



# Transport Access Program Thornleigh Station Upgrade

Visual Impact Assessment

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## List of Acronyms

Acronym	Meaning
BAZ	Boarding Assistance Zone
CCTV	Closed Circuit Television
CEMP	Construction Environmental Management Plan
DSAPT	Disability Standards Acceptable Public Transport
FAT	Family Accessible Toilet
LCZ	Landscape Character Zone
PCT	Plant Community Type
PDP	Public Domain Plan
REF	Review of Environmental Factors
TAP	Transport Access Program
TfNSW	Transport for NSW
TGSI	Tactile Ground Surface Indicators
UDP	Urban Design Plan





Thornleigh





# I. Introduction

Spackman Mossop Michaels Pty Ltd (SMM) were engaged by Transport for NSW (TfNSW) to undertake an assessment of the visual impacts of the proposed accessibility upgrade at Thornleigh Station (the Proposal). The Proposal forms part of the Transport Access Program (TAP) and More Trains, More Services Program.

This report constitutes the visual assessment that has been prepared to inform the Review of Environmental Factors (REF) for the proposed upgrade. This visual impact assessment identifies the potential visual impacts of the Proposal on views within the station and to the station from public land in surrounding areas, as per the methodology described in Section 3.

This report is structured as follows:

- Section 1 – Introduction  
Introduces the Proposal and outlines the report structure
- Section 2 – Proposal description  
Describes the Proposal and summarises key design parameters
- Section 3 – Methodology  
Describes the methodology used to carry out the visual impact assessment for the Proposal
- Section 4 – Existing environment  
Describes the existing environment through a description and analysis of the Proposal's setting and its built and natural features
- Section 5 – Visual impact assessment  
Identifies the areas from where the Proposal would be visible. Assesses how well the design responds to what people currently see from key viewpoints. Also contains artist impressions illustrating the Proposal following completion of construction activities for a select number of viewpoints
- Section 6 – Landscape character impact assessment  
Assesses the fit of the Proposal with the existing character of the area
- Section 7 – Mitigation strategy  
Recommends the mitigation measures that may assist with managing the predicted visual impact of the Proposal
- Section 8 – Conclusion  
Provides a summary of the likely visual impacts that would be associated with the Proposal and how they could be further reduced through the application of the mitigation strategy outlined in Section 6
- Section 9 – References  
Lists the documents referred to in this report



## 2. Project description

# 02

## Project Description

The Proposal would improve accessibility of Thornleigh Station in line with the requirements of the Commonwealth Disability Discrimination Act 1992 (DDA) and the Disability Standards for Accessible Public Transport 2002 (DSAPT).

Key features include:

- Construction and installation of three new passenger lifts including lift landings with canopies for weather protection at the waiting areas
- Modifications to the existing footbridge and stairs to accommodate new lift landings, including upgrades to tactiles, nosings, stair treads and handrails as required on platforms 1/2 and platform 3
- New stairs to enable lift construction on Railway Parade, including demolition of existing stairs
- New interchange zone on Railway Parade including walkway regrading, kerb widening, an accessible car parking space and an accessible kiss and ride
- Construction of an accessible kiss and ride and one accessible car space on Railway Parade
- Improved footpaths for pedestrian access from both Railway Parade and The Esplanade entrances
- A proposed interchange zone including new bus stop and shelter at The Esplanade, seating and bike hoops
- Relocation of an arbour at The Esplanade forecourt
- Accessible parking spaces in commuter car park
- Boarding Assistance Zone (BAZ) canopy on platform 3
- Lowering of the waiting areas on platforms 1/2, and platform 3
- Provision of a Family Accessible Toilet (FAT) and unisex Ambulant Toilet on platform 1/2
- Ancillary work including services relocation and/or adjustments, including lighting and communications systems (e.g. CCTV), stormwater drainage, line marking, retaining walls, and overhead wiring
- Electrical upgrades
- Landscaping and revegetation throughout the site area.

**Figure 2-1** shows the general layout of key elements for the Proposal.

### 2.1 Scope of Works

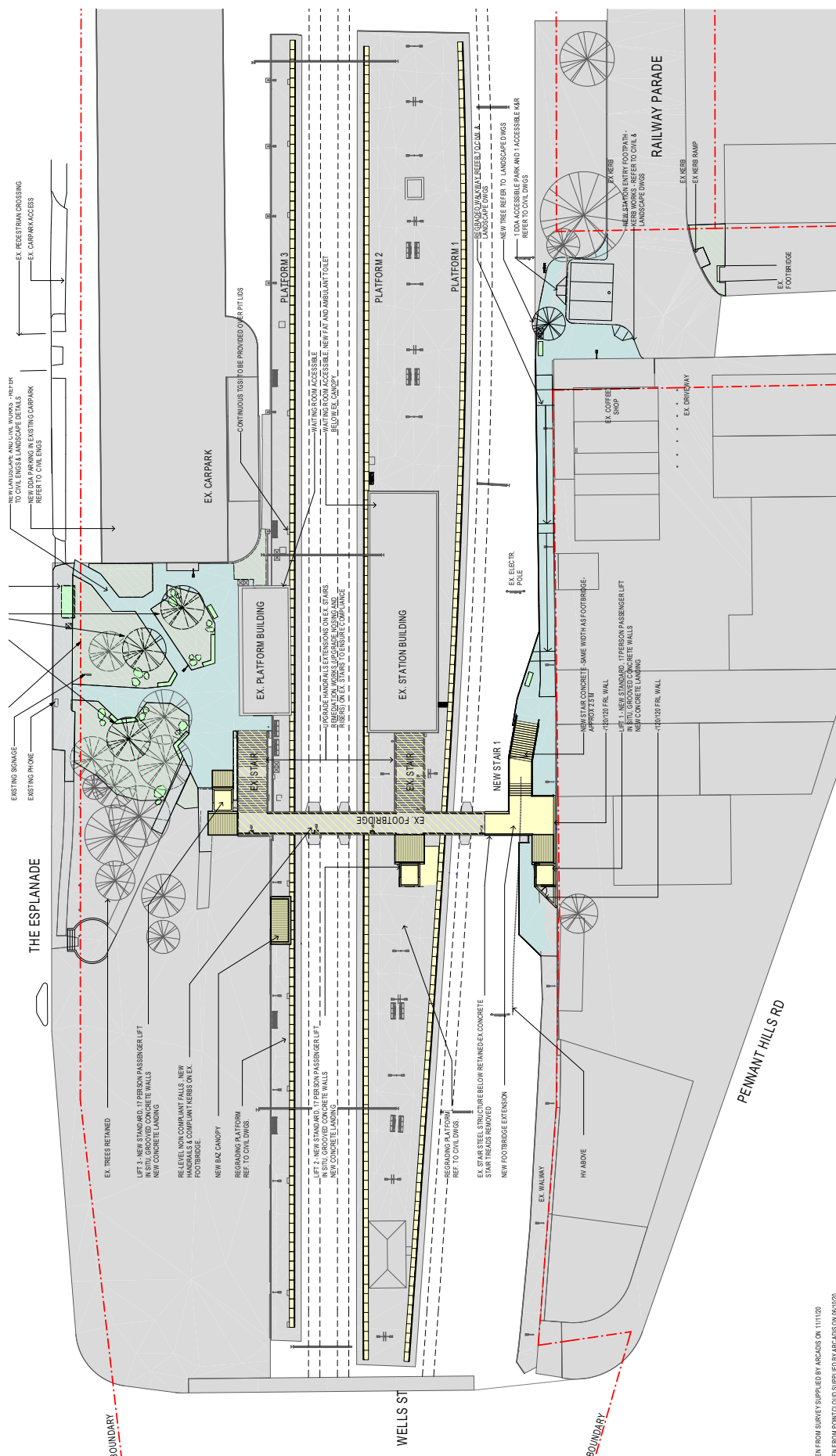
Details of the proposed work to take place at the station to improve accessibility are provided below. It should be noted that the description of the Proposal is based on a concept design and is subject to detailed design.

#### 2.1.1 Thornleigh Station Upgrades

- Construction of three new passenger lifts and lift landings to connect to the existing footbridge. This work include the construction of:
  - Alterations to the existing footbridge
  - Concrete lift shafts
  - Accessible pathways to compliant grades
  - Protection screens to lifts and stairs
  - Lift landings
  - Lift canopies
- Minor work to existing stairs on platform 1/2 to meet compliance, minor work to include adjustment's to handrails, nosings and Tactile Ground Surface Indicators (TGSIs) .
- Alterations to the existing station building on platforms 1/2 which demolishes the existing toilets to improve circulation space at the bottom of the existing stairs
- Provision of a new FAT and unisex Ambulant Toilet on platforms 1/2 at the northern end of the existing platform building under the existing canopy
- Lowering of the waiting area on platforms 1/2, and platform 3 for level access
- BAZ upgrade including line marking, and new canopy on platform 3.

#### 2.1.2 Railway Parade

- New stairs to enable lift construction on Railway Parade. This involves widening of the existing path in this area, demolition of the existing stairs and construction of stairs facing east, to join the pathway towards Railway Parade
- Construction of a kiss and ride and one accessible car space on Railway Parade in the existing parking area
- Associated walkway and footpath work for pedestrian access to the Railway Parade entrance. This work includes widening of the existing path, modifications to fencing, installation of new lighting and regrading work. Work will continue on the existing path between Railway Parade and Wells Street.



EN FROM SURVEY SUPPLIED BY ARCADIS ON 11/11/20



# 02

## 2.1.3 The Esplanade

- New line markings to create two accessible car spaces in the existing car park at The Esplanade
- Regrading work for pedestrian access to The Esplanade entrance. This work includes widening of the existing path, landscaping, upgrades to fencing, installation of new lighting regrading work
- Provision of interchange zone including a new bus stop and canopy on The Esplanade, seating and bike hoops.

## 2.1.4 Ancillary Work

- New fencing, where required. Maintenance work will be completed on existing fencing where affected by construction activities
- Ancillary work including services relocation and/or adjustments, including lighting, CCTV, stormwater drainage and retaining walls
- Customer information and communication systems including wayfinding modifications, public address system upgrade and hearing induction loops
- Installation of wayfinding signage and other statutory/regulatory signage
- Localised regrading and coping edge TGSI's as required.

