Jannali Station Upgrade
Transport Access Program

Visual Impact Assessment

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Green Bean Design – Capability Statement

Green Bean Design (GBD) was established as a landscape architectural consultancy in 1999 and has specialised in landscape and visual impact assessment over the past 10 years. As an independent consultancy, GBD provide professional advice to a wide range of commercial and government clients involved in large infrastructure project development.

GBD owner, and principal landscape architect Andrew Homewood, is a registered landscape architect and member of the Australian Institute of Landscape Architects and the Environmental Institute of Australia and New Zealand. Andrew has over 21 years continuous employment in landscape consultancy and has completed numerous landscape and visual impact assessments for a variety of large scale and state significant infrastructure, including mines, transmission lines/substations, wind farms and solar power developments.

Prepared for	Prepared by
Transport for NSW	Green Bean Design - landscape architects
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Glossary

This Visual Impact Assessment has adopted and the following definitions from *Guidelines for Landscape and Visual Impact Assessment*[1] (2013) and the Roads and Maritime Services (RMS) *Environmental Impact Assessment Practice Note Guideline for Landscape Character and Visual Impact Assessment* EIA-N04[2] (2013).

Table 1 Glossary

Term	Definition
Cumulative effects[1]	The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.
Element (urban landscape)[1]	Individual parts of the developed landscape which make up the urban environment (e.g. buildings, roads, bridges and parks).
Indirect Impacts[1]	Impacts on the environment, which are not a direct result of the development but are often produced away from it or as a result of a complex pathway.
Magnitude[2]	The measurement of scale, form and character of a development proposal when compared to the existing condition. In the case of visual assessment this relates to how far the proposal is from the viewer. Combined with sensitivity, magnitude provides a measurement of impact.
Mitigation[1]	Measures, including any processes, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.
Photomontage (Visualisation)[1]	Computer simulation or other technique to illustrate the appearance of a development.
Sensitivity[2]	The sensitivity of a landscape character zone or view and its capacity to absorb change. In the case of visual impact this also relates to the type of viewer and number of viewers. Combined with magnitude, sensitivity provides a measure of impact.
Visibility[2]	The state or fact of being visible or seen
Visual Absorption Capacity[1]	The degree to which a particular landscape character type or area is able to accommodate change without unacceptable adverse effects on its character.
Visual amenity[1]	The value of a particular area or view in terms of what is seen.
Visual envelope[1]	Extent of potential visibility to or from a specific area or feature.
Visual impact[2]	The impacts on the views from residences, workplaces and public places.
Visual Impact Assessment[1]	A process of applied professional and methodical techniques to assess and determine the extent and nature of change to the composition of existing views that may result from a development.
View location[1]	A place or situation from which a proposed development may be visible.
Visual receiver[1]	Individual and/or defined groups of people who have the potential to be affected by a proposal.

Section 1 Introduction

1.1 Introduction

Green Bean Design Pty Ltd (GBD) was commissioned by Transport for NSW (TfNSW) to prepare a Visual Impact Assessment (VIA) for proposed works to upgrade and introduce new infrastructure at Jannali Station (the Proposal) as part of the Transport Access Program (TAP).

The VIA has been undertaken as part of the Review of Environmental Factors (REF) that is being prepared in accordance with the provisions of Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). This VIA provides an assessment of the potential effects of the Proposal on the existing urban landscape and visual environment surrounding the station precinct and site of the proposed works. This VIA has been prepared in accordance with consideration of Clause 228 of the NSW *Environmental and Planning and Assessment Regulation 2000*.

1.2 TAP Objectives

TfNSW initiated the TAP to improve and provide more accessible, modern and secure infrastructure. TAP has a number of objectives including to provide:

- stations that are accessible to those with a disability, ageing and parents/carers with prams
- modern interchanges that support an integrated network and allow seamless transfers between all modes for all customers
- modern buildings and facilities for all modes that meet the needs for a growing population
- safety improvements including extra lighting, help points, fences and security measures for car parks and interchanges, including stations, bus stops and wharves
- signage improvements so customers can more easily use public transport and transfer between modes at interchanges
- other improvements and maintenance such as painting, new fencing and roof replacements.

Section 2 VIA objectives and methodology

2.1 VIA objectives

A key objective of this VIA is to determine the likely visual significance of the Proposal on people living and working in, or travelling through the urban landscape within and surrounding the station precinct. This VIA has also been undertaken to:

- assess the existing visual character of the station precinct as well as the surrounding urban landscape
- determine the extent and nature of the potential visual significance of the Proposal on surrounding receivers
- identify measures to mitigate and minimise any potential visual impacts.

2.2 VIA Guidance

This VIA has been prepared with regard to industry standards including:

- *Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment EIA–N04* (RMS March 2013)
- *Visual Landscape Planning in Western Australia* (Western Australian Planning Commission November 2007)
- *Guidelines for Landscape and Visual Impact Assessment* (Landscape Institute and Institute of Environmental Management & Assessment 2013).

2.3 VIA methodology

This VIA methodology included the following activities:

- desktop study addressing visual character and identification of view locations within the surrounding area
- fieldwork and photography
- assessment and determination of the Proposals visual impact
- recommended mitigation measures for the Proposal.

2.3.1 Desktop study

A desktop study was carried out to identify an indicative viewshed for the Proposal. This was carried out by reference to topographic maps as well as aerial photographs of the station location and surrounding landscape.

Topographic maps and aerial photographs were also used to identify the locations and categories of potential view locations that could be verified during the fieldwork component of the assessment. The desktop study also outlined the visual character of the surrounding landscape including features such as landform, elevation, landuse and the distribution of residential dwellings.

2.3.2 Fieldwork and photography

The fieldwork involved:

- a site inspection in July 2015 to determine and confirm the potential extent of visibility of the Proposal
- determination and confirmation of the various view location categories and receiver locations from which the Proposal could potentially be visible.

2.3.3 Assessment of visual impact

The level of visual impact that may result from the construction and operation of the Proposal has been determined by combining the assessment and determination of surrounding receiver sensitivity and the magnitude of the Proposal works when compared to the existing visual environment. The assessment and determination of visual impact has been determined in accordance with the RMS practice note (RMS 2013).

The determination of visual impact is also subject to other factors which are considered in more detail in this VIA.

2.3.4 Mitigation measures

A number of mitigation measures have been recommended to assist in the reduction and, where possible, minimisation of any major adverse effects on surrounding receiver locations.

