station construction site are shown in Figure 15-12.



Figure 15-12: North Strathfield metro station construction site – Representative viewpoints

Landscape character impacts

Stage 1 would result in the northern half of the railway heritage gardens being removed, including the clipped hedges and ornamental plantings. This would change the sense of place in this location, as well as the accessibility and level of shade and comfort at the railway station entrance.

Temporary changes would also be made to Queen Street, including the relocation of the existing pedestrian crossing to the south of Wellbank Street. The extension of the construction site to the Queen Street kerb would also include the removal of existing mature street trees. Additional construction activity, including traffic movements to and from the site would also affect the landscape character.

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-32. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-32: North Strathfield metro station construction site – Landscape character impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Railway heritage gardens	Local	Considerable reduction	Moderate adverse
Queen Street streetscape	Local	Considerable reduction	Moderate adverse

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-33.

The North Strathfield metro station construction site would require the removal of existing trees and would extend to the kerb resulting in visual impacts along Queen Street and for residences or businesses fronting Queen Street opposite the construction site. The proposed works would also include the partial removal of the railway heritage gardens. This would affect the leafy context of these existing areas.

Temporary noise hoardings would be installed along the site boundary and partially screen the view of the site from the surrounding areas. The linear nature of this construction site would create a strong horizontal wall.

Construction traffic would also be visible entering and exiting the site near the Pomeroy Street bridge. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-33: North Strathfield metro station construction site – Daytime visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Viewpoint 1: View south along Queen Street and Beronga Street	Local	Considerable reduction	Moderate adverse
Viewpoint 2: View west along Waratah Street	Local	Considerable reduction	Moderate adverse
Viewpoint 3: View north-west from the corner of Queen and Wellbank Streets	Local	Noticeable reduction	Minor adverse
Viewpoint 4: View north-west from Queen Street	Local	Noticeable reduction	Minor adverse

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-34.

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. While the removal of the mature street trees and vegetation along Queen Street, would open up views to the site from the residential properties opposite the site, this lighting would be somewhat contained by perimeter site fencing and/or hoarding. There would also be some security lighting at the southern site for the site offices and parking area, although this would generally be screened by existing vegetation.

Table 15-34: North Strathfield metro station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
North Strathfield metro station site	E3: Medium district brightness	Noticeable reduction	Minor adverse

15.11 Burwood North Station construction site

15.11.1 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). Parramatta Road is a six lane thoroughfare linking the Parramatta CBD to Sydney CBD. This heavily trafficked road physically and visually separates the urban communities of Burwood and Concord. The Parramatta Road corridor includes retail, commercial, light industrial, medium density residential and open space uses. At North Burwood, Parramatta Road presents a visually harsh streetscape with few street trees, poor pedestrian environments and vehicle-dominated uses.

The urban form along this section of Parramatta Road is largely fragmented. It contains some remnant buildings that show a traditional main street character such as the local heritage listed Bath Arms Hotel on the corner of Parramatta Road and Burwood Road.

Burwood Road runs north-south, providing a direct link between North Burwood and Burwood town centre. A number of different mixed use buildings have also been recently constructed along Burwood Road in the vicinity of Parramatta Road, which has resulted in changes to the visual character of the street. This changing character continues along the Parramatta Road corridor.

Nearby, the local heritage listed St Luke’s Anglican Church 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 site.

Concord Oval provides an important sporting facility and greenspace for the highly developed urban area. Concord Oval contains a locally heritage listed gateway and five mature fig trees which were once the entrance to St Luke’s Park. Canada Bay Council is currently planning a redevelopment of Concord Oval including the construction of a new indoor recreation centre and passive recreation areas.

Views to the Burwood North Station construction site would be 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 screening from mature vegetation within Concord Oval.

Short distance views to the northern construction site would be possible from Parramatta Road, Burwood Road, Burton Street, Loftus Street, Neichs Lane and Esher Street.

