Pendle Hill Station
Easy Access Upgrade
Transport Access Program

VISUAL IMPACT ASSESSMENT

Prepared for:

NSW Transport for NSW

Prepared by:

GREEN BEAN DESIGN
landscape architects

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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 transport, mines, transmission lines/substations, wind farms and solar power developments.

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Glossary

This Visual Impact Assessment has adopted and adapted the following definitions from the Guidelines for Landscape and Visual Impact Assessment (2013).

Table 1 Glossary

Cumulative effects	*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)	*Individual parts of the developed landscape which make up the urban environment (e.g. buildings, roads, bridges and parks).*
Indirect Impacts	*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	*A combination of the scale, extent and duration of an effect.*
Mitigation	*Measures, including any processes, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.*
Sensitivity	*Susceptibility of a receiver to a specific type of change.*
Visibility	*A relative determination at which the proposal can be clearly discerned and described.*
Visual Absorption Capacity	*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	*The value of a particular area or view in terms of what is seen.*
Visual envelope	*Extent of potential visibility to or from a specific area or feature.*
Visual Impact Assessment	*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.*

Table 1 Glossary

	existing views that may result from a development.
View Location	*A place or situation from which a proposed development may be visible.*
Visual receiver	*Individual and/or defined groups of people who have the potential to be affected by a proposal.*
Visual Significance	*A measure of the importance or gravity of the visual effect culminating from the degree of magnitude and receiver sensitivity.*

Introduction

Section 1

1.1 Introduction

Green Bean Design (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 Pendle Hill Railway Station as part of the TfNSW Transport Access Program (TAP).

This 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 Pendle Hill Station upgrade (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 consideration of Clause 228 of the NSW *Environmental and Planning and Assessment Regulations 2000*.

1.2 TAP Objectives

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

- 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
- stations that are accessible to those with a disability, ageing and parents with prams
- 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.

VIA objectives and methodology

Section 2

2.1 VIA objectives

A key objective of this VIA is to determine the 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 potential visual impacts.

2.2 VIA Guidance

This VIA has been prepared with regard to landscape architectural industry standards including those such as:

- Roads and Maritime Services Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment EIA – N04
- Visual Landscape Planning in Western Australia (Western Australian Planning Commission, November 2007)
- Guidelines for Landscape and Visual Impact 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 visual significance
- determination of potential mitigation measures.

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 Pendle Hill 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 to determine and confirm the potential visibility of the Proposal and ancillary structures from surrounding areas
- determination and confirmation of the various visual receiver categories and view locations from which the Proposal structures could potentially be visible.

2.3.3 Assessment of visual significance

The visual significance of the Proposal on visual receivers and view locations will result primarily from a combination of the potential visibility of the Proposal and the characteristics of the urban landscape between, and surrounding, visual receivers and the Proposal. The potential degree of visibility and resultant visual significance will be partly determined by a combination of factors including:

- distance between visual receivers and various elements of the Proposal
- duration of view from visual receiver locations toward various constructed elements within the Proposal location
- predicted impact of the Proposal on existing visual amenity
- nature of predicted visual impacts
- visual sensitivity of locations from which views toward the Proposal exist.

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

2.3.4 Mitigation measures

Mitigation measures have been determined to assist in the reduction and, where possible, remediation of any significant adverse effects on surrounding views locations that may arise from the Proposal.

Pendle Hill Station location and description

Section 3

3.1 Station location

Pendle Hill Station is located on the Western and Cumberland Lines of the Sydney Trains network in the Greater Western suburb of Pendle Hill. The station and rail corridor form a boundary between the City of Holroyd and City of Parramatta Local Government Areas and is located approximately 28 kilometres from the Sydney central business district. The station is positioned in a north west to south east alignment and is bounded by the Wentworth Avenue road corridor to the north and the Joyce Street road corridor to the south. The Pendle Hill Station location is illustrated in **Figure 1**.