Section 3 Jannali Station location and description

3.1 Station location

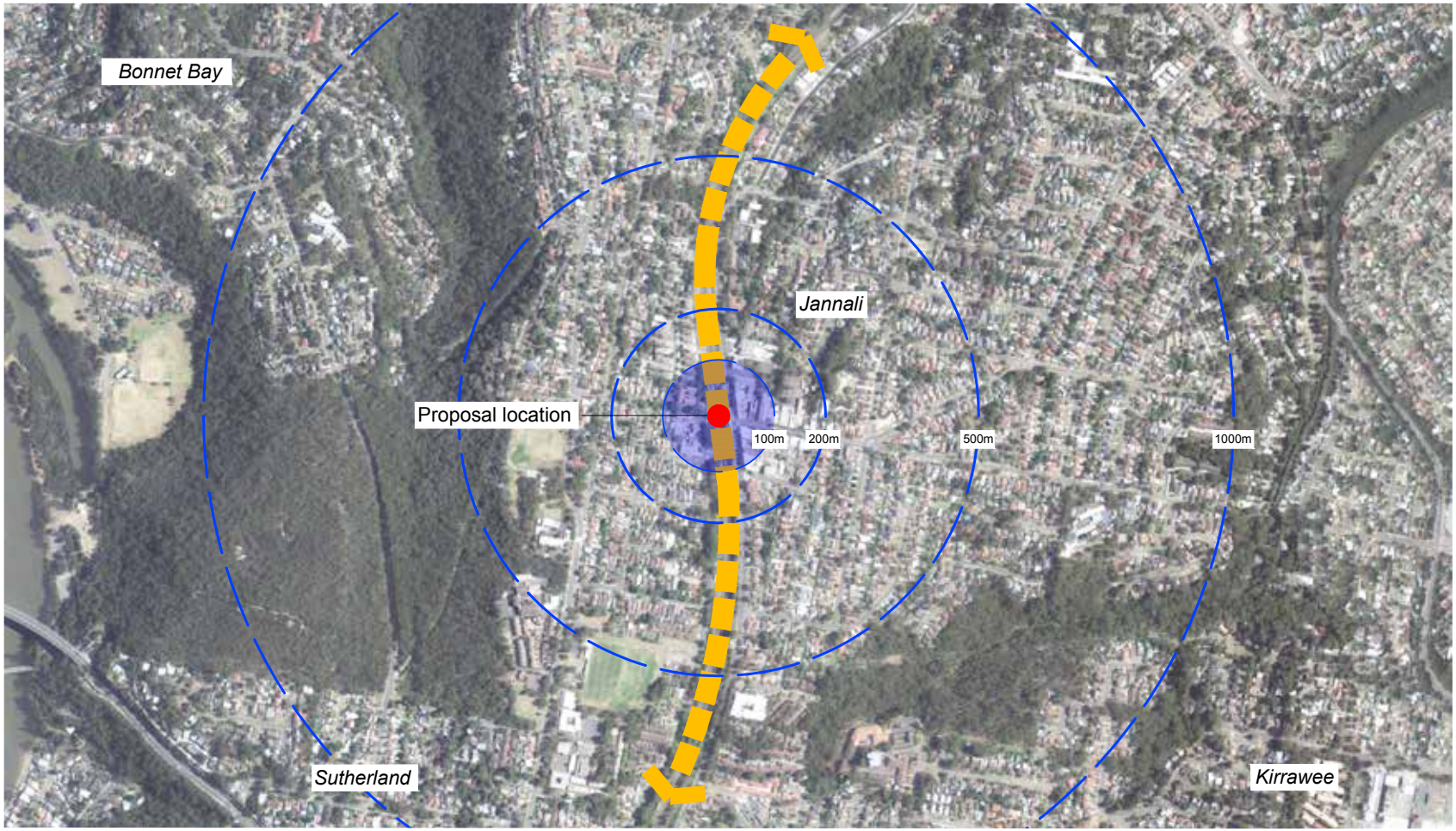
Jannali Station is located on the T4 Eastern Suburbs and Illawarra line in the southern Sydney suburb of Jannali. The station is within the northern portion of the Sutherland Shire Local Government Area and is approximately two kilometres north east from the Sutherland central business district. The station is positioned in a north to south alignment and is bounded by Jannali Avenue to the west and Railway Crescent to the east. The location of the station is illustrated in Figure 1.

3.2 Existing station description

The existing station precinct exhibits a number of key visual elements:

- north and south bound rail lines, electrical conductors and steel gantries
- two side platforms
- station buildings, ticket office and passenger shelters/canopies
- dedicated commuter car parking and on street parking east and west of the rail line
- taxi stand and bus stops with shelters
- Red Cross op shop
- utility poles and wires
- security and safety fencing
- wayfinding signage.

The station precinct and adjoining road corridors contain mature indigenous and non indigenous tree planting which provides some degree of screening and filtering of views within proximity to, and beyond the station. Trees on Jannali Avenue and Mitchell Avenue are also listed on the heritage schedule of the Sutherland Shire Local Environmental Plan 2015. Tree planting continues along local residential street nature strips and throughout residential garden areas.



Source: Google Earth Pro 2015 Aerometrex

Legend

Jannali Station

Approximate distance from proposal works

Rail corridor (Illawarra Line)