As a result of the installation of lifts and subsequent changes to the station, station power supply upgrade/relocation work may be required. This work could include the relocation of High Voltage (HV) aerial wiring. Additional upgrade work may also be required, pending detailed design.

## 2.1.5 Materials and finishes

Materials and finishes for the Proposal have been selected based on the criteria of durability, low maintenance and cost effectiveness, to minimise visual impacts, and to be aesthetically pleasing.

Consideration has also been given to lifecycle impacts. The lifecycle impacts of a material are calculated by looking at the environmental impacts of materials from the point of extraction, through to transportation, use, operation and end of life

Availability and constructability are also important criteria to ensure that materials are readily available and the structure can be built with ease and efficiently. Materials are also selected for their application based on their suitability for meeting design requirements.

Each of the upgraded or new facilities would be constructed from a range of different materials, with a different palette for each architectural element. Subject to detailed design, the Proposal would include the following:

- Lift shafts – grey concrete
- Lift doors – stainless steel
- Lift glass – clear
- Lift canopy – consistent with the existing station entrance canopy
- Lift ventilation – consistent with the existing ventilation
- Lift roof – consistent with the existing station roofing
- Platform – asphalt
- Footpath – concrete.

The design would be submitted to Transport for NSW's Design Review Panel for comment before being accepted by Transport for NSW. An Urban Design and Landscaping Plan (UDLP) and an artist impression (if required) would also be prepared by the Contractor, prior to finalisation of detailed design for endorsement by Transport for NSW.

# 02

## 2.2 Construction activities

### 2.2.1 Work methodology

Subject to approval, construction is expected to commence in 2021 and is expected to be completed in 2023. The construction methodology is likely to involve a number of stages including:

1. Site establishment and enabling works
2. Relocation of services and preparation of substructure
3. Construction of station upgrade works
4. Testing and commissioning
5. Decommissioning of temporary facilities and site demobilisation.

The construction methodology would be developed during the detailed design of the Proposal by the nominated Construction Contractor in consultation with TfNSW.

### 2.2.2 Traffic access and vehicle movements

Traffic and transport impacts associated with the Proposal are assessed in Section 6 of the REF. The potential traffic and access impacts expected during the construction of the Proposal include:

- Construction vehicle movements for staff access and the delivery of materials and equipment on The Esplanade and Railway Parade
- Construction staff parking, will be provided at the site compound and workers will be encouraged to car pool/catch public transport where possible
- Temporary changes in pedestrian, cyclist and vehicle access and movements around Thornleigh Station during work
- Temporary changes during work on The Esplanade and Railway Parade for the construction of an accessible car space, kiss and ride and bus stop
- Potentially higher level of platform congestion arising from restricted access to certain areas of the platforms such as near the lift construction/platform extension (due to construction work or storage areas) in peak hours
- A minor increase in traffic on the local road network.

A detailed construction methodology and associated management plans (such as a Construction Environmental Management Plan (CEMP)) would be developed during the next design phase of the Proposal to manage potential traffic and access impacts.

### 2.2.3 Ancillary facilities

A temporary construction compound would be required to accommodate a site office, amenities, laydown and storage area for materials. A construction laydown area is proposed to the east of Thornleigh Station (refer to **Figure 2-2**).

Impacts associated with utilising this area have been considered in the environmental impact assessment including requirements for rehabilitation.

Further information on the construction activities including work methodology, likely plant and equipment, working hours, construction vehicle movements and traffic access are provided in chapter 3 of the REF.



- LEGEND
- Potential Removal
  - Trimming
  - Site Office
  - Material Laydown

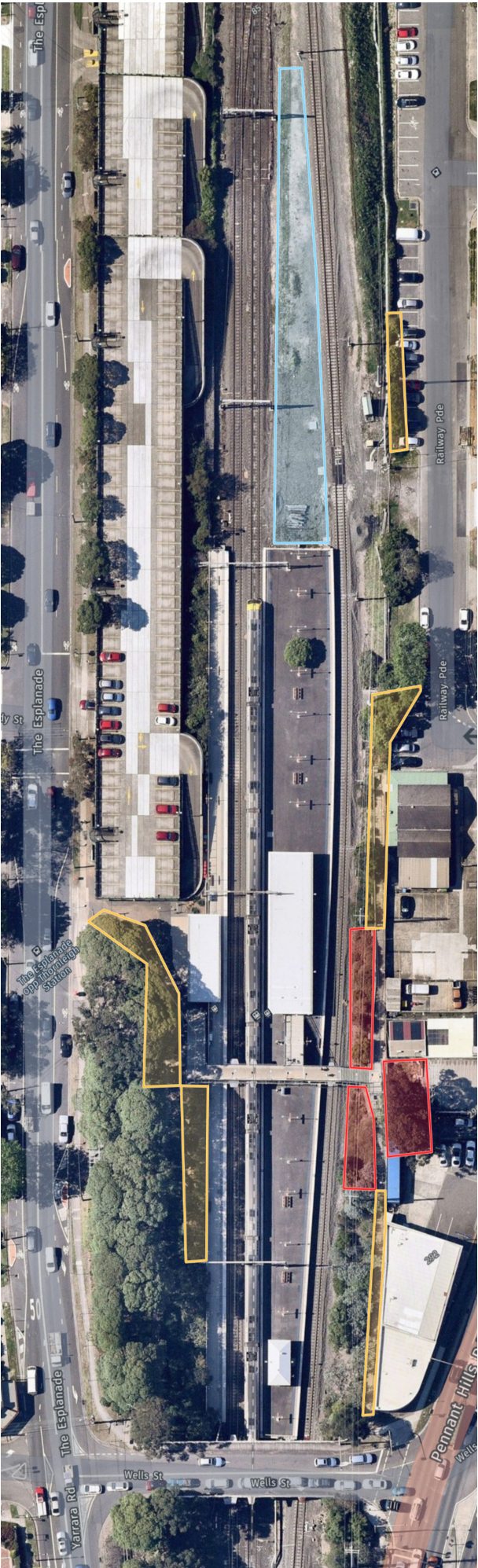


Figure 2-2 Proposed site compound and material laydown areas



# 3. Methodology

# 03

## Methodology

### 3.1 Purpose

The landscape character and visual impact assessment has several purposes:

- To measure and report on how well the design fits into the built, natural and community landscape and how well it responds to what people see
- To inform Transport, other agencies and the community about the potential landscape character and visual impacts of the Proposal, as well as of impact avoidance, management and mitigation strategies.

### 3.2 Guidance

TfNSW has no visual assessment guidelines specifically for rail infrastructure structure projects. Consistent with other TAP projects, the visual assessment carried out for the Proposal conforms generally with the following:

- *Guideline for landscape character and visual impact assessment. Environmental impact assessment practice note EIA-N04 (EIA-N04)*, Centre for Urban Design, TfNSW 2020
- *Guidance Note for Landscape and Visual Assessment (GNLVA)*, Australian Institute of Landscape Architects Queensland 2018.

### 3.3 Process

This assessment differentiates between landscape character assessment – the overall impact of a project on an area's character and sense of place and visual impact assessment – the project's impacts on views.

The assessment process involved:

- A review of relevant guidelines, planning and policies
- A contextual analysis of the existing environment (**Section 4**)
- A site inspection on 12.11.2020 to ground-truth existing conditions, landscape character and views
- Identification of landscape character zones (described in **Section 4.2**)
- Assessment of visual impacts during construction and operation. Refer to **Section 3.5** for further detail on the visual impact assessment methodology and **Section 5** for the visual impact assessment
- Assessment of construction and operation landscape character impacts. Refer to **Section 3.6** for further detail on the landscape character assessment methodology and **Section 6** for the landscape character impact assessment
- Development of a mitigation strategy (**Section 7**).

### 3.4 Study area definition

For the purpose of the landscape character and visual impact assessment, the study area has been adopted in consideration of areas from where the Proposal would be visible – also refer **Section 3.5**. This area is also called the visual envelope of the Proposal and is generally based on the interplay of built form and topography and how they shape views in the area.

### 3.5 Visual impact assessment

Visual impact is the measure of the potential change that new interventions would have on existing views.

The visual impact assessment (**Section 5**) involves identifying an estimated visual catchment through desktop analysis and ground truthing to ascertain the theoretical area from where the Proposal would be visible considering factors such landform, direction of travel or direction of the view, built structures and vegetation. Vegetation, while often obscuring potential views, is not considered a permanent obstruction as it can be relatively easily removed. This area is known as the visual catchment or visual envelope and is illustrated in a Visual Envelope Map (VEM) (**Figure 4-13**).

Within the visual envelope a number of viewpoints were selected for assessment (**Figure 5-1**). Viewpoints were chosen to represent a range of views including views from residential properties, roads and public spaces. The visual impact of the Proposal was assessed by considering the sensitivity of the view and the magnitude of change to the view as a result of the project:

- Sensitivity refers to the quality of the view. It is measured by assessing the composition of the view, its capacity to absorb change by identifying sensitive or visually valuable elements in the view, and the length of exposure to the view. Sensitivity also considers the number of potential viewers and the activities they are likely engaged in. For example, residents would be more sensitive to change in their surroundings than workers in industrial areas

- Magnitude refers to the physical character, size and scale of the proposed works and how close the works are relative to the viewer. For example, a development situated several hundreds of meters from the viewpoint would have a much reduced visual impact relative to one tens of metres away or less
- The combination of sensitivity and magnitude provides the rating of the visual impact. Visual impact is calculated using the landscape character and visual impact grading matrix provided in EIA-N04 (**Table 3-1**)
- A summary of the visual impact assessment during project operation is provided in **Section 5.3.7**. The summary of visual impacts during project construction is provided in **Section 5.2.1**.

### 3.6 Landscape character assessment

Landscape character refers to the combined quality of the built, natural and cultural aspects of an area which shape its unique sense of place. Landscape character zones (LCZ) are identified based on the contextual analysis (**Section 4**) and confirmed during ground-truthing. They are defined as areas of distinct character, generally grouping together similar characteristics in terms of natural, built and community elements such as land use, vegetation cover, topography, heritage or scenic values.

The purpose of dividing the study area into LCZs is to make sure that the impacts assessed are representative for each zone based on its distinct characteristics. The LCZs identified for the study area are described in **Section 4.2**.