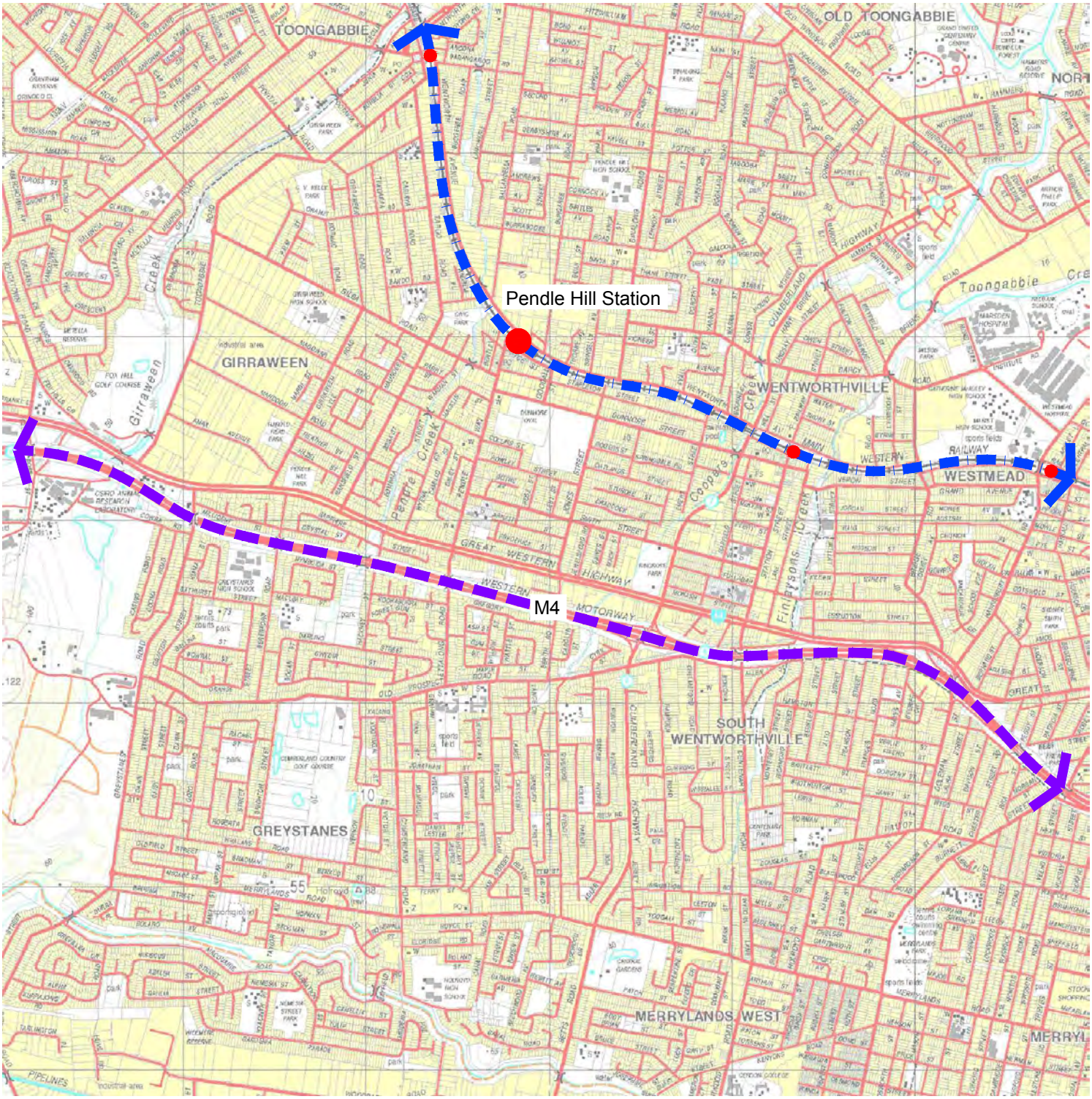
3.2 Existing station description

The existing station precinct exhibits a range of visual elements which include:

- east and west bound rail lines (main and suburban), electrical conductors and steel stanchions
- four platforms located on two islands
- footbridge with walkway ramp and step access with railings
- station buildings, ticket office and passenger shelters/amenities
- utility poles and wires
- on street 90 degree car parking (to Joyce Street and Wentworth Avenue)
- various security and safety fencing
- directional and informative signage.

The station precinct can be accessed by pedestrians from the adjoining Wentworth Avenue footpath to the north and Joyce Street footpath to the south. Pedestrian walkway ramps extend from a marked pedestrian crossing at the Pendle Way and Joyce Street intersection and from Wentworth Avenue to a footbridge which spans the rail corridor. The station buildings and ticket office are located on the island platforms, and accessed via steps from the footbridge. A bus stop, located on the south side of Joyce Street and opposite the station, will be upgraded as part of the proposed works. There is no dedicated off street parking at the station; however, 90 degree street parking extends alongside the rail corridor on the north side of Joyce Street and along Wentworth Avenue.

The station precinct and adjoining road corridors contain mature indigenous and non indigenous tree planting which provides some degree of screening within proximity to, and beyond the station. Tree planting continues along local residential street nature strips and throughout residential garden areas.



Legend

- Western & Cumberland Lines
- Railway station
- M4 Motorway corridor

0km 500m

Figure 1
Location Plan

Pendle Hill Station
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Proposal description

Section 4

4.1 Proposal description

The Proposal is designed to improve pedestrian access to and from the station, increase Pendle Hill Stations ability to cope with the predicted future patronage demands, and improve pedestrian flow, passenger information services and wayfinding between transport modes. The Proposal will include a range of works to existing infrastructure as well as the construction of new facilities. The Proposal will include:

- four new lifts (one to each station entrance and each platform island)
- new station concourse with canopies, anti throw screens and street level entrances
- new platform stairs and canopies with anti throw screens
- new street entry stairs and canopies with anti throw screens
- demolition of the existing ramps and partial demolition of the existing footbridge
- station precinct upgrade and enhanced interchange provisions.

Supporting these major features of the preferred concept design are a number of interchange and accessibility upgrade works that would improve access, convenience, and interchange between modes.

Tree removal and pruning may be required to facilitate the upgrade works on the south station boundary including for the construction of proposed operational areas. The location of proposed works is illustrated in **Figure 2**.

Source: Google Earth Pro 2014 Sinclair Knight Merz

Legend

- Indicative proposal extent
- Proposed structure
- Existing tree to be removed
- Existing structure retained
- Rail corridor