Figure 1
Proposal location

0m 200m

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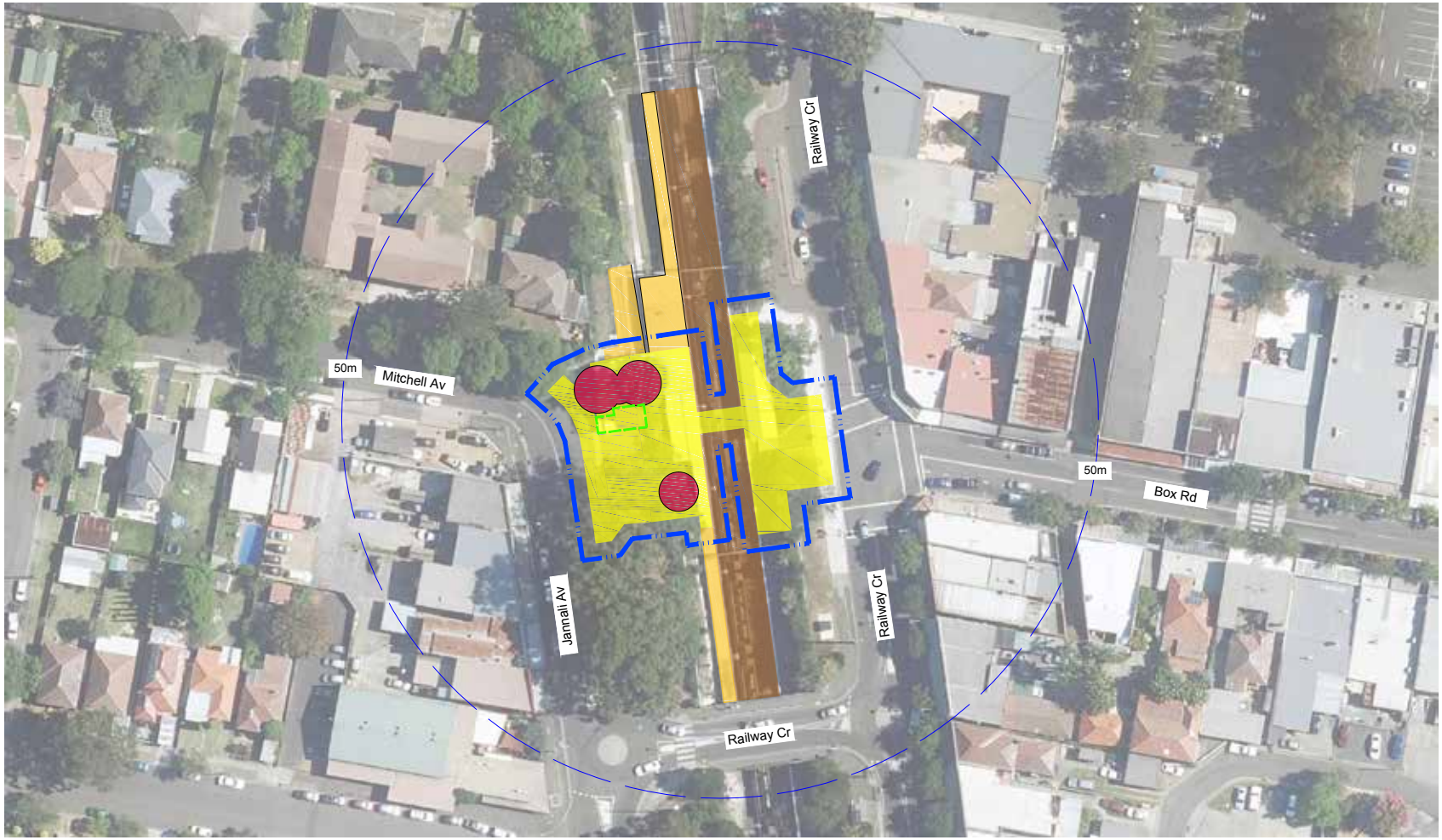
Section 4 Proposal description

4.1 Proposal description

The Proposal would include a range of works to existing infrastructure as well as the construction of new facilities to improve access, convenience, and interchange between transport modes. The Proposal would include:

- new stairs, lift and upgraded entry plaza on each side of the station
- new pedestrian bridge to provide access to both platforms and across the railway
- new canopies for weather protection above the pedestrian bridge, stairs, lift landings and entry plazas
- new family accessible toilet on platform 1
- installation of undercover bicycle racks on both sides of the station
- upgraded footpaths/ramps on Jannali Avenue, Mitchell Avenue and Railway Crescent
- bus zone works including construction of a shelter closer to the station entrance on Jannali Avenue and a new bus zone on Mitchell Avenue
- provision of five accessible parking spaces (three upgraded and two relocated), two kiss and ride spaces and vehicle turning area in the Oxley Avenue car park connected to the station by a widened footpath
- provision of up to three part-time kiss and ride spaces in Railway Crescent
- ancillary works, including localised platform regrading (as necessary), adjustments to lighting, improvements to station communication systems with new infrastructure (including CCTV cameras), wayfinding signage, services diversion and/or relocation, station power supply upgrade, and minor drainage works.

The removal of three small to medium size mature trees from the western side of the station would be required to accommodate the new western station entrance. The location of the Proposal is illustrated in Figure 2.



Source: Google Earth Pro 2015 Aerometrex

Legend

- Indicative Proposal extent relevant to visual impact assessment
- Existing structure to be retained
- Proposed works relevant to visual impact assessment
- Existing structure to be removed
- Existing tree to be removed
- Rail corridor

Figure 2
Proposal area

Note: This figure is indicative only and based on a concept design

0m 15m

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Section 5 Panoramic photographs

5.1 Panoramic photographs

Digital photographs were taken during the course of the fieldwork to illustrate existing views in the vicinity of view locations inspected as part of this VIA. The panorama photographs were digitally stitched together to form a segmented panorama image which provides a visual illustration of the existing view from each photo location.

The panoramic photographs presented in this VIA have been annotated to identify existing built elements and roads located within the existing view and surrounding the station. The panoramic photograph locations are illustrated in Figure 3, and the panoramic photographs illustrated in Figures 4 to 7.

Source: Google Earth Pro 2015 Aerometrex

Legend

V1 Panorama photo location

V5 Photomontage location

Proposed works relevant to the visual impact assessment

Figure 3
Photo locations

0m 50m

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Photo location V1 - View looking south to south west from Railway Crescent

Photo location V2 - View looking south to south west from Railway Crescent

Photo location V3 - View looking south to south west from Railway Crescent

Figure 4 Photo sheet 1

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Photo location V4 - View looking west from Box Road toward Railway Crescent intersection

Photo location V5 - View looking west from Box Road toward Railway Crescent intersection

Photo location V6 - View looking north to north west from Railway Crescent and road rail bridge

Figure 5 Photo sheet 2

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Photo location V7 - View looking north from Jannali Avenue

