



# Unanderra Station Upgrade

## Landscape Character and Visual Impact Assessment

July 2020

# UNANDERRA STATION UPGRADE

## LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT

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**PREPARED FOR:** Pitt & Sherry on behalf of Transport FOR NSW  
**PREPARED BY:** Alison Dodds, *PGCert Public Policy, BPlan, BLArch*  
*PIA Registered Planner*  
and Stacey Brodbeck, *MenvPlan, BLArch*  
*AILA Registered Landscape Architect and PIA Registered Planner*

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# 1 Introduction

## 1.1 Purpose of this report

Transport for NSW (TfNSW) proposes to upgrade Unanderra Station as part of their Transport Access Program (the Proposal). The Proposal would provide a station precinct that is accessible to those with a disability, limited mobility, parents/carers with prams, and customers with luggage.

This report assesses the landscape character and visual impacts associated with the Proposal and informs the Review of Environmental Factors (Pitt & Sherry, REF) which has been developed concurrently.

## 1.2 Proposal overview

Unanderra Station is south of Wollongong on the 'SCO - South Coast Line' of the Sydney Trains Network, connecting Kiama and Sydney. A location map is provided in FIGURE 1-1.



**FIGURE 1-1: LOCATION OF UNANDERRA STATION**

The Proposal would result in the following key features:

- installation of three new lifts connecting to the existing footbridge, with canopies for weather protection at the lift landings
- modifications to the existing footbridge, subject to detailed design, including regrading of the deck and replacement of stair treads and handrails where necessary
- construction of elevated walkways between the new lifts and the footbridge, with new anti-throw screens
- platform modifications including minor platform regarding, line marking of boarding assistance zones on Platforms 1 and 2, and the relocation of two seating benches
- modification of the existing station building to enable the provision of a new family accessible toilet, and a new staff unisex ambulant toilet, a station services equipment room (SSER), and store room
- provision of an accessible kiss and ride space on Berkeley Road (east) including new kerb ramps, with a new accessible pathway to the station entrance including new kerb ramps
- provision of an accessible kiss and ride space on Berkeley Road (west), with kerb ramps and a widened footpath
- conversion of the existing non-compliant DDA parking spaces on Berkeley Road (west of station) into three accessible parking spaces with shared spaces
- provision of accessible footpaths on Berkeley Road (west) between the station entrance, kiss and ride, bus zone and accessible parking spaces.

A detailed project description is provided in SECTION 4.

### 1.3 Report format

This report is set out in the following format:

SECTION 2	Defines the methodology for the assessment
SECTION 3	Describes the location and context of the Site
SECTION 4	Describes the Proposal and its main visual changes
SECTION 5	Assesses the likely effects to landscape character
SECTION 6	Assesses the likely effects to surrounding viewpoints
SECTION 7	Describes measures that have been, and could be, incorporated to improve the visual outcome
SECTION 8	Presents a summary of key findings and conclusion.

## 2 Assessment methodology

This section outlines the methodology for the assessment, which is based on the NSW Roads and Maritime Services<sup>1</sup> *Guideline for Landscape Character and Visual Impact Assessment, Environmental Impact Assessment Practice Note EIA-N04*, December 2018 (referred to hereafter as the 'Guideline').

### 2.1 Assessment

Two assessments are presented in the Guideline to improve design outcomes:

- landscape character assessment - the assessment of impact on the aggregate of an area's built, natural and cultural character or sense of place – which helps determine the overall impact of a project on an area's character and sense of place.
- visual impact assessment - the assessment of impact on views - which helps define the day to day visual effects of a project on people's views.

The method to measure impact is based on the combination of sensitivity of the existing area or view to change, and magnitude of the Proposal on that area or view. These terms are defined in the Guideline as:

- Sensitivity: refers to the qualities of an area, the number and type of receivers and how sensitive the existing character of the setting is to the proposed nature of change.
- Magnitude: refers to the physical scale of a project, how distant it is and the contrast it presents to the existing condition.

The combination of sensitivity and magnitude provide the rating of the landscape character impact for a project, or visual impact for individual viewpoints (refer TABLE 2-1).

**TABLE 2-1: LANDSCAPE CHARACTER AND VISUAL IMPACT RATING MATRIX**

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

<sup>1</sup> As of 1 December 2019, Roads and Maritime Services was integrated with TfNSW

### **Landscape character assessment**

The Guideline sets out the tasks for landscape character impact assessment as:

1. analyse existing landscape character and its sensitivity
2. identify landscape character zones (if required because of the size or complexity of the project)
3. determine the magnitude of impact
4. assess landscape character impact (based on both the sensitivity of the character zone and magnitude of the Proposal in that zone).

### **Visual impact assessment**

The Guideline sets out the tasks for visual impact assessment as:

1. identify the extent of visibility of the Proposal
2. identify existing viewpoints and their sensitivity to change
3. determine the magnitude of change from each viewpoint
4. assess visual impact (based on a composite of the sensitivity of the view and magnitude of the Proposal in that view).

## **2.2 Field survey**

The Site was inspected 28 March 2020 and included a walk-over of Unanderra Station precinct and surrounding streets. The day of the inspection was dry and sunny. Private property was not accessed. Viewpoints were assessed from the nearest publicly accessible locations.

## **2.3 Photography**

Photographs included in this report have been taken using a 50mm lens on a full frame camera with GPS positioning. The 50mm lens was used as this is closest to the view perceived by a human eye. Unless otherwise noted, all photographs in this report were taken by the author 28 March 2020.



## 3 Site description

### 3.1 Location

Unanderra Station is approximately five kilometres south of Wollongong Station, within the suburb of Unanderra, in Wollongong local government area (LGA). A map showing the context of Unanderra Station and key features within the vicinity is provided FIGURE 3-1.