Figure 2
Proposal area

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

0km 25m

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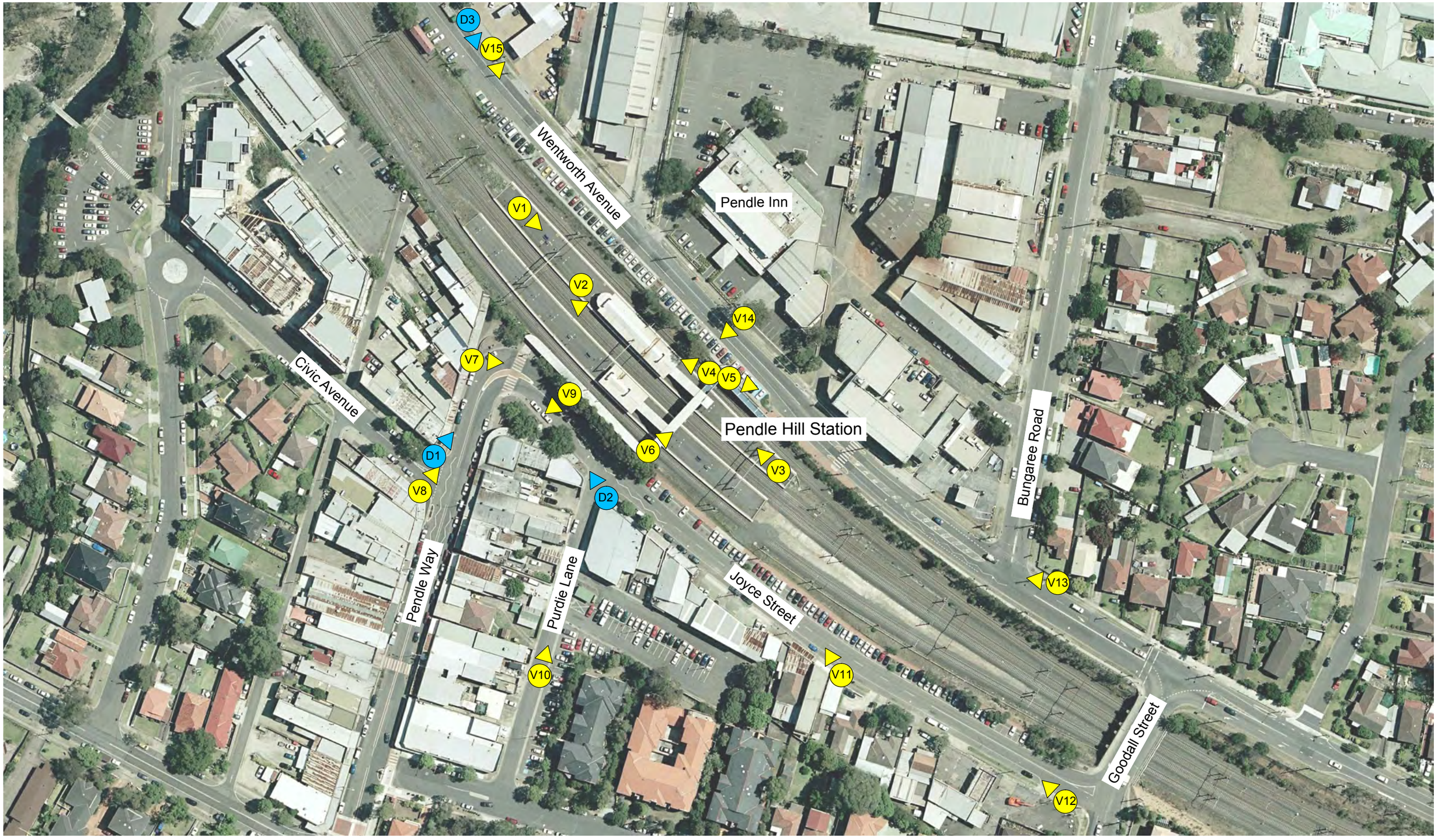
Panoramic photographs

Section 5

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 and natural elements located within the existing view as well as the Proposal where relevant. The panoramic photograph locations are illustrated in **Figure 3**, and the panoramic photographs illustrated in **Figures 4** to **8**.



Source: Google Earth Pro 2014 Sinclair Knight Merz

Legend

D1 Concept design illustration location

V5 Photo location

Figure 3
Photo locations

0m 30m

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Photo location V1 - View south east from Platform 2 toward walkway and footbridge access from Joyce Street and Wentworth Avenue

Photo location V2 - View south east to south from Platform 2 toward booking office, pedestrian footbridge and covered walkway to Joyce Street

Photo location V3 - View south to north west from Platform 2 toward Joyce Street, pedestrian footbridge and walkways to Joyce Street and Wentworth Avenue

Figure 4 Photo sheet 1

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Photo location V4 - View south west to north west from pedestrian footbridge (Wentworth Avenue access)

Photo location V5 - View west to south east from pedestrian walkway toward Wentworth Avenue and Joyce Street

Photo location V6 - View north east to south east from pedestrian footbridge toward Wentworth Avenue

Figure 5 Photo sheet 2

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Photo location V7 - View north to east from Pendle Way toward Joyce Street

Photo location V8 - View north east from corner of Civic Avenue and Pendle Way

Photo location V9 - View south east from Joyce Street toward north end of Pendle Way

Figure 6 Photo sheet 3

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Photo location V10 - View north from Purdie Lane toward Joyce Street

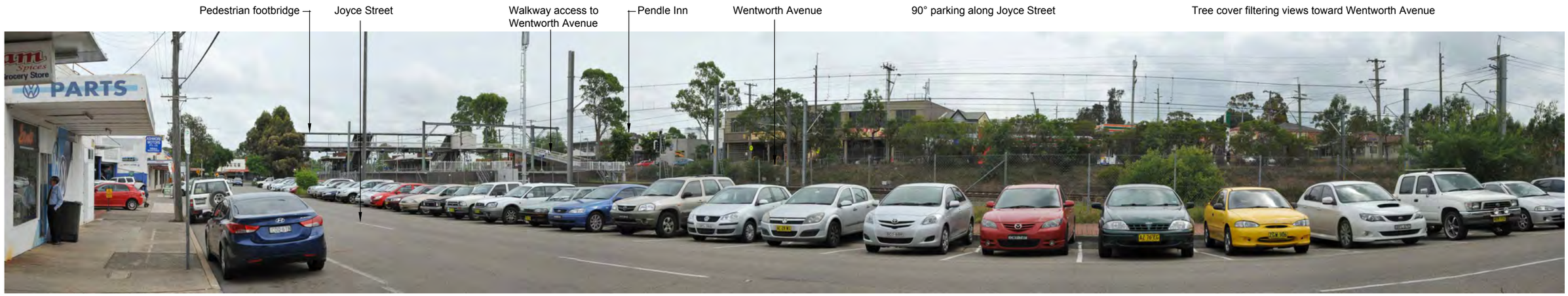

Photo location V11 - View north west to north from Joyce Street

Photo location V12 - View north west to north from Joyce Street and Goodall Street intersection