The southern construction site would 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 landscape character and visual sensitivity of the area surrounding the Burwood North Station construction site is summarised in Table 15-35.

Table 15-35: Burwood North Station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Parramatta Road and Burwood Road streetscapes	Local
Burton Street, Loftus Street and Niches Laneway streetscapes	Local

15.11.2 Potential impacts

Construction of Burwood North Station would require two construction sites:

- The Burwood North Station northern construction site would cover about 13,100 square metres and would be located on Parramatta Road between Burwood Road and Loftus Street
- The Burwood North Station southern construction site would cover about 1,400 square metres bound by Burwood Road, Parramatta Road, Esher Lane and commercial properties west of Esher Street.

The key activities and components that would be seen at the Burwood North Station north construction site include:

- The demolition of commercial and residential buildings
- The removal of about 60 trees and vegetation within the site and trimming of trees that overhang the site on Neichs Lane and at 18 Burton Street
- Site offices and amenities on the northern boundary of the site
- Metal clad acoustic sheds (about 15 metres high) (or other acoustic measures)
- Station excavation works and support
- Site laydown area
- Adjustments to parking, public transport and pedestrian access
- Water treatment plant along Parramatta Road
- Noise barriers and hoardings surrounding the construction site about three metres high.

The key activities and components that would be seen at the Burwood North Station south construction site include:

- Demolition of commercial buildings
- A metal clad acoustic shed (about 15 metres high) (or other acoustic measures)
- Adjustments to parking, public transport and pedestrian access
- Noise barriers and hoardings surrounding the construction site about three metres high.

Six representative viewpoints to assess visual amenity impacts from the Burwood North Station construction site are shown in Figure 15-13.



Figure 15-13: Burwood North Station construction site – Representative viewpoints

Landscape character impacts

Stage 1 would result in the demolition of an entire block of buildings along the northern side of Parramatta Road, as well as a smaller number of buildings on the southern side of Parramatta Road. The construction site would create a gap in the built form around North Burwood. This has the potential to affect sense of place and identity.

The scale of an acoustic shed (or other acoustic measures) 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 existing overshadowing by the current 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 area’s urban renewal.

The proposed works may also include temporary alterations to footpaths, and the removal of some trees inside the construction site. Heavy vehicle haulage to and from the site would also be noticeable.

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, the level of comfort and amenity of the adjacent footpaths in this section of Burton Street, the remainder of the street would remain unchanged.

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-36. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-36: Burwood North Station construction site – Landscape character impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Parramatta Road and Burwood Road streetscapes	Local	Considerable reduction	Moderate adverse
Burton Street, Loftus Street and Niches Laneway streetscapes	Local	Noticeable reduction	Minor adverse

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-37. A comparison of the existing view from viewpoints 2 and 6 with the indicative views resulting from Stage 1 are provided in Figure 15-14 to Figure 15-17.

Visual impacts would result from the demolition of existing buildings along Burwood Road and Parramatta Road. The removal of these buildings would create a gap in the streetscape, including the removal of two prominent corner buildings.

The erection of temporary acoustic sheds (or other acoustic measures) would alter the streetscape from the existing one and two storey fine grain commercial character of Parramatta Road in this area.

Heavy vehicles would also be seen travelling along Parramatta Road to and from the site, and using entrance points to the site. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-37: Burwood North Station construction site – Daytime visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Viewpoint 1: View south along Burwood Road	Local	Considerable reduction	Moderate adverse
Viewpoint 2: View south across the intersection of Burwood Road and Burton Street	Local	Considerable reduction	Moderate adverse
Viewpoint 3: View south-west along Burton Street	Local	Considerable reduction	Moderate adverse
Viewpoint 4: View south-west along Loftus Street	Local	Noticeable reduction	Minor adverse
Viewpoint 5: View north-west along Parramatta Road	Local	Noticeable reduction	Minor adverse
Viewpoint 6: View east across the intersection of Parramatta Road and Burwood Road	Local	Considerable reduction	Moderate adverse
Viewpoint 7: View south-east from the intersection of Parramatta Road and Burwood Road	Local	Considerable reduction	Moderate adverse