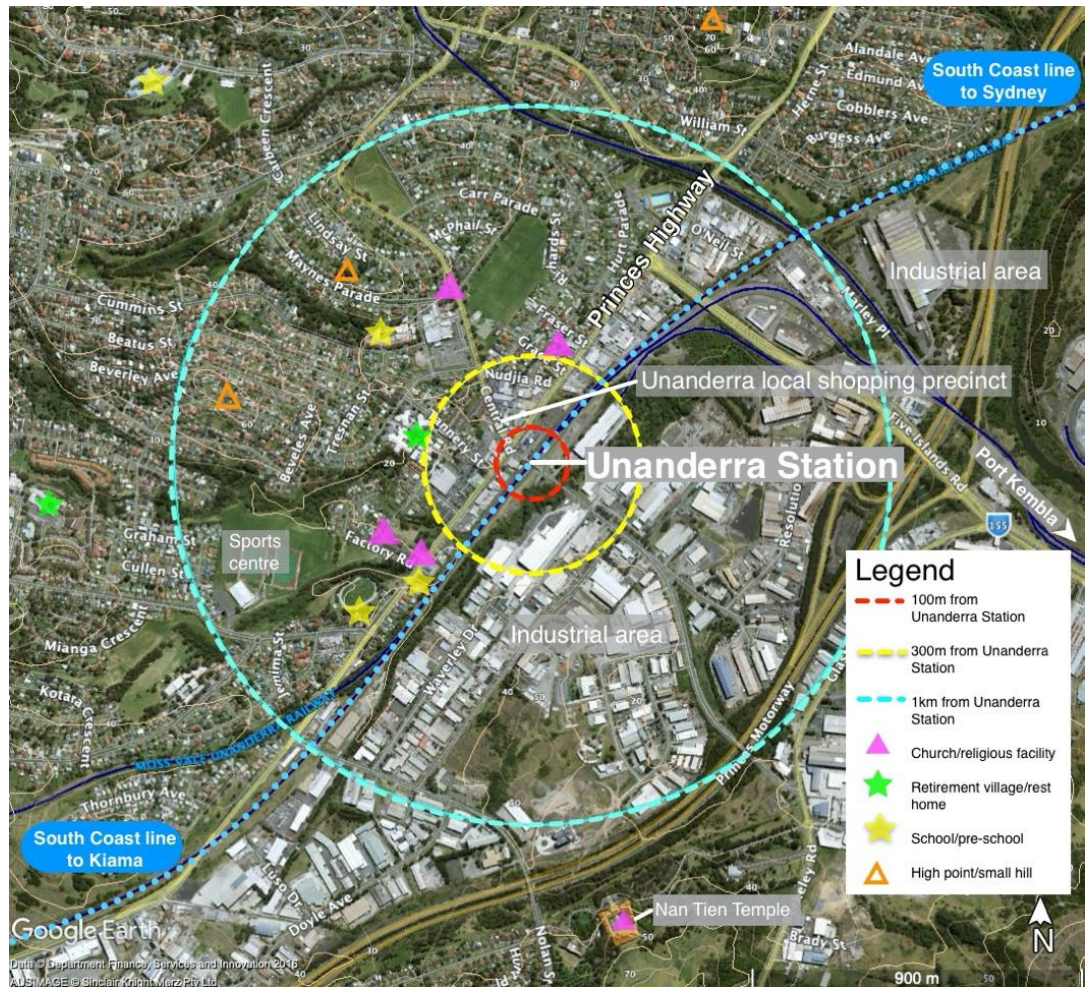


FIGURE 3-1: CONTEXT OF PROPOSAL LOCATION

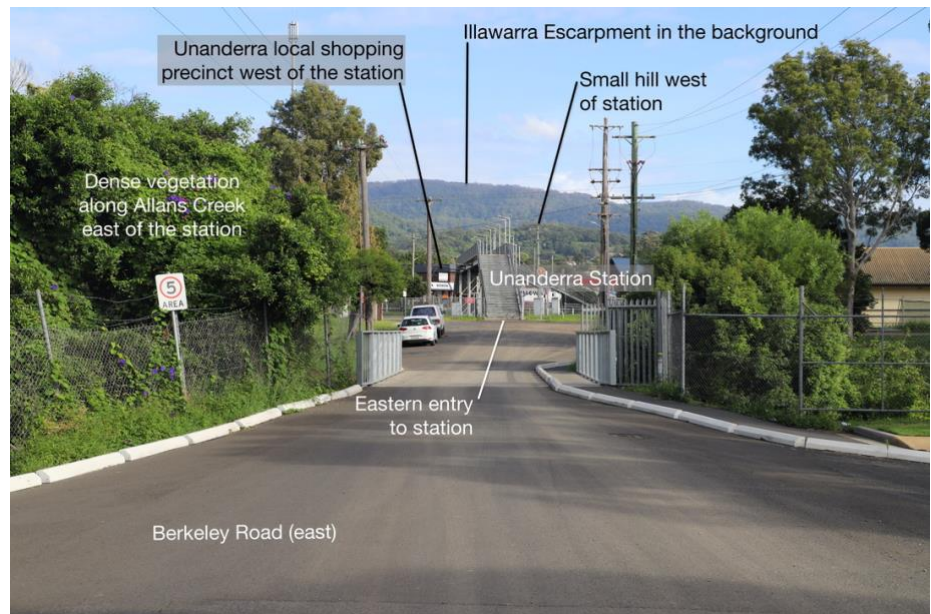
### 3.2 Visual context

#### Landform

The rail corridor (and main road corridors - Princes Highway and Princes Motorway) runs north/south between the Illawarra Escarpment and the Pacific Ocean. Mount Kembla (with an elevation of approximately 520m above the level of the station) is the closest feature of the Illawarra Escarpment at approximately 3.7km to the north-west. The entrance to Port Kembla is approximately 6km to the east.

Land to the east is flat and low lying and includes Allans Creek which lies approximately 60m east of the rail corridor. Land to the west rises to the foothills

of the Illawarra Escarpment. There are also distinctive small hills west of the station, elevated approximately 60m above the level of the station. An image showing local landform is provided at FIGURE 3-2.

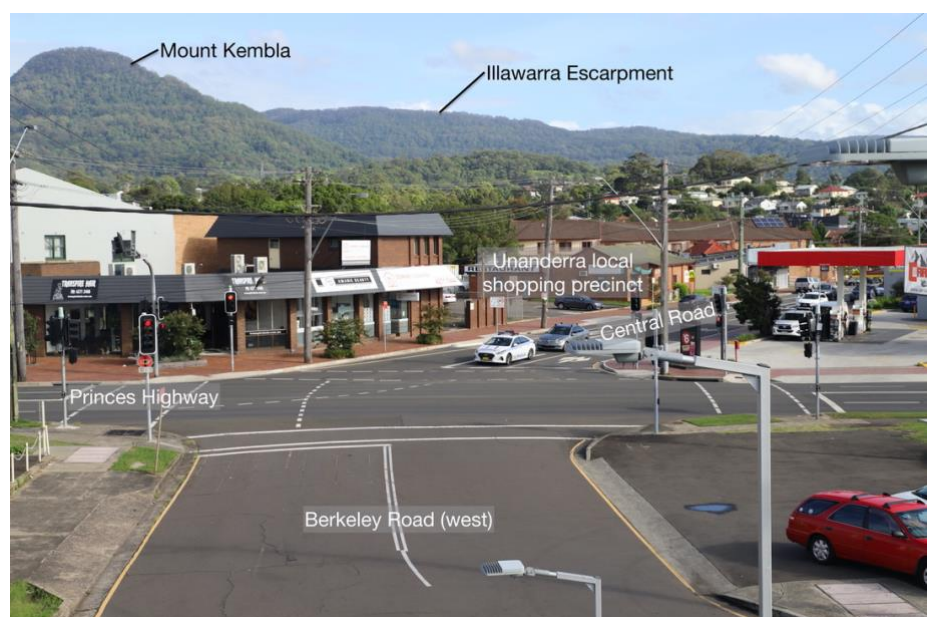


**FIGURE 3-2: VIEW OF STATION FROM BERKELEY ROAD (EAST) LOOKING WEST**

#### Land use

East of the station, the built environment is predominantly industrial. West of the station is Unanderra local shopping precinct (along Central Road), a commercial strip (along the Princes Highway) and low-density residential housing. An image of the shopping precinct is shown at FIGURE 3-3.

Distinctive built features in the vicinity (not visible from the station) include the tall industrial stacks of plants of the Port Kembla industrial area (approximately 2.5km east) and Nan Tien Temple (approximately 1.2km south).



**FIGURE 3-3: UNANDERRA LOCAL SHOPPING PRECINCT**



## Heritage<sup>2</sup>

Unanderra Station is not listed on any statutory or non-statutory heritage registers and is not considered an item of listed heritage importance. Unanderra Station Master's Residence is located 10m southwest of the Proposal site and is listed on the following registers as an item of local significance:

- 'Unanderra Station Master's Residence', RailCorp Heritage Inventory Register, SHI# 4801939
- 'Unanderra Station Master's Residence', Wollongong LEP 2009, item no. 6428.