Figure 7 Photo sheet 4

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Photo location V13 - View south to west from Wentworth Avenue and Bungaree road intersection

Photo location V14 - View south to west from Wentworth Avenue toward Pendle Hill station

Photo location V15 - View south east to south from Wentworth Avenue toward Pendle Hill station

Figure 8 Photo sheet 5

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Urban landscape effects

Section 6

6.1 Existing landscape and urban character

The urban landscape character surrounding Pendle Hill Station is typical of both residential suburban settings and that of a main line rail corridor with mixed development within a local commercial centre. Residential areas to the north of Pendle Hill Station extend along Wentworth Avenue to the east of Bungaree Road and are defined by a mix of single storey detached dwellings with front and rear gardens. Dwellings are set back from street frontages with tree planting along nature strips. Land to the north of the station precinct administered by the City of Parramatta is within Zone B2 Local Centre. Council's objectives for Zone B2 include to:

- provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work and visit the local area
- encourage employment opportunities in accessible locations
- maximise public transport patronage and encourage walking and cycling
- encourage the construction of mixed use buildings that integrate suitable commercial, residential and other developments and that provide active ground level uses.

Land beyond and to the north and north west of the Local Centre is zoned IN1 General Industrial.

The urban landscape character south of the rail corridor is defined by the Pendle Hill commercial centre with a range of shops and services extending along Pendle Way and Joyce Street. There is a constant level of vehicular and pedestrian activity throughout the local commercial area and a visual diversity of colour, line and form associated with buildings and signage. Land adjoining and to the south of the rail corridor (administered by the City of Holroyd) is within Zone B2 Local Centre. Council's objectives for Zone B2 include to:

- provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work and visit the local area
- encourage employment opportunities in accessible locations
- maximise public transport patronage and encourage walking and cycling
- permit residential development that is complementary to, and well integrated with, commercial uses.

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 accommodate new 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 will have higher VAC values. Complex urban landscapes which include a mix of scale, form and line (together with some degree of vegetative screening) will also have high VAC values. The VAC of the urban landscape surrounding the Pendle Hill Station and the area of proposed works exhibits a relatively high VAC.

6.3 Urban landscape character impacts

The Proposal and its associated infrastructure will have an overall low impact upon the urban landscape character of the station precinct and surrounding urban environment. The bulk and scale of constructed elements will be partially visually contained by existing mature tree planting within and beyond the station precinct as well as existing development within the Pendle Hill local commercial centre and industrial development to the north. The Proposal design incorporates various architectural and engineered outcomes to visually minimise bulk and scale of constructed elements through modulation and articulation of structures.

Building form and height also responds to both existing constructed elements within and adjacent to the station precinct including existing station buildings. Mature tree planting along the north and south portion of the rail corridor provides a backdrop to views of the Proposal which will be visible below tree canopies.

Portions of the Proposal will integrate with the existing station precinct and, as an upgrade to existing transport facilities, the Proposal retains the stations existing function and purpose in its relation to surrounding land use. The Proposal presents a rational approach to pedestrian and vehicular movement within the station precinct and connectivity to adjoining areas.

The Proposal is considered to result in a beneficial visual outcome where contemporary design, modern materials and sympathetic colours applied to the existing station precinct will combine to create a legible and high visual amenity asset within the surrounding urban landscape.

Viewshed

7.1 Viewshed

For the purpose of this VIA the viewshed is defined as the area of land surrounding and beyond the Proposal area 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 200 metres distance offsets) extending across the landscape from the Pendle Hill Station. The viewshed is illustrated in **Figure 9**.

The primary viewshed extends in a north west to south east orientation following the main view corridors of both the rail line, Wentworth Avenue and Joyce Street. The viewshed beyond the station precinct is responsive to both mature tree planting and built development to the north and south of the rail corridor and results in a restricted extent of visual penetration. The residential interface to the rail corridor is generally setback and visually separated in a wider context by commercial buildings and mature tree planting.

Source: Google Earth Pro 2014 Sinclair Knight Merz

Legend

- Pendle Hill Station footprint
- Tree cover with screening potential
- Rail corridor/view
- Road corridor view
- Building line blocking view beyond
- Residential interface
- Primary view shed

Figure 9
Viewshed

0km 50m

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Visual effects

Section 8

8.1 Introduction

The significance of visual effects resulting from the construction and operation of the Proposal will primarily result from a combination of the following factors:

- distance between the receiver location and elements within the Proposal
- duration of the view from receiver location toward the Proposal
- predicted impact of the Proposal on existing visual amenity
- nature of predicted impacts
- receiver sensitivity of locations from which views toward the Proposal exist.

8.2 View distance

The criteria for the view distance are set out in the VIA **Table 2**. The view distance parameters include:

- long distance views beyond 100 metres of the Proposal
- medium distance views between 50 metres and 100 metres of the Proposal
- short distance views within 50 metres of the Proposal.