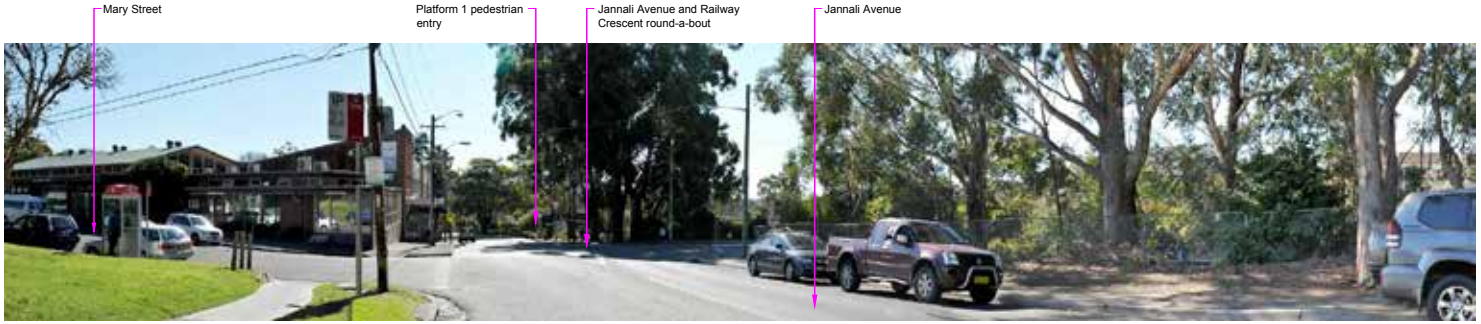

Photo location V8 - View looking north from Jannali Avenue and Mary Street intersection

Photo location V9 - View looking north to north east from Jannali Avenue and Railway Crescent (crossing road/rail bridge)

Figure 6 Photo sheet 3

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Photo location V10 - View looking north east from Jannali Avenue toward station pedestrian entry

Photo location V11 - View looking east from Mitchell Avenue toward station pedestrian entry

Photo location V12 - View looking east to south east from Mitchell Avenue toward station pedestrian entry

Figure 7 Photo sheet 4

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Section 6 Urban landscape effects

6.1 Existing landscape and urban character

Jannali Station is located within an area of mixed residential suburban and mixed commercial development that is typically found in the local council area. The station provides direct and good accessibility to adjoining suburbs and larger metropolitan centres. Medium to low density housing together with mixed use zoning creates an urban village environment which is enhanced by mature tree planting lining streets alongside and beyond the rail corridor.

Residential areas within the viewshed extend to the west of Jannali Station along Mitchell Avenue, Jannali Avenue and Mary Street. Residential areas are largely defined by mostly single storey detached dwellings with front and rear gardens. Dwellings are set back from street frontages with mature tree avenue planting along nature strips which contribute to the leafy, urban village character of the area. Residential areas north of Mitchell Avenue also include small, two to three storey multi unit developments. A small number of shops extend along Jannali Avenue (and opposite the station) comprising two storey brick buildings. A car mechanic workshop located on the corner of Jannali Avenue and Mitchell Avenue is opposite the entry to the station ticket office and platform 1 entry.

By contrast the Railway Crescent corridor is characterised by a moderately busy traffic corridor with street access to adjoining residential and commercial areas beyond the viewshed. The commercial zone opposite the station on Railway Crescent continues east along Box Road. The commercial zone provides a mix of services, cafes, providores and professional health providers which are generally located in two storey premises with ground floor shops and offices above.

Built elements within the station precinct and surrounding commercial development are visually softened by tree and shrub planting alongside the rail corridor and within the commercial streetscapes. Tree planting includes a mix of evergreen and deciduous native and non native species. Deciduous trees are more predominant alongside commercial buildings allowing for winter solar access, with evergreen species used to provide a greater degree of year round screening alongside the rail corridor.

6.2 Visual Absorption Capability

Visual Absorption Capability (VAC) is a classification system used to describe the relative ability of the urban landscape to accept modifications and alterations without the loss of character or deterioration of visual amenity. VAC relates to the physical characteristics of the urban landscape that are often inherent and quite static in the long term. In essence the VAC indicates the ability of an urban landscape setting to 'hide' development.

The VAC of an urban landscape is largely determined by inherent physical factors which include:

- the degree of visual penetration (view distance without obstruction) through surrounding buildings and tree cover
- the complexity of the urban landscape through bulk, scale, form and line.

Urban landscapes with a low visual penetration would have higher visual absorption capability values. Complex urban landscapes which include a mix of scale, form and line (together with some degree of vegetative screening) would also have high visual absorption capability values.

The VAC of the urban landscape surrounding the Jannali Station and the Proposal exhibits a relatively high VAC.

6.3 Urban landscape character impacts

The Proposal would introduce new elements and built forms in the visual environment including the pedestrian bridge, stairs, lifts and station entrances along with a family accessible toilet building on platform 1.

Some of the new elements such as the stairs and Family Accessible Toilet building and lower sections of the pedestrian bridge/lifts would be visually contained within the rail corridor, and partially screened by mature tree planting within and beyond the station precinct.

The upper sections of the pedestrian bridge and lift structures would be visible from surrounding receiver locations but their height is not considered to be inconsistent with the height of some existing residential and commercial buildings located in the area surrounding the station. The height of the pedestrian bridge and lifts are also such that they meet operational requirements (i.e. sufficient vertical clearance above the railway track).

The new station entrances would be more prominent and clearly defined to help delineate the transport mode and to assist with wayfinding. Whilst more prominent, the station entrances are designed and intended to integrate with the existing streetscape along Jannali Avenue and Railway Crescent. Materials and finishes will complement existing street furniture and seek to replace outdated existing infrastructure such as the bus stop on Jannali Avenue. The Proposal presents a rational approach to pedestrian and vehicular movement within the station precinct and connectivity to surrounding areas within the Jannali Centre.

As such, the Proposal would have an overall low impact upon the urban landscape character of the station precinct and surrounding environment and the Proposal is unlikely to form any significant skyline view from surrounding receiver locations. The Proposal would enhance the station's presentation to Jannali Avenue and create a greater degree of visual clarity around the pedestrian entry from the Jannali Avenue and Mitchell Avenue intersection. Pedestrians and motorists travelling along local roads, as well as commuters walking through the station precinct, would experience an overall positive impact through the enhancement of layout, materials and design features within the station.

Section 7 Viewshed

7.1 Viewshed

For the purpose of this VIA the viewshed is defined as the area of land surrounding and beyond the station which could be potentially affected by the Proposal. In essence, the viewshed defines this VIA study area. The viewshed for the Proposal has been divided into a series of concentric bands (between 50 metres and 100 metres distance offsets) extending across the landscape from the Jannali Station. The viewshed is illustrated in Figure 8.

The primary viewshed extends in a north south orientation following the main parallel view corridors of both the rail corridor, Jannali Avenue and Railway Crescent. The primary viewshed also extends perpendicular to the rail corridor along the Box Road and Mitchell Avenue road corridors.