The proposed works would not occur within the curtilage of the Unanderra Station Masters Residence. An image of the Station Master's Residence is provided FIGURE 3-4.



**FIGURE 3-4: UNANDERRA STATION MASTER'S RESIDENCE**

## Vegetation

There is very little tall vegetation within the rail corridor, apart from four trees (one exotic and three native trees) near the western entrance to the station. The trees were identified in *Unanderra Station Arboricultural Impact Assessment* (Eco Logical Australia, 15 April 2020). They are between 4-6m high and have a span of 4-6m.

Nearby Allans Creek is densely vegetated with large shrubs and vines.

### 3.3 Site description

A map showing features within 300m of the station is provided in FIGURE 3-5. The station is accessed via a set of stairs either side of the rail corridor which connect to a footbridge over the rail line.

<sup>2</sup> Provided by Pitt&Sherry

Unanderra Station is an island platform located between the tracks. Platform 1 (to Sydney) is to the west and Platform 2 (from Sydney) is to the east. A commuter parking area is provided along the western side of the station.

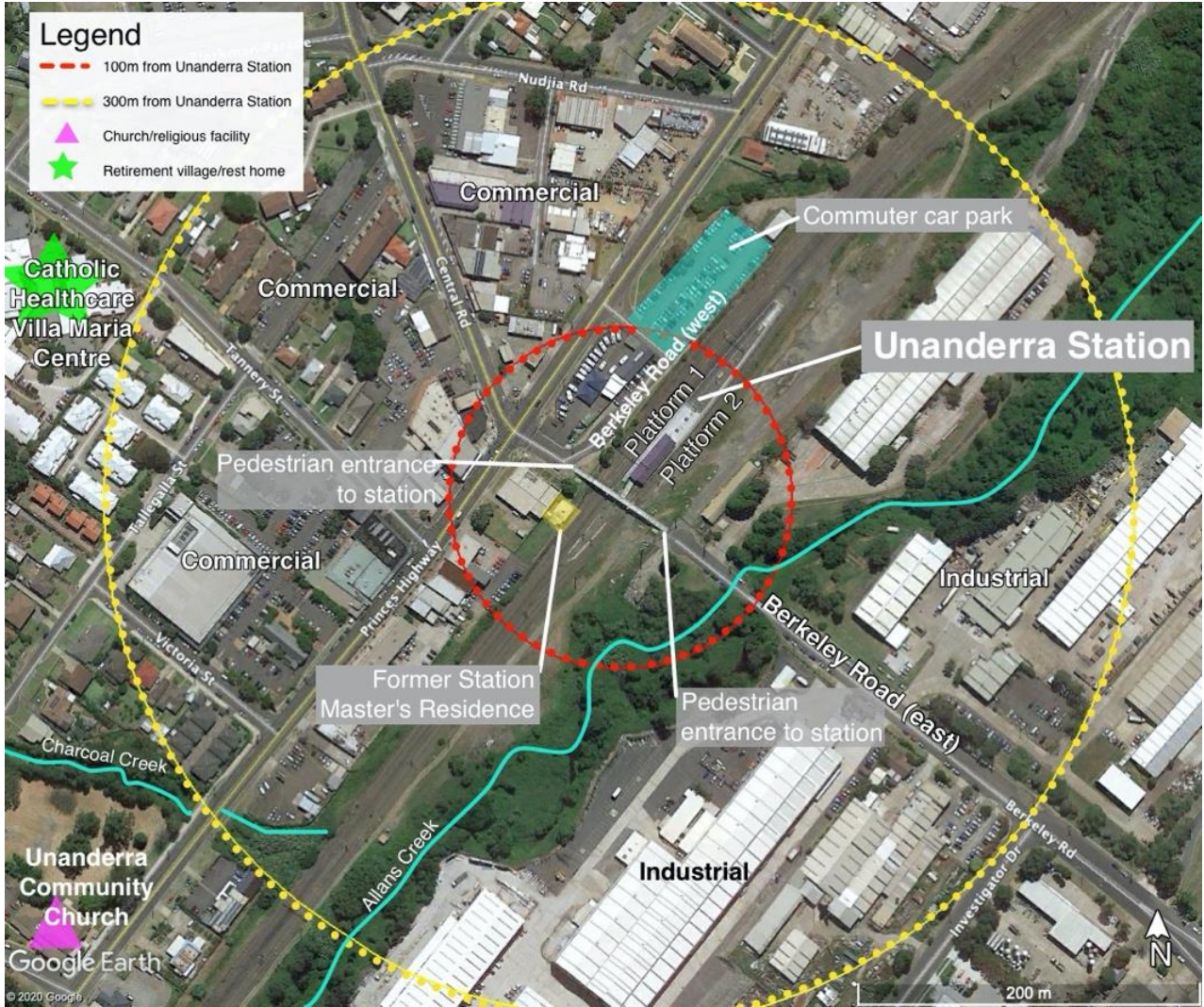


FIGURE 3-5: CLOSER VIEW OF STATION VICINITY



## 4 Project description

### 4.1 Scope of works<sup>3</sup>

The Proposal involves an upgrade of Unanderra Station as part of the Transport Access Program which would improve accessibility and amenities for customers.

The general layout of the proposed works is shown in FIGURE 4-1 and indicative elevations are shown in FIGURE 4-2 (figures provided by TfNSW).