Within each LCZ the landscape character impact is derived from the sensitivity of the zone and the magnitude of the project in that zone where:

- Sensitivity refers to how sensitive the existing character of the setting is to the proposed change. This can also be understood as the setting's inherent capacity to absorb change. For example, a pristine natural environment

would be more sensitive to change than an industrial area. Sensitivity is influenced by both professional judgement and objective measures. For example, an area's listing on a State level heritage register would mean a higher level of sensitivity

- Magnitude refers to the physical size and scale of the project. For example, a large intersection would have a greater magnitude than a localised road widening, and therefore have a greater impact on the landscape character

The combination of sensitivity and magnitude provides the rating of the landscape character impact. Landscape character impact is calculated using the landscape character and visual impact grading matrix provided in EIA-N04 (**Table 3-1**).

A summary of the landscape character impacts during construction and operation is provided in **Section 6.1.1** and **Section 6.3** respectively.

#### 3.6.1 Mitigation strategy

The mitigation strategy comprises, principles or treatments recommended to manage the identified landscape character and visual impacts of the project. They include opportunities to avoid, reduce and manage potential adverse impacts during construction and operation of the Proposal. Examples may include:

- Adopting alternative designs or revisions to the basic engineering and architectural design to prevent and/or minimise negative impacts
- Remedial measures such as colour and textural treatment of structural features
- Compensatory measures such as landscape design to compensate for unavoidable negative impacts and to attempt to generate long-term positive impacts.

The mitigation strategy for the project is described in **Section 7**.

		Magnitude			
Sensitivity		High	Moderate	Low	Negligible
	High	High	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Table 3-1. Landscape character and visual impact grading matrix







# 4. Existing environment

# 04 Existing Environment

## 4.1 Location

### 4.1.1 Regional context

Thornleigh Station is located on the T9 Northern Line in Sydney's north, approximately 20 kilometres from Central Station (**Figure 4-1**). The suburb of Thornleigh is well established with extensive areas of traditional low-density suburban housing interspersed by parks and bushland corridors, as well as an employment area west of Pennant Hills Road, between Duffy Avenue and Sefton Road.

The Thornleigh town centre is a mixed use commercial precinct identified as a local centre in the Greater Sydney Commission North District Plan. The centre contains small shops and restaurants near the station, new residential flat buildings, commercial units, a hotel and a Bunnings Warehouse. It stretches from Wells Street to Duffy Avenue, generally between Pennant Hills Road and the T9 Northern Line. Pennant Hills Road/Cumberland Highway is a major arterial road providing local and regional connectivity and is identified as an urban renewal corridor following completion of NorthConnex. It is located approximately 65 metres south-east of the station.

### 4.1.2 Local context

The study area for the project is the area immediately surrounding Thornleigh Station (**Figure 4-2**). It has been determined based on the following:

- A desktop study examining aerial photographs and topographic maps considering both landform, built form and vegetation cover
- A site inspection to confirm the visual catchment
- Previous studies of a similar nature.



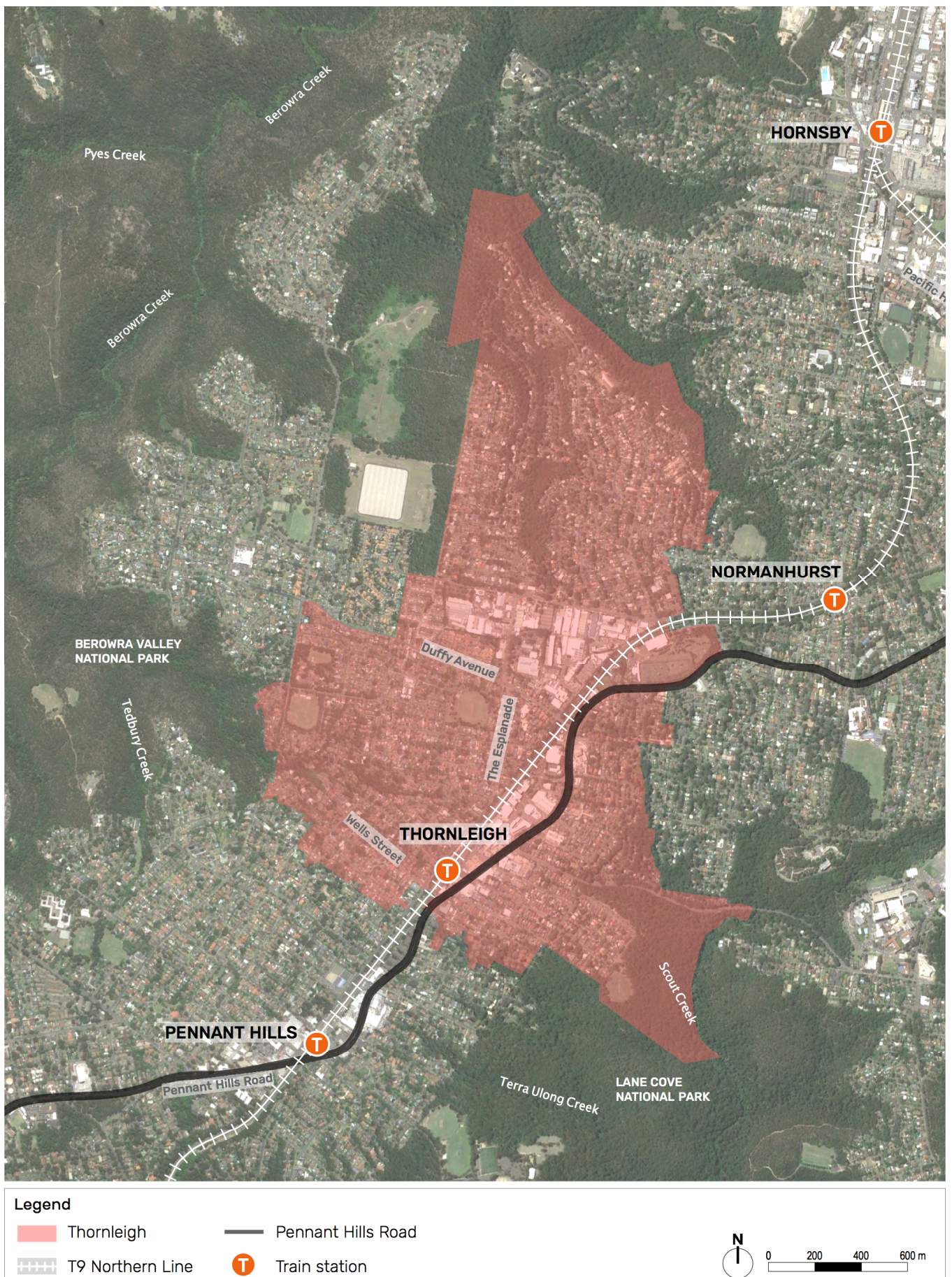


Figure 4-1 Regional context



# 04



Figure 4-2 Local context

# 04

## 4.1.3 Land use and built form

The land use and built form of the study area is characterised by the location along two major movement corridors: the T9 Northern Line rail corridor and Pennant Hills Road (**Figure 4-26**).

Much of the rail corridor is framed by parallel roads. They include Yarrara Road and The Esplanade on the western side and Railway Parade and Pennant Hills Road on the eastern side of the rail corridor. Wells Street is approximately 90 metres south-west of the station and provides road connectivity across the rail corridor.

The Esplanade and Pennant Hills Road also form part of the bus network of the area. Bus stops are located on The Esplanade next to and opposite the western station forecourt and north of the pedestrian overbridge on Pennant Hills Road. They facilitate interchange between the T9 Northern Line and bus routes 586 (Westleigh to Pennant Hills), 600 (Hornsby to Parramatta) and the night service N80 (Hornsby to Town Hall via Strathfield).

Thornleigh town centre extends for about 900 metres on the eastern side of the railway line, between Wells Street and Duffy Avenue (**Figure 4-1**). It is a mixed use centre characterised by predominantly commercial buildings of varying architectural styles and new residential flat buildings which are nearing completion (**Figure 4-3**). The centre offers a wide variety of shops and services including niche supermarkets, health and fitness, professional and trade services, food outlets, fashion, recreation shops (pools, cycling), a Bunnings Warehouse and local convenience services.

West Pennant Hills Road has been identified as offering opportunities for urban renewal following completion of the NorthConnex tunnel which opened in November 2020. This is reflected in the construction of a new high-rise apartment building with ground floor retail, for example on the corner of Bellevue Street.

Due to high volumes of traffic, access from Pennant Hills Road is limited. Railway Parade on the eastern side of Thornleigh Station is one of a limited number of roads providing vehicular access to the town centre, with short-term town centre parking provided along the railway line.

On the western side of the rail corridor traditional low-density residential housing is the predominant land use, interspersed with occasional business uses including a café

opposite the station forecourt and a hairdresser/clothing store on the corner of The Esplanade and Wells Street.

Other land uses include a number of churches and an unnamed reserve located within the rail corridor between the western station forecourt and Wells Street. Established vegetation including mature trees in the reserve make an important contribution to the character of The Esplanade, the western station forecourt and the rail corridor itself (**Figure 4-4**).