The viewshed beyond the station precinct is responsive to both mature tree planting and built development to the east and west of the rail corridor and results in a generally restricted extent of visual penetration. The residential interface to the rail corridor is generally setback and visually separated by commercial buildings and mature tree planting.

Receiver locations within the viewshed incorporate a range of categories which include:

- residential dwellings (including multi storey units north of Mitchell Avenue)
- commercial premises
- rail customers
- pedestrians
- motorists.

Source: Google Earth Pro 2015 Aerometrex

Legend

- Proposed works
- Tree cover with screening potential
- Rail corridor/view
- Road corridor view
- Building line blocking view beyond
- Residential interface
- Primary view shed

Figure 8
Viewshed

0m 25m

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Section 8 Visual impact assessment

8.1 Introduction

In accordance with the RMS practice note (RMS 2013), the significance of visual impact that would result from the construction and operation of a project is a composite of the sensitivity of the view and magnitude of the project in that view.

8.2 Quantifying impacts

The RMS practice note states that:

'Sensitivity refers to the qualities of an area, the type number and type of receivers and how sensitive the existing character of the setting is to the proposed change. For example a pristine natural environment would be more sensitive to change that a built up industrial area'.

'Magnitude refers to the nature of the project. For example a large interchange would have a very different impact on landscape character than a localised road widening in the same area'.

The combination of sensitivity and magnitude provide the rating of visual impact for a viewpoint. Table 2 sets out the RMS practice note relative visual impact grading values which combine sensitivity and magnitude.

Table 2 Proposal visual impact grading matrix

		Magnitude			
		High	Moderate	Low	Negligible
Sensitivity	High	High impact	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-Low	Negligible
	Low	Moderate	Moderate-Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

The RMS practice note determines that '*a judgement must be made as to the quality and extent of the design solution in assessing magnitude and impact. Determining a low impact based on the assumption that the very highest quality design outcome would be achieved could be unrealistic and misleading. However it is equally misleading to determine impacts based on the very worst outcomes. A balance must be found but it is usually better to err on the side of caution'.*

To be in accordance with the RMS practice note, this VIA has erred on the side of caution given that the assessment is based on a concept design that would be further refined during following stages of the design process.

8.3 Key existing viewpoints

In accordance with the RMS practice note, this VIA has developed a schedule of representative viewpoints which are within a reasonable distance of the Proposal and within the view catchment. The representative viewpoints include residential dwellings, commercial properties, road corridors and pedestrian footpaths. The representative viewpoints are illustrated in Figure 9.

Source: Google Earth Pro 2015 Aerometrex

Legend

- Proposed works
- Tree cover with screening potential
- Rail corridor
- Residential dwelling
- Commercial or workplace
- Road corridor
- Open space
- R2 Receiver location

Figure 9
Receiver locations

0m 25m

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8.4 Visual sensitivity

Following selection, the receiver viewpoints have been rated as to their sensitivity to change by the Proposal. The RMS practice note states that 'visual sensitivity refers to the quality of the existing view and how sensitive the view is to the proposed change. Visual sensitivity is related to the direction of view and the composition of the view'.

Table 3 identifies:

- receiver viewpoints (R) and receiver types for the Proposal
- the view direction and approximate distance to the Proposal for each receiver viewpoint
- description of the existing view from each receiver viewpoint
- an assessment of the visual sensitivity (erring on the side of caution) for each receiver viewpoint.

Table 3 – Visual sensitivity matrix

Receiver viewpoint (Refer Figure 9)	View direction and distance	Existing view description	Visual sensitivity grading
R1 Box Road & Railway Crescent intersection	Looking west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Pedestrian and motorist street level views toward Jannali Station are direct and immediate but partially filtered by existing tree and shrub planting alongside the eastern boundary of the rail corridor. There are opportunities for glimpsed views to buildings on the western side of the rail corridor, including a view toward the Mitchell Avenue road corridor.	Moderate
R2 Box Road corridor	Looking west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Pedestrian and motorist street level views (in a westerly travel direction) toward Jannali Station are framed by commercial development and shops along the north and south road frontages.	Moderate
R3 Commercial buildings	Looking west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Primarily ground level views toward Jannali Station are direct with some partial tree screening either side of the Railway Crescent road corridor.	Low
R4 Commercial buildings (Box Road north)	Looking west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground and first storey views toward Jannali Station are indirect and generally contained within the Box Road streetscape view corridor. Visible portions of the station and associated infrastructure are largely restricted to the eastern and platform 2 extents.	Negligible
R5 Commercial buildings (Box Road south)	Looking west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground and first storey views toward Jannali Station are indirect and generally contained within the Box Road streetscape view corridor. Visible portions of the station and associated infrastructure are largely restricted to the eastern and platform 2 extents.	Negligible
R6 Commercial buildings (along Railway Crescent)	Looking north-west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground and first storey views toward Jannali Station are largely screened and filtered by existing tree planting alongside the rail corridor.	Low

Receiver viewpoint (Refer Figure 9)	View direction and distance	Existing view description	Visual sensitivity grading
R7 Railway Crescent and White Street intersection	Looking north-west toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Street level pedestrian and motorist views toward Jannali Station are partially screened by tree planting alongside the rail corridor and station precinct. Views are largely restricted to the Railway Crescent road corridor.	Low
R8 Public reserve	Looking north-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Street level views toward Jannali Station from the public reserve on the corner of Jannali Avenue and Mary Street are largely screened by commercial properties alongside Jannali Avenue and partially filtered and screened in places by tree planting alongside Jannali Avenue.	Low
R9 Commercial properties	Looking east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Ground level and first storey views toward Jannali Station extend directly and proximately across the Jannali Avenue corridor.	Moderate
R10 Jannali Avenue	Looking north-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Street level views toward Jannali Station from the Jannali Avenue corridor north of Railway Crescent road bridge extend directly toward the station precinct, with medium distance views south of the road bridge partially screened and filtered by tree planting.	Moderate
R11 Mitchell Avenue	Looking east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Street level pedestrian and motorist views toward Jannali Station from the Mitchell Avenue corridor are partially filtered and screened in places by tree planting alongside the road corridor and within the station precinct.	Moderate
R12 Residential dwelling	Looking east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is within 50 metres.	Ground level views toward Jannali Station are direct and proximate to the dwelling location. Existing planting within, and surrounding, the dwelling provides a small degree of screening and partial filtering of views toward the station.	High-Moderate
R13 Multi unit residential dwellings	Looking south-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground, second and third storey views toward Jannali Station from multi unit residential dwellings along (and east of) Oxley Avenue are generally screened and/or filtered by mature tree planting between the dwellings and the rail corridor.	Low
R14 Multi unit residential dwellings	Looking south-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground, second and third storey views toward Jannali Station from the multi unit residential dwellings along (and east of) Oxley Avenue are partially screened and/or filtered by mature tree planting between the dwellings and the rail corridor.	Low
R15 Residential dwellings north of Mitchell Avenue	Looking south-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground level views toward Jannali Station from residential dwellings set back (and north) from Mitchell Avenue are screened by existing residential development and tree planting along Mitchell Avenue.	Negligible