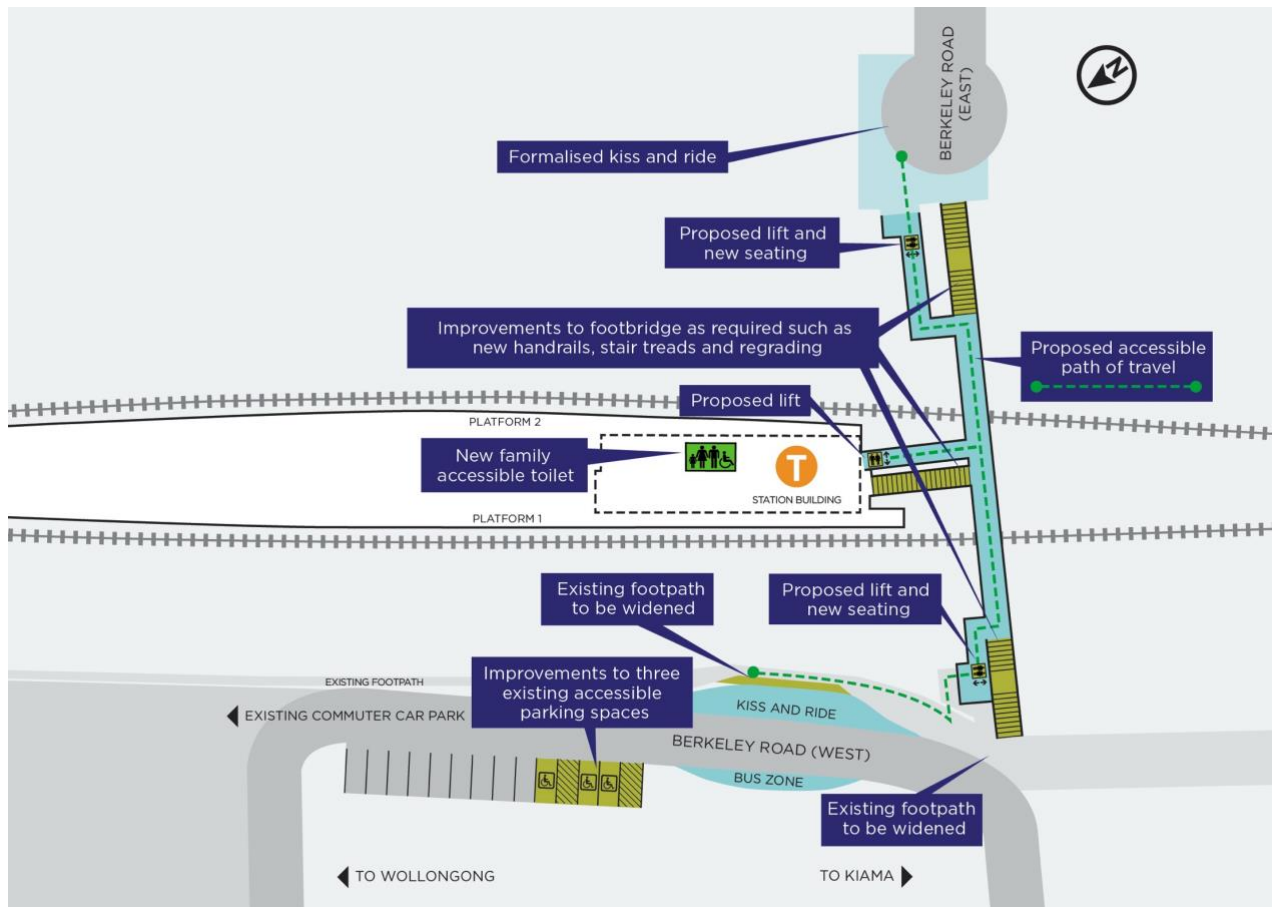
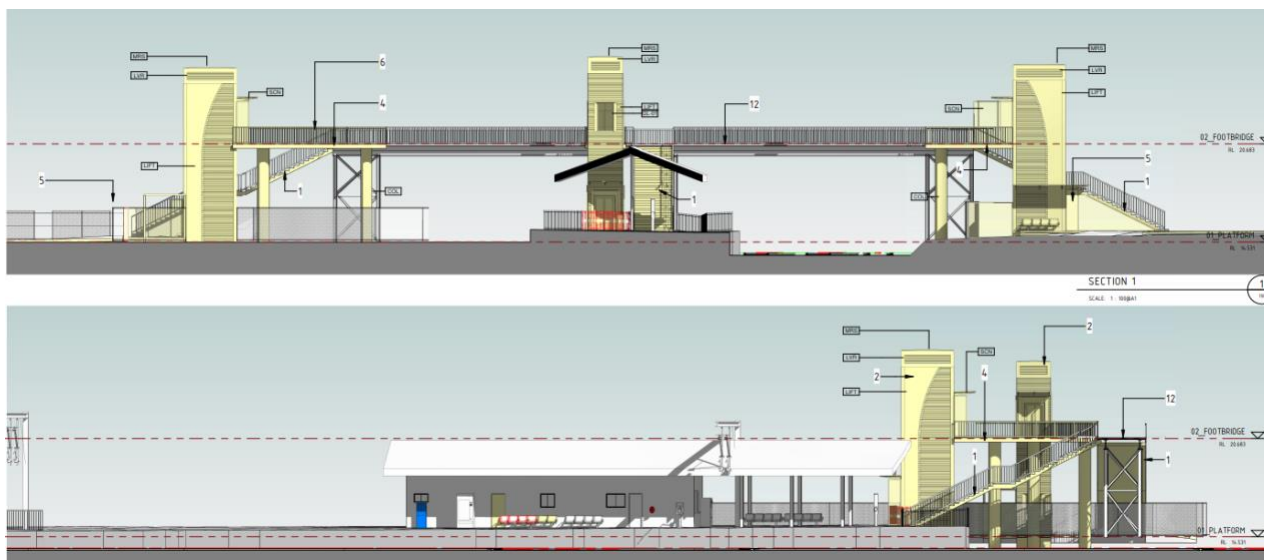


FIGURE 4-1: GENERAL LAYOUT OF THE PROPOSED WORKS (INDICATIVE AND SUBJECT TO DETAILED DESIGN)

<sup>3</sup> Provided by Pitt&Sherry





**FIGURE 4-2: INDICATIVE ELEVATIONS OF THE PROPOSED FOOTBRIDGE MODIFICATIONS (SUBJECT TO DETAILED DESIGN)**

### Station upgrade

Proposed works to take place at the station to facilitate improved accessibility are:

- installation of three new lifts connecting the platform to the existing footbridge, which would include:
  - covered lift walkways, new anti-throw screens and handrails
- refurbishment and other work to the existing footbridge including:
  - replacement of stair treads and handrails where required
  - regrading of the footbridge floor
- work to the existing station building including:
  - construction of a new family accessible toilet
  - construction of new staff ambulant toilet
- ancillary work including adjustments to lighting, handrails, minor drainage work, existing non-operational ticket counter to be fitted with opaque glass, landscaping, wayfinding signage, improvements to station communications systems including closed circuit TV (CCTV) cameras, hearing loops, emergency help points and installation of tactile ground surface indicators (TGSIs).

### Interchange facilities

A number of adjustments to the interchange areas around the station are proposed to improve accessibility and the customer experience. These include:

- conversion of three existing non-compliant accessible parking spaces into three DDA compliant accessible parking spaces with shared zones on the west side of the station, and compliant footpath and kerb ramps to access these spaces

- formalisation of a kiss and ride bay on the west side of the station and establishment of a kiss and ride bay on the east side of station including widening of footpaths and addition of kerb ramps
- addition of kerb ramp at the bus stop west of the station
- modification of rail corridor fencing to accommodate kiss and ride zones.

### Materials and finishes

Subject to detailed design, the Proposal would include the following:

- lift shafts – precast concrete with anti-graffiti coating, aluminium louvres, prefinished metal roof sheeting, aluminium window frames and glass
- lift waiting area canopies – steel frames and prefinished metal roof sheeting.

The new components of the station are proposed to have a dark tone similar to the existing footbridge. An Urban Design Plan (UDP) including a Public Domain Plan (PDP) would also be prepared by the Construction Contractor prior to finalisation of detailed design for endorsement by Transport for NSW.

An artist impression of the Proposal is shown in FIGURE 4-3.