Figure 4-3 Thornleigh town centre



Figure 4-4 Unnamed reserve along The Esplanade



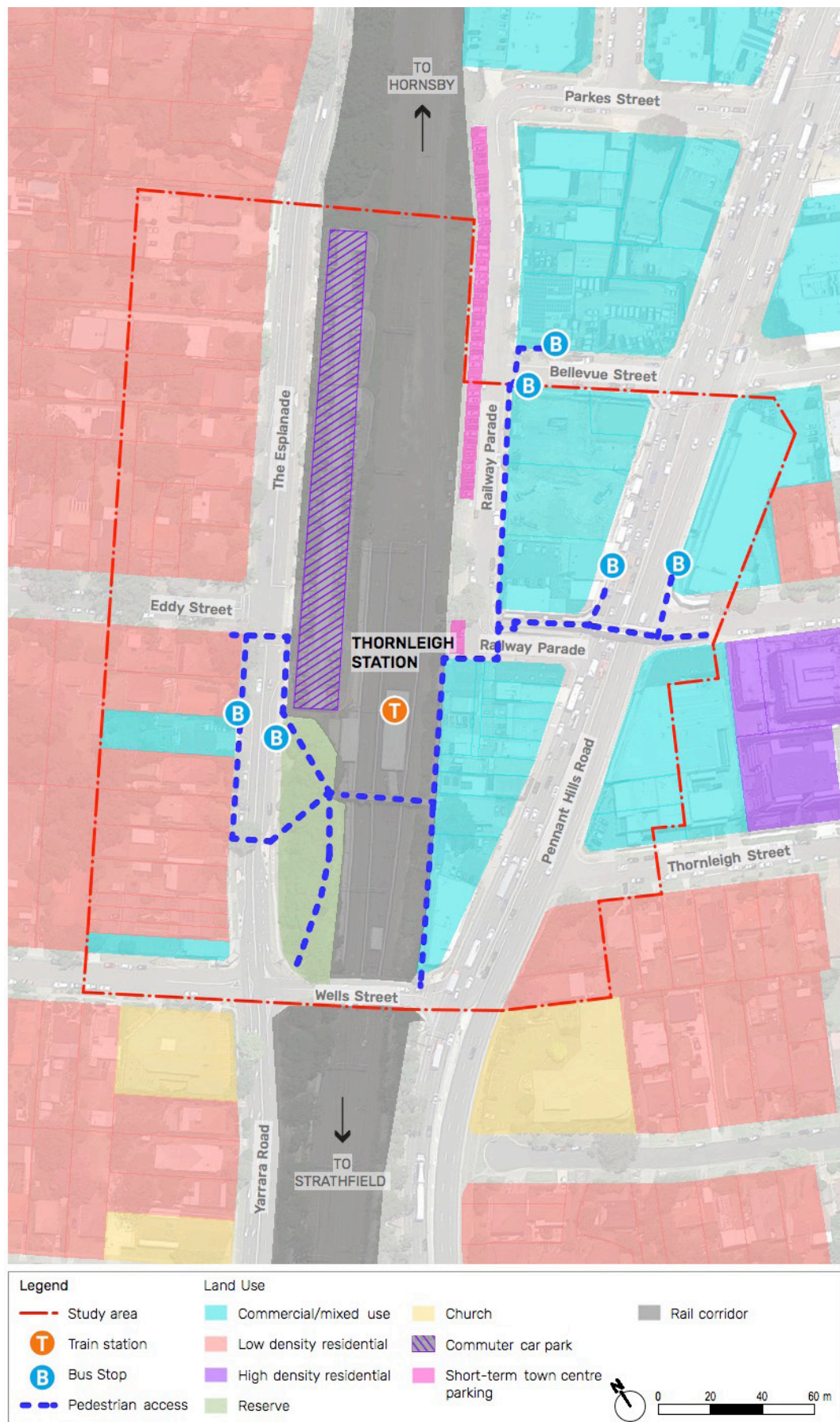


Figure 4-5 Land use

# 04

## 4.1.4 Heritage

Surrounding Thornleigh Station are a number of heritage items of local heritage significance (**Figure 4-5**):

- Item 689: House
- Item 690: House
- Item 723: House
- Item 725: House
- Item 718: House

Heritage item 723 is located directly adjacent to Thornleigh Station across The Esplanade.

None of the identified heritage items is associated with particular views or vistas and would therefore not be sensitive to changes in local views.

Minor excavation work would be contained to the railway corridor of Thornleigh Station, with access from The Esplanade and Pennant Hills Road. As a result, there will be no physical or visual impact affecting the significance of heritage items near the Proposal.

The heritage of the area is discussed in more detail in Chapter 6 of the REF.

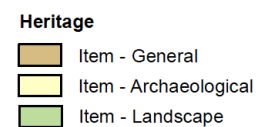


Figure 4-6 Heritage



# 04

## 4.1.5 Topography

Thornleigh is located between the upper reaches of the Lane Cove River in the south and Zig Zag Creek, a tributary to Berowra Creek. Pennant Hills Road generally follows the ridge line between the two creeks (**Figure 4-1**). The ridge line is fairly broad and encompasses Thornleigh Station. The topography of the study area is gently undulating along the ridge, sloping gently from Wells Road to the north-east, as well as towards the creek systems to the south-east and south-west.

## 4.1.6 Vegetation

Thornleigh is a generally leafy suburb, especially within the low density residential areas west of the rail corridor, retaining both native vegetation remnants as well as planted vegetation, including ornamental trees. This character is reflected in large mature trees as street planting along The Esplanade, in private properties and within the railway corridor. In particular, the large mature Brush Boxes (*Lophostemon conferta*) make an important contribution to the character, visual outlook and amenity of The Esplanade and Thornleigh station. They constitute large shade trees that visually soften the appearance of rail infrastructure including the existing footbridge and multi-storey commuter car park north of the station (**Figure 4-7**).

The heavily treed character on the western side of the rail corridor is in contrast to the town centre on the eastern side. The town centre is dominated by built form and retains only limited vegetation, much of which is associated with the rail corridor itself. Vegetation lining the rail corridor provides a visual buffer between the rail corridor and adjoining land uses (**Figure 4-8**). Other vegetation includes two large native trees at Domino's Pizza and boundary planting within private properties. This vegetation is visually important as it provides visual relief and contrast to the infrastructure corridors and dense urban development (**Figure 4-9**).

Visually important trees in the vicinity of the Proposal are shown in **Figure 4-12**.

For information regarding the biodiversity values of the study area, refer to the *Thornleigh Station Upgrade Biodiversity Development Assessment Report*. The condition of existing trees potentially affected by the Proposal is described in the *Thornleigh Station Upgrade Arborist Report*.



Figure 4-7 Brush Boxes along The Esplanade



Figure 4-8 Vegetation along the rail corridor provides a visual buffer



Figure 4-9 Vegetation in the town centre providing visual relief



# 04

## 4.1.7 Existing station character

Thornleigh Station is located along a straight section of rail line along the major ridge. The station's entrance is identified by a modest single-storey brick building between the western station forecourt and platform 3 (**Figure 4-10**). It is set back from The Esplanade in a park-like setting characterised by mature Brush Boxes. The building provides a small convenience store facing the open space and seating facing the platform. North of the western station entrance is a multi-storey commuter car park that extends for a distance of about 185 metres between the rail corridor and The Esplanade.

The rail corridor comprises of three tracks separated by an island platform which contains platform 2 and 3. The main station building is located on the island platform and contains bathrooms, the station managers office and storage. A third small station building is located at the southern end of the island platform. A simple steel pedestrian bridge provides pedestrian access across the rail corridor and to the island platform (**Figure 4-11**).

## 4.1.8 Views and visual envelope

Due to the interplay of built form and vegetation, visibility of Thornleigh Station is limited to a relatively small area that is generally confined to the surrounding road system and associated footpaths including the Great North Walk. The proposal would also be visible from the railway corridor itself, including the unnamed reserve and commuter car park along The Esplanade. Glimpses of the station are also possible from Pennant Hills Road between Wells Street and Railway Parade, including from businesses in this area and the pedestrian overbridge. The visual envelope is shown in **Figure 4-13**.

Key views of Thornleigh Station include filtered views from The Esplanade, views from Wells Street and views from The Great North Walk. These views have been taken into consideration in the visual assessment (**Section 5**).



Figure 4-10 The western station building behind The Esplanade forecourt



Figure 4-11 Existing pedestrian rail overbridge and central island platform access stairs

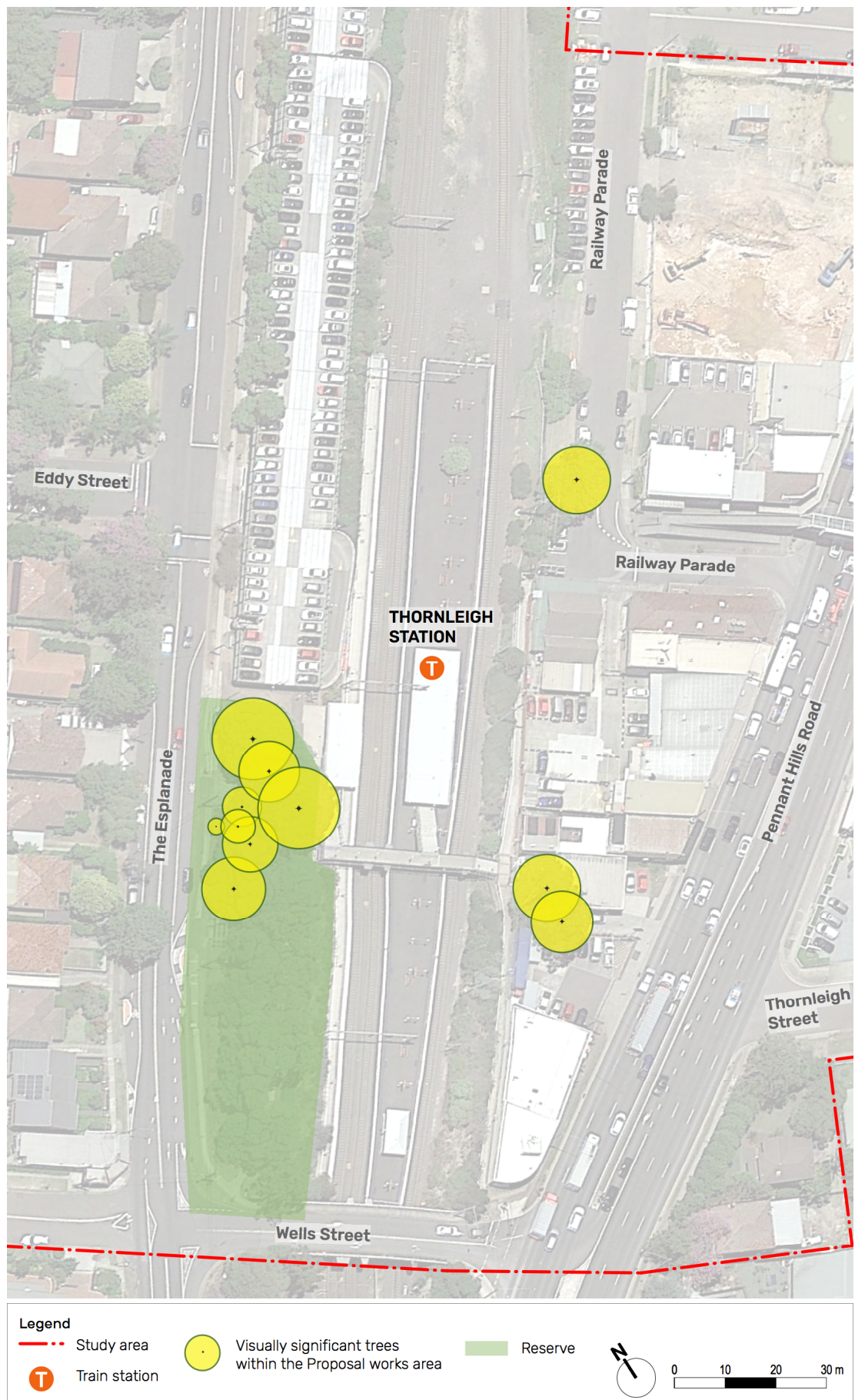


Figure 4-12 Vegetation including visually important trees in proximity to the Proposal