Receiver viewpoint (Refer Figure 9)	View direction and distance	Existing view description	Visual sensitivity grading
R16 Residential dwellings Mitchell Avenue (south)	Looking east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground level views toward Jannali Station from residential dwellings set back from south of Mitchell Avenue are indirect and partially screened by adjoining commercial development to the east of the dwellings.	Negligible
R17 Residential dwellings Mary Street (north)	Looking south-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground level views toward Jannali Station from residential dwellings set back from north of Mary Street are screened by adjoining commercial development along Jannali Avenue, to the north east of the dwellings.	Negligible
R18 Residential dwellings Mary Street (south)	Looking north-east toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Ground level views toward Jannali Station from residential dwellings set back from the south of Mary Street are screened by residential dwellings and commercial development to the east of the dwellings.	Negligible
R19 Railway Crescent (north)	Looking south toward the Proposal site. The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Street level pedestrian and motorist views toward Jannali Station are partially screened and filtered by tree planting alongside the rail corridor.	Low

8.5 Visual magnitude

In accordance with the RMS practice note magnitude is 'the measurement of scale, form and character of a development proposal when compared with the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer'.

Table 4 identifies:

- receiver viewpoints
- the approximate distance from the receiver viewpoint to the Proposal
- a judgement on comparable scale, form and character between existing and proposed conditions
- an assessment of the visual magnitude (erring on the side of caution) for each receiver viewpoint.

Table 4 – Proposal visual magnitude matrix

Receiver viewpoint (Refer Figure 9)	Approximate distance	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R1 Box Road & Railway Crescent intersection	The distance between the receiver viewpoint and the Proposal is within 50 metres.	The Proposal would form a visible element within the station visual environment. The Proposal would introduce constructed elements which, in general, complement the scale of existing residential and commercial buildings surrounding the station. The Proposal is not expected to create a noticeable deterioration in the existing view.	Moderate
R2 Box Road corridor	The distance between the receiver viewpoint and the Proposal is within 50 metres.	The Proposal would form a visible element within the surrounding visual environment with views toward the Proposal works framed within and terminating the streetscape corridor view. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low
R3 Commercial buildings	The distance between the receiver viewpoint and the Proposal is within 50 metres.	The Proposal would form a visible element within the surrounding visual environment; however views toward the Proposal would be partially filtered by planting against the rail corridor and along Railway Crescent. The Proposal would introduce constructed elements which, in general, complement the scale and form of existing built structures surrounding the station. The Proposal is not expected to create a noticeable deterioration in the existing view.	Low
R4 Commercial buildings (Box Road north)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would form a visible element within the surrounding visual environment; however, views toward the Proposal would be restricted by the road corridor. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low

Receiver viewpoint (Refer Figure 9)	Approximate distance	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R5 Commercial buildings (Box Road south)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would form a visible element within the surrounding visual environment; however views toward the Proposal would be restricted within the road corridor view. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low
R6 Commercial buildings (along Railway Crescent)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would form a visible element within the surrounding visual environment; however views toward the Proposal would be partially filtered by planting against the rail corridor and along Railway Crescent. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low
R7 Railway Crescent and White Street intersection	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would form a visible element within the surrounding visual environment; however views toward the Proposal would be partially filtered by planting against the rail corridor and along Railway Crescent. The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low
R8 Public reserve	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	Views toward the Proposal would be partially filtered and screened by mature tree planting along Jannali Avenue. The Proposal would generally result in no discernible deterioration in the existing view.	Low
R9 Commercial properties	The distance between the receiver viewpoint and the Proposal is within 50 metres.	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Moderate
R10 Jannali Avenue	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Moderate
R11 Mitchell Avenue	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Moderate

Receiver viewpoint (Refer Figure 9)	Approximate distance	Comparable judgement between the existing and proposed condition	Visual magnitude grading
R12 Residential dwelling	The distance between the receiver viewpoint and the Proposal is within 50 metres.	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Moderate
R13 Multi unit residential dwellings	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low
R14 Multi unit residential dwellings	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would form a visible element within the surrounding visual environment; however views toward the Proposal would be partially filtered by planting against the rail corridor. The Proposal would introduce constructed elements which, in general, complement the scale and form of existing structures at the station. The Proposal is not expected to create a noticeable deterioration in the existing view.	Low
R15 Residential dwellings north of Mitchell Avenue	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would result in no discernible deterioration in the existing view.	Negligible
R16 Residential dwellings Mitchell Avenue (south)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would result in no discernible deterioration in the existing view.	Negligible
R17 Residential dwellings Mary Street (north)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would result in no discernible deterioration in the existing view.	Negligible
R18 Residential dwellings Mary Street (south)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would result in no discernible deterioration in the existing view.	Negligible
R19 Railway Crescent (north)	The distance between the receiver viewpoint and the Proposal is between 50 metres and 100 metres.	The Proposal would introduce constructed elements which, in general, complement the scale and form of some existing commercial and residential buildings beyond the station. The Proposal is not expected to create a noticeable deterioration in the amenity of the existing view and surrounding built environment.	Low

8.6 Assessment of visual impacts

The RMS practice note stipulates that the impact of the Proposal on each viewpoint be assessed and that the visual impact should be based on a composite of the sensitivity of the view and magnitude of the Proposal in that view. A composite visual impact grading has been determined for each receiver viewpoint by reference to the visual impact grading matrix set out in Table 2.

Table 5 identifies:

- receiver viewpoints for the Proposal
- the visual sensitivity grading for each receiver location
- the visual magnitude grading for each receiver location

an assessment of the visual impact (erring on the side of caution) for the Proposal.