**FIGURE 4-3: ARTIST IMPRESSION OF PROPOSAL FROM BERKELEY ROAD LOOKING EAST (SUBJECT TO DETAILED DESIGN)<sup>4</sup>**

<sup>4</sup> Subject to detailed design. Figure provided by TfNSW

## 4.2 Construction

### Timing

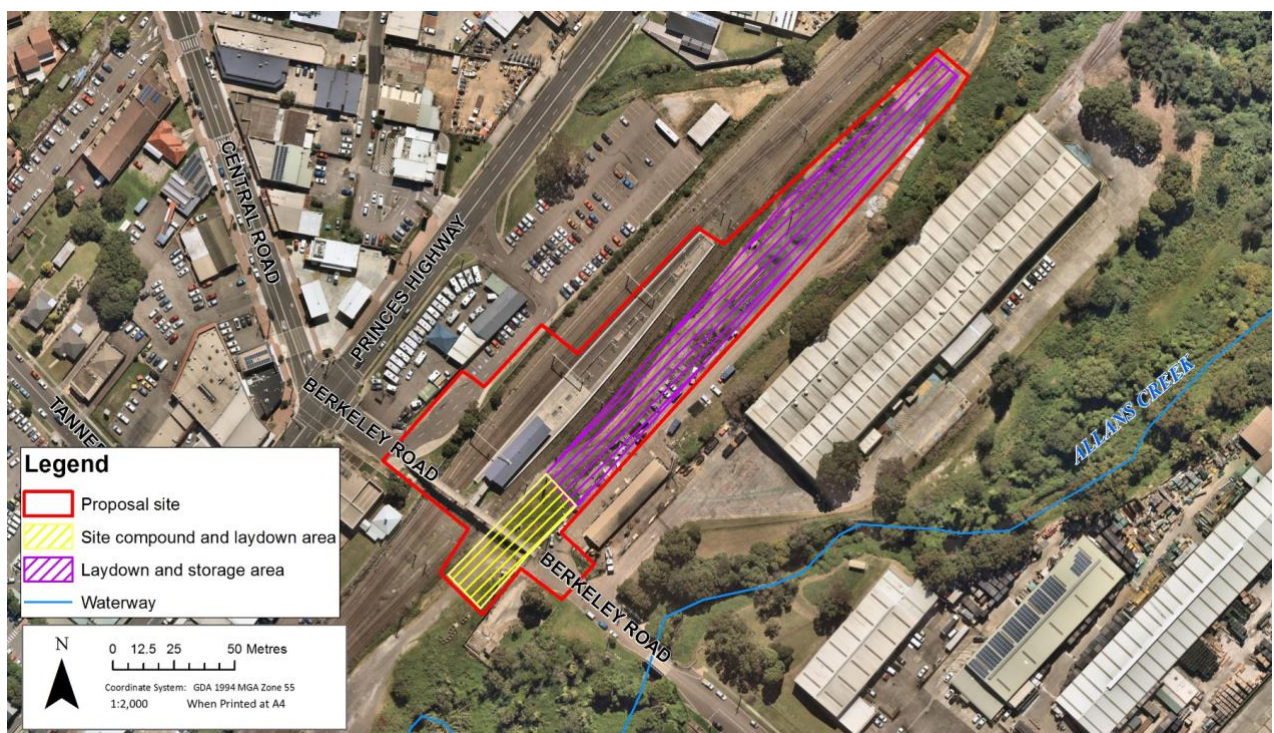
Subject to approval, construction is expected to commence in mid 2021 and take around 18 months to complete. The station would remain operational throughout the construction period.

Standard construction hours are anticipated to be 7.00 am to 6.00 pm Monday to Friday, and 8.00 am to 1.00 pm Saturdays<sup>5</sup>. Work outside of standard hours may be required occasionally at night, on weekends and during scheduled trackwork weekends. These are scheduled line closures that would occur regardless of the Proposal when part of the rail network is temporarily closed for maintenance and trains are not operating. It is estimated that approximately three rail shutdowns would be utilised.

Out of hours work may also be scheduled outside of trackwork weekends. Approval from TfNSW would be required for any out of hours work and the affected community would be notified.

### Site establishment

The temporary construction compound is proposed to be located on the east side of the station footbridge (refer to FIGURE 4-4) and would accommodate a site office, amenities, laydown and storage area for materials. The compound location would extend under the footbridge. A laydown and storage area is proposed next to the site compound in the rail corridor.



**FIGURE 4-4: PROPOSED CONSTRUCTION AREA<sup>6</sup>**

<sup>5</sup> Or as extended under the *Environmental Planning and Assessment (COVID-19 Development – Infrastructure Construction Work Days) Order 2020*

<sup>6</sup> Figure provided by Pitt&Sherry



Safety barriers and hoarding would be installed around the nominated work zones on the platform.

Pedestrian access to the station and across the rail corridor would be maintained during construction.

### Vegetation removal

The Proposal potentially requires the removal of two trees near the western entrance to provide for the kerb ramp at the kiss n ride. The two trees (#2 and #3) were identified and assessed in *Unanderra Station Arboricultural Impact Assessment* (Eco Logical Australia, 2020) and are shown FIGURE 4-5.

Tree pruning may also be required.

Tree protection zones would be installed around tall vegetation to be retained near the construction zone.

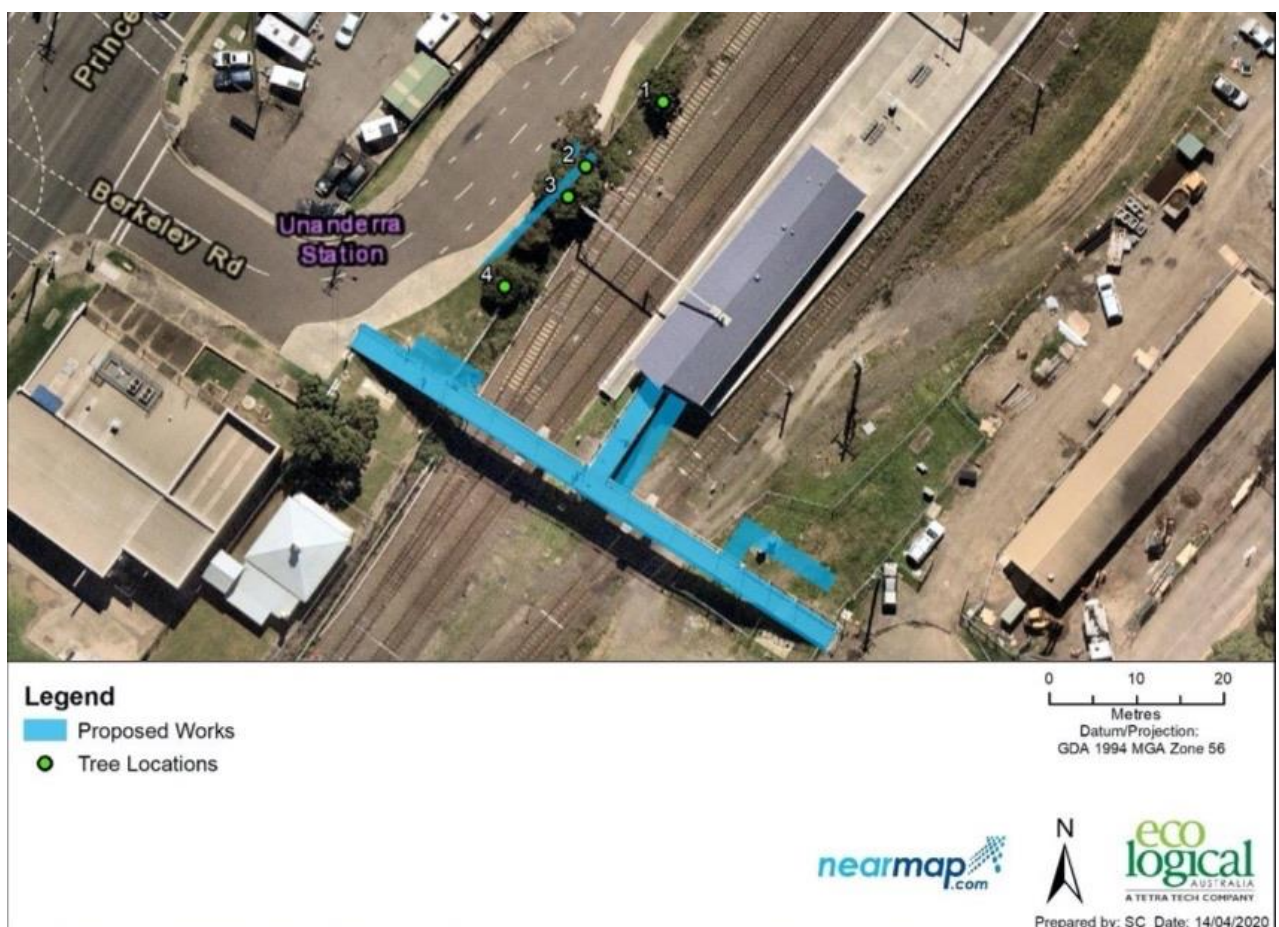


FIGURE 4-5: TREES IDENTIFIED WITHIN THE PROPOSAL AREA

### Major works

Construction would require traffic control in the adjacent streets and use of large equipment, including:

- Mobile cranes
- Piling rig
- Trucks
- Lighting towers
- Excavator
- Coring machine
- Forklift
- Mulcher
- Vibrating roller

- Road rail excavator
- Elevated working platform
- Concrete pump, grinder and truck

Key activities include:

- Station entrance:
  - new paving and fencing to the new station entry points
  - widen footpaths on both sides of the station.
- Lift installation:
  - construct lift pits/foundations/lift bases
  - install lift shafts and upper lift landings
  - install lift structures including landing, roof and louvres
  - install lift shaft services, lift cars and lift fit-out cars.
- Platform works:
  - demolish and remove existing unisex toilet and SSER wall
  - demolish and remove staff toilet and store walls and doors
  - relocation of two platform benches
  - installation of new walls, family accessible toilet and staff ambulant toilet
  - install new lighting and CCTV.
- Footbridge and stairs
  - regrade existing footbridge to achieve compliant cross fall
  - remove footbridge balustrade at lift locations
  - construct new elevated walkways from lifts to existing footbridge
  - install canopies to lift walkways
  - installation of protection screens to walkways and waiting areas.
- Interchange works
  - modification of footpaths on both sides of the rail corridor including widening and installation of kerb ramps
  - reconfiguration of and line marking in car park west of the station for the compliant accessible car spaces
  - signage for new bus stop, accessible parking and kiss and ride areas.
- Finalisation
  - install wayfinding signage
  - fencing adjustments and installation of bollards.

### 4.3 Completion

Upon completion of the proposed work, all disturbed areas would be rehabilitated. Demobilisation work would include removal of the construction compound/s, temporary fencing and storage areas; and either covering or vegetating exposed surfaces.

The main Proposal elements that would be visible would be:

- Three new lift shafts: one either end of the footbridge, and one in the middle of the footbridge. The lift shafts would be approximately 11m



above existing ground level, and approximately 5m higher than the floor of the footbridge.

- New canopies to lift landings.
- New elevated walkways and anti throw screens between the footbridge and each lift.
- Widened pathways at each station entry, connecting the lifts, stairs and kiss and ride facilities.
- New handrails, signage and kiss and ride bay at each station entry.

Modifications to the station building on the platform would not look significantly different when viewed from outside the station.

# 5 Impact on landscape character

This section assesses the likely impact of the Proposal on landscape character based on the combination of 'sensitivity' of the area to change, and 'magnitude' of the Proposal.

## 5.1 Existing landscape character

The existing landscape is described at SECTION 3.

Key features that contribute to local landscape character include: the flat local terrain around the station and rail corridor; warehouse-style industrial land uses east of the station; commercial precinct west of the station; low-density residential housing on elevated areas west of the station; and backdrop of the Illawarra Escarpment.

Character within the rail corridor is more 'infrastructure based' and features lighting, stanchions, fencing, small buildings, open grassed areas and material stockpiles, and is bordered by the rear of commercial and industrial premises.

The Station Master's Residence (refer FIGURE 3-4) is an appealing heritage building. However its restricted location between a commercial building and the rail corridor, its close proximity of security mesh fencing, power poles and tall shrubs, and the taller footbridge providing views over the heritage building roof, result in the presence of the small Station Master's Residence being easily overlooked and having minimal contribution to scenic landscape character.

Images showing local landscape character (of the rail corridor and vicinity) are shown in FIGURE 5-1.

## 5.2 Sensitivity of character

Landscape character is rated as having **low** sensitivity, as:

- The wider landscape setting of the station is distinctive and dramatic with the proximity of Mount Kembla and the Illawarra Escarpment in the background.
- However the rail corridor, including the footbridge, stairs and station infrastructure, are not visually appealing elements within the landscape.
- The contribution of the rail corridor to local scenic qualities would be unlikely to be affected by the type of change proposed.
- Character adjacent the rail corridor – featuring warehouses, sheds, brick walls, fencing and extensive areas of bitumen for parking - is also less appealing within the positive, wider, natural landscape setting.



FIGURE 5-1: PHOTOGRAPHS SHOWING LANDSCAPE CHARACTER OF THE STATION VICINITY

### 5.3 Magnitude of change to character

#### Construction

During construction, the Proposal would have a **low** magnitude of change on landscape character as:

- Tall, moving construction equipment and machinery would be visible, although compatible with the character of the rail corridor character.
- The extent of the landscape that would be affected by construction activity would be relatively small.
- The two trees potentially removed do not contribute significantly to landscape character.
- The construction period is temporary.

#### Operation

Following construction, the Proposal would have a **low (positive)** magnitude of change on landscape character:

- The Proposal would be a recognisable new element within the overall scene, one that enhances local scenic quality by improving the station entrances and upgrading railway infrastructure.
- The scale of the Proposal would be compatible with the character of the immediately surrounding rail corridor, industrial and commercial

uses, and railway infrastructure would still be confined to a relatively small proportion of the wider scene.

- The height of the new elements would not adversely affect the wider positive setting and would not detract from the presence of the Illawarra Escarpment in the background.
- The new Proposal elements would be located on the far side of the footbridge from the heritage building, no closer to the heritage building than the existing footbridge, and would not reduce the landscape setting of the Station Master's Residence.

#### 5.4 Summary of landscape character impact

A summary of impact to landscape character is provided in TABLE 5-1.

**TABLE 5-1: SUMMARY OF LANDSCAPE CHARACTER IMPACTS**

Phase	Sensitivity	Magnitude	Landscape character impact
Construction	Low	Low	Low
Operation	Low	Low	Low

## 6 Impact on views

This section assesses the likely impact of the Proposal on representative public and private viewpoints, based on the combination of 'sensitivity' of the view to change, and predicted 'magnitude' of impact of the Proposal on the view.

### 6.1 Extent of visibility

Views of Unanderra Station are possible from adjacent roads, the local shopping precinct, and elevated residential areas within approximately 2km of the station. An approximate visual envelope is shown at FIGURE 6-1.



FIGURE 6-1: APPROXIMATE VIEWSHED

### 6.2 Assessed viewpoints

Four viewpoints (VPs) have been identified for assessment, including residential private viewpoints within 1km and public viewpoints. Viewpoints beyond 1km were not included for assessment as the extent of the Proposal area within view is negligible. The assessed viewpoints are shown in FIGURE 6-2:

- VP1: Unanderra shopping precinct
- VP2: Princes Highway
- VP3: Berkeley Road (east)
- VP4: Elevated residential areas to the west.