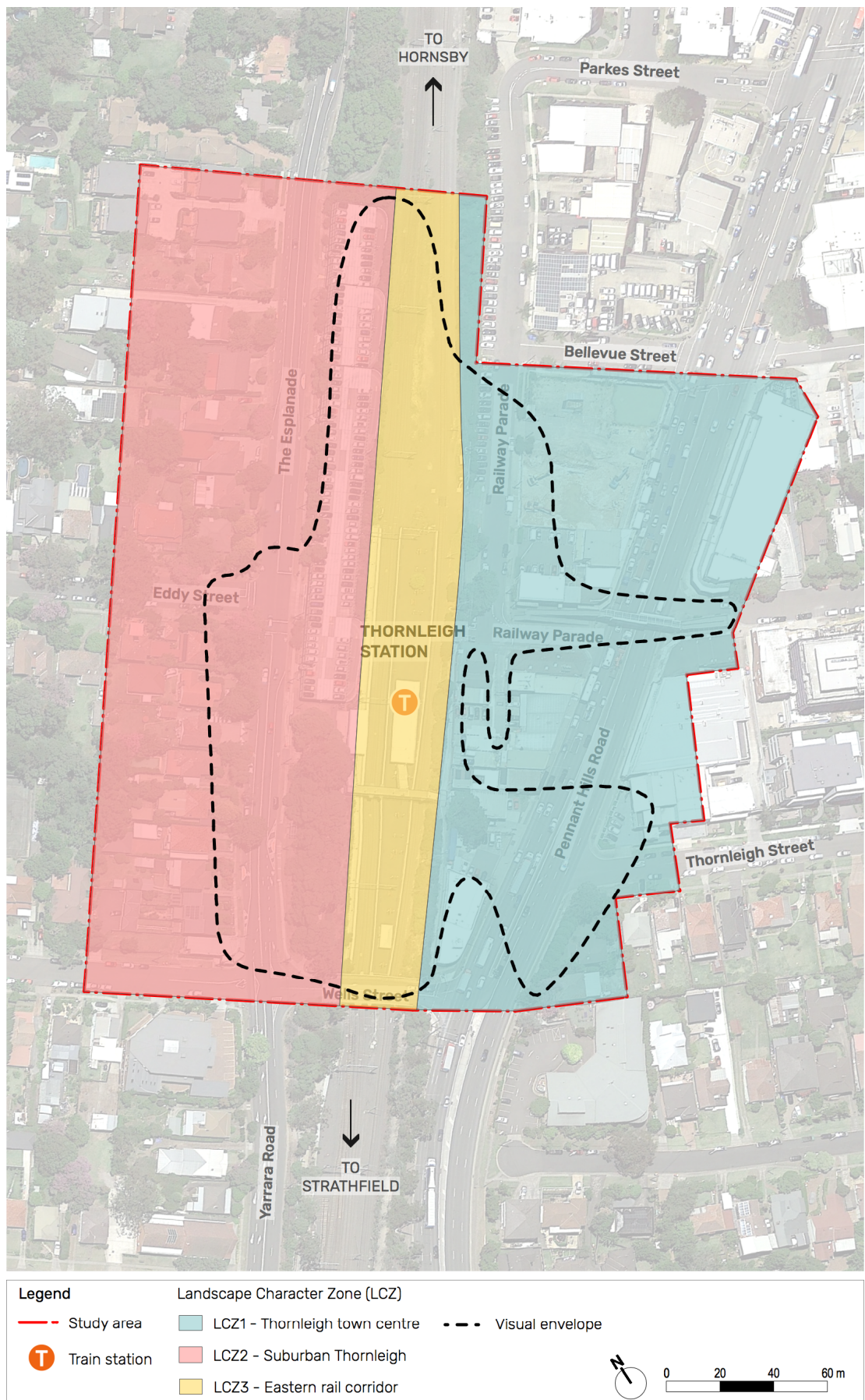
## 4.2 Landscape character zones

Based on the contextual analysis and ground-truthing, three landscape character zones LCZ were identified in the study area. They are described in **Table 4-1** and shown on **Figure 4-13**.

Table 4-1 Landscape character zones within the study area

Landscape character zone	Description
<b>LCZ 1: Thornleigh Town Centre</b>	A mixed use commercial centre between the railway line and Pennant Hills Road. The zone is characterised by intensive urban development with limited greenery to provide visual relief. The busy arterial movement corridor of Pennant Hills Road is another defining character element.
<b>LCZ 2: Suburban Thornleigh</b>	<p>Predominantly low density residential areas west of the railway line interspersed by a small number of small business. The zone is characterised by well-established and maintained one and two storey residential homes on medium to large blocks with mature gardens including extensive tree canopy cover.</p> <p>The zone also incorporates the western rail corridor which is superfluous to the movement of trains. It contains the western station forecourt that transitions into an informal, heavily vegetated reserve towards Wells Street. The northern half of this zone is comprised of the commuter car park.</p> <p>A key character element of this zone is the large mature Brush Box trees both north and south of the station. They complement the surrounding residential environment, create an inviting station forecourt, offer shade and provide a visual buffer to rail infrastructure.</p>
<b>LCZ 3: Rail Corridor</b>	The Rail Corridor LCZ encompasses the eastern portion of rail corridor land in the study area. This zone is functional in character being comprised of rail infrastructure including rail tracks and station infrastructure. Vegetation along the eastern edge provides a visual buffer as well as visual relief to the town centre.





## 5. Visual impact assessment

# 05

## Visual Impact Assessment

### 5.1 Overview

Consistent with the methodology in **Section 3.5**, six viewpoints were chosen within the Proposal's visual envelope (**Figure 5-1**) to analyse how well the Proposal responds to what people see.

For each viewpoint, the assessment discusses:

- The location of the viewpoint, and who the potential viewers would be
- The visual sensitivity of the view to change
- Permanent project elements visible in the view
- The magnitude of change to the existing view
- The overall rating of the visual impact resulting from the combination of visual sensitivity and magnitude of change.

The ratings for visual sensitivity and magnitude are measured relative to each other within the scope of the project, rather than to an absolute scale covering all potential forms of impact. Through this process, the visual impact of the Proposal as a whole has been identified. Refer **Table 5-2** for a summary of the visual impact assessment.

There are two components to the assessment, namely the assessment of visual impacts during construction (**Section 5.2**) and operation (**Section 5.3**).

### 5.2 Visual impacts during construction

Temporary visual impacts would result from general construction activities, the movement and operation of plant and machinery as well as the erection of temporary structures including fencing, hoarding, material laydown and storage areas and site offices. The sources of construction impacts are described in Chapter 3 of the REF. They would typically include a combination of vegetation removal or pruning, the visibility of temporary structures, machinery and plant, construction work activities and increased vehicle movements. Sources of change to the view during construction also include the operational project elements that would be constructed in the view.

Therefore, project construction would result in at least the same amount of change to existing views as operation of the project. This means that construction visual impacts would generally be of equal or greater magnitude than operational visual impacts.

**Table 5-2** summarises the potential construction and operational visual impacts of the Proposal. The assessment considers the sources of change to the viewpoint based on construction-related facilities and activities, the associated magnitude of change to the viewpoint and the overall visual impact rating based on the sensitivity of the viewpoint. The sensitivity of each viewpoint to change is discussed in **Section 5.3**. **Figure 2-2** illustrates temporary facilities and elements associated with construction of the Proposal.

The type and intensity of construction facilities and activities would vary throughout the duration of construction. As the nature and intensity of construction activities changes, temporary visual impacts would also vary. The visual impact ratings would therefore constitute a worst case and may at times be lower than those identified.

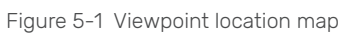
Impacts during construction would be temporary in nature and would be mitigated where possible. Management measures would be detailed in the CEMP.

#### 5.2.1 Summary of visual impact assessment during construction

As shown in **Table 5-2** visual impact ratings during construction of the project would be as follows:

- One viewpoints would have a high to moderate visual impact
- Four viewpoints would have a moderate visual impact
- One viewpoint would have a moderate to low visual impact.





## 5.3 Visual impacts during operation

### 5.3.1 Viewpoint 1

#### *Location*

Western side of The Esplanade opposite the entrance pergola to the western station forecourt, looking west – refer **Figure 5-1**.

#### *Potential viewers*

Residents, pedestrians (including commuters walking to the station), motorists, cyclists, commuters waiting at the bus stop and customers at the hairdresser/shops and café.

#### *Visible project elements*

- Extension of pedestrian bridge/lift landing
- Western lift (lift 3) and canopy
- Anti-climb screen to stair and bridge
- Adjustments to existing fencing, planting
- Relocation of arbour
- Tree pruning.

#### *Visual sensitivity*

The view from viewpoint 1 is illustrated in **Figure 5-2**. Existing mature trees in the western part of the railway corridor comprise the majority of the existing view composition and provide for filtered views of the existing pedestrian bridge at Thornleigh Station. The park-like character of this view would be highly sensitive. In addition, the view would be experienced by a large number of residents when coming or going from their home. These viewers would be sensitive to change in the visual character of their suburb. The sensitivity of the viewpoint to change is **high**.