Table 5 – Proposed visual impact assessment matrix

Receiver viewpoint (Refer Figure 9)	Visual sensitivity grading	Visual magnitude grading	Visual impact
R1 Box Road & Railway Crescent intersection	Moderate	Moderate	**Moderate**
R2 Box Road corridor	Moderate	Low	**Moderate-Low**
R3 Commercial buildings	Low	Low	**Low**
R4 Commercial buildings (Box Road north)	Negligible	Low	**Negligible**
R5 Commercial buildings (Box Road south)	Negligible	Low	**Negligible**
R6 Commercial buildings (along Railway Crescent)	Low	Low	**Low**
R7 Railway Crescent and White Street intersection	Low	Low	**Low**
R8 Public reserve	Low	Low	**Low**
R9 Commercial properties	Moderate	Moderate	**Moderate**
R10 Jannali Avenue	Moderate	Moderate	**Moderate**
R11 Mitchell Avenue	Moderate	Moderate	**Moderate**
R12 Residential dwelling	Moderate	Moderate	**High-Moderate**
R13 Multi unit residential dwellings	Low	Low	**Low**
R14 Multi unit residential dwellings	Low	Low	**Low**

Receiver viewpoint (Refer Figure 9)	Visual sensitivity grading	Visual magnitude grading	Visual impact
R15 Residential dwellings north of Mitchell Avenue	Negligible	Negligible	**Negligible**
R16 Residential dwellings Mitchell Avenue (south)	Negligible	Negligible	**Negligible**
R17 Residential dwellings Mary Street (north)	Negligible	Negligible	**Negligible**
R18 Residential dwellings Mary Street (south)	Negligible	Negligible	**Negligible**
R19 Railway Crescent (north)	Low	Low	**Low**

8.7 Summary of visual impact

This VIA has determined that:

- One of the nineteen receiver viewpoints (R12) would likely experience a High-Moderate visual impact
- Four of the nineteen receiver viewpoints would likely experience a Moderate visual impact
- One of the nineteen receiver viewpoints would likely experience a Moderate-Low visual impact
- Seven of the nineteen receiver viewpoints would likely experience a Low visual impact
- Six of the nineteen receiver viewpoints would likely experience a negligible visual impact.

One receiver location has been determined to have a High-Moderate impact. The residential receiver R12, located adjacent to the Proposal at the Jannali Avenue and Mitchell Avenue intersection, will gain direct but partially filtered views toward the Proposal and key built elements at the western entrance such as the lift, footbridge, canopies and new walls and steps.

A little over one quarter of receiver viewpoints (around 26 per cent of the receiver viewpoints) have been determined to have an overall moderate impact with regard to the Proposal. The moderate visual impact is a result of views which are very proximate (within 50 metres) to the Proposal and this proximity results in direct and detailed views toward proposed structures and elements. Whilst there are some existing trees that would filter views, the Proposal would be visible and reasonably prominent within the available viewshed, including views toward key features such as the station entrances, lifts and pedestrian bridge.

One receiver viewpoint (around half a per cent of receiver viewpoints) has been determined to have an overall moderate-low visual impact with regard to the Proposal. The moderate-low visual impact is a result of the moderate visual sensitivity and a low visual magnitude that are proximate and with direct views toward parts of the Proposal.

Just over one third of the receiver viewpoints (around 37 per cent of receiver viewpoints) have been determined to have an overall low visual impact with regard to the Proposal. The low visual impact results from both a low visual sensitivity and low magnitude and generally represents views that would be subject to some partial screening and/or where the Proposal would create no major change in scale or form to the existing visual environment.

Just over one third of receiver viewpoints (around 31.5 per cent of receiver locations), including single storey residential dwellings to the west of the rail corridor have been determined to have an overall negligible visual impact with regard to the Proposal. The majority of the negligible visual impact results from the screening effect of buildings and some existing tree planting between the receiver viewpoints and the Proposal. Negligible impacts also result from dwellings within multi storey residential buildings where the unit is located opposite to the Proposal.

The Proposal would be visually filtered and partially screened by existing mature tree planting within the station precinct as well as tree cover extending alongside the rail corridor. The Proposal would require the removal of a small number of mature trees within the Proposal envelope on Jannali Avenue. The removal of existing trees is unlikely to create any significant additional visual impact. The removal of trees would be offset by new tree planting to be installed in the station precinct and car park areas as part of the upgrade works.

The existing Jannali Station viewshed is not expected to increase to any significant measure as a result of the Proposal.

Whilst some visible built elements associated with the Proposal would be subject to change including form and colour, during the next stages of design (if approved) the overall visible scale of the Proposal within the context of the surrounding urban environment would remain relatively unchanged.

The majority of surrounding receivers would not be significantly impacted by the Proposal including sensitive residential receivers along Mitchell Avenue and less sensitive receivers within surrounding commercial developments. Pedestrians and motorists travelling along local road corridors, including Jannali Avenue and Railway Crescent, would not experience any major change with regard to the Proposal. Views toward the Proposal would be partially screened by existing mature tree and shrub planting surrounding the station. Potential visual impacts would also be limited due to the transitory and relatively short term nature of views from surrounding road corridors.

8.8 Construction activities

Whilst construction activities would tend to be more visible than the operational stage of the Proposal, the construction activities would be temporary and transient in nature. Views toward construction activities would be partially restricted by existing tree cover surrounding the station precinct.

Typical construction impacts include:

- temporary fencing and hoardings
- road barriers and signage
- scaffolding
- temporary site office and amenities.

8.9 Night time lighting

The Proposal would require installation of lighting for operational, safety, security and maintenance purposes. Night lighting would include building and pole mounted directional spot lighting and pole mounted pedestrian lighting. The Proposal would avoid broad area or floodlighting where possible. Light installations would be installed in accordance with the Australian Standard Control of the obtrusive effects of outdoor lighting (AS 4282-1997), and avoid light spill to adjoining road corridors and residential areas. In summary, night time lighting is not anticipated to have an adverse impact.

8.10 Overshadowing

The location of the Proposal in relation to the offset distance to public domain areas, road corridors and residential areas would result in shadows cast by new infrastructure being largely contained within the station precinct boundary. The Proposal is unlikely to create any significant cumulative shadowing in addition to existing shadowing from mature tree plantings adjoining the station precinct.