Viewpoints are described and assessed in TABLE 6-1 to TABLE 6-4.





FIGURE 6-2: LOCATION OF ASSESSED VIEWPOINTS


TABLE 6-1: VP1 – UNANDERRA SHOPPING PRECINCT (CENTRAL ROAD)

Viewpoint characteristics	The local shopping precinct is approximately 60m west of the station, at the same elevation, and includes small retail shops and larger commercial premises.
Existing View	<p>A typical view toward the Proposal area is shown FIGURE 6-3 (taken approximately 65m from the station entrance).</p> 
Existing Sensitivity	<p>The sensitivity of the view toward the Site is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>The station stairs and footbridge are visible across the busy Central Road/Princes Highway intersection.</li> </ul>


	<ul style="list-style-type: none"> <li>▪ The view is cluttered with moving vehicles, traffic lights, signage, poles (electricity, lighting, telecommunications) and wires, and advertising.</li> <li>▪ The viewpoint provides public views to the local community, and very limited private views (from the upper floors of townhouses near the shopping area, approximately 175m from the station).</li> </ul>
Magnitude of change	<p>The magnitude of change during the temporary construction period is rated as <b>moderate</b>, as:</p> <ul style="list-style-type: none"> <li>▪ Tall mobile equipment and construction activities would be visible across the intersection.</li> <li>▪ Hoarding/fencing on Berkeley Road (west) would affect pedestrian views and movement when in close proximity.</li> <li>▪ The two trees potentially to be removed (between 4-6m tall) are seen behind commercial premises.</li> </ul> <p>The artist impression of the Proposal (FIGURE 6-4) is from a similar direction to VP1, but illustrates the view from a closer position (approximately 20m from the station entrance).</p>  <p><b>FIGURE 6-4: ARTIST IMPRESSION OF PROPOSAL FROM BERKELEY ROAD LOOKING EAST</b></p> <p>The magnitude of change following construction is rated as <b>low (positive)</b>, as:</p> <ul style="list-style-type: none"> <li>▪ The three proposed lift shafts would be the most prominent of the new elements in view.</li> <li>▪ The new and refurbished features of the Proposal would be visible and recognisable, yet relatively compatible with the surrounding character</li> <li>▪ The improvements proposed at Berkeley Road (west) would increase the appeal of the station entrance.</li> </ul>
Level of Impact	<p>CONSTRUCTION: The low sensitivity ranking, combined with the moderate magnitude of change, leads to an overall <b>moderate-low</b> level of impact.</p> <p>OPERATION: The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p>



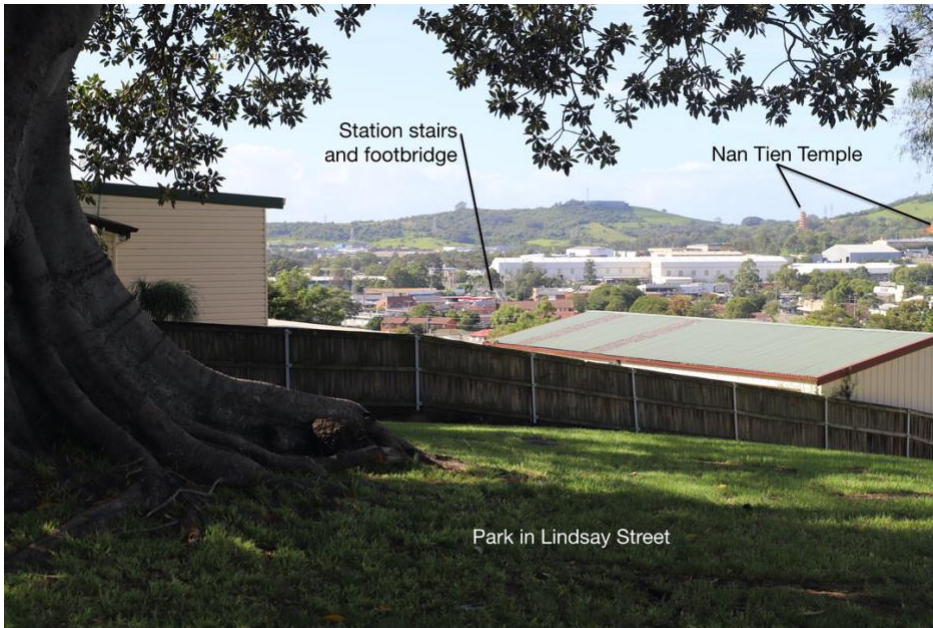
**TABLE 6-2: VP2 – PRINCES HIGHWAY**

Viewpoint characteristics	The Princes Highway is approximately 40m from the station at its closest but has limited viewing opportunity. At approximately 160m to the north of the station, wider, clearer views of the station are possible from the highway across the commuter car park.
Existing View	<p>A typical view toward the Proposal area is shown FIGURE 6-5 (taken approximately 150m from the station entrance).</p>  <p><b>FIGURE 6-5: VIEW FROM PRINCES HIGHWAY TOWARD PROPOSAL AREA</b></p>
Existing Sensitivity	<p>The sensitivity of the view toward the Site is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ The view would be available to a relatively high number of public viewers, travelling south along the Princes Highway.</li> <li>▪ The station and railway infrastructure are not visually prominent, surrounded by large sheds east and west.</li> <li>▪ A small number of residences on the western side of the Princes Highway (approximately 300m away) view the footbridge across the busy highway.</li> </ul>
Magnitude of change	<p>The magnitude of change during the temporary construction period is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ Viewers would see construction activity in the background, behind sheds and vehicles.</li> <li>▪ The degree of scale and contrast in the view would not be significant.</li> </ul> <p>The magnitude of change following construction is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ Modifications to the station building on the platform would be visually indistinct.</li> <li>▪ The closest major new feature in view would be the proposed central lift shaft at the southern end of the station building, which would be taller than the existing station building and lower than the commercial shed in the foreground. The eastern lift shaft may also be visible.</li> <li>▪ The new features would integrate with the surrounding built objects in scale and character.</li> </ul>
Level of Impact	<p><b>CONSTRUCTION:</b> The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p> <p><b>OPERATION:</b> The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p>

**TABLE 6-3: VP3 – BERKELEY ROAD (EAST)**

Viewpoint characteristics	Berkeley Road (east) runs perpendicular to the rail corridor and terminates approximately 2.5m from the base of the station stairs. Views are possible up to approximately 380m from the station.
Existing View	<p>A typical view toward the Proposal area is shown FIGURE 6-6 (taken approximately 100m from the station entrance).</p>  <p><b>FIGURE 6-6: VIEW FROM BERKELEY ROAD (EAST) TOWARD PROPOSAL AREA</b></p>
Existing Sensitivity	<p>The sensitivity of the view toward the Site is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ The view would be available to a relatively small number of public viewers accessing the industrial area and businesses along Berkeley Road (east).</li> <li>▪ Railway infrastructure is not visually prominent within the view, being relatively well concealed by the dark grey tone against the vegetated background.</li> </ul>
Magnitude of change	<p>The magnitude of change during the temporary construction period is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ Viewers would see construction activity in the background, behind sheds and vehicles.</li> <li>▪ The degree of scale and contrast in the view would not be significant.</li> <li>▪ The construction compound would be visible in the vicinity of the footbridge.</li> </ul>
	<p>The magnitude of change following construction is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ The three proposed lift shafts would be in view.</li> <li>▪ The lift shafts would be lower than the ridgeline and are proposed to have a dark tone similar to the existing footbridge.</li> </ul>
Level of Impact	<p><b>CONSTRUCTION:</b> The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p>
	<p><b>OPERATION:</b> The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p>