#### *Magnitude of visual effect*

Due to the intervening effect of mature tree cover, much of the Proposal would be concealed behind existing canopies. The alignment of the lift shaft with the existing pedestrian bridge would maximise visual integration with the existing infrastructure. However, the anti-climb screen would result in a more solid, built-up appearance replacing the landscape outlook. Overall, the magnitude of the Proposal would be **low**.



Figure 5-2 Viewpoint 1

# 05

## *Viewpoint 1 visual impact summary*

Visual sensitivity	Magnitude of change	Visual impact
High	Low	<b>Moderate</b>



### 5.3.2 Viewpoint 2

#### Location

The Esplanade at the western station forecourt near the commuter car park, looking south – refer **Figure 5-1**.

#### Potential viewers

Potential viewers would include pedestrians walking to the station, including from the commuter car park; bus patrons alighting at the western station forecourt; residents and patrons at the café on The Esplanade; as well as passing motorists, would have a similar view.

#### Visible project elements

- Extension of pedestrian bridge/lift landing
- Western lift (lift 3) and canopy
- Anti-climb screen to stair and bridge
- Lift 2 to central concourse
- Eastern lift (lift 1)
- New forecourt paving and landscaping
- Adjustments to existing fencing, planting
- Relocation of arbour
- Tree removal and pruning.

#### Visual sensitivity

The view from viewpoint 2 is illustrated in **Figure 5-3**. The view would be experienced by a large number of residents when coming or going from their home, as well as by commuters accessing the station and those using the pedestrian overpass to cross over the railway line. These viewers would be sensitive to change in the visual character of their suburb.



Figure 5-3 Viewpoint 2



# 05

Approximately half of the view is comprised of mature trees including Brush Boxes in turf in the station forecourt and mature trees near Domino's. Mature trees, the park-like setting and the open sky above the rail line would be highly sensitive to change. The remainder of the view is comprised of the existing station building and stairs as well as paths leading to the stairs. The built elements exhibit a relatively high degree of visual clutter and would be less sensitive to change. Overall, the sensitivity of the viewpoint to change is **moderate**.

*Magnitude of visual effect*

The lifts would constitute new built forms protruding above the existing pedestrian overbridge. They would comprise a relatively small portion of the view, with lift 1 partially concealed by mature trees in the western station forecourt. The anti-climb screen on the stairs would result in a more solid, built-up appearance within this view. New forecourt paving and landscaping would reduce visual clutter and worn patches in the western station forecourt, resulting in a beneficial change to the view. Overall, the magnitude of change within this view would be **moderate**.

A photomontage illustrating the Proposal at viewpoint 2 is shown in **Figure 5-4**.

*Viewpoint 2 visual impact summary*

Visual sensitivity	Magnitude of change	Visual impact
Moderate	Moderate	<b>Moderate</b>



Figure 5-4 Photomontage at viewpoint 2

# 05

## 5.3.3 Viewpoint 3

### *Location*

Great North Walk/eastern station walkway approximately halfway between Railway Parade and the pedestrian bridge over the rail corridor, looking southwest – refer **Figure 5-1**.

### *Potential viewers*

Commuters accessing the train station from Thornleigh town centre, Railway Parade and Pennant Hills Road. Pedestrians crossing the rail corridor at the station. Tourists on the Great North Walk.

### *Visible project elements*

- Extension of pedestrian bridge/lift landing
- Eastern lift (lift 1) and canopy
- Removal of existing stairs
- New stairs (stair 1) from the pedestrian overbridge to the Great North Walk
- Ant-climb screen to stair and bridge
- Lift 2 to central concourse
- New paving, new lighting and furniture
- Adjustments to existing fencing
- Vegetation removal and pruning.



Figure 5-5 Viewpoint 3



# 05

## Visual sensitivity

The view from viewpoint 3 is illustrated in **Figure 5-5**. Much of this view is dominated by existing fencing at the rear of private properties and along the rail corridor. Powerlines add additional clutter to the view. Visually sensitive elements constitute a smaller portion of the view. They include the open sky above the rail corridor, the two mature eucalypts in the Domino's property and the mature Brush Boxes on the western side of the rail corridor. The majority of people observing this view would be rail commuters who would expect to see rail related infrastructure on approach to the train station. Combined with the prevailingly utilitarian character of the view, the overall sensitivity of this viewpoint to change is **low**.

## Magnitude of visual effect

Widening of the Great North Walk into the rail corridor, construction of the new stairs and Lift 1 would substantially change the right-hand portion of this view, closing off the vista along the Great North Walk. The loss of sight lines as a result of lift installation would enclose this vista, blocking views of people entering the walk from the southern end

and possibly heightening the sense of being in an enclosed space. Removal of trees inside the rail corridor would open up views of the pedestrian overbridge. Lift 2, while visible, would be set against the backdrop of mature Brush Boxes and would be harder to discern. The magnitude of change to this view would be **high**.

A photomontage illustrating the Proposal at viewpoint 3 is shown in **Figure 5-6**.

## Viewpoint 3 visual impact summary

Visual sensitivity	Magnitude of change	Visual impact
Low	High	Moderate



Figure 5-6 Photomontage at viewpoint 3

# 05

## 5.3.4 Viewpoint 4

### Location

Western end of the Pennant Hills Road pedestrian overbridge, looking west – refer **Figure 5-1**.

### Potential viewers

Pedestrian over Pennant Hills Road while on the pedestrian bridge on approach to Thornleigh town centre and Thornleigh station. The view is also representative of views from nearby businesses in Railway Parade as well as residential viewers in the new multi-storey apartment building on the corner of Pennant Hills Road and Bellevue Street.

### Visible project elements

- Upgraded station entrance including footpath widening, furniture and kerb re-alignment
- Changed parking arrangements including widened forecourt and new kerb ramp to accessible parking spaces
- Adjustments to existing fencing and signage
- Tree and other vegetation removal and pruning.

### Visual sensitivity

The view from viewpoint 4 is illustrated in **Figure 5-7**. Much of the view comprises of Railway Parade, including existing parking spaces and would have a low level of sensitivity to change. Part of the view is comprised of vegetation and has a higher level of sensitivity to change. Trees and other vegetation along the railway corridor provide a visual buffer to the rail corridor, as well as a contrast to the densely developed town centre. Due to the overarching utilitarian character of the view, the overall sensitivity of this viewpoint to change is **low**.

### Magnitude of visual effect

The removal of vegetation along the railway corridor to facilitate access to accessible parking spaces will open up views between Railway Parade and the railway corridor, altering the outlook from this view. Upgraded and widened pedestrian pavements at the station entrance will replace existing aged pavements, resulting in a beneficial change. The magnitude of change within this view would be **moderate**.



Figure 5-7 Viewpoint 4

# 05

## *Viewpoint 4 visual impact summary*

Visual sensitivity	Magnitude of change	Visual impact
Low	Moderate	<b>Moderate to low</b>



# 05

## 5.3.5 Viewpoint 5

### Location

Pennant Hills Road on the corner of the Giant bicycle shop car park, looking north across the Giant and Domino's car park towards the existing station overbridge – refer **Figure 5-1**.

### Potential viewers

People travelling along Pennant Hills Road including commuters, local residents and people accessing the town centre.

### Visible project elements

- Extension of pedestrian bridge/lift landing
- Eastern lift (lift 1)
- Lift 2 to central concourse.

### Visual sensitivity

The view from viewpoint 5 is illustrated in **Figure 5-8**. The view would be experienced by large numbers of people travelling along Pennant Hills Road. Travelling at moderate speed, the view would be experienced for brief moments of time along the journey. Much of the view is comprised of car parking and back of house utility areas which would have a low level of sensitivity to change. The two mature eucalyptus trees comprise about a quarter of the view. They make an important visual contribution to the town centre, providing visual relief and contrast in a highly urbanised setting. They are highly sensitive to change. Due to dominance of utilitarian elements in the view, the overall sensitivity to change is **low**.



Figure 5-8 Viewpoint 5

# 05

## *Magnitude of visual effect*

The mature eucalypts would partially screen the view of the pedestrian bridge extension and Lift 1 from Pennant Hills Road. Lift 2 may also be partially visible above the shipping container. However, the lifts would comprise a relatively small portion of the view, constituting brief glimpses for the majority of viewers driving along Pennant Hills Road. The magnitude of change to this view would be **Low**.

## *Viewpoint 5 visual impact summary*

Visual sensitivity	Magnitude of change	Visual impact
Low	Low	<b>Low</b>

### 5.3.6 Viewpoint 6

#### *Location*

Wells Street bridge, looking north-east – refer **Figure 5-1**.

#### *Potential viewers*

People travelling along Wells Street between residential areas and Pennant Hills Road including residents and commuters.

#### *Visible project elements*

- Extension of pedestrian bridge/lift landing on both sides
- Lift to western station forecourt (lift 1), lift to central concourse (lift 2) and eastern lift to the Great North Walk (lift 3)
- Lift 2 to central concourse
- BAZ canopy on platform 1
- Tree pruning and vegetation removal.

#### *Visual sensitivity*

The view from viewpoint 6 is illustrated in **Figure 5-9**. The central portion of the view is comprised of rail infrastructure at the existing Thornleigh Station including rail tracks, platforms and central concourse, existing station buildings, the existing pedestrian overbridge, fences and rail corridor power infrastructure. Vegetation lining the rail corridor on both sides including existing mature trees would be highly sensitive to change. Overall, the sensitivity of the viewpoint to change is **moderate**.

#### *Magnitude of visual effect*

The three lifts would constitute new elements in the view. They would comprise only a small portion of the overall view. In addition, lifts 2 and 3 would be set against a busy background, reducing their visual prominence. Similarly, existing mature trees would reduce the visual prominence of lift 1. Vegetation removal associated with the widening of the Great North Walk would remove the visual buffer between the rail corridor and adjoining areas, resulting in a more urban outlook. Overall, the magnitude of change to this view would be **low**.



Figure 5-9 Viewpoint 6



# 05

A photomontage illustrating the Proposal at viewpoint 6 is shown on **Figure 5-10**.

*Visual impact summary*

Visual sensitivity	Magnitude of change	Visual impact
Moderate	Low	<b>Moderate to low</b>



Figure 5-10 Photomontage at viewpoint 6

### 5.3.7 Summary of visual impact assessment during operation

The visual impact assessment comprised the assessment of six representative viewpoints selected in accordance with the methodology in **Section 3.5**. The assessment of viewpoints is summarised in **Table 5-2**. The range of visual impact ratings were determined to be:

- Three viewpoints would have a moderate visual impact
- Three viewpoints would have a moderate to low visual impact
- One viewpoint would have a low visual impact.