Section 9 Photomontages

9.1 Photomontages

The photomontages locations were selected by GBD, in consultation with TfNSW. The photomontages locations are illustrated in Figure 3 and the photomontages are presented in Figures 10 and 11.

The photomontage locations were selected from accessible sections of the surrounding road corridors. They represent typical viewpoint locations and illustrate the potential influence of existing tree cover on visibility. The locations include:

- Photomontage V5 (from photo location V5) looking west from Box Road adjacent to commercial properties. The photomontage illustrates proposed and potential direct views toward the Proposal from the Box Road corridor
- Photomontage V11 (from photo location V11) looking east from Mitchell Avenue. The photomontage illustrates proposed and potential direct views toward the Proposal from the Mitchell Road corridor.

The photomontages help to demonstrate that some individual built elements associated with the Proposal, such as the lift, pedestrian bridge and canopy/awning structures, which would be visually legible as additional structures when compared to the existing view. Whilst the lifts and canopy structures may be regarded as distinct visual elements, their scale and height are considered to be in proportion to the overall Proposal and are unlikely to form dominant skyline features from surrounding receiver locations.

Existing panorama photograph V5 - Existing view looking west from Box Road

Photomontage V5 - Proposed view looking west from Box Road
Note: The photomontage is indicative only and is based on a concept design

Figure 10
Photomontage V5

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Photomontage V11 - Existing view looking east from Mitchell Avenue

Photomontage V11 - Proposed view looking east from Mitchell Avenue
Note: The photomontage is indicative only and is based on a concept design

Figure 11
Photomontage V11

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Section 10 Cumulative impact assessment

10.1 Cumulative Impact Assessment

A cumulative visual impact could result from elements of the Proposal being constructed in conjunction with other existing or proposed developments which could be either associated or separate to it. Separate developments could occur or be located within a local context where visibility is dependent on a journey between each site or within the Proposal viewshed.

The Proposal would be located within the visual envelope of the existing station which contains rail infrastructure, station buildings and associated utility infrastructure. Constructed elements associated with the Proposal would be similar in scale, line and form to existing infrastructure within the existing station precinct. The potential for an associated cumulative impact between the Proposal and existing infrastructure would be minimised by the visual relationship between the proposed and existing works, with the Proposal forming an enhancement and extension to existing infrastructure rather than being viewed and recognised as a standalone development.

The Proposal is considered to have limited potential to increase the significance of cumulative visual impact with regard to existing large scale visual elements located beyond the Jannali Station precinct. This is largely due to visual screening surrounding the Proposal for the majority of receiver locations and the location of proposed constructed elements relative to existing infrastructure.

Section 11 Mitigation measures

11.1 Mitigation measures

Mitigation measures should be considered to minimise the level of residual visual impacts during construction and operation. The mitigation measures generally involve reducing the extent of visual contrast between the visible portions of the Proposal structures and the surrounding landscape, and/or screening direct views toward the Proposal where possible.

11.2 Detail design

Mitigation measures during the detail design process should consider:

- further refinement in the design of the lift and canopy structures to articulate and form profiles which may assist in the mitigation of bulk and height
- consideration in selection and location for replacement tree planting which may provide partial screening or backdrop setting for constructed elements from surrounding receiver locations, including sensitive receiver locations such as R12
- advanced tree planting to the raised planter at the western station entrance to create a continuity of tree planting along the Jannali Avenue and Mitchell Avenue streetscape corridors
- a review of materials and colour finishes for selected components including the use of non reflective finishes to surfaces and roof structures.

11.3 Construction

Mitigation measures during the construction period should consider:

- installation of screen hoarding and/or shade cloth screens
- minimise tree removal
- avoidance of temporary light spill beyond the construction site where temporary lighting is required
- rehabilitation of disturbed areas
- removal of graffiti in accordance with TfNSW standard requirements
- protection of mature and heritage listed trees
- traffic management and parking arrangements including potential for cars to park along residential streets due to reduced construction capacity.

11.4 Operation

Mitigation measures during the operational period should consider:

- light installation to be designed and placed in accordance with AS 4282-1997, to minimise obtrusive effects for surrounding receivers
- ongoing maintenance and repair of constructed elements
- replacement of damaged or missing constructed elements
- long term maintenance (and replacement as necessary) of tree planting within the station precinct to maintain visual filtering and screening of external views
- soft and hard landscape works maintenance.

Section 12 Conclusion

12.1 Summary

The Proposal would introduce a range of constructed elements into the existing visual environment including key visual features such as lift structures, footbridge, steps, and canopies.

The Proposal is unlikely to result in a significant impact on the sensitivity of existing views as key Proposal infrastructure, including the lifts and pedestrian footbridge, would not be inconsistent with the scale of some existing multi storey residential and commercial buildings within the Jannali urban village. The Proposal would also introduce visual elements commonly associated with other stations in the metropolitan area. The Proposals key features would not be unexpected or considered not associated with a contemporary station development.

The Proposal would be more prominent and clearly defined than the existing station. This will help delineate the transport mode and to assist with wayfinding. The Jannali urban village character which surrounds the station results in a relatively high VAC. The high VAC would tend to absorb changes to the visual environment associated with the upgrade works.

Whilst more visually prominent than the existing station, the Proposal is intended to integrate with the existing streetscapes within the Jannali Centre. The Proposal is considered to have an overall low impact upon the Jannali urban village character.

This VIA determined that the Proposal would have a moderate-low visual impact on the majority of people living/working in or travelling through the urban landscape surrounding Jannali Station. The Proposal would have a potential high-moderate visual impact on one residential dwelling (R12) located adjacent to the station on the corner of Jannali Avenue and Mitchell Avenue.

The consideration and application of mitigation measures outlined in this VIA will assist to minimise the potential visual impact of the Proposal.

References

Guidelines for Landscape and Visual Impact Assessment Landscape Institute and Institute of Environmental Management & Assessment (3rd Edition), 2013

Environmental Impact Assessment Practice Note, Guideline for Landscape Character and Visual Impact Assessment EIA-N04 Roads and Maritime Services, March 2013

Transport Access Program Services Brief Visual Impact Assessment for Jannali and Harris Park Station Accessibility Upgrades Transport for NSW, May 2015, (Document reference 3788560)

Limitations

GBD has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Transport for NSW and authorised third parties. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the GBD Proposal dated 20 May 2015.

The methodology adopted and sources of information used are outlined in this report. GBD has made no independent verification of this information beyond the agreed scope of works and GBD assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to GBD was false.

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