Figure 15-14: Burwood North Station construction site – Existing view from viewpoint 2, south across the intersection of Burwood Road and Burton Street



Figure 15-16: Burwood North Station construction site – Existing view from viewpoint 6, east across the intersection of Parramatta Road and Burwood Road



Figure 15-15: Burwood North Station construction site – Photomontage from viewpoint 2, south across the intersection of Burwood Road and Burton Street



Figure 15-17: Burwood North Station construction site – Photomontage from viewpoint 6, east across the intersection of Parramatta Road and Burwood Road

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-38.

Works would be required at night at the Burwood North Station construction site. Although the work would largely be contained by barriers and the acoustic sheds (or other acoustic measures such as acoustic panels over excavations) at the site, some lighting would be required outside of the covered areas including lighting associated with construction support areas and haulage on Parramatta Road, Burwood Road and Loftus Street.

Due to the removal of mature vegetation, there is potential for adjacent residential buildings to view the night-time construction activity.

Works may also be visible from Parramatta Road, however it is expected the lighting impact from these works would generally be absorbed into the surrounding context. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-38: Burwood North Station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Burwood North Station construction site	E3: Medium level brightness	Noticeable reduction	Minor adverse

15.12 Five Dock Station construction site

15.12.1 Existing environment

Five Dock has a vibrant town centre located on Great North Road, including a mix of commercial, retail, community, residential and civic open space uses. The mix of different low rise buildings in the town centre creates a continuous building form, with similar setbacks and building scales. Great North Road comprises a mix of modern and heritage buildings with distinctive decorative façades that assist in wayfinding along the street. Wide footpaths on both sides of the street, intermittent street trees and continuous awnings provide shade and comfort for pedestrians. The road is highly activated with retail frontages, street cafes and alfresco dining areas.

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 carparking areas for developments fronting Great North Road and contains visually sensitive residential receivers.

Fred Kelly Place is on the southern boundary of the western construction site and 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.

Second Avenue forms the northern boundary of the eastern construction site and comprises a mixed use and residential development. It has continuous footpaths within narrow grassed verges and intermittent street trees on the northern side of the road across from the site.

Waterview Street adjoins the eastern construction site to the west and is lined by predominantly one to two-storey detached properties and low rise multi storey residential apartment blocks with limited street trees.

Streetscape improvements are also proposed for Great North Road by Canada Bay Council including landscape and pavement improvements. 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 commence in early 2020 and take 12 months to complete.

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.

The landscape character and visual sensitivity of the area surrounding the Five Dock Station construction site is summarised in Table 15-39.

Table 15-39: Five Dock Station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
Great North Road streetscape	Local
East Street, Second Avenue and Waterview Street streetscape	Local
Fred Kelly Place and Australia Post open space	Local

15.12.2 Potential impacts

Construction of Five Dock Station would require two construction sites:

- The Five Dock Station western construction site would cover about 4,150 square metres and would be located between Great North Road and East Street, to the north of Fred Kelly Place and south of St Albans 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.

The key activities and components that would be seen at the Five Dock Station western construction site include:

- Demolition of commercial buildings, structures and a car park
- Removal of about 15 trees and all other vegetation within the site including several small trees facing East Street and seven trees within 23 and 25 Waterview Street
- Possible trimming of some trees which overhang the site
- Car parking, laydown area and a water treatment plant
- A metal clad acoustic shed (about 15 metres in height) (or other acoustic measures)
- Station shaft excavation works and support
- Station cavern excavation and temporary storage
- Hoarding surrounding the construction site, about three metres in height.