These distances have been determined against the likely visibility and visual scale of constructed elements associated with the Proposal. From short distances the Proposal will be a dominant feature within the surrounding landscape and may be at some variance with the scale and pattern of the existing urban landscape. From medium distances the Proposal will be a recognisable feature, but not dominate views within the surrounding urban landscape. From long distances the Proposal will form a visible element within the surrounding urban landscape but is unlikely to constitute a marked effect on existing views.

8.3 View duration

The criteria for the view duration are set out in the VIA **Table 2**. The view duration parameters include:

- long term for a view period of over two hours;
- moderate term for a view of thirty minutes to two hours; and
- short term for ten minutes up to thirty minutes.

These periods of time have been determined against the overall period of view that may be available during daylight hours (assumed to be a period of around twelve hours, discounting seasonal variation). Therefore, as a percentage of the maximum viewing time available during daylight hours:

- a period of two hours represents approximately 17% of daylight hours;

- a period of thirty minutes represents approximately 4.5% of daylight hours; and
- ten minutes represents approximately 1.5% of daylight hours.

8.4 Receiver sensitivity

The following indicators have been adopted to define the sensitivity of individual receivers at specific viewpoints:

- High sensitivity - people with proprietary interest and prolonged viewing opportunities such as residents and users or visitors to attractive and/or well-used recreational facilities
- Medium sensitivity - people with an interest in their environment e.g. visitors to local attractions or larger numbers of travellers with an interest in their surroundings; and
- Low sensitivity - people with a passing interest in their surroundings e.g. those travelling along transport corridors and people whose interest is not specifically focussed on the urban landscape e.g. commuters.

An overall determination of the visual significance at surrounding view locations has also been assessed and determined against criteria outlined in **Table 2** below:

Table 2 - View Location Assessment Criteria

Criteria	Definition
View Distance:	
Long (L)	> 100 metres
Medium (M)	50 metres – 100 metres
Short (S)	< 50 metres
View Duration:	
Long term (LT)	> 2 hours
Moderate term (MT)	30 minutes to 2 hours
Short term (ST)	10 – 30 minutes
Predicted Impact:	
Adverse (A)	Predicted impact of the Proposal on existing view is likely to be negative.
Neutral (N)	Predicted impact of the Proposal on existing view is likely to be neutral.
Beneficial (B)	Predicted impact of the Proposal on existing view is likely to be positive.

Table 2 - View Location Assessment Criteria

Criteria	Definition
Nature of Impact:	
Temporary (T)	Visual impact will be temporary in nature
Permanent (P)	Visual impact will be permanent in nature
Reversible (R)	Visual impact will be considered reversible (for example constructed elements may be removed at the decommissioning stage)
Irreversible (IR)	Visual impact will be considered irreversible (for example proposed alteration to existing infrastructure associated with the Proposal will be both permanent and irreversible)
Magnitude:	
High (H)	Total loss or major change to pre-development view or introduction of elements which are uncharacteristic to the existing urban landscape features.
Medium (M)	Partial loss or alteration to pre-development view or introduction of elements that may be prominent but not necessarily uncharacteristic with the existing urban landscape features.
Low (L)	Minor loss or alteration to pre-development view or introduction of elements that may not be necessarily uncharacteristic with the existing urban landscape features.
Negligible (N)	Very minor loss or alteration to pre-development view or introduction of elements which are not uncharacteristic with the existing urban landscape features (resulting in a no change situation).
Receiver Sensitivity:	
High (H)	Residential dwelling locations
Medium (M)	Commercial centre or work places
Low (L)	Local access roads and train passengers
Visual Significance:	
High (HS)	The Proposal will be a significant and dominant feature within the surrounding landscape and at variance with the landform, scale and pattern of the landscape. The Proposal will have the capacity to cause a significant deterioration in the existing view. The Proposal's visual effects may not be