### 5.3.8 Lighting during operation

As outlined in **Section 2**, lighting would be provided as part the Proposal. Lighting would generally be limited to pedestrian lighting required to meet statutory requirements and to ensure a safe and secure environment at night. Lighting would be designed in accordance with relevant Australian standards including *AS 4282 Controlling the Obtrusive Effects of Outdoor Lighting*. An appropriate lighting management plan would be prepared to minimise the impact of lighting into adjacent visually sensitive properties and would include downward direct lights, baffling and shielding. As a result, new lighting is expected to be confined to the rail corridor, with no light spill or obtrusive lighting effects on nearby land uses or residents. Therefore, visual impacts from lighting are considered to be minor.



Table 5-2 Summary of visual impacts during construction and operation

View-point	Visual sensitivity	Elements visible during construction *	DURING CONSTRUCTION		DURING OPERATION	
			Magnitude of visual effect	Visual impact	Magnitude of visual effect	Visual impact
1	High	<ul style="list-style-type: none"> <li>Operational Proposal elements</li> <li>Construction activities</li> </ul>	Low	<b>Moderate</b>	Low	<b>Moderate</b>
2	Moderate	<ul style="list-style-type: none"> <li>Operational Proposal elements</li> <li>Construction activities</li> </ul>	High	<b>High to moderate</b>	Moderate	<b>Moderate</b>
3	Low	<ul style="list-style-type: none"> <li>Operational Proposal elements</li> <li>Construction activities</li> </ul>	High	<b>Moderate</b>	High	<b>Moderate</b>
4	Low	<ul style="list-style-type: none"> <li>Operational Proposal elements</li> <li>Construction activities</li> </ul>	Moderate	<b>Moderate to low</b>	Moderate	<b>Moderate to low</b>
5	Low	<ul style="list-style-type: none"> <li>Operational Proposal elements</li> <li>Construction activities</li> </ul>	High	<b>Moderate</b>	Low	<b>Low</b>
6	Moderate	<ul style="list-style-type: none"> <li>Operational Proposal elements</li> <li>Construction activities</li> <li>Material laydown area north of central concourse</li> </ul>	Moderate	<b>Moderate</b>	Low	<b>Moderate to low</b>

**Note:**

\* None of the compound sites would be visible in the assessed view points.

# 6. Landscape character impact assessment



# 06

## Landscape character impact assessment

There are two components to the assessment, namely the assessment of landscape character impacts during construction (**Section 6.1**) and operation (**Section 6.2**). Locations of landscape character zones are shown in **Figure 2-1**.

### 6.1 Construction impacts

Before construction starts detailed planning would be carried out to consider construction methods and scheduling, and how to manage community and environmental issues. These generally include noise, access, amenity and general disruption and compliance with work, health and safety requirements.

Equipment and plant requirements would be refined during future project stages and as the construction methodology is developed by the construction contractor. Construction methods and management measures to minimise environmental impacts would be detailed in the Construction Environmental Management Plan (CEMP), which would be prepared by the construction contractor.

The key general principles for construction would require the construction contractor to:

- Consider the effect on urban amenity, including impacts on residential receivers and businesses
- Manage impacts on existing infrastructure including local roads, utilities and services
- Recognise the increased safety risk when carrying out modifications to existing infrastructure
- Manage community and environmental issues including amenity, noise, access and general disruption.

Further details on the project's construction is provided in chapter 3 of the REF.

Irrespective of detailed construction planning, potential landscape character impacts experienced during construction for a project of this nature would result from the permanent operational project elements as they are being constructed (**Section 6.2**) and from temporary sources of change to the landscape character. Typically, they would include:

- Site establishment including vegetation pruning and removal and fencing or hoarding
- Establishment and operation of ancillary facilities such as site offices and material laydown areas including fencing and hoarding

- Construction activities including the operation of plant and equipment
- Construction-related traffic movements
- Temporary traffic management including temporary traffic and access changes
- Lighting during construction.

#### 6.1.1 Potential impacts

Landscape character changes during construction would derive from both Proposal elements as they are being constructed and from temporary construction activities. The impacts would vary throughout the construction period depending on the construction activities being carried out at the time. Therefore, the assessment constitutes a worst case assessment. Actual impacts experienced during the construction period may be lower at certain times.

Construction activities would take place in all LCZs and result in temporary landscape character impacts within the respective LCZs and potentially within adjoining LCZs.

**Table 6-1** summarises the project's landscape character impacts during construction. LCZs that have a higher sensitivity to change, would experience greater landscape character impacts during construction.

The landscape character impacts of the project during construction are expected to be:

- Moderate to low for the Thornleigh Town Centre and Eastern Rail Corridor
- Low for Suburban Thornleigh.

Overall, impacts during construction are temporary in nature and would be mitigated where possible through appropriate siting of infrastructure, materials and finishes of sheds and hoardings, and management of increased traffic in the study area.

## 6.2 Operational impacts

The operational landscape character assessment for each LCZ comprises of:

- Sensitivity of the area's landscape character, that is its inherent capability to absorb change of the order of the Proposal, based on the description of the existing landscape character provided in **Section 4.2**
- A description of the Proposal elements located within the LCZ
- An assessment of the magnitude of change in the LCZ resulting from the Proposal, based on a description of landscape character changes resulting from the Proposal
- A landscape character impact summary.

### 6.2.1 LCZ 1: Thornleigh Town Centre

#### *Sensitivity to change*

The Thornleigh Town Centre is a highly urban setting located between Pennant Hills Road and the T9 Northern Line. Both are major infrastructure and movement corridors. The Thornleigh Town Centre is a busy centre of activity and in a state of ongoing transformation as part of the Pennant Hills Road urban renewal corridor. The scale of the Proposal relative to the town centre and development occurring therein is relatively small. The Thornleigh Town Centre would be well placed to absorb change of the nature and scale of the Proposal within its existing fabric and structure. The sensitivity of LCZ 1 to change is considered to be **low**.

#### *Proposal elements in this zone*

The following Proposal elements would be located in LCZ 1:

- Extension of the existing pedestrian overbridge to the east
- Anti-climb screen to stairs and bridge
- Eastern lift (lift 1) and canopy
- Removal of existing stairs
- New stairs (stair 1) from the pedestrian overbridge to the Great North Walk
- Widening and re-grading of the Great North Walk including new paving
- Modifications to Railway Parade including footpath re-grading and widening/kerb realignment, footpath extension to accessible parking spaces and

reconfiguration of existing parking spaces to provide accessible parking spaces

- New lighting to the Great North Walk
- Adjustments to existing fencing
- Tree and other vegetation removal and pruning.

#### *Magnitude of change in this zone*

The Proposal would introduce new built form into the Thornleigh Town Centre. New built elements would be minor in scale compared to existing built form and not lead to a change in built form character or scale. The Proposal would enhance access as well as the amenity, safety and security on the approach to the train station. It would also improve way-finding through an easier to find station entrance. These changes would be consistent with the existing and desired future character of both LCZ 1 and the adjoining Eastern Rail Corridor LCZ (LCZ 4), improving connectivity and cohesiveness of the area.

Due to the lack of vegetation cover in LCZ 1, removal of vegetation along the rail corridor would alter the character of this part of LCZ 1 as well as the interface between LCZ 1 and LCZ 4.

Overall, the magnitude of change to LCZ 1 would be **low**.

#### *Landscape character impact summary*

Summary - LCZ 1	Rating
Sensitivity	Low
Magnitude	Low
<b>Landscape character impact</b>	<b>Low</b>

## 6.2.2 LCZ 2: Suburban Thornleigh

### *Sensitivity to change*

Suburban Thornleigh constitutes an established and attractive residential neighbourhood separated from major activity centres and movement corridors by the T9 Northern Line. While the commuter car park represents a large structure and The Esplanade represents a relatively busy route, the residential neighbourhood character prevails and is enforced by the presence of street trees that filter views of the built form. Residents of the Suburban Thornleigh LCZ would likely be highly sensitive to changes in their neighbourhood character. Rail commuters constitute another important group in this zone, including those using the commuter car park and those waiting for bus services. This group would be sensitive to change affecting the commuting experience and functionality.

The scale of the Proposal in this zone would be consistent with the height and scale of existing built form which includes a large portion of two storey homes as well as the existing multi-storey commuter car park. The proposal would not interface with heritage listed properties (refer **Section 4.1.4**). This indicates that the zone would be able to absorb change of the nature of the Proposal within its existing fabric. The sensitivity of LCZ 1 to change of the order of the Proposal is considered to be **low**.

### *Proposal elements in this zone*

The following Proposal elements would be located in LCZ 2:

- Extension of the existing pedestrian overbridge to the west
- Western lift (lift 3) and canopy
- Relocation of arbour
- Modifications to the western station forecourt including new paving and re-grading, a small reduction in turf areas, new landscaping, new seating and signage and a new bus shelter
- Adjustments to existing fencing and garden beds
- Tree pruning.

### *Magnitude of change in this zone*

The Proposal would introduce new built form into the zone. Proposal elements would be of minor scale, consistent with the built form of LCZ 2. Existing important character elements such as mature Brush Box trees would not be affected by the Proposal. The Proposal would enhance rail access as well as amenity on the approach to the train station, constituting beneficial outcomes. The changes

would be consistent with the existing and desired future character of both LCZ 2 and the adjoining Rail Corridor LCZ (LCZ 3), improving connectivity and cohesiveness of the area.

Overall, the magnitude of change to LCZ 2 would be **low**.

### *Landscape character impact summary*

Summary - LCZ 2	Rating
Sensitivity	Low
Magnitude	Low
<b>Landscape character impact</b>	<b>Low</b>

## 6.2.3 LCZ 3: Eastern Rail Corridor

### *Sensitivity to change*

The rail corridor is characterised by its rail movement function and infrastructure. The Proposal would be consistent in nature and scale with the of infrastructure typically experienced in rail corridors.

The sensitivity of the zone to change of the nature of the Proposal is considered to be **low**.