The key activities and components that would be seen at the Five Dock Station eastern construction site include:

- Demolition of residential buildings and a car park
- Removal of about seven trees within the site and the trimming of some trees overhanging the site
- Office and staff amenities double stacked along Waterview Street
- Water treatment plant along Waterview Street, a workshop and dangerous good storage
- A metal clad acoustic shed (about 15 metres in height) (or other acoustic measures)
- Station shaft excavation works and support
- Station cavern excavation and temporary storage
- Adjustments to parking, public transport and pedestrian access
- Hoarding surrounding the construction site, about three metres in height.

Eight representative viewpoints to assess visual amenity impacts from the Five Dock Station construction site are shown in Figure 15-18.



Figure 15-18: Five Dock Station construction site – Representative viewpoints

Landscape character impacts

The location of Stage 1 close to Great North Road, which acts as the main north-south spine through Five Dock would result in impact to the existing landscape character in the vicinity of the western construction site. The extended street frontage of the site and the need for construction vehicles to enter the site from Great North Road would impact pedestrian connectivity. Wayfinding may also be temporarily impacted by the disruption to the building form.

There would be no direct impacts on Fred Kelly Place, although the proximity of Fred Kelly Place to the western construction site would have the potential to temporarily impact on the level of comfort and amenity enjoyed by park users and pedestrians.

While the existing buildings on the site would currently cause some overshadowing of Fred Kelly Place, particularly during mid-winter, the proposed additional height of the acoustic shed (or other acoustic measures) would likely temporarily increase the existing overshadowing, particularly during winter. This effect would most likely be experienced in areas towards 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 western construction site would involve the removal of one tree.

The temporary acoustic shed (or other acoustic measures) on the eastern site is set back from the Australia Post open space and would not be likely to cause any overshadowing of this open space. Existing trees bordering the Australia Post open space would assist with screening possible views to the eastern construction site from within the park, however, the large acoustic shed (or other acoustic measures) 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 that overhang the construction site, which would partly reduce the leafy skyline.

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-40. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-40: Five Dock Station construction site – Landscape impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Great North Road streetscapes	Local	Considerable reduction	Moderate adverse
East Street, Second Avenue and Waterview Street streetscape	Local	Noticeable reduction	Minor adverse
Fred Kelly Place and Australia Post open space	Local	Noticeable reduction	Minor adverse

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-41. A comparison of the existing view from viewpoints 3 and 6 with the indicative views resulting from Stage 1 are provided in Figure 15-19 to Figure 15-22.

There would be minor and moderate visual impacts as a result of the proposed works. This would include visual impacts from the removal of existing buildings and the construction of temporary acoustic sheds (or other acoustic measures), particularly in the context of heritage buildings in the vicinity of the site.

The retention of most vegetation would assist in mitigating this impact and screening construction works. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-41: Five Dock Station construction site – Daytime visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Viewpoint 1: View south-east along East Street	Local	Noticeable reduction	Minor adverse
Viewpoint 2: View south-west along Great North Road	Local	Considerable reduction	Moderate adverse
Viewpoint 3: View north along Great North Road	Local	Considerable reduction	Moderate adverse
Viewpoint 4: View east towards Australia Post open space	Local	No perceived change	Negligible
Viewpoint 5: View south-east from the corner of Great North Road and Second Avenue	Local	Noticeable reduction	Minor adverse
Viewpoint 6: View south-west along Waterview Street	Local	Considerable reduction	Moderate adverse
Viewpoint 7: View north-west along Waterview Street	Local	Considerable reduction	Moderate adverse
Viewpoint 8: View west along Second Avenue from Five Dock Park	Local	Noticeable reduction	Minor adverse



Figure 15-19: Five Dock Station construction site – Existing view from viewpoint 3, north along Great North Road



Figure 15-21: Five Dock Station construction site – Existing view from viewpoint 6, south from Waterview Street



Figure 15-20: Five Dock Station construction site – Photomontage from viewpoint 3, north along Great North Road



Figure 15-22: Five Dock Station construction site – Photomontage from viewpoint 6, south from Waterview Street

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-42.