Table 2 - View Location Assessment Criteria

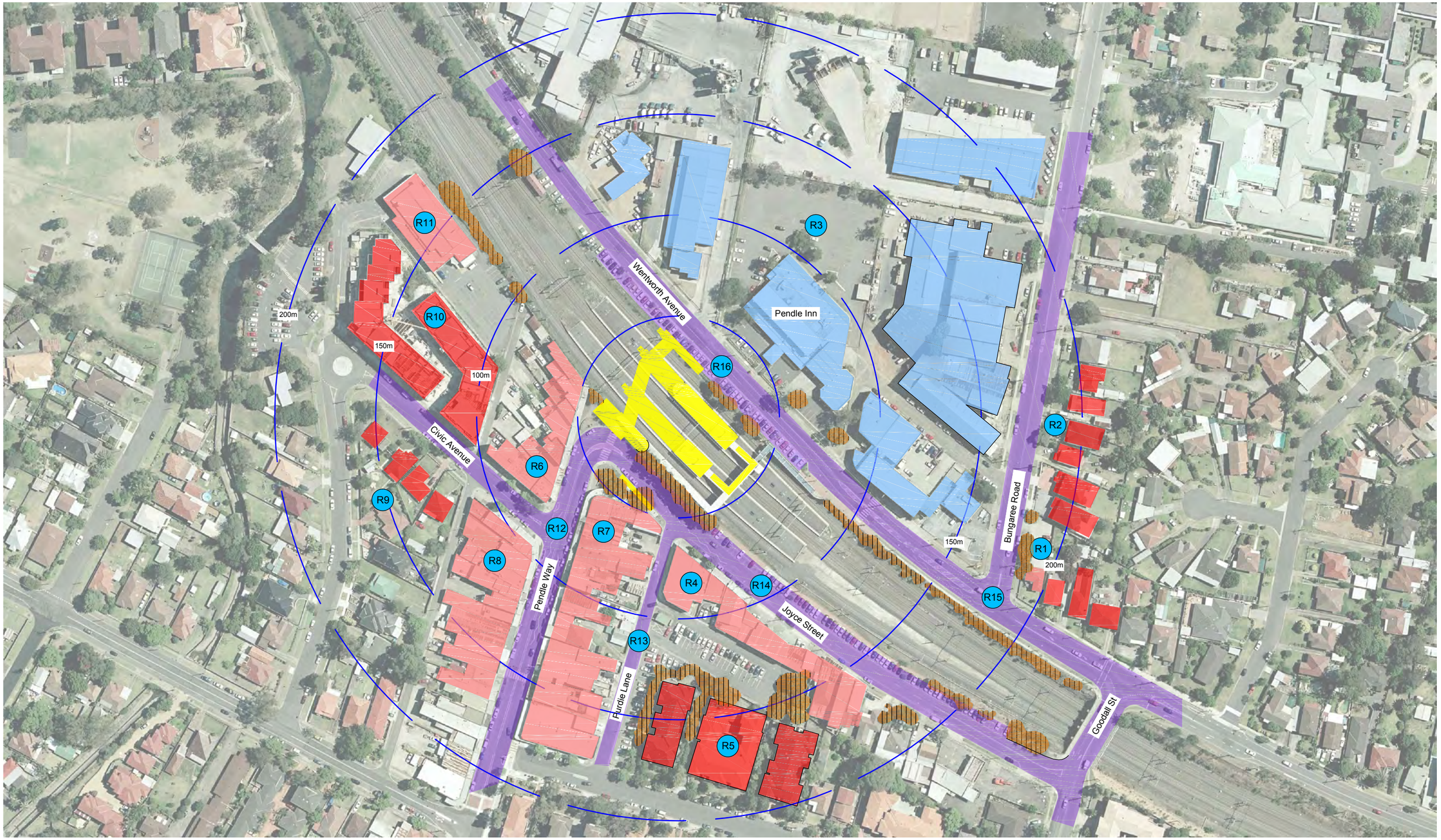
Criteria	Definition
	minimised by mitigation measures and cumulative impacts may result in an increased level of impact.
Moderate (MS)	The Proposal will be a recognisable feature, but not dominate views within the surrounding landscape. The Proposal will be out of scale and discordant with the landform, scale and pattern of the landscape and have the capacity to cause a noticeable deterioration in the existing view. The Proposal's visual effects may be partially mitigated through appropriate measures.
Low (LS)	The Proposal will form a visible element within the surrounding landscape but is unlikely to constitute a marked effect on existing views. The Proposal will complement the scale, landform and pattern of the surrounding landscape and will not create a noticeable deterioration in the existing view. The Proposal's visual effects will be positively mitigated through appropriate measures.
Negligible (NS)	The Proposal will result in no discernible deterioration in the existing view.

The visual significance criteria outlined in **Table 2** is used **as a guide** to determine visual significance. The significance of visual impact for each view location is also considered against other factors, which include the overall visibility of the Proposal from surrounding view locations.

8.5 Visual Significance Matrix

The matrix presented in **Table 3** presents the assessment and determination of visual impact significance for selected receiver locations beyond the Proposal location. The representative receiver locations are illustrated in **Figure 10**.

Source: Google Earth Pro 2014 Sinclair Knight Merz



Legend

- Pendle Hill Station footprint
- Tree cover with screening potential
- Local Center/commercial
- Residential dwelling
- Commercial/industrial
- Road corridor

Figure 10
Receiver locations

0km 50m

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Table 3 - Visual Significance Matrix

Receiver viewpoint (Figure 10)	View direction and distance toward Proposal	Description	Distance			Duration			Predicted Impact			Nature of Impact				Magnitude	Receiver sensitivity	Significance
			L	M	S	LT	MT	ST	A	N	B	T	P	R	IR			
R1 Residential dwellings & vet practice	West to north west – around 200 metres	Indirect views toward the Pendle Hill Station and the proposed works from residential dwellings north of Wentworth Avenue are partially blocked by tree planting to the south of the Wentworth Avenue road corridor.														N	H	NS
R2 Residential dwellings	West – around 200 metres	Views toward the Pendle Hill Station and the proposed works from residential dwellings to the east of Bungaree Road are blocked by industrial buildings to the west of Bungaree Road.														N	H	NS
R3 Industrial areas and Pendle Inn	South to south west – between 50 and 200 metres	Views extend across Wentworth Avenue toward the Pendle Hill Station and proposed works from industrial development and the Pendle Inn buildings. View opportunities are limited from within and adjoining industrial buildings.														L	M	LS
R4 Commercial properties	North to north west – between 50 and 150 metres	Views toward the Pendle Hill Station and proposed works are direct from the east and central portions of commercial property frontage along the south side of Joyce Street. Views from the west end of Joyce Street toward the station are partially screened by tree planting alongside the station boundary.														L	M	LS