### *Proposal elements in this zone*

The following Proposal elements would be located in LCZ 3:

- Central lift (lift 2), landing and canopy
- Upgrade to existing pedestrian stairs to the island platform
- Alterations to existing building
- BAZ canopy
- Extension of the existing pedestrian overbridge to the east
- Eastern lift (lift 1) and canopy
- Anti-climb screen to stairs
- Removal of existing stairs
- New stairs (stair 1) from the pedestrian overbridge to the Great North Walk
- Adjustments to fencing
- Vegetation removal
- Installation of TGSIs and regrading of platforms as required.



# 06

## Magnitude of change in this zone

The Proposal would introduce new built form into the zone. Proposal elements would be of minor scale, consistent with the character and function of LCZ 3. The changes would be consistent with the existing and desired future character of this zone and the adjoining areas, improving access and connectivity to rail services and across the rail corridor. However, the location of lift 1 would interrupt the Great North Walk functionally and visually, challenging perceptions of safety and security along the walk.

Overall, the magnitude of change to LCZ 3 would be **low**.

## Landscape character impact summary

Summary - LCZ 1	Rating
Sensitivity	Low
Magnitude	Low
<b>Landscape character impact</b>	<b>Low</b>

## 6.3 Summary of operational landscape character impacts

The landscape character impacts of the project are summarised in **Table 6-1**.

As can be seen from **Table 6-1**, the Proposal's potential landscape character impacts would vary according to the different levels of landscape character sensitivity and

magnitude of the changes resulting from the Proposal. The landscape character impacts of the Proposal on the three LCZs during operation would be low.

The low operational landscape character impact ratings are a reflection of the degree to which the scale of the Proposal elements is consistent with the extent and scale of existing development in surrounding areas. The Proposal would occupy only a minor footprint within the existing urban fabric.

Beneficial landscape character impacts would be associated with:

- Enhanced access to rail services and across the rail corridor, improving connectivity within and between LCZs and contributing to cohesive communities
- Enhanced wayfinding
- Enhanced facilities including seating and accessible parking and commuting experience for all users.

Adverse landscape character impacts would be associated with:

- Changes to the visual interface between the Thornleigh Town Centre (LCZ 1) and the Rail Corridor (LCZ 3) altering the spatial character and outlook
- Changes to sight lines as a result of built form placement affecting passive surveillance levels

Landscape Character Zone	Sensitivity	DURING CONSTRUCTION		DURING OPERATION	
		Magnitude of change	Landscape character impact	Magnitude of change	Landscape character impact
<b>1</b> Thornleigh Town Centre	Low	Moderate	<b>Moderate</b>	Low	<b>Low</b>
<b>2</b> Suburban Thornleigh	Low	Low	<b>Low</b>	Low	<b>Low</b>
<b>3</b> Rail corridor	Low	Moderate	<b>Moderate</b>	Low	<b>Low</b>

Table 6-1 Summary of landscape character impacts during construction and operation



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The Sunday Telegraph

THE AUSTRALIAN

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# 7. Mitigation strategy



## 7.1 Impact mitigation recommendations

This section recommends mitigation measures that respond to the identified visual and landscape character impacts of the Proposal. They include general management measures (**Section 7.1.1**) and recommended design refinement measures (**Section 7.1.2**) to further reduce the potential visual and landscape character impacts resulting from the Proposal.

### 7.1.1 General management measures

The landscape character assessment in **Section 6** has demonstrated that the Proposal is consistent with the scale, character and function of the surrounding area. It would result in beneficial improvements by improving access to rail services as well as across the rail corridor.

The following general management measures are recommended to minimise potential landscape character impacts resulting from the Proposal:

- An Urban Design and Landscape Plan (UDLP) would be prepared by the Construction Contractor, in consultation with the relevant council, and submitted to TfNSW for endorsement by the Precincts and Urban Design team, prior to finalisation of the detailed design. The UDP, at a minimum, would address the following:
  - The appropriateness of the proposed design with respect to the existing surrounding landscape, built form, behaviours and use-patterns (including consideration of Crime Prevention Through Environmental Design principles). This is to include but not be limited to:
    - Connectivity with surrounding local and regional movement networks including street networks, other transport modes and active transport networks. Existing and proposed paths of travel for pedestrians should be shown
    - Integration with surrounding local and regional open space and or landscape networks. Existing and proposed open space infrastructure/landscape elements should be shown
    - Integration with surrounding streetscape including street wall height, active frontages, awnings, street trees, entries, vehicle cross overs etc
    - Integration with surrounding built form (existing or desired future) including building height, scale, bulk, massing and land-use
  - Design detail that is sensitive to the amenity and character of heritage items located within or adjacent to the Proposal site
- If tree removal is necessary the UDP should provide a tree offset strategy as per TfNSW's Vegetation Management Guideline
- A Public Domain Plan (PDP) would be prepared by the Construction Contractor, in consultation with Hornsby Shire Council, and submitted to TfNSW for endorsement by the Precincts and Urban Design team, prior to finalisation of the detailed design. The PDP, at a minimum, would address the following:
  - Materials, finishes, colour schemes and maintenance procedures including graffiti control for new walls, barriers and fences
  - Landscape treatments and street tree planting to integrate with surrounding streetscape
  - Opportunities for public art created by local artists to be incorporated, where considered appropriate, into the Proposal
  - Total water management principles to be integrated into the design where considered appropriate
  - Design measures included to meet ISCA 1.2/2.0
  - Identification of design and landscaping aspects that will be open for stakeholder input, as required.
- Landscape and visual amenity:
  - All permanent lighting would be designed and installed in accordance with the requirements of standards relevant to *AS 1158 Road Lighting* and *AS 4282 Controlling the Obtrusive Effects of Outdoor Lighting*
  - Worksite compounds would be screened with shade cloth (or similar material, where necessary) to minimise visual impacts from key viewing locations
  - Temporary hoardings, barriers, traffic management and signage would be removed when no longer required
  - During construction, graffiti would be removed in accordance with TfNSW's Standard Requirements.

### 7.1.2 Design refinement measures

The visual assessment in **Section 5** indicates that existing mature vegetation is highly sensitive to change due to its visual contribution to the area. The sparsity of vegetation on the eastern side of the railway line renders individual trees relatively more important visually than on the western side of the railway corridor where vegetation cover is much more extensive.

In order to reduce the visual impacts of the Proposal as a result of tree and vegetation removal, the following mitigation measures are recommended for investigation during future project stages:

- Tree protection:
  - Develop the design of supplementary tree planting if necessary
  - Develop a construction methodology and processes for the installation of lift 1 that ensures the protection of both of the large mature eucalypts in the Domino's property.
  - Develop a construction methodology and processes for the installation of lift 3 to minimise the extent of pruning required to existing mature Brush Boxes
  - Construction of the Proposal must be carried out in accordance with the *Vegetation Management (Protection and Removal) Guideline* (TfNSW, 2019)
- Urban design, public domain and landscaping:
  - Reconsider the placement of the lift and stairs on the eastern walkway to achieve:
    - A direct line of site along the walkway from the eastern entrance at Railway Parade to the Wells Street overbridge
    - Investigate options to reduce the impact of the stair stringer of the existing footbridge where it extends into proposed lift waiting area
    - Enlarge waiting areas at lift and stair to increase passive surveillance of the area
    - Align the lift and stair to provide direct lines of site along the eastern walkway to increase passive surveillance.
  - Investigate opportunities to reinstate landscaping as a vegetated buffer at the eastern station entrance between Railway Parade and the railway corridor
  - Investigate opportunities to reinstate landscaping in the western station forecourt including reinstatement of box hedging removed for the Proposal.





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SCT013

90° ANGLE PARKING  
FRONT OR REAR TO KERB  
VEHICLES UNDER 6M ONLY  
1/4 P  
8:30-6:00  
8:30-12:30  
SAT

Thornleigh



## 8. Conclusion

This report describes the Proposal and assesses the potential visual and landscape character impacts associated with Proposal construction and operation. It recommends a series of mitigation measures to ensure the Proposal is fully integrated with its built, natural and community setting.

The project would introduce new rail infrastructure into the area. Key features comprise the three lifts and associated enhancements to access stairs and pavements. The Proposal also comprises internal upgrades to existing station buildings. These would be contained within existing building footprints and not generally be visible from surrounding areas. The design has been developed in recognition of existing natural, built and community values and has sought to minimise potential impacts by integrating the lifts closely with existing pedestrian overbridges, thereby constituting relatively minor extensions of existing rail infrastructure.

#### *Landscape character impacts*

The landscape character of the Proposal area is varied. Three distinct landscape character zones were identified, based on the combination of natural, built and community factors. The project would result in a number of changes to the existing landscape character of the study area as a result of:

- Vegetation removal and pruning
- Changes to spatial character and views
- Changes to built form affecting sight lines
- Changes to accessibility and connectivity which are generally of a beneficial nature.

The magnitude of impact as a result of the Proposal is low for all three landscape character zones in the study area.

#### *Visual impacts*

Due to existing built form and mature tree cover, visibility of the Proposal would generally be limited to areas in close proximity to Thornleigh Station. Viewers in this area would expect to see rail transport infrastructure and the Proposal would assist in highlighting the station assisting wayfinding locally.

Six viewpoints were selected within the visual envelope and represent a number of different viewers and view angles of the project. Based on the sensitivity of the views to change and the magnitude of change to the view as a result of the Proposal, the visual impacts of the Proposal would range from 'low' to 'moderate'. Adverse visual impacts are generally related to the removal of vegetation providing screening and visual buffers.

#### *Construction impacts*

During construction of the Proposal, both visual and landscape character and impacts would be at least equal to and often somewhat greater than operational impacts. Visual impacts during construction would range from 'moderate to low' to 'high to moderate', and landscape character impacts during construction would range from 'low' to 'moderate'. Impacts would result from construction traffic, site offices and material laydown and storage areas, temporary fencing and changes to access arrangements as well as the temporary presence of construction machinery and equipment. However, the degree of impact would be temporary and would not be continuous throughout the construction period. Instead, it would fluctuate with workflow intensities and construction activities.

TfNSW will continue to develop the design during future project phases. Once operational, the Proposal would achieve the desired performance outcomes and complementing the visual amenity, character and quality of the surrounding environment.

## 9. References



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## References

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Thornleigh