Some night works would be required and the majority of these works would be contained in the acoustic sheds (or other acoustic measures such as acoustic panels over excavations). However, site activities such as security, vehicle and task lighting may occur outside of the sheds. Construction vehicle movements are also likely to introduce additional lighting to this area. This would potentially impact residential areas on First Avenue and Waterview Street and multi-storey residential buildings along Great North Road. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-42: Five Dock Station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Five Dock Station construction site	E3: Medium district brightness	Noticeable reduction	Minor adverse

15.13 The Bays Station construction site

15.13.1 Existing environment

Stage 1 works at The Bays would be within the existing south-west foreshore area of White Bay. The Bays comprises 5.5 kilometres of foreshore land about two kilometres to the east of the Sydney CBD and includes White Bay.

The Bays is planned to undergo significant urban renewal. It is envisaged that the precinct will ultimately become a mixed use employment and residential precinct.

The Bays has been a key maritime, industrial and infrastructure precinct in Sydney, having been used to support maritime trade and industry since European settlement. Key developments in this area include the White Bay Power Station (opened in 1913), the Glebe Island grain silos (constructed in 1975) and the White Bay Cruise Terminal (opened in 2013). The White Bay Power Station and Glebe Island Silos both provide dominant visual landmarks, being reminders of the area’s industrial history.

Current uses at The Bays include port freight and logistics services, commercial activities, and the White Bay Cruise Terminal. White Bay Power Station is disused and is surrounded by vacant foreshore land on which the Stage 1 site would be located.

The Stage 1 site is framed by Rozelle, Balmain and Balmain East, located to the north and west. These suburbs are generally elevated, sloping down towards the bay, and are predominantly residential in character. Some other uses, including commercial, retail and public open space is interspersed among these areas.

Public access to the foreshore area at White Bay is restricted due to the maritime nature of the area, however there are public open space areas in the immediate surroundings. Views are also available from the waterfront areas of White Bay to the Sydney Harbour Bridge and Barangaroo. Likewise, the construction site would be visible from ferries and other vessels on Sydney Harbour.

There are several major infrastructure projects planned for the area. The WestConnex M4-M5 Link will involve 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 planned Western Harbour Tunnel. WestConnex M4-M5 would involve the provision of a new open space within the 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 White Bay Power Station. A construction site for 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 planned Western Harbour Tunnel and Warringah Freeway Upgrade project would comprise a new crossing of Sydney Harbour from WestConnex Stage 3 to the Warringah Freeway at North Sydney.

The Port Authority of NSW has obtained planning approval for a Glebe Island multi-user facility to be located on the eastern side of Glebe Island to 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 will comprise the construction of silos, warehouses, weigh bridges, ancillary uses and car parking areas. Both proposed facilities on Glebe Island will 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 will involve the addition of a five to eight storey extension with vertical green elements to the facades and roof.

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 landscape character and visual sensitivity of the area surrounding The Bays Station construction site is summarised in Table 15-43.

Table 15-43: The Bays Station construction site – Landscape and visual sensitivity

Location	Landscape and visual sensitivity level
The site and Glebe Island portside industrial and commercial areas	Neighbourhood

15.13.2 Potential impacts

The Bays Station construction site would cover about 61,200 square metres in front of the former White Bay Power Station.

The key activities and components that would be seen at The Bays Station construction site include:

- Removal of two industrial buildings and some structures
- Removal of about 30 trees and all other vegetation within the site
- Establishment of parking areas, site offices, amenities, workshops, material/plant storage areas, laydown areas, an elevated conveyor, and water treatment plant and other activities
- A metal clad acoustic shed (around 15 metres in height) (or other acoustic measures) at the south-west part of construction site
- A metal clad acoustic shed (around 15 metres in height) (or other acoustic measures) at the south-east part of construction site
- Station excavation works and support
- Temporary spoil storage
- Tunnel boring machine launch
- Adjustments to the road network
- Noise barriers and hoardings surrounding the construction sites, about three metres high.