Table 3 - Visual Significance Matrix

Receiver viewpoint (Figure 10)	View direction and distance toward Proposal	Description	Distance			Duration			Predicted Impact			Nature of Impact				Magnitude	Receiver sensitivity	Significance
			L	M	S	LT	MT	ST	A	N	B	T	P	R	IR			
R5 Residential dwellings & units	North to north west – around 150 metres	Views toward the Pendle Hill Station and the proposed works are partially screened by tree planting and commercial properties to the north of the residential units. Potential and partial views from upper storey units toward the station.														L	H	LS
R6 Commercial property	East to north east – between 50 and 100 metres	Direct ground and first floor views toward the Pendle Hill Station will extend toward the west portion of the station precinct including proposed operations building.														L	M	NS
R7 Commercial property	North – between 50 and 200 metres	Indirect views toward the Pendle Hill Station and proposed works are partially screened by tree planting adjoining the north portion of commercial property. The majority of commercial properties have frontage toward Pendle Way.														L	M	NS
R8 Commercial property	North east – between 50 and 200 metres	Indirect views toward the Pendle Hill Station and proposed works are partially screened by adjoining commercial development. The majority of commercial properties have frontage toward Pendle Way.														L	M	NS

Table 3 - Visual Significance Matrix

Receiver viewpoint (Figure 10)	View direction and distance toward Proposal	Description	Distance			Duration			Predicted Impact			Nature of Impact				Magnitude	Receiver sensitivity	Significance
			L	M	S	LT	MT	ST	A	N	B	T	P	R	IR			
R9 Residential dwellings	North east – around 150 metres	Views toward the Pendle Hill Station and proposed works from residential dwellings to the south of Civic Avenue are blocked by commercial property and multi storey residential unit development to the north of Civic Avenue														N	H	NS
R10 Residential dwellings & units	East – between 100 and 150 metres	Views toward the Pendle Hill Station and the proposed works from multi storey residential units north of Civic Avenue are partially screened by commercial property to the west of Pendle Way. A small number of upper storey windows are visible from the station footbridge.														L	H	LS
R11 Commercial property	South east – around 150 metres	Views toward the Pendle Hill Station and the proposed works will be largely screened by commercial property to the west of Pendle Way and partial screening by tree planting alongside the rail corridor.														L	M	LS
R12 Pendle Way road corridor	North– between 50 and 200 metres	Views toward the Pendle Hill Station and the proposed works are framed and restricted by commercial properties either side of the road. The south station precinct including proposed booking office and office building will terminate the view from the road corridor.														L	L	LS

Table 3 - Visual Significance Matrix

Receiver viewpoint (Figure 10)	View direction and distance toward Proposal	Description	Distance			Duration			Predicted Impact			Nature of Impact				Magnitude	Receiver sensitivity	Significance
			L	M	S	LT	MT	ST	A	N	B	T	P	R	IR			
R13 Purdie Lane	North– between 50 and 100 metres	Views toward the Pendle Hill Station and the proposed works from Purdie Lane are blocked by commercial property between Purdie Lane and Pendle Way. Direct views north along the Purdie Lane corridor are terminated to the north of Joyce Street by mature tree planting alongside the station precinct.														N	L	NS
R14 Joyce Street	North west – within 50 and in excess of 200 metres	Indirect lateral views toward the Pendle Hill Station and proposed works from Joyce Street extend across the rail corridor toward the station precinct, platforms and buildings.														L	L	LS
R15 Bungaree Road	West – between 100 and 150 metres	Views toward the Pendle Hill Station and proposed works are blocked by industrial development to the west of Bungaree Road.														L	L	NS
R16 Wentworth Avenue	North– between 50 and 100 metres	Indirect lateral views toward the Pendle Hill Station and proposed works from Wentworth Avenue extend across the rail corridor toward the station precinct, platforms and buildings. Screening is provided by tree planting along a section of Wentworth Avenue south of the Bungaree Road intersection.														L	L	LS

8.6 Summary of visual significance

The majority of receiver locations, including those from private residential dwellings, road corridors and public spaces beyond the station precinct have been determined to have an overall negligible to low visual significance with regard to the Proposal and its associated infrastructure. The negligible to low visual significance largely results from the screening effect of existing tree planting alongside the rail corridor and the distribution of commercial development within the Pendle Hill local centre.

The proposed upgrade works are considered to have an overall beneficial impact for commercial properties as well as views from road corridors, where works will enhance and create a positive outcome for existing views.

8.7 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 are illustrated in **Figure 11** which includes views toward the Ingleburn Station in South West Sydney whilst undergoing upgrade works similar to those proposed at Pendle Hill Station. The typical construction photos illustrate:

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

8.8 Night time lighting

Some Proposal infrastructure will require lighting installation for operational, safety, security and maintenance purposes. Night lighting will include building and pole mounted directional spot lighting and pole mounted pedestrian lighting. The Proposal will avoid broad area or floodlighting where possible. The majority of infrastructure areas associated with the Proposal will be unlikely to require additional lighting, or lighting that will result in a direct line of sight from surrounding view locations. Light installations will 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.

8.9 Overshadowing

The location of proposed works in relation to the offset distance to public domain, road corridors and residential areas, will result in the majority of shadows cast by the Proposal infrastructure being contained within the station precinct boundary. Some overshadowing will extend along the south boundary of the station

precinct and across the Pendle Way and Joyce Street road intersection, and may also extend across a small number of commercial property frontages at the north end of Pendle Way.

Photo C1 - Typical construction illustration at Ingleburn Railway Station

Photo C2 - Typical construction illustration at Ingleburn Railway Station

Photo C3 - Typcial construction illustration at Ingleburn Railway Station

Figure 11 Typical construction photos

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Design illustrations

Section 9

9.1 Design illustrations

Three locations were selected to illustrate typical views toward the Proposal post development. The three locations are illustrated in **Figure 3** and the illustrations are presented in **Figures 12**, **13** and **14**. The illustrations are presented with both the existing and post development views. The illustration locations were selected from accessible sections of surrounding road corridors and represent typical viewpoint locations that illustrate the potential influence of existing tree cover on visibility. The locations include:

- D1 from Pendle Way footpath (west side) adjacent to commercial shops with direct views toward the station upgrade works
- D2 from Joyce Street footpath (south side) adjacent to commercial properties with partial tree filtered views toward the existing station and upgrade works
- D3 from Wentworth Avenue footpath (north side) adjacent to commercial properties with direct views toward the existing station and upgrade works.