**TABLE 6-4: VP4 – ELEVATED RESIDENTIAL AREAS WEST**

Viewpoint characteristics	There are two small hills within 1km of the station providing elevated vantage points (approximately 60m above the level of the station) for residents of low-density, detached dwellings. Streets where views would be possible include some residences along Lindsay Street and Beverley Avenue.
Existing View	<p>A view toward the Proposal area is shown FIGURE 6-6 (taken from a park on Lindsay Street, approximately 700m from the station entrance). A tall pillar of Nan Tien Temple is visible in the image, however, cross-sections confirm that the station is not visible from the temple.</p>  <p><b>FIGURE 6-7: VIEW FROM LINDSAY STREET LOOKING SOUTH-EAST TOWARD PROPOSAL AREA</b></p>
Existing Sensitivity	<p>The sensitivity of the view toward the Site is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ The private view available from this viewpoint includes large industrial sheds south and east of the station, and includes views to the large plant, stacks and plumes of Port Kembla (visible further to the east, although not seen in the image above).</li> <li>▪ The railway station is not visually prominent within the view and comprises a very small proportion of the total scene.</li> </ul>
Magnitude of change	<p>The magnitude of change during the temporary construction period is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ Construction activity would be barely visible at this distance, seen against the bulky large, light-coloured sheds in the background.</li> <li>▪ The degree of scale and contrast in the view would not be significant.</li> </ul> <p>The magnitude of change following construction is rated as <b>low</b>, as:</p> <ul style="list-style-type: none"> <li>▪ The three proposed lift shafts would be in view.</li> <li>▪ They would be lower than vegetation that appears to be near the station, and lower than the large, bulky sheds in the background.</li> <li>▪ The Proposal would be compatible with its surrounding character.</li> </ul>
Level of Impact	<p><b>CONSTRUCTION:</b> The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p> <p><b>OPERATION:</b> The low sensitivity ranking, combined with the low magnitude of change, leads to an overall <b>low</b> level of impact.</p>



### 6.3 Summary of visual impact

The assessed impact of the Proposal on views during construction is summarised in TABLE 6-5. The assessed impact of the Proposal on views following construction is summarised in TABLE 6-6.

**TABLE 6-5: SUMMARY OF IMPACTS TO VIEWPOINTS – CONSTRUCTION**

Viewpoint	Sensitivity	Magnitude	Assessed visual impact
VP1: Unanderra shopping precinct	Low	Moderate	Moderate-low
VP2: Princes Highway	Low	Low	Low
VP3: Berkeley Road (east)	Low	Low	Low
VP4: Elevated residential areas to the west	Low	Low	Low

**TABLE 6-6: SUMMARY OF IMPACTS TO VIEWPOINTS – OPERATION**

Viewpoint	Sensitivity	Magnitude	Assessed visual impact
VP1: Unanderra shopping precinct	Low	Low	Low
VP2: Princes Highway	Low	Low	Low
VP3: Berkeley Road (east)	Low	Low	Low
VP4: Elevated residential areas to the west	Low	Low	Low

# 7 Mitigation measures

This section describes the positive design characteristics of the Proposal and additional measures that are recommended to improve the visual outcome.

## 7.1 Positive visual attributes of the Proposal

The Proposal has incorporated a number of positive characteristics which would reduce its visual impact:

- The Proposal has been located to minimise impacts to existing vegetation.
- The lifts are proposed to be concrete with an attractive finish (texture), would occupy a relatively small space, and would have a tone similar to the existing footbridge.
- Additional pathways, signage and lighting would be provided improving the experience for pedestrians.
- An Urban Design and Landscaping Plan (UDLP) would be prepared which would include replacement planting to address vegetation removed during construction.
- All lighting would be designed and installed in accordance with the requirements of *AS4282 Control of the Obtrusive Effects of Outdoor Lighting*.
- Unnecessary loss or damage to vegetation would be avoided by protecting trees prior to construction and/or trimming vegetation (if necessary).
- If trees are removed, they would be offset in accordance with Transport for NSW (2019) *Vegetation Offset Guide*, which would greatly enhance the number of trees at the station.

## 7.2 Additional measures

In addition to the above, the following measures are recommended to improve the visual outcome:

- Include one or several feature trees at the Berkeley Road (west) entrance (if possible) to enhance the view of the entry and provide amenity and shade for station customers.
- Colours for elements such as handrails, trims and fencing should be as recessive as possible, so the station continues to be unobtrusive. Choose colours with low reflectivity and high grey content.

## 8 Key findings and conclusion

The Proposal to upgrade Unanderra Station to meet accessibility requirements would result in three new lift shafts, upgrades to stairs, new pathways, handrails and signage, and two new kiss and ride bays.

### **Impact on landscape character**

The wider landscape setting of the station is distinctive with Mount Kembla and the Illawarra Escarpment visible in the background. However, the immediate surroundings are less appealing, featuring industrial and commercial warehouses. The rail corridor and station infrastructure are not visually prominent elements within the landscape.

The Proposal would have a positive impact to character by improving the station entrances and upgrading railway infrastructure. During construction, two 4-6m trees near the western station entrance may require removal, however, the trees do not contribute significantly to landscape character. Once constructed, the scale of the Proposal would be compatible with the character of the immediate surroundings, would not adversely affect the wider positive setting of the Illawarra Escarpment, and would not reduce landscape character in the vicinity the Station Master's Residence.

### **Impact to views**

Four viewpoints were identified for assessment within the visual catchment of the Proposal area, including the adjacent local shopping area, the Princes Highway and the closest residential viewpoints. The highest assessed impact to views during construction is from the shopping area and is rated moderate-low.

Following construction, the assessed impact to all viewpoints is low. The lift shafts would be the most visible new features of the Proposal, however, they would be generally lower in height than industrial sheds and vegetation in the background, are proposed to be concrete and have a similar tone to the existing footbridge, and would integrate with the surrounding built scale and character. Further, the improvements proposed at station entrances would increase the visual appeal of the station.

### **Conclusion**

Overall, the Proposal would result in a low and acceptable impact level to landscape character and surrounding viewpoints. There would be visual improvements to the station and a better experience for station customers. The scale of the Proposal would be compatible with the character of the rail corridor and immediate surroundings, and the station would remain relatively inconspicuous and not visually prominent within the landscape.

## 9 References

Architectus (19/10/2018) *Unanderra Station – Architectural Site Plan Existing*. TAP-UNAN-150105-AR-DRAW-0001

Architectus (19/10/2018) *Unanderra Station – Elevations*. TAP-UNAN-150105-AR-DRAW-1201

Eco Logical Australia (15 April 2020), *Unanderra Station Arboricultural Impact Assessment*

Roads and Maritime Services (December 2018) *Guideline for Landscape Character and Visual Impact Assessment, Environmental Impact Assessment Practice Note EIA-N04*

Transport for NSW (22 July 2019) *Vegetation Management (Protection and Removal) Guideline*

Transport for NSW (23 August 2019) *Vegetation Offset Guide*

Transport for NSW (23 August 2019) *Weed Management and Disposal Guide*