Five representative viewpoints to assess visual amenity impacts from The Bays Station construction site are shown in Figure 15-23.



Figure 15-23: The Bays Station construction site – Representative viewpoints

Landscape character impacts

Landscape character impacts anticipated as a result of Stage 1 are summarised in Table 15-44.

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.

Table 15-44: The Bays Station construction site – Landscape character impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
The site and Glebe Island portside industrial and commercial areas	Neighbourhood	No perceived change	Negligible

Daytime visual amenity impacts

The anticipated daytime visual impacts on representative viewpoints as a result of Stage 1 are summarised in Table 15-45.

There would be negligible and minor visual impacts due to the proposed demolition and construction activities associated with Stage 1. This is in the context of the site, which features a generally industrial and construction based visual context.

Construction would be generally visible in the mid ground catchment of surrounding views, with a temporary acoustic shed (or other acoustic measures) rising above the site. This construction would generally be consistent with the industrial and construction visual character of this area.

Temporary works associated with the power supply route 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. In the residential areas, where there is built form of a smaller scale and less busy streets, there would be a noticeable reduction in the amenity of views from the streets and adjacent properties along the power supply route. Management of potential impacts and mitigation measures are discussed in Section 15.15.

Table 15-45: The Bays Station construction site – Daytime visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
Viewpoint 1: View south from Mansfield Street Open Space, Rozelle	Local	Noticeable reduction	Minor adverse
Viewpoint 2: View south-west from Peacock Point Reserve, Balmain East	Local	No perceived change	Negligible
Viewpoint 3: View south-west from Barangaroo Reserve, Barangaroo	Regional	No perceived change	Negligible
Viewpoint 4: View north-west from Victoria Road pedestrian path, near Anzac Bridge	Local	No perceived change	Negligible
Viewpoint 5: View east from Victoria Road, Rozelle	Neighbourhood	Noticeable reduction	Negligible
Power supply: View to the power supply route	Local	Noticeable reduction	Minor adverse

Night-time visual amenity impacts

The anticipated night-time visual impacts as a result of Stage 1 are summarised in Table 15-46.

The Bays is already subject to existing night light sources including security lighting and vehicle headlights from the nearby Anzac Bridge and Victoria Road.

During the night, there would be works required at this site during construction. Lighting associated with the works would generally be contained in acoustic sheds (or screened by other acoustic measures such as acoustic panels over excavations), however there would be lighting within the remaining areas of the site to support the works. The natural barriers set by the surrounding landform, major roads and existing industrial buildings would mitigate the amount of light to residential areas in Balmain and Rozelle.

Construction vehicle movements would also introduce additional lighting, however this would be largely imperceptible due to the heavily trafficked nature of the surrounding road network.

Table 15-46: The Bays Station construction site – Night-time visual amenity impacts

Location	Sensitivity rating	Magnitude of change	Impact rating
The Bays Station construction site	E3: Medium district brightness	No perceived change	Negligible

15.14 Cumulative impacts

Potential cumulative impacts were considered for assessment based on the likely interactions of Stage 1 with other projects and plans that met the adopted screening criteria. The approach to assessment and the other projects considered are described further in Appendix G (Cumulative impacts assessment methodology).

Table 15-47 provides a summary of the potential cumulative landscape and visual impacts of Stage 1 in conjunction with other developments. 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 be in view of Stage 1 activities.

There are no projects identified within view or nearby to the following construction sites and therefore no cumulative landscape or visual impact is anticipated at these locations:

- Silverwater services facility construction site
- North Strathfield metro station construction site.