The design illustrations have been prepared by Design Inc Pty Ltd as part of the concept design development works and are reproduced in this VIA with permission of TfNSW.

Pedestrian access to station precinct

Pendle Way

Image source: DesignInc

Photo D1.1 - Existing view north to north east from Pendle Way toward Pendle Hill Station

Proposed upgrade works including new station concourse

Pendle Way

Image source: DesignInc

Concept design illustration D1.2 - Proposed view north to north east from Pendle Way toward proposed upgrade works

Concept design illustration prepared by DesignInc Pty Ltd

Figure 12
Illustration D1

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Existing bus stop

Footbridge step access from Pendle Way

Joyce Street

Image source: DesignInc

Photo D2.1 - Existing view west to north west from Joyce Street toward Pendle Hill Station

Bus stop upgrade

Proposed station concourse

Proposed station building upgrades

Joyce Street

Image source: DesignInc

Illustration D2.2 - Proposed view west to north west from Joyce Street toward proposed station upgrade works

Concept design illustration prepared by DesignInc Pty Ltd

Figure 13
Illustration D2

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Image source: DesignInc

Photo D3.1 - Existing view south east to east from Wentworth Avenue toward Pendle Hill station

Image source: DesignInc

Illustration D3.2 - Proposed view south east to east from Wentworth Avenue toward Pendle Hill Station

Concept design illustration
prepared by DesignInc

Figure 14
Illustration D3

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Cumulative impact assessment

Section 10

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 will 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 will 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 will 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 Pendle Hill Station precinct. This is largely due to visual screening surrounding the Proposal for the majority of view locations and the location of proposed constructed elements relative to existing infrastructure.

Mitigation measures

Section 11

11.1 Mitigation measures

While the overall significance of the Proposal visual significance has been determined as negligible to low for the majority of surrounding receiver location, 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 Proposals structures and the surrounding landscape, and/or screening direct views toward the Proposal where possible.

11.2 Construction

Mitigation measures during the construction period should consider:

- installation of screen hoarding and/or shade cloth screens
- retention and protection of existing tree planting
- 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 trees within the station precinct
- traffic management and parking arrangements including potential for cars to park along residential streets due to reduced construction capacity.

11.3 Operation

Mitigation measures during the operational period should consider:

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

Conclusion

Section 12

12.1 Summary

This VIA concludes that overall the Proposal upgrade, activities and operations will have a negligible to low visual significance on the majority of people living in or travelling through the urban landscape surrounding Pendle Hill Station.

The Proposal will form a noticeable visual element within the surrounding urban landscape but is unlikely to constitute a marked effect on existing views. The Proposal will generally complement the scale, landform and pattern of the surrounding urban landscape and will not create a noticeable deterioration in the existing view. The Proposals visual effects will be positively mitigated through appropriate measures.

The Proposal will be partially visually contained by existing mature tree planting within the station precinct as well as tree cover extending alongside the Wentworth Avenue and Joyce Street road corridors. The existing station is also afforded a relatively high degree of visual containment by existing double storey built development within the Pendle Hill local commercial center. The urban landscape character surrounding the station results in a relatively high VAC and will readily absorb changes to the visual environment associated with the upgrade works. The urban landscape character surrounding the station results in a relatively high VAC and will readily absorb changes to the visual environment associated with the upgrade works.

The Proposal will 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 will require the removal of a small number of mature trees; however, the removal of existing trees will result in a minor reduction for screening potential and is unlikely to create any significant additional visual impact. The removal of trees will be offset by new tree planting to be installed as part of the upgrade works.

The existing Pendle Hill Station viewshed is not expected to increase to any significant measure as a result of the Proposal. There will be a slight increase in viewshed following the construction of lift and double step access arrangements to the station precinct, but this will be largely restricted to upper storey views and confined within the general extent of the existing viewshed.

The overall magnitude of the Proposal will result in a minor loss and alteration to pre-development views; however, the introduction of new constructed elements will not be uncharacteristic with existing urban landscape features.

The majority of surrounding receivers will not be significantly impacted by the Proposal including sensitive residential receivers. Pedestrians and motorists travelling along local roads as well as commuters walking through the station precinct will experience an overall positive impact through the enhancement of layout, materials and design features within the station.

References

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

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

Transport for NSW, October 2014, Transport Access Program Services Brief Visual Impact Assessment for Heathcote Station, Wentworth Falls Station, Pendle Hill Station and Wentworthville Station Accessibility Upgrades (Document reference 3788560)

Limitations

GBD has prepared this VIA report in accordance with the usual care and thoroughness of the consulting profession for the use of Transport for NSW and only those third parties who have been authorised in writing by GBD to rely on this VIA report. 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 VIA report. It is prepared in accordance with the scope of work and for the purpose outlined in the GBD Proposal dated 21st October 2014.

The methodology adopted and sources of information used are outlined in this VIA 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 VIA report as provided to GBD was false.

This VIA report was prepared between October 2014 and December 2014 and is based on the conditions encountered and the concept design reviewed at the time of preparation. GBD disclaims responsibility for any changes that may have occurred after this time.

This VIA should be read in full. No responsibility is accepted for use of any part of this VIA in any other context or for any other purpose or by third parties. This VIA report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.