Table 15-47: Potential cumulative landscape character and visual amenity impacts

Site	Projects	Landscape character impact	Visual impact
Westmead metro station construction site	<ul style="list-style-type: none">Parramatta Light Rail (Stage 1)16 storey tower development at 24-26 Railway Parade	The combined removal of vegetation 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.	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.
Parramatta metro station construction site	<ul style="list-style-type: none">Parramatta Light Rail (Stage 1)56 storey tower development at 6-7 Parramatta Square14 storey mixed use development at 99-119 Macquarie Street	<p>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 temporarily reduced in width or diverted.</p> <p>The removal of several buildings as 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.</p> <p>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.</p>	<p>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.</p> <p>Sydney Metro West 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.</p>
Clyde stabling and maintenance facility construction site	<ul style="list-style-type: none">Clyde Terminal Conversion ProjectViva Energy Clyde Western Area Remediation Project	<p>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.</p> <p>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.</p>	<p>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.</p> <p>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 from the grandstands at Rosehill Gardens racecourse.</p>
Sydney Olympic Park construction site	<ul style="list-style-type: none">Multi-storey mixed-use developments for residential, commercial and retail usesParramatta Light Rail (Stage 2) (proposed)	<p>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.</p> <p>Temporary footpath diversions and closures during construction may also, reduce accessibility, permeability and legibility within the local area.</p>	Multiple projects would temporarily increase the extent of construction activity seen from surrounding residential and commercial buildings, particularly from elevated locations. 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.
Burwood North Station construction site	<ul style="list-style-type: none">Concord Oval redevelopment site	<p>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.</p> <p>The combined effect of the temporary construction vehicle haulage along Loftus Street would also adversely affect the level of accessibility and comfort for pedestrians along this suburban residential street.</p>	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 temporary construction activity potentially extending across a greater portion of views and an increased number of construction vehicle movements.
Five Dock Station construction site	<ul style="list-style-type: none">Five Dock Streetscape Upgrade (Stage 2)	These projects may both require temporary 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.	The construction sites would be viewed 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. When viewed in combination, there would be a cumulative effect as temporary 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.
The Bays Station construction site	<ul style="list-style-type: none">WestConnex M4-M5 Link surface upgrade worksThe Bays – Road Relocation Works proposalWestern Harbour Tunnel and Warringah Freeway UpgradeGlebe Island concrete batching plantGlebe Island multi-user facilityMulti-storey office building at 36 James Craig Road	<p>Potential cumulative effect as a result of the removal of vegetation across The Bays by other 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.</p> <p>The temporary road and footpath diversions and closures, as well as the construction traffic associated with these projects may result in a temporary cumulative effect on accessibility, permeability and legibility.</p>	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.

15.15 Management and mitigation measures

15.15.1 Approach to management and mitigation

Landscape character and visual amenity impacts from Stage 1 would be managed in accordance with the Construction Environmental Management Framework, which specifies key operational requirements, environmental management procedures, and a communications and consultation strategy. More details of the Construction Environmental Management Framework are provided in Chapter 27 (Synthesis of the Environmental Impact Statement).

The Construction Environmental Management Framework includes visual amenity management objectives to minimise impacts on landscape features and reduce visual impacts.

The Construction Environmental Management Framework specifies that a Visual Amenity Management Plan be prepared and implemented, including:

- Visual mitigation measures (refer to Section 15.15.2)
- Maintenance of outward facing elements of site hoarding, including removal of graffiti and weeds
- Compliance record keeping and management.

15.15.2 Mitigation measures

The mitigation measures that would be implemented to address potential landscape character and visual amenity impacts are listed in Table 15-48.

Table 15-48: Mitigation measures – Landscape character and visual amenity Stage 1

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
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 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

Reference	Impact/issue	Mitigation measure	Application location(s) ¹
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
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

Note 1: 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 (e.g. tunnel boring machine works); PSR: Power supply routes.

15.15.3 Interactions between mitigation measures

Mitigation measures in other chapters that are relevant to the management of landscape character and visual amenity impacts include:

- Chapter 11 (Non-Aboriginal heritage – Stage 1), measures which address the consideration of the White Bay Power Station Conservation Management Plan in relation to visual impacts at the Bays Station construction site and the retention of view lines.

There are no mitigation measures identified in the assessment of other environmental aspects that are likely to affect the assessment of landscape character and visual impacts.

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